

CONFERENCE GUIDE

43RD INTERNATIONAL CONFERENCE AND EXPOSITION ON ADVANCED CERAMICS AND COMPOSITES

JANUARY 27 – FEBRUARY 1, 2019

Hilton Daytona Beach Resort and Ocean Center
Daytona Beach, Florida, USA

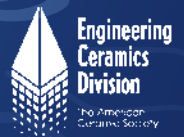


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Organized by the Engineering Ceramics Division of The American Ceramic Society



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WELCOME



Welcome to Daytona Beach, Florida for the 43rd International Conference and Exposition on Advanced Ceramics and Composites, a showcase for cutting-edge research and product developments in advanced ceramics, armor ceramics, solid oxide fuel cells, ceramic coatings, bioceramics, and more. We hope you benefit from the technical program and Industry Expo that provide an open forum to present and exchange findings on recent advances in ceramic science and technology.

The Engineering Ceramics Division of the American Ceramic Society has organized this prestigious conference since 1977—with tremendous growth in interest and participation from ceramic communities globally.

The key event of this year’s conference is the international 40th Anniversary Richard M. Fulrath Award Symposium on “Frontiers of Ceramics for Sustainable Society.” The Richard M. Fulrath award was started in 1978 to promote technical and personal friendships between Japanese and American professional ceramic engineers/scientists and encourage understanding among diverse cultures surrounding the Pacific Rim. In addition, this year’s technical program consists of seventeen symposia, four focused sessions on emerging technologies, the 8th Global Young Investigator Forum, and a special focused session on Diversity, Entrepreneurship, and Commercialization.

Attendees also have access to the Exposition on Tuesday, January 29 and Wednesday, January 30 across the street at the Ocean Center. Plan to connect with representatives from these industry-leading organizations.

Our special thanks go to our event sponsors listed on page iv.

The ECD Executive Committee and volunteer organizers, together with ACerS, thank you for joining us for what should be a stimulating and beneficial experience.

2019 Program Chair



Surojit Gupta
Department of Mechanical
Engineering, University of
North Dakota



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2018-2019 Engineering Ceramics Division Officers

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Welcome from The American Ceramic Society (ACerS)

The ACerS community is open to all, and we're happy to have you with us. ACerS values diverse and inclusive participation within the field of ceramic science and engineering. We strive to promote involvement and access to leadership opportunity regardless of race, ethnicity, gender, religion, age, sexual orientation, nationality, disability, appearance, geographic location, career path or academic level.

If you are a new member or joining us for the first time, please see the events available for you on page viii, or visit the ACerS registration desk to learn more.

For all guests, if you need access to a nursing mother's room or other special needs, please ask us at the ACerS registration desk. For childcare services, please check with the hotel concierge or a listing of licensed and bonded caregivers.

We hope you enjoy the conference and want you to know that all individuals are welcome at ACerS conferences and events.

MEETING REGULATIONS



Cell phones
silent

During oral sessions conducted during Society meetings, unauthorized photography, videotaping, and audio recording is strictly prohibited for two reasons:

- (1) conference presentations are the intellectual property of the presenting authors as such are protected, and
- (2) engaging in photography, videotaping, or audio recording is disruptive to the presenter and the audience.

Failure to comply may result in the removal of the offender from the session or from the remainder of the meeting.

Note: The Society may engage photographers to photograph sessions for marketing and promotional purposes.



No photography/
recording

MEETING REGULATIONS

The American Ceramic Society is a nonprofit scientific organization that facilitates the exchange of knowledge meetings and publication of papers for future reference. The Society owns and retains full right to control its publications and its meetings. The Society has an obligation to protect its members and meetings from intrusion by others who may wish to use the meetings for their own private promotion purpose. Literature found not to be in agreement with the Society's goals, in competition with Society services or of an offensive nature will not be displayed anywhere in the vicinity of the meeting. Promotional literature of any kind may not be displayed without the Society's permission and unless the Society provides tables for this purpose. Literature not conforming to this policy or displayed in other than designated areas will be disposed. The Society will not permit unauthorized scheduling of activities during its meeting by any person or group when those activities are conducted at its meeting place in interference with its programs and scheduled activities. The Society does not object to appropriate activities by others during its meetings if it is consulted with regard to time, place, and suitability. Any person or group wishing to conduct any activity at the time and location of the Society meeting must obtain permission from the Executive Director or Director of Meetings, giving full details regarding desired time, place and nature of activity.

Diversity Statement: The American Ceramic Society values diverse and inclusive participation within the field of ceramic science and engineering. ACerS strives to promote involvement and access to leadership opportunity regardless of race, ethnicity, gender, religion, age, sexual orientation, nationality, disability, appearance, geographic location, career path or academic level. Visit the registration desk if you need access to a nursing mother's room or need further assistance. For childcare services, please check with the concierge at individual hotels for a listing of licensed and bonded caregivers.

The American Ceramic Society plans to take photographs and video at the conference and reproduce them in educational, news or promotional materials, whether in print, electronic or other media, including The American Ceramic Society's website. By participating in the conference, you grant The American Ceramic Society the right to use your name and photograph for such purposes. All postings become the property of The American Ceramic Society.

During oral sessions conducted during Society meetings, **unauthorized photography, videotaping and audio recording is prohibited.** Failure to comply may result in the removal of the offender from the session or from the remainder of the meeting.

Registration Requirements: Attendance at any meeting of the Society shall be limited to duly registered persons.

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Final determination of the suitability of any information, procedure or products for use contemplated by any user, and the manner of that use, is the sole responsibility of the user. Expert advice should be obtained at all times when implementation is being considered, particularly where hazardous materials or processes are encountered.

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SCHEDULE AT A GLANCE

Hilton Daytona Beach Resort/Ocean Walk Village | 100 North Atlantic Avenue

Exposition & Poster Session Location | Ocean Center Conference Center/Arena

SUNDAY, JANUARY 27, 2019

Conference registration	2:00 p.m. – 7:00 p.m.	Hilton – Coquina Foyer
Member and publication center	2:00 p.m. – 7:00 p.m.	Hilton – Coquina Foyer
Speaker ready room	2:00 p.m. – 7:00 p.m.	Hilton – Manatee
Welcome reception	5:30 p.m. – 7:00 p.m.	Hilton – Coquina Foyer

MONDAY, JANUARY 28, 2019

Conference registration	7:00 a.m. – 6:00 p.m.	Hilton – Coquina Foyer
Member and publication center	7:00 a.m. – 6:00 p.m.	Hilton – Coquina Foyer
Speaker ready room	8:00 a.m. – 4:00 p.m.	Hilton – Manatee
Opening awards ceremony & plenary session	8:30 a.m. – 12:00 p.m.	Hilton – D & E
Companion coffee	9:00 a.m. – 10:30 a.m.	Hilton – Oceanview
Coffee break	10:00 a.m. – 10:20 a.m.	Hilton
Lunch on own	12:00 p.m. – 1:20 p.m.	
Concurrent technical sessions	1:30 p.m. – 5:30 p.m.	Hilton
Coffee break	3:00 p.m. – 3:20 p.m.	Hilton
New member reception	5:30 p.m. – 6:30 p.m.	Hilton – Oceanview
ACerS Global Graduate Researchers Network Student and Young Professional Networking Mixer	7:30 p.m. – 9:00 p.m.	Hilton – Oceanview

TUESDAY, JANUARY 29, 2019

Conference registration	7:30 a.m. – 6:00 p.m.	Hilton – Coquina Foyer
Member and publication center	7:30 a.m. – 6:00 p.m.	Hilton – Coquina Foyer
Speaker ready room	8:00 a.m. – 4:00 p.m.	Hilton – Manatee
Concurrent technical sessions	8:30 a.m. – 12:00 p.m.	Hilton
Coffee break	10:00 a.m. – 10:20 a.m.	Hilton
Writing Excellent Abstracts: A Hands-on Workshop, including lunch	12:00 p.m. – 1:00 p.m.	Hilton – Flagler
Exhibitor set-up	12:00 p.m. – 4:00 p.m.	Ocean Center
Lunch on own	12:00 p.m. – 1:20 p.m.	
Concurrent technical sessions	1:30 p.m. – 6:00 p.m.	Hilton
Coffee break	3:00 p.m. – 3:20 p.m.	Hilton
Poster session A set-up	3:00 p.m. – 4:30 p.m.	Ocean Center
Exhibits & poster session A, including reception	5:00 p.m. – 8:00 p.m.	Ocean Center

WEDNESDAY, JANUARY 30, 2019

Conference registration	7:30 a.m. – 5:30 p.m.	Hilton – Coquina Foyer
Member and publication center	7:30 a.m. – 5:30 p.m.	Hilton – Coquina Foyer
Speaker ready room	8:00 a.m. – 4:00 p.m.	Hilton – Manatee
Concurrent technical sessions	8:30 a.m. – 12:00 p.m.	Hilton
Coffee break	10:00 a.m. – 10:20 a.m.	Hilton
Lunch on own	12:00 p.m. – 1:20 p.m.	
Concurrent technical sessions	1:30 p.m. – 5:00 p.m.	Hilton



SCHEDULE AT A GLANCE

Hilton Daytona Beach Resort/Ocean Walk Village | 100 North Atlantic Avenue
Exposition & Poster Session Location | Ocean Center Conference Center/Arena

WEDNESDAY, JANUARY 30, 2019 (continued)

Coffee break	3:00 p.m. – 3:20 p.m.	Hilton
Poster session B set-up	3:00 p.m. – 4:30 p.m.	Ocean Center
Exhibits & poster session B, including reception	5:00 p.m. – 7:30 p.m.	Ocean Center

THURSDAY, JANUARY 31, 2019

Conference registration	7:30 a.m. – 5:30 p.m.	Hilton – Coquina Foyer
Member center	7:30 a.m. – 5:30 p.m.	Hilton – Coquina Foyer
Speaker ready room	8:00 a.m. – 4:00 p.m.	Hilton – Manatee
Concurrent technical sessions	8:30 a.m. – 12:00 p.m.	Hilton
Coffee break	10:00 a.m. – 10:20 a.m.	Hilton
Lunch on own	12:00 p.m. – 1:20 p.m.	
Concurrent technical sessions	1:30 p.m. – 5:00 p.m.	Hilton
Coffee break	3:00 p.m. – 3:20 p.m.	Hilton
Last night reception	5:30 p.m. – 6:30 p.m.	Hilton – Coquina Foyer

FRIDAY, JANUARY 26, 2018

Conference registration	8:00 a.m.–12:00 p.m.	Hilton – Coquina Foyer
Concurrent technical sessions	8:30 a.m. – 12:00 p.m.	Hilton
Coffee break	10:00 a.m. – 10:20 a.m.	Hilton



2019 AWARD SPEAKERS

MONDAY, JANUARY 28, 2019 | 8:30 A.M. – 12:00 P.M.

OPENING REMARKS 8:30 A.M. | HILTON COQUINA D & E

JAMES I. MUELLER AWARD | 8:50 AM



Dileep Singh, Senior Materials Scientist, Argonne National Laboratory, USA

Title: *Renewable energy: Role of ceramics and composites*

Abstract: Extreme environments and operating conditions of power generation from renewable energy sources is necessitating development of components and systems using advanced materials. This presentation will discuss the opportunities and challenges in various renewable energy technologies including solar, wind, and geothermal. Role of engineered ceramic materials in fulfilling the gaps and/or meeting the material technological challenges will be discussed. Attributes of ceramics and their composites, vis-à-vis to metals, that make them the materials of choice are their high-temperature mechanical properties, corrosion and creep resistance, etc. As part of the presentation, specific example will be presented that will outline the development of a ceramic composite system for high temperature thermal energy storage from bench to prototype scale. Finally, the need for techno-economic analysis to demonstrate the viability of the advanced ceramic materials for renewable energy applications will be discussed.

BRIDGE BUILDING AWARD | 9:30 AM



Jerzy Lis, Vice Rector of Cooperation and President of the Board of INNO AGH, AGH University of Science and Technology, Poland

Title: *Processing of complex ceramic materials by rapid high-energy techniques*

Abstract: The presentation is prepared based on author experience and the results obtained by AGH University of Science and Technology research group working in the field of ceramic materials synthesis using selected rapid high-energy techniques (RHET). Two RHET methods are described in details namely: Combustion Synthesis is also called Self-Propagating High-Temperature Synthesis (SHS) and Laser Rapid Manufacturing (LRM). Those approaches lead to technology enable to use strong high-energy sources for synthesis of different compounds associated with local consolidation of materials. These techniques should be considered as harvesting energy methods because reaction is initiated locally, then process goes in self-sustaining regime and chemical energy is generated from ambient surrounding powdery bed to provide an uninterrupted synthesis. Considering materials science point of view, physicochemical processes occurring in the micro-regions undergoing rapid temperature rise with of next flash cooling resulted in very effective and untypical in nature phenomena compare to more conventional heating. Such combination effects lead to preparation new materials having interesting properties. Examples of such phenomena occurring in conditions of strong sources of chemical energy (SHS) or laser energy (LRM) used to prepare ceramic materials are analysed. It can be demonstrated in different engineering ceramics systems e.g. Si-C-N, Ti-Si-C-N and Ti-Al-C-N as well as Al-O-N. It has been concluded, that such RHET techniques brought significant contribution to the ceramic processing and may be considered as perspective approach to materials engineering.

PLENARY SPEAKERS | 10:40 AM



Shunpei Yamazaki, President, Semiconductor Energy Laboratory Co., Ltd., Japan

Title: *Crystalline Oxide Semiconductor (IGZO Ceramics)-based devices for Artificial Intelligence (AI) and Internet of Things (IoT)*

Abstract: Technologies driving artificial intelligence (AI) and Internet of things (IoT) are advancing day by day, and the activities surrounding this field do not show signs of slowing down. It is expected that in near future, networked AI and IoT will pervade the entire human society, and the amount of data transmission through our networks will expand to the limit. The society fears that this will require enormous amounts of power and a power reduction of AI by 1000 times is demanded. In 2009, we discovered c-axis aligned crystalline indium-gallium-zinc-oxide (CAAC-IGZO), which is a crystalline oxide semiconductor material. CAAC-IGZO is layered, and has a novel crystal structure. It is highly aligned in the c-axis direction and is not aligned in the a-b plane direction, but has no clear crystal grain boundaries. CAAC-IGZO is a ceramic material that can be applied to active devices, which can be applied to hardware such as a graphics processing unit (GPU), a central processing unit (CPU), a dynamic random access memory (DRAM), a 3D-NAND flash, and a field-programmable gate array (FPGA). AI chips are fabricated using the hardware listed above, and they are fabricated using Si semiconductor material. More DRAM chips are on an AI chip more than any other chip, and they consume power more than any other chip. This technology enables extreme reduction of AI chip's power consumption. Ceramics play key role in various critical developments in AI technology. In future crystalline oxide semiconductor will be the key technology to make AI prevalent throughout the world. This presentation will go across boundaries and introduce the applications of IGZO ceramics in an active device for AI technology.

11:20 AM



Michael J. Cima, David H. Koch professor of engineering, Faculty director of the Lemelson-MIT Program, Associate Dean for Innovation, Massachusetts Institute of Technology, USA

Title: *Drug, Device, or Diagnostic? Engineering in a new world of medicine*

Abstract: Medical technologies are evolving at a very rapid pace. Portable communications devices and other handheld electronics are influencing our expectations of future medical tools. The advanced medical technologies of our future will not necessarily be large expensive systems. They are just as likely to be small and disposable. In addition, the lines between drugs, devices, diagnostics, and procedures are being blurred. This talk will review how microsystems and microdevices are already impacting health care as commercial products or in clinical development. Example systems include point of care diagnostics (POCT), patient monitoring tools, systemic drug delivery, local drug delivery, and imaging tools are described. These technologies are moving care from hospitals to outpatient settings, the physician's office, community health centers, nursing homes, and the patient's home.



SPECIAL EVENTS

WELCOME RECEPTION

SUNDAY, JANUARY 27, 2019 | 5:30 – 7:00 P.M.
HILTON – COQUINA FOYER

Network with colleagues at this reception.

NEW MEMBER RECEPTION

MONDAY, JANUARY 28, 2019 | 5:30 – 6:30 P.M.
HILTON – OCEANVIEW

New ACerS members are invited to join us for a casual gathering and opportunity to network with other new members. (by invitation only)

ACERS GLOBAL GRADUATE RESEARCHER NETWORK

Student and Young Professional Networking Mixer

MONDAY, JANUARY 28, 2019 | 7:30 – 9:00 P.M.
HILTON – OCEANVIEW

Swap stories with fellow students and young professionals during this relaxed evening event.

SHOT GLASS CONTEST



TUESDAY, JANUARY 29, 2019
6:45 – 7:45 P.M.



THE OCEAN CENTER, EXHIBIT SHOW FLOOR

Organized by ACerS President's Council of Student Advisors (PCSA)

Test your skills with this design contest! Competitors get 15 drinking straws to build a protective device for their shot glass donated by SCHOTT. Then, the glasses are dropped from increasing heights until the breaking threshold is reached. The glass with the highest successful drop distance wins!

EXPOSITION & POSTER SESSION HOURS

TUESDAY, JANUARY 29, 2019 | 5:00 – 8:00 P.M.
WEDNESDAY, JANUARY 30, 2019 | 5:00 – 7:30 P.M.
OCEAN CENTER CONFERENCE CENTER/ARENA

Visit with vendors from the ceramic and glass industry.

PUBLISHING IN AMERICAN CERAMIC SOCIETY JOURNALS:

WRITING EXCELLENT ABSTRACTS: A HANDS-ON WORKSHOP

Submit better manuscripts to the ACerS journals

TUESDAY JANUARY 29, 2019 | 12:00 – 1:00 PM
HILTON - FLAGLER

Sponsored by:

Excellent abstracts and titles make articles more attractive to your audience and improve AI indexing for discovery of your work. Guided by ACerS journal editors you will critique and improve abstracts of articles published in our journals. You are welcome to bring your own work.



Box lunches will be provided to those who pre-registered, and to all others on a first-come first served basis. Come early to guarantee your space and sharpen your skills.

THE STUDENT AND INDUSTRY FAILURE TRIALS (SIFT) COMPETITION

WEDNESDAY, JANUARY 30, 2019 | 5:30 – 6:30 PM
THE OCEAN CENTER, EXHIBIT SHOW FLOOR

This competition will challenge teams of students, industry professionals, and academics to analyze a ceramic material which has failed in an industrial setting and identify the failure mechanism. The competition is open to any student from undergraduate through graduate levels of study, and any interested industry professionals or researchers are welcome to participate as advisors to the teams of students. The SIFT Competition is organized by the President's Council of Student Advisors.

LAST NIGHT RECEPTION

THURSDAY, JANUARY 31, 2019 | 5:30 – 6:30 P.M.
HILTON – COQUINA FOYER

Recap the week's excitement with your colleagues and friends.

THE ECD GLOBAL YOUNG INVESTIGATOR AWARD

MONDAY, JANUARY 28 | 1:30 PM | HILTON COQUINA SALON G

The Global Young Investigator Award laureate delivers the opening keynote lecture as a part of the 8th Global Young Investigator Forum.



Ji

Wei Ji, Assistant professor, Wuhan University of Technology, China

Title: *Sintering of advanced ceramics by plastic deformation as dominant mechanism*

NEW! ENGINEERING CERAMICS DIVISION (ECD) JUBILEE GLOBAL DIVERSITY AWARD

MONDAY, JANUARY 28, 2019 | 1:30 – 3:00 P.M.

HILTON COQUINA SALON E

This award is intended to recognize exceptional early- to mid-career professionals who are women and/or underrepresented minorities (i.e. based on race, ethnicity, nationality and/or geographic location) in the area of ceramic science and engineering.



Zhang

1:30 PM

Jie Zhang, Institute of Metal Research, China

Title: *Integrated design of ceramic coatings for accident-tolerant fuel cladding in LWRs*



Balázi

2:00 PM

Katalin Balázi, Hungarian Academy of Sciences, Hungary

Title: *Effect of deposition parameters on cubic TiC and hexagonal Ti phase formation of thin films deposited by magnetron sputtering*



Rueschhoff

2:30 PM

Lisa M. Rueschhoff, Air Force Research Lab, USA

Title: *Nano to bulk scale ceramic processing and structure control for enhanced properties*

MECHANICAL PROPERTIES OF CERAMICS AND GLASS SHORT COURSE*

THURSDAY, JANUARY 31, 2019 | 8:30 A.M. – 4:30 P.M.

FRIDAY, FEBRUARY 1, 2019 | 8:30 A.M. – 4:00 P.M.

LOCATION: HILTON – FLAGLER A

INSTRUCTORS: **George D. Quinn**, NIST, and **Richard C. Bradt**, University of Alabama

Additional registration fee is required.*

40TH ANNIVERSARY

RICHARD M. FULRATH AWARD SYMPOSIUM

TUESDAY, JANUARY 29; WEDNESDAY, JANUARY 30

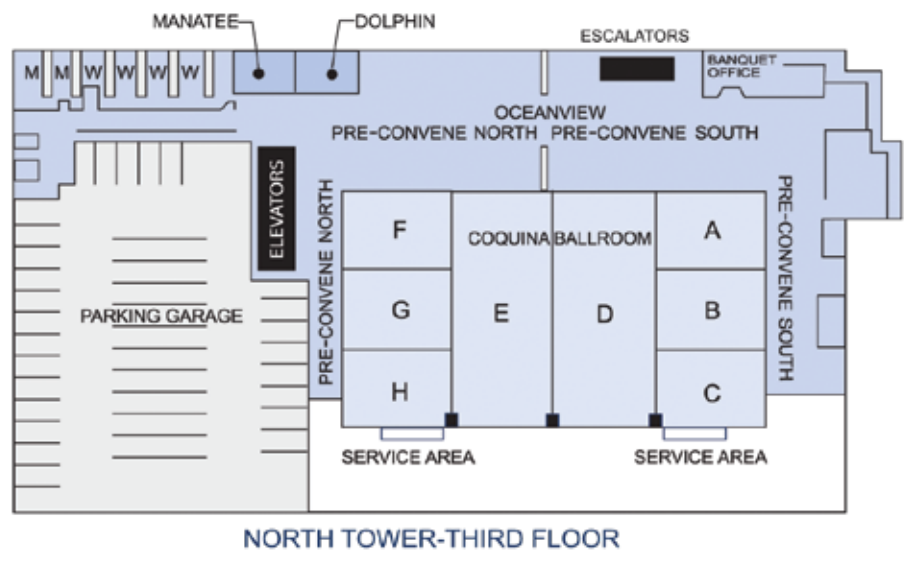
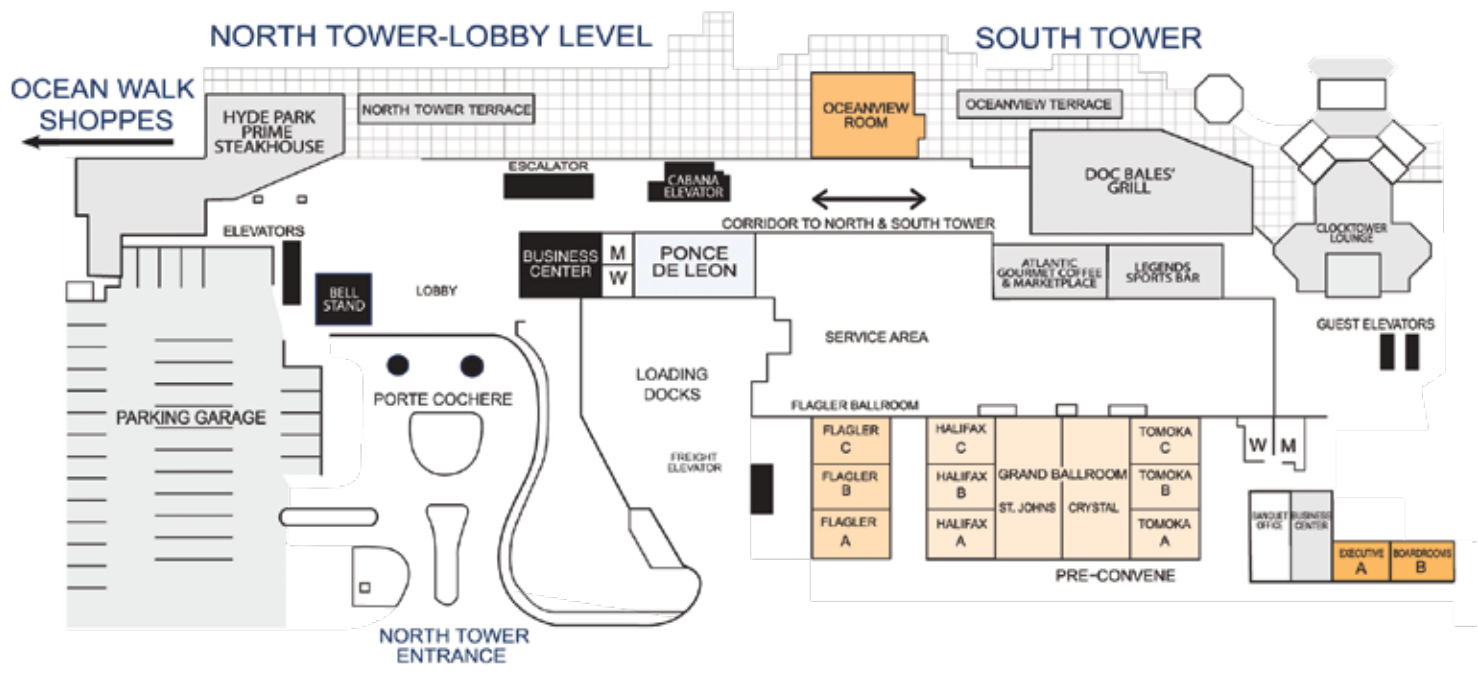
HILTON COQUINA E

“Frontiers of Ceramics for Sustainable Society”

The Richard M. Fulrath award was started in 1978 to promote technical and personal friendships between Japanese and American professional ceramic engineers/scientists and encourage understanding among the diverse cultures surrounding the Pacific Rim. In its 40-year history, this award has made major contributions in this area. All the Fulrath award winners have made significant contributions to various areas of ceramic science and technology development which is critically needed for a sustainable society. As an increasing global population drives to improve its standard of living, the demand for energy, healthcare, housing, transportation, and industrial products also grows rapidly. However, the higher demand and production in all these areas leads to a dramatic increase in the overall consumption of resources and rate of pollution leading to climate change that creates the risk of irreversible changes in ecosystem. New technologies and innovative solutions are required to address these needs. This symposium will address the critical role of advanced ceramic materials and technologies in solving various societal challenges.



HILTON MEETING ROOM FLOOR PLAN



NEW NIST NRC POSTDOC OPPORTUNITY:

Additive Manufacturing of Hybrid Ceramic Materials

NIST
**National Institute of
Standards and Technology**
U.S. Department of Commerce

Starting in February 2019, the Materials Measurement Science Division (MMSD) of NIST's Material Measurement Laboratory (MML) will offer NRC postdoc opportunities in advanced synthesis and characterization of additive manufactured (AM) hybrid materials. Of interest are: AM gradient materials with ceramic coatings on metallic substrates (for wear-resistant, ultra-hightemperature coatings or net-formed components), AM metal / ceramic matrix composites (for gradient hardness components, gears and artefacts, or other graded porosity materials), and AM ceramic / polymer composites (for dental nanocomposites, bone tissue scaffolds, etc.). Due to the extreme thermal transients associated with most AM build processes, the as-built structures contain many non-equilibrium features in their microstructure and spatial phase distribution, and frequently also high residual stresses, all of which have effects that must be mitigated by post-build processing treatments. In this connection, we are interested in developing the insights and understanding necessary to quantify and optimize AM material processes for AM product performance. This requires characterizing AM material microstructures and void morphologies, and the associated crystalline phases, including their highly non-equilibrium spatial variation and heterogeneity, as a function of the AM fabrication path and postprocessing steps (including in situ characterization). To address these issues, NIST has access to advanced characterization tools that include world-class majorfacility X-ray and neutron scattering and diffraction capabilities, as well as advanced electron microscopy and diffraction facilities. Successful candidates will formulate their own research plans (collaborating with NIST staff) in support of these objectives. They are expected to develop their synthesis skills, both at NIST and in collaboration with others, and their characterization skills in X-ray, neutron and/or electron scattering measurements and analysis. In addition, opportunities exist to employ/develop advanced modeling capabilities and artificial intelligence (AI) machine learning techniques. Candidates must be U.S. Citizens and have completed their doctoral degree.

Initial inquiries should be made to Andrew Allen (andrew.allen@nist.gov) or Igor Levin (igor.levin@nist.gov)



EXHIBIT FLOOR PLAN AND BOOTH INFORMATION

S TUESDAY, JAN. 29, 2019: 5 – 8 PM | WEDNESDAY, JAN. 30, 2019 | 5 – 7:30 PM
 OCEAN CENTER (across the street from the Hilton)

Stop by any vendor booth in our ICACC 2019 Expo and receive a raffle ticket for a drawing to win the following exciting prizes:

First prize:

Phase Equilibria Diagrams PC Database, Version 4.3 USB single license (\$1,095 value)

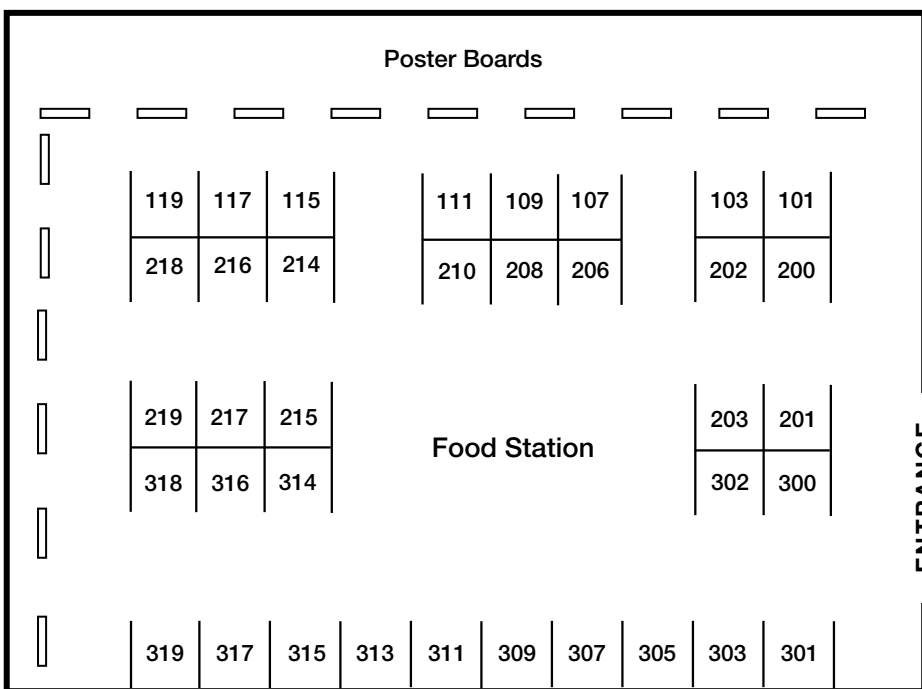
Second prize:

ICACC 2020 free registration (\$730 value)

Third prize:

“Engineered Ceramics: Current Status and Future Products” technical book (\$175 value)

Turn your raffle tickets in during exhibit hours at the ACerS booth (101) in the Exhibit Hall. You may turn in as many tickets as you gather from exhibitors, so the more you visit with our vendors, the better your odds to win! The prizes will be drawn at 6:30 p.m., Wednesday, January 30, at the ACerS booth. You need not be present to win. This is a great opportunity to collaborate with potential business partners, and walk away with something useful for your business or career. It can be a win-win, literally.



Exhibitor	Booth No.	Exhibitor	Booth No.
3DCERAM SINTO INC.	318	Netzsch Instruments	300
AdValue Technology, LLC	317	Nordson SONOSCAN	302
Alfred University	315	Oxy-Gon Industries, Inc.	214
AVS	307	Praxair Surface Technologies	219
Centorr Vacuum Industries	200	Reserved	208
Ceramics Expo	311	SPEX SamplePrep	316
CM Furnaces	210	Springer Nature	107
Gasbarre	203	TAV VACUUM FURNACES SPA	313
Haiku Tech	215	Tev Tech	206
Harper International	309	Tethon 3D	218
H.C. Starck Surface Technology and Ceramic Powders GmbH/Höganäs AB	305	Thermcraft, Inc.	303
KEYENCE Corporation of America	301	Wiley	216
Lithoz America LLC	103	Zeiss Microscopy	201
Microtrac	314	ZIRCAR Ceramics	2026

ICACC EXPO PREVIEW

Exhibit dates:

Tuesday, January 29, 2019: | 5 – 8 p.m. | Wednesday, January 30, 2019 | 5 – 7:30 p.m.

3DCERAM-SINTO

Booth No. 318

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American Ceramic Society (The)

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More than 10,000 scientists, engineers, researchers, manufacturers, plant personnel, educators, students, marketing and sales professionals from more than 80 countries make up the members of The American Ceramic Society. The Society provides members and subscribers access to an extensive array of periodicals and books, meetings and expositions, and online technical information. In addition, ACerS Journals are three of the most cited ceramic publications in the world. ACerS educates and provides forums to connect individuals working in ceramics-related materials through hosted technical meetings and communities in order to better advance the ceramics community. Since 1898, ACerS has been the hub of the global ceramics community and one of the most trusted sources of ceramic materials & applications knowledge. If ceramic material and technologies are a significant part of your work, then ACerS is the professional society for you.

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AVS specializes in design, engineering, fabrication and complete integration of custom furnaces. We specialize in applications involving combinations of high temperatures to 2400°C, vacuum to 10⁻⁶ torr, and gas pressures up to 3000 psig (200 bar). We also manufacture furnaces that include hydraulic hot pressing from 5 tons to over 1000 tons of force, complex gas controls such as MIM and CVD, as well as combination debinding/sintering furnaces. Some AVS furnace applications involve induction heating, but most utilize either graphite or metal resistance heating. AVS leads the industry with its ACE Data Acquisition and Control System, a fully integrated control system that provides graphical user interface screens with point-and-click selection and control of furnace components, run-time parameter displays, recipe screens, user-configurable recipes, status screens, statistics screen and trend screens, including a split-screen feature, allowing direct trend screen comparisons.

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Centorr Vacuum Industries

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Ceramics Expo 2019

Booth No. 311

Ceramics Expo, now in its fifth year, is the center of North American innovation, commerce and networking in this vitally important sector, promoting the advances in ceramic manufacturing and demonstrating the many benefits of ceramics in electronic, automotive, aerospace / defense, medical, energy, industrial and many other industry applications.

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CM Furnaces, Inc.

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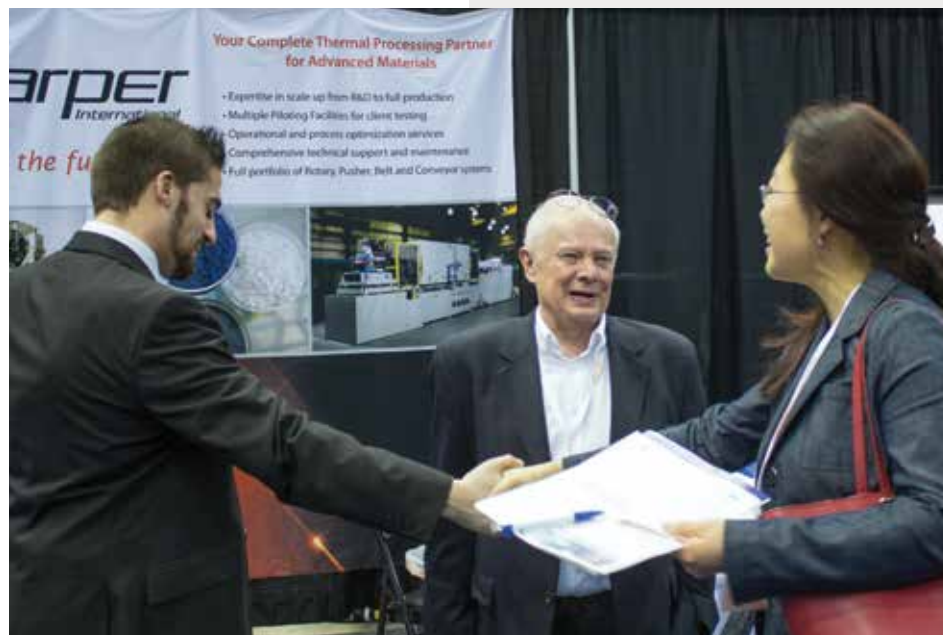
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Exhibit dates:

Tuesday, January 29, 2019: | 5 – 8 p.m. | Wednesday, January 30, 2019 | 5 – 7:30 p.m.

Gasbarre

Booth No. 203

Gasbarre is a full-service OEM offering equipment and services for powder materials, thermal processing, and manufacturing technologies. Products include mechanical, CNC hydraulic, electric, high-speed, and dry-bag isostatic presses, and vacuum and atmosphere furnaces in continuous and batch designs up to 3000°F. Gasbarre also offers precision tooling for all its products.

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Harper International

Booth No. 309

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H.C. Starck Surface Technology and Ceramic Powders GmbH / Höganäs AB

Booth No. 305

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Lithoz America LLC

Booth No. 103

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Nordson SONOSCAN

Booth No. 302

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Booth No. 107

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TAV VACUUM FURNACES SPA

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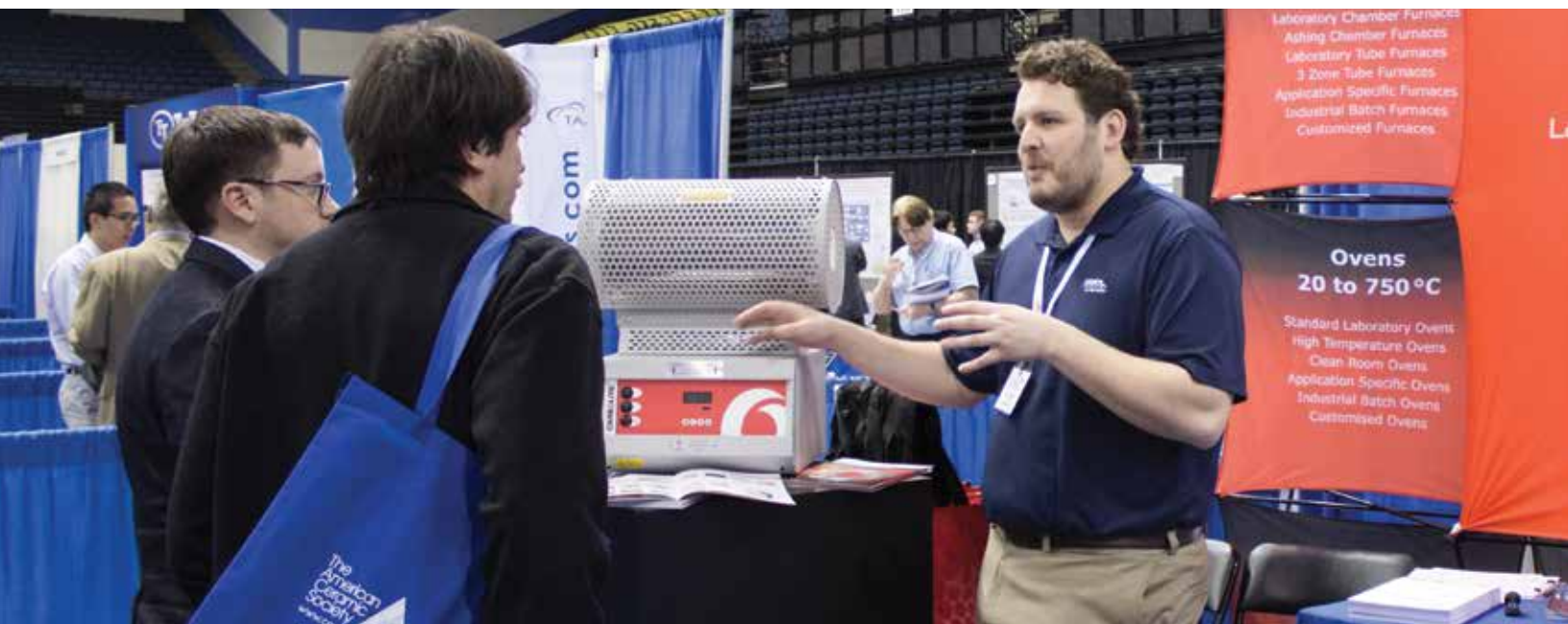
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SYMPOSIA

2019 PROGRAM CHAIR: Surojit Gupta, University of North Dakota, USA

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Jonathan A. Salem, NASA Glenn Research Center, USA; Dileep Singh, Argonne National Laboratory, USA; Dietmar Koch, German Aerospace Center, Germany; Emmanuel Maillet, General Electric Company, USA; Shaoming Dong, Shanghai Institute of Ceramics, China; Warren Oden, Hysitron, Inc., USA; T. Ishikawa, Tokyo University of Science, Yamaguchi, Japan; Monica Ferraris, Politecnico di Torino, Italy; Walter Krenkel, University of Bayreuth, Germany; Rajesh Kumar, United Technologies Research Center, USA; Andrew Wereszczak, Oak Ridge National Laboratory, USA; Raul Bermejo, Montanuniversitaet Leoben, Austria

S2: ADVANCED CERAMIC COATINGS FOR STRUCTURAL, ENVIRONMENTAL, AND FUNCTIONAL

Peter Mechnich, German Aerospace Center (DLR), Germany; Douglas E. Wolfe, The Pennsylvania State University, USA; Dongming Zhu, NASA Glenn Research Center, USA; Eugene Medvedovski, Endurance Technologies Inc., Canada; Elizabeth Opila, University of Virginia, USA; Eric H. Jordan, The University of Connecticut, USA; Bryan Harder, NASA Glenn Research Center, USA; Robert Vaßen, Forschungszentrum Jülich, Germany; Kang N. Lee, NASA Glenn Research Center, USA; Byung-Koog Jang, National Institute for Materials Science (NIMS), Japan; David Poerschke, University of California Santa Barbara, USA; Ping Xiao, University of Manchester, UK; Marie-Hélène Vidal-Sétif, ONERA, France; Yutaka Kagawa, University of Tokyo, Japan; Soumendra N. Basu, Boston University, USA; Rodney W. Trice, Purdue University, USA; Federico Cernuschi, Ricerca sul Sistema Energetico, Italy; Uwe Schulz, German Aerospace Center, Germany; Yiguang Wang, Northwestern Polytechnical University, China

S3: 16TH INTERNATIONAL SYMPOSIUM ON SOLID OXIDE CELLS (SOC): MATERIALS, SCIENCE AND TECHNOLOGY

Mihails Kusnezoff, Fraunhofer IKTS, Germany; Narottam P. Bansal, NASA Glenn Research Center, USA; Tatsumi Ishihara, Kyushu University, Japan; Federico Smeacetto, Politecnico di Torino, Italy; Jeffrey W. Stevenson, Pacific Northwest National Laboratory, USA; Ayhan Sarikaya, Saint-Gobain, USA; Ruey-Yi Lee, Institute of Nuclear Energy Research, Taiwan; Vincenzo Esposito, DTU Energy Conversion, Denmark; Scott A. Barnett, Northwestern University, USA; Nguyen Q. Minh, University of California San Diego, USA; Prabhakar Singh, University of Connecticut, USA

S4: ARMOR CERAMICS – CHALLENGES AND NEW DEVELOPMENTS

Jerry LaSalvia, ARL, USA; Jeffrey Swab, ARL, USA; Brady Aydelotte, ARL, USA; Michael Bakas, ARO, USA; Victoria Blair, ARL, USA; Peter Brown, DSTL, UK; Richard Haber, Rutgers University, USA; Christopher Marvel, Lehigh University, USA; Ghatu Subhash, University of Florida, USA; Andrew Wereszczak, ORNL, USA

S5: NEXT GENERATION BIOCERAMICS AND BIOCOSMOS

Roger Narayan, University of North Carolina, USA; Markus Reiterer, Medtronic, Inc., USA; Bikramjit Basu, Indian Institute of Science, India; Ilaria Cacciotti, Università degli Studi Niccolò Cusano, Italy; Marta Cerruti, McGill University, Canada; Enrico Bernardo, Università di Padova, Italy; Eva Hemmer, Institut National de la Recherche Scientifique (INRS), Canada; Chikara Ohtsuki, Nagoya University, Japan; Akiyoshi Osaka, Okayama University, Japan; Tolou Shokuhfar, University of Illinois at Chicago, USA; Kohei Soga, Tokyo University of Science, Japan; Enrica Verné, Politecnico di Torino, Italy

S6: ADVANCED MATERIALS AND TECHNOLOGIES FOR DIRECT THERMAL ENERGY CONVERSION AND RECHARGEABLE ENERGY STORAGE

Palani Balaya, National University of Singapore, Singapore; Olivier Guillon, Forschungszentrum Jülich, Germany; Dany Carlier, ICMCB, France; Fei Chen, Wuhan University of Technology, China; Jang Wook Choi, KAIST, South Korea; Mickael Dollé, University of Moncton, Canada; Ryoji Funahashi, AIST, Japan; Emmanuel Guilmeau, CNRS CRISMAT, France; XiangXin Guo, Qingdao University & Shanghai Institute of Ceramics (CAS), China; Wei Lai, Michigan State University, USA; Naoaki Yabuuchi, Tokyo Denki University, Japan

S7: 12TH INTERNATIONAL SYMPOSIUM ON FUNCTIONAL NANOMATERIALS AND THIN FILMS FOR SUSTAINABLE ENERGY HARVESTING, ENVIRONMENTAL AND HEALTH APPLICATIONS

Sanjay Mathur, University of Cologne, Germany; Yakup Gönüllü, SCHOTT AG, Germany; Hidehiro Kamiya, University of Agriculture and Technology, Japan; Alberto Vomiero, Lulea University, Sweden; Silke Christiansen, Helmholtz-Zentrum Berlin, Germany; Mustafa Ürgen, Istanbul Technical University, Turkey; Mustafa Toprak, Royal Institute of Technology (KTH), Sweden; Gunnar Westin, Uppsala University, Sweden; Wilson Smith, TU Delft, Netherlands; Di Wu, Washington State University, USA; Ausrine Bartašyte, University of Besancon, France; Thomas Fischer, University of Cologne, Germany; Daniel Chua, National University of Singapore, Singapore; Yasuhiro Tachibana, RMIT, Australia

S8: 13TH INTERNATIONAL SYMPOSIUM ON ADVANCED PROCESSING AND MANUFACTURING TECHNOLOGIES FOR STRUCTURAL AND MULTI-FUNCTIONAL MATERIALS AND SYSTEMS (APMT13)

Zhengyi Fu, Wuhan University of Technology, China; Hisayuki Suematsu, Nagaoka University of Technology, Japan; Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Mrityunjay Singh, Ohio Aerospace Institute, NASA Glenn Research Center, USA; Enrico Bernardo, University of Padova, Italy; Mirosław Bu ko, AGH University of Science and Technology, Poland; Thomas Graule, Empa, Switzerland; Surojit Gupta, University of North Dakota, USA; Young-Wook Kim, University of Seoul, Korea; Jerzy Lis, AGH University of Science and Technology, Poland; Eugene Medvedovski, Endurance Technologies Inc., Canada; Lisa Rueschhoff, Air Force Research Laboratory, OH, USA; Richard D. Sisson, Jr., Worcester Polytechnic Institute, USA; Tohru S. Suzuki, National Institute for Materials Science (NIMS), Japan; Satoshi Tanaka, Nagaoka University of Technology, Japan; Valerie Wiesner, NASA Glenn Research Center, USA

S9: POROUS CERAMICS: NOVEL DEVELOPMENTS AND APPLICATIONS

Paolo Colombo, University of Padova, Italy; Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Tobias Fey, University of Erlangen-Nuremberg, Germany; Farid Akhtar, Lulea University of Technology, Sweden; Samuel Bernard, Institut de Recherche sur les Céramiques de Limoges, France; Giorgia Franchin, University of Padova, Italy; Jacob George, Corning, USA; Aleksander Gurlo, Technical University Berlin, Germany; Miki Inada, Kyushu University, Japan; Jian-feng Yang, Xi'an Jiaotong University, China

S10: CERAMICS MODELING, GENOME AND INFORMATICS

Jingyang Wang, Institute of Metal Research, Chinese Academy of Sciences, China; Jian Luo, University of California, San Diego, USA; Katsuyuki Matsunaga, Nagoya University, Japan; Sergei Manzhos, National University of Singapore, Singapore; Paul Rulis, University of Missouri-Kansas City, USA; Hans J. Seifert, Karlsruhe Institute of Technology, Germany; Sean Smith, The University of New South Wales, Australia; Gerard L. Vignoles, University of Bordeaux, France; William J. Weber, University of Tennessee, USA; Haixuan Xu, University of Tennessee, USA

S11: ADVANCED MATERIALS AND INNOVATIVE PROCESSING IDEAS FOR PRODUCTION ROOT TECHNOLOGIES

Sung Duk Kim, Korea Institute of Industrial Technology, Korea; Jacob L. Jones, North Carolina State University, USA; Tadachika Nakayama, Nagaoka University of Technology, Japan; Ali Erdemir, Argonne National Laboratory, USA; Jun Akedo, AIST, Japan; Byungkoog Jang, Kyushu University, Japan; Kouichi Yasuda, Tokyo Institute of Technology, Japan; Kyoung Il Moon, Korea Institute of Industrial Technology, Korea; Sungwook Mhin, Korea Institute of Industrial Technology, Korea; Hyuksu Han, Korea Institute of Industrial Technology, Korea; Giovanni Ramirez, Bruker, USA

S12: ADVANCED MAX/MXENE PHASES AND UHTC MATERIALS FOR EXTREME AND HIGH TEMPERATURE ENVIRONMENT

Surojit Gupta, University of North Dakota USA; Miladin Radovic, Texas A&M University, USA; Konstantza Lambrinou, SCK • CEN, Belgium; Michael Naguib, ORNL, USA; Jie Zhang, Institute of Metal Research, Chinese Academy of Sciences, China; Thierry Cabioch, Université de Poitiers, France; Babak Anasori, Drexel University, USA; Sylvain Dubois, Université de Poitiers, France; Per Eklund, Linköping University, Sweden; Johanna Rosen, Linköping University, Sweden; Yanchun Zhou, Aerospace Research Institute of Material & Processing Technology, China; William G. Fahrenholtz, Missouri S&T, USA; Sea-Hoon Lee, KIMS, Korea; Frederic. Monteverde, ISTECCNR, Italy; Luc J Vandeperre, Imperial College, UK; Guo-Jun Zhang, Donghua University, Shanghai, China; Carolina Tallon, Virginia Tech, USA

S13: DEVELOPMENT AND APPLICATIONS OF ADVANCED CERAMICS AND COMPOSITES FOR NUCLEAR FISSION AND FUSION ENERGY SYSTEMS

Phil Edmondson, Oak Ridge National Laboratory, USA; Takaaki Koyanagi, Oak Ridge National Laboratory, USA; Jake Amoroso, Savannah River National Laboratory, USA; Cory Trivelpiece, Savannah River National Laboratory, USA; Kyle Brinkman, Clemson University, USA; Kevin Fox, Savannah River National Laboratory, USA

S14: CRYSTALLINE MATERIALS FOR ELECTRICAL, OPTICAL AND MEDICAL APPLICATIONS

Kiyoshi Shimamura, National Institute for Materials Science; Noboru Ichinose, Waseda University, Japan; Victoria Blair, U.S. Army Research Laboratory, USA; Yoshihiko Imanaka, Fujitsu Laboratories Ltd., Japan; Romain Gaume, University of Central Florida, USA; Takayuki Yanagida, Nara Institute of Science and Technology, Japan; Yiquan Wu, Alfred University, USA

S15: 3RD INTERNATIONAL SYMPOSIUM ON ADDITIVE MANUFACTURING AND 3D PRINTING TECHNOLOGIES

Soshu Kirihara, Osaka University, Japan; Mrityunjay Singh, Ohio Aerospace Institute, USA; Michael Halbig, NASA Glenn Research Center, USA; Elizabeth Kupp, Pennsylvania State University, USA; Martin Schwentenwein, Lithoz GmbH, Austria; Tyrone Jones, Army Research Laboratory, USA; Hui-suk Yun, KIMS, South Korea; Craig E. Smith, NASA Glenn Research Center, USA; Lisa Rueschhoff, Air Force Research Laboratory, USA; Andrea Zocca, BAM, Germany; Miranda Fateri, FH Aachen, Germany

S16: GEOPOLYMERS, INORGANIC POLYMERS AND SUSTAINABLE MATERIALS

Waltraud M. Kriven, University of Illinois at Urbana-Champaign, USA; Joseph Davidovits, Geopolymer Institute, St. Quentin, France; Ghassan Al Chaar, US Army Corps of Engineers, ERDC, CERL, USA; Don Seo, Arizona State University, USA

S17: ADVANCED CERAMIC MATERIALS AND PROCESSING FOR PHOTONICS AND ENERGY

Alberto Vomiero, Luleå University of Technology, Sweden; Federico Rosei, INRS, Canada; Yasuhiro Tachibana, RMIT University, Australia; David Kisailus, University of California at Riverside, USA; Tohru Sekino, Osaka University, Japan; Francesco Enrichi, Centro Enrico Fermi, Rome, Italy; Daniele Benetti, INRS, Canada

FS1: BIO-INSPIRED PROCESSING OF ADVANCED MATERIALS

Joaquin Ramirez-Rico, University of Seville, Spain; Ziqi Sun, The Queensland University of Technology, Australia; Simone Sprio, Institute of Science and Technology for Ceramics-ISTEC, Italy; Florian Bouville, Swiss Federal Institute of Technology Zürich – ETH, Switzerland; Pablo Zavattieri, Purdue University, USA; Esther Garcia-Tunon, Materials Innovation and School of Engineering, University of Liverpool, United Kingdom

FS2: IMAGE BASED CHARACTERIZATION AND MODELLING OF CERAMICS BY NON-DESTRUCTIVE EXAMINATION TECHNIQUES

You Zhou, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Surojit Gupta, University of North Dakota, USA; Satoshi Tanaka, Nagaoka University of Technology, Japan; Rousseau Benoît, University of Nantes, France; Ulf Betke, Otto-von-Guericke University, Germany; Amjad Almansour, NASA, Glenn Research Center, USA

FS3: CHEMICALLY PROCESSING OF FUNCTIONAL MATERIALS: UNDERSTANDING THE CONVERSION OF MOLECULAR STRUCTURES TO SOLID-STATE COMPOUNDS

Sanjay Mathur, University of Cologne, Germany; Maarit Karppinen, University of Aalto, Finland; Se-Hun Kwon, Busan National University, South Korea; Aivaras Kareiva, Vilnius University, Lithuania; Thomas Fischer, University of Cologne, Germany; Linan An, University of Central Florida, USA; Edwin Kroke, TU Bergakademie Freiberg, Germany; Philippe Miele, Ecole Nationale Supérieure de Chimie de Montpellier, France; Hirokazu Katsui, Tohoku University, Japan

FS4: GREEN TECHNOLOGIES, AND JOINING OF CERAMICS

Henry A. Colorado, Universidad de Antioquia UdeA, Colombia; Manoj K. Mahapatra, University of Alabama at Birmingham, USA; Surojit Gupta, University of North Dakota, USA; Enrico Bernardo, University of Padova, Italy; Jorge Barcena, Parque Científico y Tecnológico de Bizkaia, Spain; Federico Smeacetto, Politecnico di Torino, Italy; Juan C. Nino, University of Florida, Gainesville, USA; Rajiv Asthana, University of Wisconsin-Stout, USA

40TH ANNIVERSARY RICHARD M. FULRATH AWARD SYMPOSIUM ON "FRONTIERS OF CERAMICS FOR SUSTAINABLE SOCIETY"

M. Singh, Ohio Aerospace Institute, Cleveland, USA; M. Naito, Osaka University, Japan; Elizabeth Dickey, North Carolina State University, USA; Kiyoshi Shimamura, National Institute of Materials Science, Japan; Michael C. Halbig, NASA Glenn Research Center, USA; Y. Imanaka, Fujitsu Corporation, Japan; Tadachika Nakayama, Nagaoka University of Technology, Japan; Akira Ando, Murata Manufacturing Co., Japan

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Manoj K. Mahapatra, University of Alabama at Birmingham, USA; Giorgia Franchin, University of Padova, Italy; Daniele Benetti, Institut National de la Recherche Scientifique, Canada; Matthew Appleby, NASA Glenn Research Center, USA; Kathleen Shugart, UES Inc at Air Force Research Lab, USA; Valerie Wiesner, NASA Glenn Research Center, USA; Eva Hemmer, University of Ottawa, Canada; Ken'ichiro Kita, National Institute of Advanced Industrial Science and Technology, Japan

SPECIAL FOCUSED SESSION ON DIVERSITY, ENTREPRENEURSHIP, AND COMMERCIALIZATION

Surojit Gupta, University of North Dakota, USA; Valerie L Wiesner, NASA Glenn Research Center, USA; Amanda Krause, Lehigh University, USA




TECHNICAL SESSIONS BY SYMPOSIUM

Sessions	Date	Time	Location
PLENARY SESSION	28-Jan-19	8:30 AM - 12:00 PM	Coquina Salon D
40TH ANNIVERSARY RICHARD M. FULRATH AWARD SYMPOSIUM ON FRONTIERS OF CERAMICS FOR SUSTAINABLE SOCIETY			
Fulrath Session I	29-Jan-19	8:30 AM - 12:10 PM	Coquina Salon E
Fulrath Session II	29-Jan-19	1:30 PM - 5:30 PM	Coquina Salon E
Fulrath Session III	30-Jan-19	8:30 AM - 12:10 PM	Coquina Salon E
8TH GLOBAL YOUNG INVESTIGATOR FORUM			
Advanced Ceramics and Coatings for Structural, Energy, Environmental and Functional Applications	28-Jan-19	1:30 PM - 3:20 PM	Coquina Salon G
Frontiers in Ceramic Materials: Advances and Challenges in Novel Materials Design, Synthesis, Performance, and Reliability I	28-Jan-19	3:20 PM - 5:40 PM	Coquina Salon G
Frontiers in Ceramic Materials: Advances and Challenges in Novel Materials Design, Synthesis, Performance, and Reliability II	29-Jan-19	8:30 AM - 10:20 AM	Coquina Salon G
Novel Characterization Tools and Methods of Ceramics and Composites	29-Jan-19	10:20 AM - 11:30 AM	Coquina Salon G
Careers in Science, Technology, Engineering and Mathematics (STEM)	29-Jan-19	11:30 AM - 12:00 PM	Coquina Salon G
Ceramic Hybrid Materials and Composites for Aerospace, Armor, Biomedical, Electronics, Sensors and Actuators, Energy Conversion and Storage, Photo-catalysis, and Environmental Applications I	29-Jan-19	1:30 PM - 3:20 PM	Coquina Salon G
Ceramic Hybrid Materials and Composites for Aerospace, Armor, Biomedical, Electronics, Sensors and Actuators, Energy Conversion and Storage, Photo-catalysis, and Environmental Applications II	29-Jan-19	3:20 PM - 5:20 PM	Coquina Salon G
FS1: BIO-INSPIRED PROCESSING OF ADVANCED MATERIALS			
Mechanical Properties of Natural and Bioinspired Materials	31-Jan-19	8:30 AM - 11:40 AM	Coquina Salon F
Processing of Biomorphic and Biomimetic Materials	31-Jan-19	1:30 PM - 4:50 PM	Coquina Salon F
Bioinspired Materials for Functional Applications	1-Feb-19	8:30 AM - 10:20 AM	Coquina Salon F
FS2: IMAGE BASED CHARACTERIZATION AND MODELLING OF CERAMICS BY NONDESTRUCTIVE EXAMINATION TECHNIQUES			
Characterization NDE Technologies for Sintering Analysis, Stress, Void and Distribution I	31-Jan-19	1:30 PM - 3:20 PM	Coquina Salon A
Characterization NDE Technologies for Sintering Analysis, Stress, Void and Distribution I I	31-Jan-19	3:20 PM - 4:20 PM	Coquina Salon A
Influence of Inhomogeneity	31-Jan-19	4:20 PM - 5:20 PM	Coquina Salon A
Use of NDE Techniques for Detection of Local Microstructural Changes and Damage Characteristics in Ceramic Matrix Composites I	1-Feb-19	8:00 AM - 10:40 AM	Coquina Salon A
FS3: MOLECULAR-LEVEL PROCESSING OF FUNCTIONAL MATERIALS: UNDERSTANDING THE CONVERSION OF MOLECULAR COMPOUNDS TO SOLID-STATE AND HYBRID STRUCTURES			
Precursor Chemistry and Applications	28-Jan-19	1:30 PM - 3:30 PM	Coquina Salon C
Solution Processing and Rare Earth Materials	28-Jan-19	3:30 PM - 5:40 PM	Coquina Salon C
Photocatalysis and Photovoltaics	29-Jan-19	8:30 AM - 10:20 AM	Coquina Salon C
Molecular Precursor Approaches for Vapor-phase Synthesis (ALD, CVD) of Materials	29-Jan-19	10:20 AM - 12:10 PM	Coquina Salon C
Gas Phase Depositions and In-Situ Characterization	29-Jan-19	1:30 PM - 3:20 PM	Coquina Salon C
Solution Processing and Photocatalysts	29-Jan-19	3:20 PM - 5:50 PM	Coquina Salon C
Precursor Chemistry and Polymer Derived Ceramics I	30-Jan-19	8:30 AM - 10:20 AM	Coquina Salon C
Precursor Chemistry and Polymer Derived Ceramics II	30-Jan-19	10:20 AM - 12:10 PM	Coquina Salon C
FS4: GREEN TECHNOLOGIES AND JOINING OF CERAMICS			
Materials Processing from Ceramic, Plastic, Metallic, and Wastes I	30-Jan-19	8:30 AM - 10:10 AM	Tomoka C
Environmental Technologies	30-Jan-19	10:20 AM - 12:00 PM	Tomoka C
Materials Processing from Ceramic, Plastic, Metallic, and Wastes II	30-Jan-19	1:30 PM - 3:20 PM	Tomoka C
Ceramic Joining for Ambient and Extreme Environmental Applications	30-Jan-19	3:20 PM - 5:00 PM	Tomoka C
Future Directions of Materials Innovation and Joining Technology	31-Jan-19	8:30 AM - 10:30 AM	Tomoka C

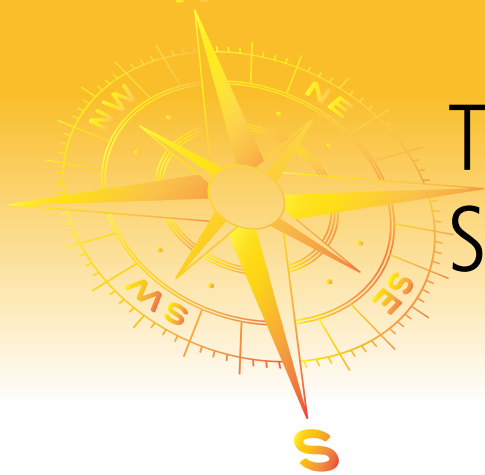
Sessions	Date	Time	Location
SPECIAL FOCUSED SESSION ON DIVERSITY, ENTREPRENEURSHIP, AND COMMERCIALIZATION			
Diversity, Entrepreneurship and Commercialization	28-Jan-19	1:30 PM - 5:10 PM	Coquina Salon E
S1: MECHANICAL BEHAVIOR AND PERFORMANCE OF CERAMICS AND COMPOSITES			
Environmental Effects and Thermo-mechanical Performance	28-Jan-19	1:30 PM - 5:20 PM	Coquina Salon D
Fibers, Matrices, Coatings, and Interfaces	29-Jan-19	8:30 AM - 11:50 AM	Coquina Salon D
Processing - Microstructure - Mechanical Properties Correlation I	29-Jan-19	1:30 PM - 4:50 PM	Coquina Salon D
Processing - Microstructure - Mechanical Properties Correlation II	30-Jan-19	8:30 AM - 12:00 PM	Coquina Salon D
Processing - Microstructure - Mechanical Properties Correlation III	30-Jan-19	1:30 PM - 4:30 PM	Coquina Salon D
Design, Life Prediction and Tribological Performance	31-Jan-19	8:30 AM - 11:50 AM	Coquina Salon D
Mechanics, Characterization Techniques, and Equipment	31-Jan-19	1:30 PM - 4:50 PM	Coquina Salon D
S2: ADVANCED CERAMIC COATINGS FOR STRUCTURAL, ENVIRONMENTAL, AND FUNCTIONAL APPLICATIONS			
Environmental Barrier Coatings - Materials, Processing and Properties I	28-Jan-19	1:30 PM - 5:00 PM	Tomoka B
Environmental Barrier Coatings - Materials, Processing and Properties II	29-Jan-19	8:30 AM - 10:20 AM	Tomoka B
Thermal Barrier Coatings - Materials, Processing and Properties I	29-Jan-19	10:20 AM - 11:50 AM	Tomoka B
Thermal Barrier Coatings - Materials, Processing and Properties II	29-Jan-19	1:30 PM - 3:20 PM	Tomoka B
CMAS Degradation of EBC/TBC: Effects and Mitigation Strategies I	29-Jan-19	3:20 PM - 5:00 PM	Tomoka B
CMAS Degradation of EBC/TBC: Effects and Mitigation Strategies II	30-Jan-19	8:30 AM - 10:10 AM	Tomoka B
Multifunctional Protective Coatings: Processing, Microstructure and Properties I	30-Jan-19	10:10 AM - 12:10 PM	Tomoka B
Multifunctional Protective Coatings: Processing, Microstructure and Properties II	30-Jan-19	1:30 PM - 3:10 PM	Tomoka B
S3: 16TH INTERNATIONAL SYMPOSIUM ON SOLID OXIDE CELLS (SOC): MATERIALS, SCIENCE AND TECHNOLOGY			
Progress in SOFC and SOEC Technology	28-Jan-19	1:30 PM - 3:50 PM	Crystal
SOC Stacks and their Integration in the Systems	28-Jan-19	3:50 PM - 5:10 PM	Crystal
Novel Processing	29-Jan-19	8:30 AM - 10:10 AM	Crystal
Sealants and Mechanical and Thermomechanical Aspects of Manufacturing	29-Jan-19	10:10 AM - 11:20 AM	Crystal
Electrolytes	29-Jan-19	1:30 PM - 3:10 PM	Crystal
Stack / Cell Performance and Durability	29-Jan-19	3:10 PM - 5:00 PM	Crystal
Air Electrode Performance and Durability	30-Jan-19	9:00 AM - 10:20 AM	Crystal
Fuel Electrode Performance and Durability	30-Jan-19	10:20 AM - 12:00 PM	Crystal
Interconnects and Coatings	30-Jan-19	1:30 PM - 3:40 PM	Crystal
HT Electrolysis	30-Jan-19	3:40 PM - 6:10 PM	Crystal
Air Electrode Performance	31-Jan-19	8:30 AM - 10:20 AM	Crystal
Air Electrode: Powders, Fabrication, Contacting	31-Jan-19	10:20 AM - 12:10 PM	Crystal
Proton Conducting Fuel Cells I	31-Jan-19	1:30 PM - 3:20 PM	Crystal
Proton Conducting Fuel Cells II	31-Jan-19	3:20 PM - 4:30 PM	Crystal
S4: ARMOR CERAMICS - CHALLENGES AND NEW DEVELOPMENTS			
Terminal Ballistics / Quasi-Static and Dynamic Behavior I	28-Jan-19	1:20 PM - 3:20 PM	Coquina Salon F
Terminal Ballistics / Quasi-Static and Dynamic Behavior II	28-Jan-19	3:20 PM - 6:10 PM	Coquina Salon F
Materials Characterization I	29-Jan-19	8:30 AM - 10:20 AM	Coquina Salon F
Materials Characterization II	29-Jan-19	10:20 AM - 11:50 AM	Coquina Salon F
Materials Characterization III	29-Jan-19	1:30 PM - 3:30 PM	Coquina Salon F
Materials and Process Modeling I	29-Jan-19	3:30 PM - 5:20 PM	Coquina Salon F
Materials and Process Modeling II	30-Jan-19	8:30 AM - 9:30 AM	Coquina Salon F
Synthesis and Processing I	30-Jan-19	9:30 AM - 12:10 PM	Coquina Salon F
Synthesis and Processing II	30-Jan-19	1:30 PM - 5:20 PM	Coquina Salon F
S5: NEXT GENERATION BIOCERAMICS AND BIOCERAMICS			
Bioceramics and Biocomposites I	31-Jan-19	8:30 AM - 12:10 PM	Coquina Salon B
Bioceramics and Biocomposites II	31-Jan-19	1:30 PM - 5:40 PM	Coquina Salon B
Bioceramics and Biocomposites III	1-Feb-19	8:30 AM - 11:30 AM	Coquina Salon B

TECHNICAL SESSIONS BY SYMPOSIUM



Sessions	Date	Time	Location
S6: ADVANCED MATERIALS AND TECHNOLOGIES FOR DIRECT THERMAL ENERGY CONVERSION AND RECHARGEABLE ENERGY STORAGE			
Li Batteries I	28-Jan-19	1:30 PM - 3:20 PM	Tomoka A
Thermoelectrics I	28-Jan-19	3:20 PM - 5:40 PM	Tomoka A
Li Batteries II	29-Jan-19	8:30 AM - 10:20 AM	Tomoka A
Thermoelectrics II	29-Jan-19	10:20 AM - 12:00 PM	Tomoka A
Beyond Li Batteries I	29-Jan-19	1:30 PM - 3:20 PM	Tomoka A
Li Batteries III	29-Jan-19	3:20 PM - 5:30 PM	Tomoka A
Beyond Li Batteries II	30-Jan-19	8:30 AM - 10:20 AM	Tomoka A
Thermoelectrics III	30-Jan-19	10:20 AM - 12:00 PM	Tomoka A
Beyond Li batteries III	30-Jan-19	1:30 PM - 3:20 PM	Tomoka A
Li Batteries IV	30-Jan-19	3:20 PM - 5:00 PM	Tomoka A
Li-O ₂ and Li-S I	31-Jan-19	8:30 AM - 10:20 AM	Tomoka A
Li-O ₂ and Li-S II	31-Jan-19	10:20 AM - 12:20 PM	Tomoka A
S7: 13TH INTERNATIONAL SYMPOSIUM ON FUNCTIONAL NANOMATERIALS AND THIN FILMS FOR SUSTAINABLE ENERGY HARVESTING, ENVIRONMENTAL AND HEALTH APPLICATIONS			
Synthesis, Functionalization and Assembly of Inorganic and Hybrid Nanostructures I	30-Jan-19	1:30 PM - 3:20 PM	Coquina Salon C
Synthesis, Functionalization and Assembly of Inorganic and Hybrid Nanostructures II	30-Jan-19	3:20 PM - 5:10 PM	Coquina Salon C
Nanomaterials for Energy Conversion and Storage and Catalysis	31-Jan-19	8:30 AM - 10:20 AM	Coquina Salon C
Synthesis, Functionalization and Assembly of Inorganic and Hybrid Nanostructures III	31-Jan-19	10:20 AM - 12:10 PM	Coquina Salon C
Synthesis, Functionalization and Assembly of Inorganic and Hybrid Nanostructures IV	31-Jan-19	1:30 PM - 3:20 PM	Coquina Salon C
Synthesis, Functionalization and Assembly of Inorganic and Hybrid Nanostructures V	31-Jan-19	3:20 PM - 5:10 PM	Coquina Salon C
S8: 13TH INTERNATIONAL SYMPOSIUM ON ADVANCED PROCESSING AND MANUFACTURING TECHNOLOGIES FOR STRUCTURAL AND MULTIFUNCTIONAL MATERIALS AND SYSTEMS (APMT13)			
Advanced Sintering Technologies I	28-Jan-19	1:30 PM - 5:20 PM	Coquina Salon A
Advanced Sintering Technologies II	29-Jan-19	8:30 AM - 11:40 AM	Coquina Salon A
Advanced Manufacturing and Processing I	29-Jan-19	1:30 PM - 5:20 PM	Coquina Salon A
Advanced Manufacturing and Processing II	30-Jan-19	8:30 AM - 11:40 AM	Coquina Salon A
Joining Technologies and Polymer-based Processing	30-Jan-19	1:30 PM - 5:00 PM	Coquina Salon A
Functional Materials and Composites	31-Jan-19	8:30 AM - 12:00 PM	Coquina Salon A
S9: POROUS CERAMICS: NOVEL DEVELOPMENTS AND APPLICATIONS			
High SSA Ceramics	30-Jan-19	1:30 PM - 3:30 PM	Coquina Salon E
Innovations in Processing Methods and Synthesis of Porous Ceramics I	30-Jan-19	3:30 PM - 5:10 PM	Coquina Salon E
Modeling and Mechanical Properties of Porous Ceramics	31-Jan-19	8:20 AM - 10:20 AM	Coquina Salon E
Innovations in Processing Methods and Synthesis of Porous Ceramics II	31-Jan-19	10:20 AM - 12:10 PM	Coquina Salon E
Innovations in Processing Methods and Synthesis of Porous Ceramics III	31-Jan-19	1:30 PM - 3:20 PM	Coquina Salon E
Properties of Porous Ceramics	31-Jan-19	3:20 PM - 5:40 PM	Coquina Salon E
S10: CERAMICS MODELING, GENOME AND INFORMATICS			
Functional Ceramics I	30-Jan-19	8:30 AM - 10:25 AM	Coquina Salon G
Functional Ceramics II	30-Jan-19	10:25 AM - 12:00 PM	Coquina Salon G
Structural Ceramics I	30-Jan-19	1:30 PM - 3:20 PM	Coquina Salon G
Structural Ceramics II	30-Jan-19	3:20 PM - 5:00 PM	Coquina Salon G
Structural Ceramics III	31-Jan-19	8:30 AM - 10:20 AM	Coquina Salon G
Structural Ceramics IV	31-Jan-19	10:20 AM - 12:00 PM	Coquina Salon G
Structural Ceramics V	31-Jan-19	1:30 PM - 3:25 PM	Coquina Salon G
Structural Ceramics VI	31-Jan-19	3:25 PM - 5:50 PM	Coquina Salon G
Structural Ceramics VII	1-Feb-19	8:30 AM - 10:20 AM	Coquina Salon G
Structural Ceramics VIII	1-Feb-19	10:20 AM - 11:40 AM	Coquina Salon G

Sessions	Date	Time	Location
S11: ADVANCED MATERIALS AND INNOVATIVE PROCESSING IDEAS FOR PRODUCTION ROOT TECHNOLOGIES			
Sustainable Energy Concepts and Applications	28-Jan-19	1:30 PM - 5:30 PM	Ponce de Leon
New Concepts and Emerging Technologies for Enhanced Product Performance I	29-Jan-19	8:30 AM - 12:00 PM	Ponce de Leon
New Concepts and Emerging Technologies for Enhanced Product Performance II	29-Jan-19	1:30 PM - 4:40 PM	Ponce de Leon
S12: ADVANCED MAX/MXENE PHASES AND UHTC MATERIALS FOR EXTREME AND HIGH TEMPERATURE ENVIRONMENT			
Novel Applications and Device Fabrication I	28-Jan-19	1:30 PM - 3:20 PM	St. Johns
Novel Applications and Device Fabrication II	28-Jan-19	3:20 PM - 6:00 PM	St. Johns
Boride Properties and Oxidation	29-Jan-19	8:30 AM - 11:00 AM	St. Johns
Carbide Properties and Oxidation I	29-Jan-19	11:00 AM - 12:10 PM	St. Johns
Progress on Mxenes and Their Composites	29-Jan-19	1:30 PM - 3:20 PM	St. Johns
Novel Processing of Mxenes and Their Composites I	29-Jan-19	3:20 PM - 5:00 PM	St. Johns
Carbide Properties and Oxidation II	30-Jan-19	8:30 AM - 9:10 AM	St. Johns
High Entropy UHTCs	30-Jan-19	9:10 AM - 12:00 PM	St. Johns
Structure and Bonding in MAX Phases	30-Jan-19	1:30 PM - 3:20 PM	St. Johns
Novel Applications and Device Fabrication III	30-Jan-19	3:20 PM - 5:20 PM	St. Johns
Synthesis, Processing, and Densification	31-Jan-19	8:30 AM - 10:50 AM	St. Johns
Ultra-High Temperature Composites I	31-Jan-19	10:50 AM - 12:10 PM	St. Johns
Ultra-High Temperature Composites II	31-Jan-19	1:30 PM - 2:10 PM	St. Johns
Novel Applications and Device Fabrication IV	31-Jan-19	2:10 PM - 4:10 PM	St. Johns
Novel Processing of MXenes and Their Composites II	31-Jan-19	4:10 PM - 5:40 PM	St. Johns
S13: DEVELOPMENT AND APPLICATIONS OF ADVANCED CERAMICS AND COMPOSITES FOR NUCLEAR FISSION AND FUSION ENERGY SYSTEMS			
Ceramic Fuel Materials, Technologies, and Characterization	28-Jan-19	1:30 PM - 3:20 PM	Coquina Salon H
Novel Ceramics and Composites for Nuclear Systems I	28-Jan-19	3:20 PM - 5:00 PM	Coquina Salon H
Joining and Technologies for Reactor Components	29-Jan-19	8:30 AM - 10:20 AM	Coquina Salon H
Coating Technologies for Reactor Components	29-Jan-19	10:20 AM - 11:50 AM	Coquina Salon H
Novel Ceramics and Composites for Nuclear Systems II	29-Jan-19	1:30 PM - 3:30 PM	Coquina Salon H
Modelling Nuclear Ceramic Fuels and Structures	29-Jan-19	3:30 PM - 5:20 PM	Coquina Salon H
Corrosion of Nuclear Ceramics	30-Jan-19	8:30 AM - 10:10 AM	Coquina Salon H
Material Technologies for Enhanced Accident Tolerance LWR Fuels	30-Jan-19	10:10 AM - 11:50 AM	Coquina Salon H
Radiation Damage, Defect Production, Evolutions, and Interactions I	30-Jan-19	1:30 PM - 3:20 PM	Coquina Salon H
Radiation Damage, Defect Production, Evolutions, and Interactions II	30-Jan-19	3:20 PM - 5:00 PM	Coquina Salon H
Mechanical Properties and Test Methods	31-Jan-19	8:30 AM - 10:30 AM	Coquina Salon H
S14: CRYSTALLINE MATERIALS FOR ELECTRICAL, OPTICAL AND MEDICAL APPLICATIONS			
Optical Materials I	28-Jan-19	1:30 PM - 5:40 PM	Tomoka C
Optical Materials II	29-Jan-19	8:30 AM - 10:20 AM	Tomoka C
Semiconductors and Dielectrics I	29-Jan-19	10:20 AM - 12:00 PM	Tomoka C
Semiconductors and Dielectrics II	29-Jan-19	1:30 PM - 4:50 PM	Tomoka C
S15: 3RD INTERNATIONAL SYMPOSIUM ON ADDITIVE MANUFACTURING AND 3D PRINTING TECHNOLOGIES			
Stereolithography I	28-Jan-19	1:30 PM - 3:20 PM	Coquina Salon B
Stereolithography II	28-Jan-19	3:20 PM - 4:40 PM	Coquina Salon B
Stereolithography III	28-Jan-19	4:40 PM - 6:00 PM	Coquina Salon B
Direct Writing	29-Jan-19	8:30 AM - 10:20 AM	Coquina Salon B
Fused Deposition	29-Jan-19	10:20 AM - 12:00 PM	Coquina Salon B
Ink Jet Printing I	29-Jan-19	1:30 PM - 3:20 PM	Coquina Salon B
Ink Jet Printing II	29-Jan-19	3:20 PM - 5:00 PM	Coquina Salon B
Characterization Tools I	30-Jan-19	8:30 AM - 10:10 AM	Coquina Salon B
Characterization Tools II	30-Jan-19	10:10 AM - 11:50 AM	Coquina Salon B
Emerging Technologies	30-Jan-19	1:30 PM - 3:20 PM	Coquina Salon B
Discussion Panel: Opportunities & Challenges in Ceramics Additive Manufacturing	30-Jan-19	3:20 PM - 5:35 PM	Coquina Salon B



TECHNICAL SESSIONS BY SYMPOSIUM

Sessions	Date	Time	Location
S16: GEOPOLYMERS, INORGANIC POLYMERS AND SUSTAINABLE MATERIALS			
Synthesis, Processing and Microstructure	30-Jan-19	8:30 AM - 10:50 AM	Ponce de Leon
3-D Printing	30-Jan-19	11:00 AM - 12:00 PM	Ponce de Leon
Composites	30-Jan-19	1:30 PM - 4:00 PM	Ponce de Leon
Sustainable Materials	30-Jan-19	4:00 PM - 5:00 PM	Ponce de Leon
Phosphates and Other Inorganic Materials	31-Jan-19	8:30 AM - 10:30 AM	Ponce de Leon
Alkali Activated Cements and Materials I	31-Jan-19	10:30 AM - 12:00 PM	Ponce de Leon
Alkali Activated Cements and Materials II	31-Jan-19	1:30 PM - 3:30 PM	Ponce de Leon
Novel Applications	31-Jan-19	3:30 PM - 5:00 PM	Ponce de Leon
SYMPOSIUM 17: ADVANCED CERAMIC MATERIALS AND PROCESSING FOR PHOTONICS AND ENERGY			
Advanced Nanostructured Materials for Photovoltaics and Solar Fuels I	28-Jan-19	1:30 PM - 5:00 PM	Halifax A/B
Advanced Nanostructured Materials for Photovoltaics and Solar Fuels II	29-Jan-19	8:30 AM - 12:00 PM	Halifax A/B
Advanced Nanostructured Materials for Photovoltaics and Solar Fuels III	29-Jan-19	1:30 PM - 5:00 PM	Halifax A/B
Multi-functional Materials I	30-Jan-19	8:30 AM - 12:10 PM	Halifax A/B
Multi-functional Materials II	30-Jan-19	1:30 PM - 4:30 PM	Halifax A/B
Multi-functional Materials III	31-Jan-19	8:30 AM - 12:20 PM	Halifax A/B
POSTER SESSIONS			
Poster Session A	29-Jan-19	5:00 PM - 8:00 PM	Ocean Center
Poster Session B	30-Jan-19	5:00 PM - 7:30 PM	Ocean Center

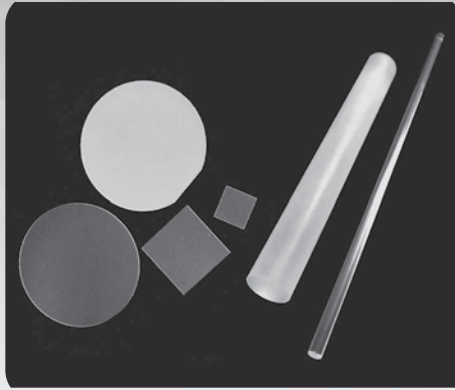




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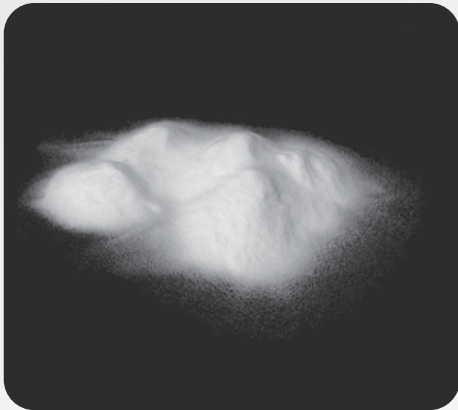
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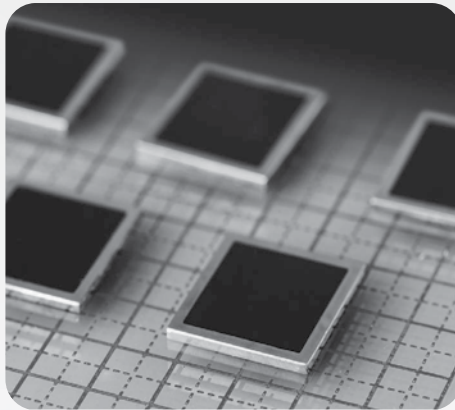
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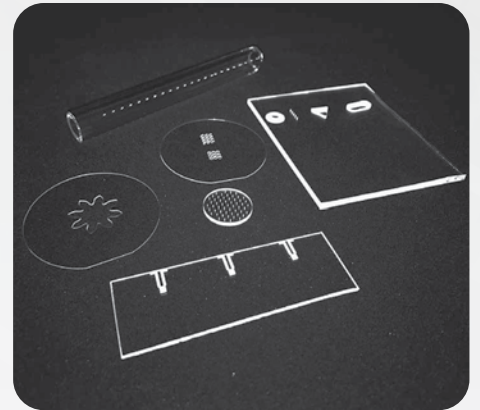
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43RD INTERNATIONAL CONFERENCE AND EXPOSITION ON ADVANCED CERAMICS AND COMPOSITES

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Oral Presenters

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A									
Abu Aldam, S.	30-Jan	9:10AM	Tomoka C	37	Bianchi, G.	29-Jan	1:50PM	Coquina Salon D	22
Adolfsson, E.	28-Jan	3:40PM	Coquina Salon B	16	Blake, D.W.	30-Jan	2:20PM	Ponce de Leon	50
Adolfsson, E.	1-Feb	9:20AM	Coquina Salon B	67	Blum, M.H.	30-Jan	1:30PM	Tomoka B	40
Ahmann, M.	29-Jan	4:40PM	Coquina Salon G	20	Boakye, E.E.	29-Jan	9:30AM	Coquina Salon D	21
Ahmed, S.	30-Jan	10:50AM	Tomoka C	38	Boman, M.	29-Jan	10:20AM	Coquina Salon C	20
Ahuja, R.	30-Jan	10:25AM	Coquina Salon G	45	Borman, T.M.	30-Jan	10:40AM	St. Johns	47
Akhtar, F.	31-Jan	2:00PM	Coquina Salon E	61	Bose, S.	29-Jan	4:50PM	Coquina Salon E	18
Akurati, S.	28-Jan	3:50PM	Coquina Salon G	9	Bouville, F.	31-Jan	8:30AM	Coquina Salon F	54
Al-Chaar, G.	31-Jan	4:00PM	Ponce de Leon	66	Bouzidi, S.S.	28-Jan	4:40PM	Halifax A/B	17
Al-Mashhadani, M.	30-Jan	3:30PM	Ponce de Leon	50	Braem, A.	1-Feb	11:10AM	Coquina Salon B	67
Alazzawi, M.K.	30-Jan	10:50AM	Coquina Salon B	49	Brenner, A.	29-Jan	9:40AM	St. Johns	28
Allan, S.M.	30-Jan	9:40AM	Coquina Salon B	49	Brenner, A.	31-Jan	9:30AM	St. Johns	63
Allan, S.M.	30-Jan	3:50PM	Coquina Salon B	49	Brinckmann, S.A.	28-Jan	5:40PM	Coquina Salon B	16
Allen, A.J.	30-Jan	11:10AM	Coquina Salon B	49	Brodnik, N.R.	30-Jan	8:30AM	Coquina Salon B	48
Almansour, A.S.	1-Feb	9:50AM	Coquina Salon A	67	Brown, N.R.	30-Jan	11:30AM	Coquina Salon H	48
An, H.	29-Jan	2:10PM	Crystal	24	Burke, P.	28-Jan	1:30PM	Crystal	11
Andes, K.	30-Jan	9:10AM	Coquina Salon F	41	C				
Ando, A.	30-Jan	10:20AM	Coquina Salon E	36	Cabana, J.	29-Jan	3:50PM	Tomoka A	26
Ang, C.K.	28-Jan	4:00PM	Coquina Salon H	15	Cabioch, T.	28-Jan	5:00PM	St. Johns	14
Ang, C.K.	29-Jan	11:50AM	St. Johns	29	Caliari, F.R.	30-Jan	11:20AM	Tomoka A	43
Aoki, T.	29-Jan	4:10PM	Coquina Salon D	22	Callaway, E.B.	29-Jan	10:50AM	Coquina Salon D	21
Aphale, A.	28-Jan	1:50PM	Coquina Salon G	9	Caouette-Fritsch, H.	30-Jan	10:10AM	Tomoka B	39
Apostolov, Z.D.	30-Jan	2:40PM	Coquina Salon A	44	Capobianco, J.A.	28-Jan	3:30PM	Coquina Salon C	17
Appleby, M.P.	31-Jan	2:30PM	Coquina Salon D	56	Carmen, V.	31-Jan	11:50AM	Coquina Salon C	60
Arai, N.	31-Jan	4:40PM	Coquina Salon E	62	Casalegno, V.	29-Jan	11:10AM	Coquina Salon H	29
Arai, Y.	28-Jan	2:20PM	Tomoka B	11	Casas-Cabanas, M.	29-Jan	9:30AM	Tomoka A	25
Arai, Y.	29-Jan	9:20AM	Tomoka B	22	Castle, E.	30-Jan	9:40AM	St. Johns	46
Armstrong, B.L.	30-Jan	4:05PM	Coquina Salon B	49	Celerier, H.	31-Jan	9:00AM	Ponce de Leon	65
Athanasiou, C.E.	28-Jan	4:40PM	Coquina Salon D	10	Cerrone, A.	30-Jan	3:50PM	Coquina Salon D	39
Awasthi, A.	29-Jan	4:20PM	Coquina Salon F	25	Chadha, V.	31-Jan	4:30PM	Ponce de Leon	66
Aydelotte, B.	28-Jan	3:20PM	Coquina Salon F	12	Chaker, M.	30-Jan	9:30AM	Halifax A/B	51
Azina, C.	30-Jan	4:40PM	St. Johns	47	Chang, C.	29-Jan	4:40PM	Crystal	24
B					Charalambous, H.	29-Jan	1:50PM	Crystal	24
Baba, S.	30-Jan	11:20AM	Coquina Salon A	44	Charalambous, H.	31-Jan	9:20AM	Tomoka C	55
Backman, L.	30-Jan	11:00AM	St. Johns	47	Chauhan, P.K.	31-Jan	5:00PM	Coquina Salon E	62
Bae, K.	31-Jan	3:20PM	Crystal	58	Cheenady, A.	29-Jan	4:00PM	Coquina Salon F	25
Bai, H.	31-Jan	1:30PM	Coquina Salon F	54	Chen, J.	29-Jan	4:10PM	Tomoka C	31
Bai, X.	31-Jan	3:50PM	Coquina Salon G	63	Chen, J.	29-Jan	5:10PM	Tomoka A	26
Baishnab, N.	1-Feb	10:40AM	Coquina Salon G	68	Chen, K.	29-Jan	3:20PM	Tomoka B	23
Balaya, P.	30-Jan	3:40PM	Tomoka A	43	Chen, X.	30-Jan	11:00AM	Coquina Salon A	44
Balazsi, C.	29-Jan	2:00PM	Coquina Salon A	27	Chen, Y.	28-Jan	2:30PM	St. Johns	14
Balazsi, C.	31-Jan	4:10PM	Coquina Salon F	54	Cheng, Z.	30-Jan	10:20AM	St. Johns	46
Balazsi, K.	28-Jan	2:00PM	Coquina Salon E	9	Cheng, Z.	31-Jan	10:10AM	St. Johns	63
Ballikaya, S.	31-Jan	9:00AM	Coquina Salon C	59	Cheng, Z.	31-Jan	4:10PM	Crystal	58
Banda, M.	28-Jan	4:10PM	Coquina Salon G	10	Chern Lin, J.	29-Jan	4:00PM	Ponce de Leon	28
Banerjee, S.	28-Jan	2:10PM	Coquina Salon G	9	Chevalier, J.	30-Jan	8:30AM	Coquina Salon D	38
Barsoum, M.	29-Jan	1:30PM	St. Johns	29	Chi, M.	28-Jan	2:00PM	Tomoka A	12
Bassiri-Gharb, N.	31-Jan	8:30AM	Halifax A/B	66	Ching, W.	30-Jan	2:30PM	St. Johns	47
Bawane, K.K.	30-Jan	4:40PM	Coquina Salon H	48	Ching, W.	31-Jan	8:30AM	Coquina Salon G	62
Beersaerts, G.	31-Jan	2:00PM	Ponce de Leon	65	Choi, H.	28-Jan	3:40PM	Ponce de Leon	13
Behler, K.D.	30-Jan	4:20PM	Coquina Salon F	42	Choi, H.	29-Jan	4:10PM	Coquina Salon C	21
Beidaghi, M.	29-Jan	2:30PM	St. Johns	29	Choi, H.	31-Jan	4:10PM	Coquina Salon C	60
Benavides, J.A.	30-Jan	3:50PM	Halifax A/B	51	Chou, Y.	30-Jan	2:00PM	Crystal	41
Benchakar, M.	31-Jan	4:50PM	St. Johns	64	Chou, Y.	31-Jan	11:30AM	Crystal	57
Benetti, D.	28-Jan	4:20PM	Halifax A/B	17	Christiansen, S.	29-Jan	1:30PM	Coquina Salon C	20
Benetti, D.	29-Jan	2:00PM	Coquina Salon G	19	Chua, D.	30-Jan	11:20AM	Halifax A/B	51
Bermejo, R.	31-Jan	9:00AM	Coquina Salon F	54	Chua, D.	30-Jan	3:50PM	Coquina Salon C	44
Bermejo, R.	31-Jan	4:10PM	Coquina Salon D	57	Chung, S.	29-Jan	9:00AM	Coquina Salon A	26
Bernard, S.	29-Jan	3:20PM	Coquina Salon C	21	Gil, M.	30-Jan	8:30AM	Coquina Salon F	41
Bernard, S.	30-Jan	2:50PM	Coquina Salon E	45	Cima, M.	28-Jan	11:20AM	Coquina Salon D	9
Bernardo, E.	28-Jan	3:20PM	Coquina Salon A	13	Ginbiz, M.N.	31-Jan	10:10AM	Coquina Salon H	65
Bernardo, E.	30-Jan	8:50AM	Tomoka C	37	Cohen, S.	28-Jan	2:50PM	Tomoka C	15
Bernardo, E.	30-Jan	4:20PM	Tomoka C	38	Collier, V.	28-Jan	2:00PM	Coquina Salon F	10
Bernardo, E.	31-Jan	3:40PM	Coquina Salon B	58	Colombo, P.	29-Jan	10:20AM	Coquina Salon B	31
Bernik, S.	28-Jan	4:20PM	Tomoka A	12	Colombo, P.	30-Jan	4:30PM	Coquina Salon E	45
Berthelot, R.	30-Jan	9:30AM	Tomoka A	42	Colorado, H.	30-Jan	8:30AM	Tomoka C	37
Betke, U.	30-Jan	3:30PM	Coquina Salon E	45	Colorado, H.	30-Jan	9:30AM	Tomoka C	37
Beyoglu, B.	30-Jan	11:30AM	Coquina Salon B	49	Colorado, H.	30-Jan	10:30AM	Ponce de Leon	50
Bhattacharjee, A.	30-Jan	8:50AM	Coquina Salon F	41	Colusso, E.	1-Feb	9:20AM	Coquina Salon F	66
					Concina, I.	30-Jan	10:20AM	Halifax A/B	51

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Cooper, V.R.	30-Jan	11:15AM	Coquina Salon G	46	Franchin, G.	29-Jan	9:00AM	Coquina Salon B	31
Cordero, Z.C.	29-Jan	4:00PM	Coquina Salon B	32	Franco, A.A.	29-Jan	9:00AM	Tomoka A	25
Costa, G.	28-Jan	5:10PM	Coquina Salon G	10	Frank, M.	29-Jan	2:40PM	Coquina Salon C	21
Costakis, W.J.	29-Jan	2:30PM	Coquina Salon F	25	Fujimoto, K.	30-Jan	11:40AM	Coquina Salon G	46
Cramer, C.L.	30-Jan	11:10AM	Coquina Salon F	42					
Czerniak, L.	30-Jan	9:30AM	Coquina Salon H	47					
		D							
D'Isanto, F.	30-Jan	11:40AM	Tomoka A	43	Gadow, R.	31-Jan	8:30AM	Coquina Salon B	58
Dambournet, D.	30-Jan	2:00PM	Tomoka A	43	Gagnepain, M.	30-Jan	5:00PM	Coquina Salon F	42
Datsiou, K.	30-Jan	2:20PM	Coquina Salon B	49	Gaignon, R.	28-Jan	1:30PM	Coquina Salon B	16
De La Pierre, S.	29-Jan	11:00AM	Crystal	24	Gan, K.	29-Jan	9:20AM	Coquina Salon A	26
Deijkers, J.	29-Jan	2:40PM	Tomoka B	23	Garcia Granados, E.	28-Jan	2:00PM	Tomoka B	10
Delaire, O.	29-Jan	10:20AM	Tomoka A	25	Garcia Rocha, V.	31-Jan	3:40PM	Coquina Salon F	54
Delorme, F.	28-Jan	3:20PM	Tomoka A	12	Garg, A.	28-Jan	5:40PM	St. Johns	14
Demkowicz, P.A.	28-Jan	1:30PM	Coquina Salon H	15	Garg, N.	31-Jan	11:00AM	Ponce de Leon	65
Deng, C.	31-Jan	9:00AM	Crystal	57	Garza, C.T.	31-Jan	10:30AM	St. Johns	63
Deng, Y.	30-Jan	10:40AM	Coquina Salon D	38	Gaume, R.M.	29-Jan	8:30AM	Tomoka C	30
Detwiler, K.	28-Jan	3:20PM	Coquina Salon D	10	Gauthier-Brunet, V.	28-Jan	2:00PM	St. Johns	14
DeVries, M.	29-Jan	4:40PM	Coquina Salon F	25	Gedamu, D.M.	29-Jan	10:50AM	Tomoka C	30
Dey, M.	30-Jan	4:20PM	St. Johns	47	Gildersleeve, E.J.	29-Jan	2:00PM	Tomoka B	23
Dickerson, M.B.	30-Jan	1:30PM	Coquina Salon A	44	Giuliani, F.	31-Jan	3:10PM	Coquina Salon D	56
Dickerson, M.B.	30-Jan	4:20PM	Coquina Salon B	49	Gobbin, F.	29-Jan	4:40PM	Coquina Salon B	32
Dickey, E.C.	30-Jan	11:50AM	Coquina Salon E	36	Godbole, E.	30-Jan	8:30AM	Tomoka B	39
Dieraert, A.	28-Jan	5:20PM	Coquina Salon B	16	Goldsby, J.	30-Jan	10:50AM	Tomoka A	43
DiGiovanni, A.A.	29-Jan	8:30AM	Coquina Salon F	24	Goller, R.	29-Jan	3:20PM	Coquina Salon A	27
Ding, H.	31-Jan	2:00PM	Crystal	57	Golt, M.C.	31-Jan	2:00PM	Coquina Salon A	55
Do, T.	28-Jan	4:00PM	Coquina Salon A	13	Gomez-Martin, A.	1-Feb	8:30AM	Coquina Salon F	66
Doeff, M.	29-Jan	1:30PM	Tomoka A	26	Gonderman, S.	29-Jan	9:40AM	Coquina Salon H	29
Dorner, A.N.	29-Jan	10:40AM	St. Johns	28	Gonzalez-Julian, J.	28-Jan	3:20PM	St. Johns	14
Doyle, P.J.	29-Jan	11:30AM	Coquina Salon H	29	Gopalan, V.	30-Jan	8:30AM	Coquina Salon E	36
Dravid, V.P.	29-Jan	1:30PM	Coquina Salon E	18	Gouma, P.	29-Jan	4:30PM	Coquina Salon E	18
Duffiet, M.	29-Jan	4:50PM	Tomoka A	26	Gouma, P.	31-Jan	2:00PM	Coquina Salon B	58
Duong, T.	31-Jan	3:30PM	St. Johns	64	Granata, G.	30-Jan	10:30AM	Coquina Salon A	44
Dylla-Spears, R.J.	30-Jan	9:30AM	Coquina Salon F	41	Gremillard, L.	30-Jan	9:00AM	Coquina Salon D	38
		E			Gross, M.D.	30-Jan	9:00AM	Crystal	40
Edmondson, P.	30-Jan	3:40PM	Coquina Salon H	48	Gruber, M.	31-Jan	3:30PM	Coquina Salon D	56
Ek, M.	29-Jan	8:30AM	Coquina Salon G	19	Guarriello, R.	29-Jan	11:30AM	Coquina Salon D	21
Eklund, P.	29-Jan	11:40AM	Tomoka A	25	Guenster, J.	29-Jan	8:30AM	Coquina Salon B	31
Eklund, P.	30-Jan	8:30AM	Coquina Salon G	45	Guillon, O.	29-Jan	4:00PM	Crystal	24
Elangovan, S.	28-Jan	3:00PM	Crystal	11	Guilmeau, E.	28-Jan	3:50PM	Tomoka A	12
Eldridge, J.I.	29-Jan	11:30AM	Tomoka B	23	Guo, X.	29-Jan	4:20PM	Halifax A/B	33
Ellis, G.	28-Jan	4:30PM	Coquina Salon G	10	Gupta, S.	31-Jan	4:00PM	Coquina Salon A	55
Emdadi, A.	31-Jan	11:40AM	Coquina Salon G	62	Gupta, S.	31-Jan	4:10PM	St. Johns	64
Enrichi, F.	28-Jan	5:00PM	Coquina Salon C	17	Gurnani, L.	29-Jan	2:30PM	Coquina Salon D	22
Enrichi, F.	31-Jan	11:30AM	Coquina Salon C	60	Guziewski, M.	31-Jan	11:00AM	Coquina Salon G	62
Epifani, M.	30-Jan	8:30AM	Halifax A/B	50					
Epifani, M.	31-Jan	3:20PM	Coquina Salon C	60					
Esslinger, S.	31-Jan	9:00AM	Coquina Salon B	58	Hahn, Y.	29-Jan	8:30AM	Coquina Salon C	20
Este, A.	31-Jan	11:20AM	Coquina Salon G	62	Haile, S.M.	31-Jan	1:30PM	Crystal	57
		F			Halbig, M.C.	29-Jan	11:30AM	Coquina Salon E	18
Faber, K.	31-Jan	1:30PM	Coquina Salon E	61	Halbig, M.C.	29-Jan	2:00PM	Coquina Salon B	32
Fahrenheitz, W.	30-Jan	10:20AM	Tomoka C	37	Halim, J.	29-Jan	4:40PM	St. Johns	29
Failla, S.	30-Jan	2:40PM	Coquina Salon F	42	Hall, K.	29-Jan	10:40AM	Coquina Salon B	31
Fan, X.	30-Jan	2:50PM	Tomoka B	40	Hamao, N.	31-Jan	8:50AM	Tomoka A	59
Fan, Y.	30-Jan	9:20AM	Crystal	40	Han, H.	28-Jan	1:30PM	Ponce de Leon	13
Fanchini, G.	30-Jan	2:00PM	Halifax A/B	51	Harboe, S.J.	31-Jan	11:50AM	Crystal	57
Fanchini, G.	31-Jan	4:40PM	Coquina Salon A	55	Harder, B.J.	28-Jan	2:40PM	Tomoka B	11
Feng, F.	29-Jan	9:40AM	Ponce de Leon	27	Harrison, S.	28-Jan	2:40PM	Coquina Salon H	15
Feng, L.	30-Jan	8:50AM	St. Johns	46	Hashimoto, M.	31-Jan	11:10AM	Coquina Salon B	58
Ferraris, M.	30-Jan	3:20PM	Tomoka C	38	Hatzell, K.B.	30-Jan	4:00PM	Tomoka A	43
Fey, T.	31-Jan	10:50AM	Coquina Salon E	61	Haug, M.	31-Jan	11:20AM	Coquina Salon F	54
Fey, T.	31-Jan	11:50AM	Coquina Salon E	61	Haugen, A.B.	28-Jan	4:30PM	Ponce de Leon	14
Fey, T.	31-Jan	3:20PM	Coquina Salon A	55	Hautcoeur, D.	30-Jan	8:50AM	Coquina Salon B	48
Fiorese, A.	28-Jan	4:40PM	Coquina Salon A	13	Hayama, N.	29-Jan	4:30PM	Coquina Salon D	22
Fishtman, N.	30-Jan	2:00PM	Coquina Salon F	42	Hayashi, A.	29-Jan	11:10AM	Coquina Salon E	18
Fischer, T.	29-Jan	2:00PM	Coquina Salon C	20	He, P.	30-Jan	11:30AM	Ponce de Leon	50
Florez, R.	30-Jan	2:00PM	Coquina Salon H	48	Hemmer, E.	30-Jan	2:30PM	Halifax A/B	51
Fonseca Alfonso, P.M.	30-Jan	10:10AM	Ponce de Leon	50	Hemmer, E.	31-Jan	10:20AM	Coquina Salon C	60
Foschini, C.R.	31-Jan	4:50PM	Coquina Salon C	60	Hemrick, J.G.	29-Jan	3:50PM	Coquina Salon E	18
					Heo, E.	31-Jan	12:00PM	Tomoka A	59
					Herrmann, M.	29-Jan	8:30AM	Coquina Salon H	29
					Herrmann, M.	30-Jan	9:00AM	Coquina Salon A	44
					Herrmann, M.	31-Jan	8:30AM	Tomoka C	55

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Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
Hillebrecht, H.	30-Jan	3:00PM	Coquina Salon F	42	Karppinen, M.	29-Jan	10:50AM	Coquina Salon C	20
Hilmas, A.	1-Feb	8:30AM	Coquina Salon A	67	Kartuzov, I.	29-Jan	5:00PM	Coquina Salon F	25
Hinoki, T.	30-Jan	8:30AM	Coquina Salon A	44	Kassner, C.	31-Jan	5:20PM	Coquina Salon E	62
Hodaj, F.	30-Jan	3:50PM	Coquina Salon A	44	Kato, T.	30-Jan	2:30PM	Coquina Salon D	39
Hoepfener, R.	29-Jan	9:30AM	Crystal	23	Katoh, Y.	29-Jan	10:50AM	Coquina Salon H	29
Hogan, J.D.	28-Jan	2:20PM	Coquina Salon F	11	Katsui, H.	29-Jan	11:50AM	Coquina Salon C	20
Holgate, C.S.	29-Jan	4:20PM	Tomoka B	23	Kawabata, Y.	28-Jan	2:00PM	Crystal	11
Hollenbach, J.	28-Jan	4:20PM	Coquina Salon A	13	Kawaguchi, N.	28-Jan	5:00PM	Tomoka C	16
Horcher, A.C.	30-Jan	2:10PM	Tomoka B	40	Kayser, M.	31-Jan	9:30AM	Coquina Salon D	56
Hoshino, T.	28-Jan	2:30PM	Ponce de Leon	13	Keane, P.F.	30-Jan	2:40PM	Ponce de Leon	50
Hossain, K.G.	30-Jan	2:30PM	Tomoka C	38	Khadka, R.	1-Feb	11:00AM	Coquina Salon G	68
Hossain, M.	30-Jan	11:20AM	St. Johns	47	Khanal, P.	1-Feb	11:20AM	Coquina Salon G	68
Hosseini, M.	1-Feb	10:00AM	Coquina Salon F	66	Kidner, N.J.	31-Jan	10:20AM	Crystal	57
Houki, T.	28-Jan	2:30PM	Coquina Salon B	16	Kikuchi, M.	31-Jan	11:40AM	Coquina Salon B	58
Hsu, Y.	29-Jan	5:10PM	Coquina Salon C	21	Kim, D.	29-Jan	3:40PM	Ponce de Leon	28
Hu, B.	29-Jan	2:30PM	Crystal	24	Kim, D.	31-Jan	8:30AM	Tomoka A	59
Hu, X.	30-Jan	10:30AM	Coquina Salon H	48	Kim, D.	31-Jan	11:40AM	Tomoka A	59
Huang, X.	31-Jan	8:50AM	Coquina Salon H	65	Kim, M.	29-Jan	3:20PM	Ponce de Leon	28
Hug, G.A.	28-Jan	2:50PM	St. Johns	14	Kim, S.	28-Jan	4:20PM	Tomoka B	11
Humbs, W.	29-Jan	9:10AM	Coquina Salon D	21	Kim, W.	30-Jan	9:10AM	Coquina Salon H	47
Humphry-Baker, S.A.	28-Jan	4:00PM	Coquina Salon D	10	Kim, Y.	28-Jan	3:20PM	Coquina Salon H	15
Humphry-Baker, S.A.	29-Jan	2:50PM	Coquina Salon H	30	Kim, Y.	29-Jan	9:20AM	Ponce de Leon	27
Hupa, L.	31-Jan	1:30PM	Coquina Salon B	58	Kimura, T.	29-Jan	9:50AM	Tomoka C	30
Hwang, C.	29-Jan	11:30AM	Coquina Salon F	24	King, D.	30-Jan	8:30AM	Coquina Salon H	47
I					King, D.	31-Jan	11:50AM	St. Johns	64
Idriss, H.	29-Jan	9:10AM	Coquina Salon C	20	King, M.K.	29-Jan	9:10AM	Coquina Salon G	19
Ikarashi, Y.	31-Jan	10:30AM	Coquina Salon D	56	Kiriara, S.	30-Jan	2:40PM	Coquina Salon B	49
Imanaka, Y.	29-Jan	10:20AM	Tomoka C	30	Kisailus, D.	31-Jan	10:20AM	Coquina Salon F	54
Imanaka, Y.	30-Jan	10:50AM	Coquina Salon E	36	Kisailus, D.	1-Feb	9:40AM	Coquina Salon F	66
Imanishi, N.	28-Jan	1:30PM	Tomoka A	12	Kishimoto, H.	30-Jan	4:10PM	Crystal	41
Ionescu, E.	28-Jan	5:00PM	Ponce de Leon	14	Klemm, H.	29-Jan	8:30AM	Tomoka B	22
Ionescu, E.	30-Jan	8:30AM	Coquina Salon C	37	Klemm, H.	29-Jan	11:00AM	Coquina Salon B	31
Ionescu, E.	30-Jan	3:20PM	Coquina Salon A	44	Kobayashi, H.	31-Jan	10:20AM	Tomoka A	59
Irisawa, T.	29-Jan	10:20AM	Ponce de Leon	27	Kobayashi, M.	29-Jan	4:50PM	Coquina Salon C	21
Ishibashi, R.	29-Jan	10:20AM	Coquina Salon H	29	Koch, D.	30-Jan	9:40AM	Coquina Salon D	38
Ishigaki, T.	29-Jan	1:30PM	Tomoka C	31	Koch, D.	30-Jan	1:30PM	Coquina Salon D	39
Ishikawa, T.	30-Jan	9:40AM	Coquina Salon A	44	Kos, S.	29-Jan	2:20PM	Ponce de Leon	28
Ito, A.	28-Jan	4:00PM	Tomoka B	11	Koshimizu, M.	28-Jan	4:10PM	Tomoka C	16
Ito, T.	30-Jan	1:30PM	St. Johns	47	Koyanagi, T.	30-Jan	11:10AM	Coquina Salon H	48
Iwamoto, Y.	28-Jan	4:00PM	Coquina Salon C	17	Krause, A.R.	31-Jan	3:40PM	Coquina Salon A	55
Iwamoto, Y.	29-Jan	9:40AM	Coquina Salon E	18	Kravchenko, O.	31-Jan	8:50AM	Coquina Salon E	61
Iwasawa, H.	29-Jan	10:50AM	Ponce de Leon	27	Krenkel, W.	30-Jan	1:30PM	Tomoka C	38
Iwazaki, Y.	29-Jan	2:00PM	Tomoka C	31	Ku, N.	30-Jan	11:50AM	Coquina Salon F	42
Iwazaki, Y.	30-Jan	11:30AM	Coquina Salon E	36	Kubushiro, K.	29-Jan	1:30PM	Coquina Salon D	22
J					Kumar, R.	29-Jan	3:50PM	Coquina Salon C	21
Jacobs, R.	31-Jan	8:30AM	Crystal	57	Kunze, S.	29-Jan	9:00AM	Coquina Salon F	24
James, C.M.	28-Jan	5:20PM	Tomoka A	13	Kuo, C.	31-Jan	2:20PM	Coquina Salon E	62
Jang, B.	30-Jan	9:30AM	Tomoka B	39	Kusnezoff, M.	30-Jan	2:40PM	Crystal	41
Jarman, J.	29-Jan	9:00AM	Coquina Salon H	29	L				
Jarvis, L.	31-Jan	10:20AM	Coquina Salon G	62	Labonnote-Weber, S.	31-Jan	9:40AM	Coquina Salon A	61
Javaid, S.	29-Jan	11:10AM	Coquina Salon G	19	Labonnote-Weber, S.	31-Jan	11:10AM	Crystal	57
Jenkins, M.G.	31-Jan	8:30AM	Coquina Salon H	65	Lambertin, D.	30-Jan	9:00AM	Ponce de Leon	50
Jennings, D.	31-Jan	2:40PM	Crystal	57	Lambrinou, K.	30-Jan	3:20PM	St. Johns	47
Ji Hwoan, L.	29-Jan	9:00AM	Ponce de Leon	27	Leduc, J.	28-Jan	4:40PM	Coquina Salon C	17
Ji, W.	28-Jan	1:30PM	Coquina Salon G	9	Lee, D.	28-Jan	3:10PM	Ponce de Leon	13
Jiménez Martínez, M.	29-Jan	4:40PM	Coquina Salon A	27	Lee, H.	29-Jan	2:40PM	Ponce de Leon	28
Jolly, B.	29-Jan	1:30PM	Coquina Salon H	30	Lee, K.N.	28-Jan	1:40PM	Tomoka B	10
Jones, T.	30-Jan	2:00PM	Coquina Salon B	49	Lee, S.	28-Jan	2:30PM	Tomoka A	12
Jordan, E.H.	29-Jan	1:30PM	Tomoka B	23	Lee, S.	30-Jan	1:50PM	Tomoka B	40
Jun, B.	30-Jan	8:50AM	Tomoka B	39	Lee, S.	30-Jan	2:10PM	Coquina Salon D	39
K					Lee, S.	31-Jan	1:30PM	St. Johns	64
Kabel, J.	31-Jan	9:50AM	Coquina Salon H	65	Lei, C.	30-Jan	4:20PM	Tomoka A	43
Kalantar-zadeh, K.	28-Jan	2:00PM	Halifax A/B	17	Lei, Y.	28-Jan	5:20PM	St. Johns	14
Kalem, V.	31-Jan	2:20PM	Coquina Salon C	60	Lences, Z.	28-Jan	2:30PM	Tomoka C	15
Kamboj, N.K.	31-Jan	5:20PM	Coquina Salon B	59	Leonard, H.S.	29-Jan	2:40PM	Coquina Salon B	32
Kameshima, Y.	31-Jan	3:20PM	Coquina Salon E	62	Leonelli, C.	31-Jan	1:30PM	Ponce de Leon	65
Kanazawa, S.	29-Jan	8:50AM	Coquina Salon D	21	Leriche, A.L.	28-Jan	2:00PM	Coquina Salon A	13
Kaplan, W.D.	29-Jan	2:00PM	Coquina Salon F	25	Li, L.	31-Jan	10:50AM	Coquina Salon D	56
Kapusuz, D.	1-Feb	9:00AM	Coquina Salon B	67	Li, M.	31-Jan	4:30PM	Coquina Salon C	60
					Li, W.	31-Jan	2:20PM	Crystal	57
					Li, Y.	30-Jan	9:20AM	Coquina Salon A	44

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Ligda, J.	28-Jan	4:10PM	Coquina Salon F	12	Morscher, G.N.	1-Feb	9:00AM	Coquina Salon A	67
Liliedahl, D.	30-Jan	4:50PM	Coquina Salon E	45	Moscinski, M.	30-Jan	3:30PM	Coquina Salon D	39
Lin, F.	30-Jan	11:50AM	Halifax A/B	51	Moscinski, M.	30-Jan	4:10PM	Coquina Salon D	39
Lin, P.	31-Jan	2:00PM	Coquina Salon C	60	Motz, G.	30-Jan	11:50AM	Coquina Salon C	37
Lis, J.	28-Jan	9:30AM	Coquina Salon D	9	Mueller, K.	29-Jan	9:20AM	St. Johns	28
Liu, C.	28-Jan	2:30PM	Crystal	11	Mueller, W.M.	30-Jan	1:50PM	Coquina Salon D	39
Liu, J.	29-Jan	9:40AM	Coquina Salon A	26	Mukasyan, A.	29-Jan	1:30PM	Coquina Salon A	27
Liu, J.	31-Jan	9:20AM	Crystal	57	Murillo Alarcón, R.	31-Jan	2:20PM	Ponce de Leon	65
Lopez-Honorato, E.	29-Jan	2:30PM	Coquina Salon H	30					
Lopez-Honorato, E.	30-Jan	10:50AM	Tomoka B	40			N		
Lopez-Honorato, E.	31-Jan	3:50PM	Coquina Salon C	60	Nabat Al-Ajrash, S.	29-Jan	10:30AM	Coquina Salon D	21
Lu, K.	30-Jan	2:00PM	Tomoka C	38	Naccache, R.	29-Jan	9:30AM	Halifax A/B	32
Luan, X.	31-Jan	9:10AM	St. Johns	63	Naim Katea, S.	31-Jan	9:40AM	Coquina Salon C	60
Luo, J.	30-Jan	9:10AM	St. Johns	46	Nakashima, Y.	28-Jan	4:50PM	Coquina Salon G	10
Luo, J.	30-Jan	1:30PM	Coquina Salon G	46	Nakayama, T.	29-Jan	8:30AM	Ponce de Leon	27
Luo, Y.	31-Jan	5:30PM	Coquina Salon G	63	Nakayama, T.	30-Jan	9:20AM	Coquina Salon E	36
Lyons, J.	31-Jan	2:50PM	St. Johns	64	Narayan, R.	29-Jan	4:10PM	Coquina Salon E	18
					Nasr Esfahani, M.	29-Jan	4:40PM	Halifax A/B	33
					Nasr Esfahani, M.	30-Jan	4:20PM	Coquina Salon A	45
					Navrotsky, A.	28-Jan	1:30PM	Coquina Salon C	17
					Nbelayim, P.S.	30-Jan	4:50PM	Coquina Salon C	44
					Nechache, R.	28-Jan	3:50PM	Halifax A/B	17
					Nguyen, T.	29-Jan	11:10AM	Ponce de Leon	27
					Nguyen, T.	29-Jan	3:50PM	Coquina Salon G	27
					Ni, C.	29-Jan	10:20AM	Coquina Salon F	24
					Nicholas, J.D.	29-Jan	10:10AM	Crystal	23
					Nie, J.	28-Jan	5:00PM	Coquina Salon A	13
					Nieto, A.	28-Jan	3:20PM	Coquina Salon G	9
					Ning, C.	1-Feb	10:30AM	Coquina Salon B	67
					Ning, X.	30-Jan	2:30PM	Tomoka A	43
					Nino, J.C.	28-Jan	4:00PM	Ponce de Leon	14
					Nowicki, K.M.	30-Jan	11:40AM	Crystal	40
							O		
					Ogasawara, K.	31-Jan	5:05PM	Coquina Salon G	63
					Ogitani, S.	29-Jan	2:40PM	Coquina Salon A	27
					Oh, T.	29-Jan	3:20PM	Coquina Salon G	19
					Oh, T.	30-Jan	11:10AM	Tomoka C	38
					Ohashi, N.	30-Jan	11:10AM	Coquina Salon E	36
					Ohji, T.	30-Jan	3:20PM	Coquina Salon B	49
					Ohtaki, M.	30-Jan	10:20AM	Tomoka A	43
					Okamoto, Y.	29-Jan	3:50PM	Tomoka C	31
					Okawa, A.	29-Jan	11:30AM	Ponce de Leon	27
					Okuizumi, S.	29-Jan	11:10AM	Coquina Salon D	21
					Olevsky, E.A.	30-Jan	1:30PM	Coquina Salon F	42
					Ong, S.	29-Jan	3:20PM	Tomoka A	26
					Opitz, A.K.	30-Jan	10:20AM	Crystal	40
					Orgiu, E.	31-Jan	11:20AM	Halifax A/B	66
					Oropeza Gomez, D.	29-Jan	3:40PM	Coquina Salon B	32
					Ortona, A.	30-Jan	4:00PM	Coquina Salon E	45
					Ortona, A.	31-Jan	9:20AM	Coquina Salon E	61
					Osada, M.	29-Jan	11:10AM	Tomoka C	30
					Osaka, A.	1-Feb	8:30AM	Coquina Salon B	67
					Öst, T.	28-Jan	1:30PM	Coquina Salon F	11
					Ouellet-Plamondon, C.	29-Jan	3:50PM	Coquina Salon G	20
					Ouellet-Plamondon, C.	31-Jan	11:50AM	Halifax A/B	66
					Ozaki, T.	30-Jan	2:20PM	Coquina Salon A	44
					Ozawa, N.	31-Jan	10:40AM	Coquina Salon G	62
							P		
					Padture, N.P.	29-Jan	8:40AM	Coquina Salon E	18
					Panakarajupally, R.	28-Jan	2:40PM	Coquina Salon D	10
					Papa, E.	30-Jan	4:30PM	Ponce de Leon	50
					Park, B.	30-Jan	5:30PM	Crystal	41
					Park, J.	29-Jan	3:30PM	Coquina Salon D	22
					Park, J.	30-Jan	11:20AM	Crystal	40
					Parker, C.G.	28-Jan	4:20PM	Coquina Salon D	10
					Parker, C.G.	29-Jan	9:00AM	Tomoka B	22
					Paul, R.M.	29-Jan	11:30AM	Coquina Salon G	19
					Peddamalla, N.	29-Jan	4:20PM	Coquina Salon A	27
					Pelz, J.	30-Jan	10:50AM	Coquina Salon F	42
					Pena, A.A.	29-Jan	9:00AM	St. Johns	28

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Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
Peng, K.	31-Jan	2:40PM	Coquina Salon C	60	Sakidja, R.	30-Jan	3:45PM	Coquina Salon G	46
Penide-Fernandez, R.	31-Jan	11:10AM	St. Johns	64	Salameh, C.	30-Jan	9:20AM	Coquina Salon C	37
Petrie, C.	29-Jan	4:40PM	Coquina Salon H	30	Salamone, S.	29-Jan	9:30AM	Coquina Salon F	24
Pietras, J.	28-Jan	4:50PM	Crystal	11	Salem, A.C.	29-Jan	2:20PM	Coquina Salon B	32
Pinek, D.	28-Jan	3:50PM	St. Johns	14	Salem, J.	31-Jan	10:10AM	Coquina Salon D	56
Pinna, N.	30-Jan	3:20PM	Coquina Salon C	44	Salvo, M.	30-Jan	3:50PM	Tomoka C	38
Pinna, N.	31-Jan	9:30AM	Halifax A/B	66	Samuel, D.	31-Jan	2:40PM	Ponce de Leon	66
Pint, B.A.	28-Jan	3:30PM	Tomoka B	11	San, S.	1-Feb	10:20AM	Coquina Salon G	68
Pirou, S.	30-Jan	11:40AM	Tomoka C	38	Sankar, K.	31-Jan	11:30AM	Ponce de Leon	65
Pittari, J.J.	28-Jan	3:50PM	Coquina Salon F	12	Sanson, A.	29-Jan	8:30AM	Crystal	23
Poerschke, D.L.	1-Feb	8:55AM	Coquina Salon G	68	Santato, C.	31-Jan	10:50AM	Halifax A/B	66
Porter, M.	29-Jan	5:00PM	Coquina Salon A	27	Santoliquido, O.	28-Jan	4:00PM	Coquina Salon B	16
Post, E.	29-Jan	4:20PM	Ponce de Leon	28	Sarkkinen, M.	31-Jan	9:30AM	Ponce de Leon	65
Povolny, S.	29-Jan	10:20AM	St. Johns	28	Sato, H.	31-Jan	2:40PM	Coquina Salon A	55
Prabhakar, P.	28-Jan	3:40PM	Coquina Salon D	10	Sato, Y.	28-Jan	2:10PM	Tomoka C	15
Prabhakar, P.	31-Jan	9:30AM	Coquina Salon H	65	Savkilyildiz, I.	29-Jan	10:50AM	Coquina Salon A	26
Pralong, V.	30-Jan	8:30AM	Tomoka A	42	Scanferla, P.	30-Jan	11:00AM	Ponce de Leon	50
Preininger, M.	29-Jan	4:20PM	Crystal	24	Schaedler, T.	28-Jan	5:00PM	Coquina Salon B	16
Presby, M.J.	28-Jan	5:00PM	Coquina Salon D	10	Schaefer, M.C.	28-Jan	4:30PM	Coquina Salon F	12
Presby, M.J.	31-Jan	1:50PM	Coquina Salon D	56	Schefold, J.	30-Jan	3:40PM	Crystal	41
Presby, M.J.	1-Feb	8:00AM	Coquina Salon A	67	Scheithauer, U.	28-Jan	4:40PM	Coquina Salon B	16
Prikhna, T.	28-Jan	5:30PM	Coquina Salon F	12	Scheithauer, U.	29-Jan	11:20AM	Coquina Salon B	31
Prikhna, T.	30-Jan	3:40PM	St. Johns	47	Scheithauer, U.	30-Jan	10:30AM	Coquina Salon B	49
					Schlup, A.	29-Jan	2:50PM	Coquina Salon F	25
		Q			Schmitt, M.	29-Jan	2:20PM	Tomoka B	23
Qin, Z.	29-Jan	11:40AM	Halifax A/B	32	Schneider, J.M.	28-Jan	1:30PM	St. Johns	14
Quinn, G.D.	31-Jan	3:50PM	Coquina Salon D	56	Schülzgen, A.	28-Jan	3:20PM	Tomoka C	15
					Schwentenwein, M.	28-Jan	3:20PM	Coquina Salon B	16
		R			Schwentenwein, M.	31-Jan	9:20AM	Coquina Salon B	58
Radovic, M.	29-Jan	4:20PM	St. Johns	29	Schwind, E.C.	29-Jan	11:30AM	St. Johns	28
Raftery, A.M.	28-Jan	2:20PM	Coquina Salon H	15	Scipioni, R.	31-Jan	9:10AM	Tomoka A	59
Raiman, S.S.	30-Jan	8:50AM	Coquina Salon H	47	Sciti, D.	31-Jan	10:50AM	St. Johns	64
Rajan, K.	29-Jan	3:30PM	Coquina Salon F	25	Seibert, R.	28-Jan	2:00PM	Coquina Salon H	15
Raju, S.	30-Jan	3:20PM	Coquina Salon F	42	Seifert, H.J.	29-Jan	8:30AM	Tomoka A	25
Ramirez Velasco, J.H.	30-Jan	9:10AM	Tomoka B	39	Seifert, H.J.	30-Jan	2:30PM	Coquina Salon G	46
Ramirez-Rico, J.	1-Feb	9:00AM	Coquina Salon F	66	Seitz, M.	29-Jan	9:20AM	Tomoka C	30
Ramirez, G.	29-Jan	1:30PM	Ponce de Leon	28	Sekino, T.	30-Jan	9:00AM	Halifax A/B	50
Randall, C.	29-Jan	2:20PM	Coquina Salon E	18	Seo, D.	30-Jan	8:30AM	Ponce de Leon	49
Ranjan, P.	31-Jan	9:20AM	Coquina Salon A	61	Seo, D.	31-Jan	3:30PM	Ponce de Leon	66
Rapaud, O.	31-Jan	1:30PM	Coquina Salon G	63	Serizawa, H.	30-Jan	2:00PM	Coquina Salon A	44
Rapking, D.	1-Feb	10:10AM	Coquina Salon A	67	Seshadri, A.	30-Jan	10:50AM	Coquina Salon H	48
Ravichandran, M.	31-Jan	8:20AM	Coquina Salon E	61	Shankar, K.	29-Jan	2:30PM	Halifax A/B	33
Ravinder, D.	28-Jan	4:50PM	Tomoka A	12	Shanmugavel, B.	31-Jan	11:10AM	Coquina Salon D	56
Reaney, I.M.	30-Jan	3:35PM	Coquina Salon B	49	Shapovalov, K.	31-Jan	9:10AM	Coquina Salon H	65
Reisert, M.	30-Jan	3:00PM	Crystal	41	Sharma, L.K.	29-Jan	5:10PM	Coquina Salon E	18
Remnev, G.	30-Jan	11:30AM	Tomoka B	40	Shen, F.	30-Jan	4:40PM	Tomoka A	43
Riedel, R.	30-Jan	10:20AM	Coquina Salon C	37	Shimamura, K.	29-Jan	10:50AM	Coquina Salon E	18
Riera, R.A.	28-Jan	4:50PM	Coquina Salon F	12	Shin, T.	30-Jan	4:40PM	Crystal	41
Righini, G.C.	30-Jan	3:20PM	Halifax A/B	51	Shinde, S.V.	29-Jan	10:50AM	Tomoka B	22
Rimsza, J.M.	1-Feb	9:45AM	Coquina Salon G	68	Shirvan, K.	29-Jan	4:00PM	Coquina Salon H	30
Roger, J.	31-Jan	3:25PM	Coquina Salon G	63	Shivprasad, A.P.	28-Jan	4:40PM	Coquina Salon H	15
Rohde, M.	30-Jan	3:20PM	Tomoka A	43	Shoulders, T.	29-Jan	11:10AM	Coquina Salon F	24
Rohde, M.	31-Jan	9:00AM	Tomoka C	55	Singh, D.	28-Jan	8:50AM	Coquina Salon D	9
Rohrer, G.	29-Jan	10:20AM	Coquina Salon E	18	Singh, G.	28-Jan	3:40PM	Coquina Salon H	15
Rombouts, M.	29-Jan	9:40AM	Coquina Salon B	31	Singh, G.	29-Jan	4:20PM	Coquina Salon H	30
Rosei, F.	31-Jan	8:30AM	Coquina Salon C	59	Singh, G.	29-Jan	4:20PM	Tomoka A	26
Rosei, F.	31-Jan	10:40AM	Coquina Salon B	58	Singh, P.	29-Jan	11:50AM	Coquina Salon E	18
Rost, C.M.	30-Jan	11:10AM	Tomoka B	40	Singh, Y.P.	31-Jan	2:10PM	Coquina Salon D	56
Rothe, S.	29-Jan	3:40PM	Crystal	24	Sinnott, S.	30-Jan	8:55AM	Coquina Salon G	45
Rousseau, B.	31-Jan	5:00PM	Coquina Salon A	55	Skripka, A.	29-Jan	4:20PM	Coquina Salon G	20
Rueschhoff, L.M.	28-Jan	2:30PM	Coquina Salon E	9	Smeacetto, F.	30-Jan	2:20PM	Crystal	41
Rueschhoff, L.M.	30-Jan	4:40PM	Coquina Salon A	45	Smith, C.	30-Jan	10:10AM	Coquina Salon B	49
Rueß, H.	31-Jan	2:30PM	St. Johns	64	Smith, C.S.	30-Jan	11:20AM	Coquina Salon D	39
Ruggles-Wrenn, M.	28-Jan	1:30PM	Coquina Salon D	10	Snead, L.	30-Jan	4:20PM	Coquina Salon H	48
Rulis, P.	31-Jan	2:20PM	Coquina Salon G	63	Solano, E.	29-Jan	2:20PM	Coquina Salon C	20
					Sonsteby, H.H.	29-Jan	11:10AM	Coquina Salon C	20
		S			Soraru, G.	30-Jan	11:10AM	Coquina Salon C	37
Sa Ribeiro, R.A.	30-Jan	4:00PM	Ponce de Leon	50	Spirrett, F.	29-Jan	11:40AM	Coquina Salon B	31
Sadia, Y.	29-Jan	11:20AM	Tomoka A	25	Sprio, S.	31-Jan	9:30AM	Coquina Salon F	54
Sadia, Y.	30-Jan	9:40AM	Crystal	40	Srivastava, A.	30-Jan	4:00PM	St. Johns	47
Sajgalik, P.	31-Jan	10:20AM	Coquina Salon E	61	Stadler, D.	29-Jan	10:20AM	Coquina Salon G	19

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Xu, P.	30-Jan	10:10AM	Coquina Salon H	48	Z				
Xu, P.	30-Jan	11:50AM	Tomoka B	40	Zaman, W.B.	31-Jan	4:30PM	St. Johns	64
Xu, Y.	31-Jan	10:50AM	Crystal	57	Zavattieri, P.	31-Jan	10:50AM	Coquina Salon F	54
Y					Zavelani-Rossi, M.	29-Jan	1:30PM	Halifax A/B	33
Yamaguchi, S.	29-Jan	2:20PM	Coquina Salon G	19	Zhang, D.	31-Jan	9:00AM	Coquina Salon A	61
Yamamoto, T.	29-Jan	2:00PM	Tomoka A	26	Zhang, H.	31-Jan	10:50AM	Coquina Salon A	61
Yamazaki, N.	28-Jan	4:40PM	Tomoka B	11	Zhang, J.	28-Jan	1:30PM	Coquina Salon E	9
Yamazaki, S.	28-Jan	10:40AM	Coquina Salon D	9	Zhang, P.	30-Jan	11:40AM	Coquina Salon D	39
Yanagida, T.	28-Jan	3:40PM	Tomoka C	15	Zhang, Q.	30-Jan	5:50PM	Crystal	41
Yang, K.	30-Jan	10:50AM	Coquina Salon G	45	Zhang, S.	31-Jan	8:30AM	Coquina Salon A	60
Ying, G.	31-Jan	5:10PM	St. Johns	64	Zhang, Y.	31-Jan	1:55PM	Coquina Salon G	63
Yoshida, H.	28-Jan	1:30PM	Coquina Salon A	13	Zhao, H.	29-Jan	10:45AM	Halifax A/B	32
Yoshimura, M.	29-Jan	2:00PM	Coquina Salon E	18	Zheng, W.	29-Jan	2:40PM	Coquina Salon G	19
Yoshimura, M.	31-Jan	9:00AM	Halifax A/B	66	Zhi, Q.	31-Jan	2:40PM	Coquina Salon E	62
Youmoue, M.	30-Jan	9:30AM	Ponce de Leon	50	Zhou, F.	28-Jan	5:50PM	Coquina Salon F	12
Young, C.M.	30-Jan	8:30AM	St. Johns	46	Zhou, Y.	29-Jan	2:10PM	Coquina Salon H	30
Yu, S.	29-Jan	9:00AM	Tomoka C	30	Zhou, Y.	29-Jan	3:20PM	St. Johns	29
Yu, Z.	29-Jan	9:30AM	Coquina Salon G	19	Zhou, Y.	31-Jan	9:30AM	Coquina Salon G	62
Yu, Z.	30-Jan	10:50AM	Coquina Salon C	37	Zhuang, H.	31-Jan	4:40PM	Coquina Salon G	63
Yun, H.	28-Jan	2:00PM	Coquina Salon B	16	Zocca, A.	29-Jan	3:20PM	Coquina Salon B	32
Yun, J.	31-Jan	11:20AM	Tomoka A	59	Zou, J.	29-Jan	8:30AM	St. Johns	28
Yurtsever, A.	29-Jan	3:50PM	Halifax A/B	33	Zuccarini, C.	29-Jan	8:50AM	Coquina Salon G	19

Poster Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
A					E				
Acchar, W.	30-Jan	5:00PM	Ocean Center	52	Espinoza Perez, L.J.	30-Jan	5:00PM	Ocean Center	54
Adlung, M.	29-Jan	5:00PM	Ocean Center	33	F				
Ahmann, M.	29-Jan	5:00PM	Ocean Center	33	Feng, L.	30-Jan	5:00PM	Ocean Center	53
Akhtar, F.	30-Jan	5:00PM	Ocean Center	53	Fortulan, C.A.	29-Jan	5:00PM	Ocean Center	35
Akimoto, H.	29-Jan	5:00PM	Ocean Center	35	G				
Akram, M.	30-Jan	5:00PM	Ocean Center	52	Gao, H.	29-Jan	5:00PM	Ocean Center	33
Alkan, B.	30-Jan	5:00PM	Ocean Center	52	Garcia, V.	29-Jan	5:00PM	Ocean Center	35
Ando, T.	30-Jan	5:00PM	Ocean Center	52	Ghaffari, K.	29-Jan	5:00PM	Ocean Center	34
Askin, C.	29-Jan	5:00PM	Ocean Center	35	Ghosh, D.	29-Jan	5:00PM	Ocean Center	34
Ates, O.S.	29-Jan	5:00PM	Ocean Center	35	Gianchandani, P.	30-Jan	5:00PM	Ocean Center	51
Awasthi, A.	29-Jan	5:00PM	Ocean Center	34	Gobbin, F.	29-Jan	5:00PM	Ocean Center	35
B					Gorven, A.J.	30-Jan	5:00PM	Ocean Center	51
Baker, B.A.	30-Jan	5:00PM	Ocean Center	53	Grilo, J.	29-Jan	5:00PM	Ocean Center	36
Balazsi, C.	30-Jan	5:00PM	Ocean Center	53	Grosch, M.	29-Jan	5:00PM	Ocean Center	33
Balazsi, K.	29-Jan	5:00PM	Ocean Center	33	H				
Balazsi, K.	30-Jan	5:00PM	Ocean Center	53	Hardy, J.S.	29-Jan	5:00PM	Ocean Center	34
Balci, O.	29-Jan	5:00PM	Ocean Center	36	He, G.	30-Jan	5:00PM	Ocean Center	53
Behler, K.D.	29-Jan	5:00PM	Ocean Center	34	Hong, H.	29-Jan	5:00PM	Ocean Center	34
Bialuschewski, D.	29-Jan	5:00PM	Ocean Center	33	J				
Blair, V.L.	29-Jan	5:00PM	Ocean Center	35	Jenkins, M.G.	30-Jan	5:00PM	Ocean Center	51, 53, 54
Bodis, E.	29-Jan	5:00PM	Ocean Center	36	Jones, E.	29-Jan	5:00PM	Ocean Center	36
C					Ju, C.	29-Jan	5:00PM	Ocean Center	34
Celik, A.M.	29-Jan	5:00PM	Ocean Center	34	K				
Charalambous, H.	29-Jan	5:00PM	Ocean Center	35	Kang, C.	30-Jan	5:00PM	Ocean Center	52
Cho, J.	30-Jan	5:00PM	Ocean Center	52	Kartuzov, V.	29-Jan	5:00PM	Ocean Center	34
Cui, B.	29-Jan	5:00PM	Ocean Center	34	Kato, M.	30-Jan	5:00PM	Ocean Center	52
D					Kato, T.	30-Jan	5:00PM	Ocean Center	52
D'Haeyer, C.	29-Jan	5:00PM	Ocean Center	36	Kawaguchi, N.	29-Jan	5:00PM	Ocean Center	35
Dai, Z.	29-Jan	5:00PM	Ocean Center	35	Khan, A.U.	29-Jan	5:00PM	Ocean Center	34
DiGiovanni, A.A.	29-Jan	5:00PM	Ocean Center	34	Kim, D.	29-Jan	5:00PM	Ocean Center	33
Ding, D.	30-Jan	5:00PM	Ocean Center	52	Kim, H.	29-Jan	5:00PM	Ocean Center	35
Dougherty, P.R.	29-Jan	5:00PM	Ocean Center	33	Kim, Y.	29-Jan	5:00PM	Ocean Center	34
Dunn, J.S.	29-Jan	5:00PM	Ocean Center	34	Kim, Y.	30-Jan	5:00PM	Ocean Center	53
Dunn, J.S.	30-Jan	5:00PM	Ocean Center	53					

Monday, January 28, 2019

Plenary Session

Plenary Session

Room: Coquina Salon D

Session Chairs: Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST); Surojit Gupta, University of North Dakota

8:30 AM

Opening Remarks and Awards

8:50 AM

(ICACC-PLEN-001-2019) Renewable Energy: Role of Ceramics and Composites

D. Singh*¹

1. Argonne National Laboratory, Applied Materials Division, USA

9:30 AM

(ICACC-PLEN-002-2019) Processing of complex ceramic materials by rapid high-energy techniques

J. Lis*¹

1. AGH University of Science and Technology, Faculty of Materials Science and Ceramics, Poland

10:10 AM

Break

10:40 AM

(ICACC-PLEN-003-2019) Crystalline Oxide Semiconductor (IGZO Ceramics)- Based Devices for Artificial Intelligence (AI) and Internet of Things (IoT)

S. Yamazaki*¹

1. Semiconductor Energy Laboratory Co., Ltd., Japan

11:20 AM

(ICACC-PLEN-004-2019) Drug, Device, or Diagnostic? Engineering in a new world of medicine

M. Cima*¹

1. Massachusetts Institute of Technology, Department of Materials Science and Engineering, USA

Special Focused Session on Diversity, Entrepreneurship, and Commercialization

Diversity, Entrepreneurship and Commercialization

Room: Coquina Salon E

Session Chairs: Surojit Gupta, University of North Dakota; Valerie Wiesner, NASA Glenn Research Center

1:30 PM

(ICACC-DIV-001-2019) Integrated design of ceramic coatings for accident-tolerant fuel cladding in LWRs (Invited)

J. Zhang*¹; J. Wang¹

1. Institute of Metal Research, Chinese Academy of Sciences, High-performance Ceramics, China

2:00 PM

(ICACC-DIV-002-2019) Effect of deposition parameters on cubic TiC and hexagonal Ti phase formation of thin films deposited by magnetron sputtering (Invited)

K. Balazsi*¹

1. Centre for Energy Research HAS, Thin Film Physics, Hungary

2:30 PM

(ICACC-DIV-003-2019) Nano to Bulk Scale Ceramic Processing and Structure Control for Enhanced Properties (Invited)

L. M. Rueschhoff*¹

1. Air Force Research Lab, Materials and Manufacturing Directorate, USA

3:00 PM

(ICACC-DIV-004-2019) GrainBound – A Perspective Into Starting a “Consulting” Company (Invited)

C. J. Marvel*¹

1. GrainBound, Inc., USA

8th Global Young Investigator Forum

Advanced Ceramics and Coatings for Structural, Energy, Environmental and Functional Applications

Room: Coquina Salon G

Session Chair: Manoj Mahapatra, University of Alabama at Birmingham

1:30 PM

(ICACC-GYIF-001-2019) Sintering of Advanced Ceramics by Plastic Deformation as Dominant Mechanism (Invited)

W. Ji*¹; Z. Fu¹

1. Wuhan University of Technology, China

1:50 PM

(ICACC-GYIF-002-2019) Airborne Impurities Assisted SOFC Cathode Degradation and Mitigation Approaches (Invited)

A. Aphale*¹; M. Reiser¹; B. Hu¹; S. Belko¹; S. Heo¹; J. Hong¹; P. Singh¹

1. University of Connecticut, Materials Science and Engineering, USA

2:10 PM

(ICACC-GYIF-003-2019) Micro-plasma based enhancement in dielectric and piezoelectric properties of ZnO based multifunctional composite thin films by surface modification (Invited)

H. Brar¹; E. Leal-Quiros¹; S. Ahmed²; S. Banerjee*²

1. California State University, Fresno, Mechanical Engineering, USA
2. SUNY Buffalo State, Mechanical Engineering, USA

2:30 PM

Break

Frontiers in Ceramic Materials: Advances and Challenges in Novel Materials Design, Synthesis, Performance, and Reliability I

Room: Coquina Salon G

Session Chairs: Yoshiki Sugimoto, National Institute of Advanced Industrial Science and Technology (AIST); Giorgia Franchin, University of Padova

3:20 PM

(ICACC-GYIF-004-2019) Progress and Challenges in Graphene Reinforced Ceramic Matrix Composites (Invited)

A. Nieto*¹

1. Naval Postgraduate School, Mechanical and Aerospace Engineering, USA

3:50 PM

(ICACC-GYIF-005-2019) Compressive response of ice-templated ceramic-polymer composites both in quasistatic and dynamic regimes of strain rate

S. Akurati*¹; N. Tennant¹; D. Ghosh¹

1. Old Dominion University, Mechanical and Aerospace Engineering, USA

4:10 PM**(ICACC-GYIF-006-2019) Effects of particle size and morphology on the dynamic compressive response of ice-templated ceramics with directional porosity**M. Banda*; J. E. John¹; D. A. Terrones¹; B. B. Laredo¹; D. Ghosh¹

1. Old Dominion University, Mechanical and Aerospace Engineering, USA

4:30 PM**(ICACC-GYIF-007-2019) Synthesis and Characterization of Novel Lignin-Metal Composites**G. Ellis*; M. Dey¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

4:50 PM**(ICACC-GYIF-008-2019) Synthesis of Al₄SiC₄ by the self-propagating high-temperature synthesis method**Y. Nakashima*; H. Hyuga¹; R. Kamiya²; S. Hashimoto²

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Nagoya Institute of Technology, Japan

5:10 PM**(ICACC-GYIF-009-2019) Calorimetric Measurements of the Thermodynamic Properties of Gas-Ceramic Coatings and Ingested CMAS Corrodents (Invited)**G. Costa*; B. J. Harder²; V. L. Wiesner¹; N. P. Bansal¹; K. N. Lee¹; D. Kapush²; S. Ushakov²; A. Navrotsky²

1. NASA Glenn Research Center, USA
2. University of California, Davis, Peter A. Rock Thermochemistry Laboratory and NEAT ORU, USA

S1: Mechanical Behavior and Performance of Ceramics & Composites**Environmental Effects and Thermo-mechanical Performance**

Room: Coquina Salon D

Session Chairs: Jonathan Salem, NASA Glenn Research Center; Marina Ruggles-Wrenn, Air Force Institute of Technology

1:30 PM**(ICACC-S1-001-2019) Creep of a Nextel™720/alumina ceramic composite containing an array of small holes at 1200° C in air and in steam (Invited)**M. Ruggles-Wrenn*; S. Minor¹; C. P. Przybyla²; E. L. Jones²

1. Air Force Institute of Technology, Aeronautics & Astronautics, USA
2. Air Force Research Lab, USA

2:00 PM**(ICACC-S1-002-2019) Modeling Oxidation Embrittlement of SiC/SiC Ceramic Matrix Composites**V. Collier*; M. Begley²; W. Xu¹; F. W. Zok¹; R. M. McMeeking²

1. University of California, Santa Barbara, Materials, USA
2. University of California, Santa Barbara, Materials and Mechanical Engineering, USA

2:20 PM**(ICACC-S1-003-2019) Oxidation behavior of HfSi₂ with boron addition**T. Tsunoura*; K. Yoshida²; T. Yano²; T. Aoki³; T. Ogasawara⁴

1. Tokyo Institute of Technology, Department of Materials Science and Engineering, Japan
2. Tokyo Institute of Technology, Laboratory for Advanced Nuclear Energy, Japan
3. Japan Aerospace Exploration Agency, Aeronautical Technology Directorate, Japan
4. Tokyo University of Agriculture and Technology, Department of Mechanical Systems Engineering, Japan

2:40 PM**(ICACC-S1-004-2019) Mechanical Characterization of SiC/SiC Ceramic Matrix Composites under a Unique Combustion Facility**R. Panakarajupally*; M. J. Presby¹; J. Zhou²; M. Kannan¹; G. N. Morscher¹; G. G. Chase²

1. The University of Akron, Mechanical Engineering, USA
2. The University of Akron, Chemical Engineering, USA

3:00 PM**Break****3:20 PM****(ICACC-S1-005-2019) Low temperature mechanical properties and oxidation behavior of melt-infiltrated SiC/SiC ceramic matrix composites**K. Detwiler*; J. Pierce²; E. J. Opila¹

1. University of Virginia, Materials Science and Engineering, USA
2. University of Dayton Research Institute, USA

3:40 PM**(ICACC-S1-006-2019) Multi-Physics Computational Modeling of High-Temperature Oxidation Damage in Ceramic Matrix Composites**P. Prabhakar*; V. Damodaran¹

1. University of Wisconsin, Civil and Environmental Engineering, USA

4:00 PM**(ICACC-S1-007-2019) A deformation map for WC**B. J. Currie¹; L. J. Vandeperre¹; S. A. Humphry-Baker*¹

1. Imperial College London, Materials, United Kingdom

4:20 PM**(ICACC-S1-008-2019) Exploration of the Coefficient of Thermal Expansion of Rare Earth Silicates Using Dilatometry and High Temperature X-ray Diffraction**C. G. Parker*; E. J. Opila¹

1. University of Virginia, Materials Science and Engineering, USA

4:40 PM**(ICACC-S1-009-2019) Impact of Irradiation-Induced Point Defects on Fracture Mechanisms in Ceramic Nanocomposites**C. E. Athanasiou*; T. Baba²; C. Ramirez¹; W. Zhang¹; I. Szlufarska¹; B. Sheldon¹

1. Brown University, School of Engineering, USA
2. University of Wisconsin, Department of Materials Science & Engineering, USA

5:00 PM**(ICACC-S1-010-2019) Erosion of a Gas-Turbine Grade Ceramic Matrix Composite: Experimental Characterization and Multi-Scale Modeling**M. J. Presby*; G. N. Morscher¹; C. Godines²; D. Huang²; A. Eftekharian²; F. Abdi²

1. University of Akron, Mechanical Engineering, USA
2. AlphaSTAR Corporation, USA

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications**Environmental Barrier Coatings - Materials, Processing & Properties I**

Room: Tomoka B

Session Chairs: Douglas Wolfe, Pennsylvania State University; Bryan Harder, NASA Glenn Research Center

1:30 PM**In Memoriam: Dr. Dongming Zhu Kang N. Lee****1:40 PM****(ICACC-S2-001-2019) Slurry-Based Environmental Barrier Coatings (Invited)**K. N. Lee*; B. J. Harder¹; J. Setlock²; B. J. Puleo¹

1. NASA Glenn Research Center, Materials, USA
2. University of Toledo, USA

2:00 PM**(ICACC-S2-002-2019) Implications of rapid quenching and chemical composition shift in Plasma Sprayed Yb₂Si₂O₇ Environmental Barrier Coatings**E. Garcia Granados*; H. Lee¹; S. Sampath¹

1. Stony Brook University, Center for Thermal Spray Research, USA

2:20 PM**(ICACC-S2-003-2019) Effect of stress/strain distribution on quantitative measurement of delamination toughness in oxide EBCs on SiC/SiC substrate system**Y. Arai*¹; Y. Aoki²; H. Hatta¹; Y. Kagawa¹

1. Tokyo University of Technology, Japan
2. The University of Tokyo (Currently Kobe steel, Ltd.), Japan

2:40 PM**(ICACC-S2-004-2019) Oxidation Performance of Doped and Undoped Environmental Barrier Coatings Deposited Via Plasma Spray-Physical Vapor Deposition (Invited)**B. J. Harder*¹; K. Lee¹; B. Kowalski¹

1. NASA Glenn Research Center, USA

3:10 PM**Break****3:30 PM****(ICACC-S2-005-2019) Effect of EBC porosity on performance at >1400°C in steam (Invited)**B. A. Pint*¹; S. Sampath²

1. Oak Ridge National Laboratory, Materials Science and Technology, USA
2. Stony Brook University, USA

4:00 PM**(ICACC-S2-006-2019) Chemical Vapor Deposition of Ytterbium Silicate Coatings for SiC Ceramic Matrix Composite**A. Ito*¹; T. Hara¹

1. Yokohama National University, Environment and Information Sciences, Japan

4:20 PM**(ICACC-S2-007-2019) Characteristics of Ytterbium Disilicate-based EBCs Fabricated by Suspension Plasma Spray**S. Kim*¹; Y. Oh¹; S. Lee¹; H. Kim¹; Y. Sohn²; O. Guillon²; R. Vassen²

1. Korea Institute of Ceramic Engineering and Technology (KICET), Engineering Ceramics Center, Republic of Korea
2. Forschungszentrum Juelich, IEK-1, Germany

4:40 PM**(ICACC-S2-008-2019) Phase Transformation of Mixture Ytterbium Silicate / Mullite in the Environmental Barrier Coating**N. Yamazaki*¹; S. Kanazawa¹; K. Kubushiro¹; T. Nakamura¹

1. IHI Corporation, Japan

S3: 16th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology**Progress in SOFC and SOEC Technology**

Room: Crystal

Session Chair: Mihails Kusnezoff, Fraunhofer IKTS

1:30 PM**(ICACC-S3-001-2019) Overview of DOE Office of Fossil Energy's Solid Oxide Fuel Cell Program (Invited)**P. Burke*¹; S. D. Vora¹

1. National Energy Technology Laboratory, U.S. Department of Energy, USA

2:00 PM**(ICACC-S3-002-2019) Recent Achievements and Challenges of SOFC Power Generation Systems (Invited)**Y. Kawabata*¹; Y. Matsuzaki³; K. Sasaki²

1. Tokyo Gas Co., Ltd., Application Technology Research Institute, Japan
2. Kyushu University, Faculty of Engineering, Japan
3. Tokyo Gas Co., Ltd., Fundamental Technology Department, Japan

2:30 PM**(ICACC-S3-003-2019) Solid Oxide Cells Technology Development at Taiwan Institute of Nuclear Energy Research (Invited)**C. Liu*¹; R. Lee¹; Y. Cheng¹; W. Hong¹; S. Wu¹; T. Lin¹; C. Chang²; N. Hsu³

1. Institute of Nuclear Energy Research, Nuclear Fuels and Materials Division, Taiwan
2. Institute of Nuclear Energy Research, Physics Division, Taiwan
3. Institute of Nuclear Energy Research, Chemistry Division, Taiwan

3:00 PM**(ICACC-S3-004-2019) Selection, Characterization, and Validation of Materials for Solid Oxide Electrolysis Operation (Invited)**S. Elangovan*¹; J. Hartvigsen¹; D. Larsen¹; T. Hafen¹; M. Adams¹

1. OxEon Energy, LLC, USA

3:30 PM**Break****SOC Stacks and their Integration in the Systems**

Room: Crystal

Session Chair: Jeffrey Stevenson, Pacific Northwest National Lab

3:50 PM**(ICACC-S3-005-2019) Industrial scale SOFC manufacturing challenges and achievements: The experience of SOLIDpower SpA (Invited)**D. Montinaro*¹

1. SOLIDpower SpA, R&D Materials and Process, Italy

4:20 PM**(ICACC-S3-006-2019) Status of Stack and system development at Sunfire (Invited)**C. Walter*¹; C. Geipel¹; T. Strohbach¹; F. Mittmann¹; O. Poszdiech¹

1. sunfire GmbH, Stacks, Germany

4:50 PM**(ICACC-S3-007-2019) Development and operation of Saint-Gobain's all-ceramic Solid Oxide Fuel Cell Stack**J. Pietras*¹; Y. Takagi¹; B. Feldman¹; S. Megel²; J. Schnetter²; S. Hielscher²

1. Saint-Gobain, USA
2. Fraunhofer IKTS, Germany

S4: Armor Ceramics - Challenges and New Developments**Terminal Ballistics / Quasi-Static and Dynamic Behavior I**

Room: Coquina Salon F

Session Chair: Brady Aydelotte, US Army Research Laboratory

1:20 PM**Welcome and Opening Remarks****1:30 PM****(ICACC-S4-001-2019) Modeling ceramics using different failure mechanisms in compression and tension (Invited)**T. Öst*¹; P. Lundberg¹

1. FOI - Swedish Defence Research Agency, Sweden

2:00 PM**(ICACC-S4-002-2019) Steel Spheres Impact on Alumina Ceramic Tiles: Experiments and Finite Element Simulations**G. Toussaint*¹; I. Polyzois¹

1. Defence Research and Development Canada, Canada

2:20 PM**(ICACC-S4-003-2019) Dynamic Bulking in Advanced Ceramics**B. Koch¹; C. Lo¹; T. Sano²; J. D. Hogan*¹

1. University of Alberta, Edmonton, Mechanical Engineering, Canada
2. US Army Research Laboratory, USA

2:40 PM**(ICACC-S4-004-2019) Dynamic Compression Strength of Ceramics: Preliminary Results from a Round Robin Exercise**J. Swab*¹; G. D. Quinn²

1. Army Research Laboratory, USA
2. National Institute of Standards and Technology, USA

3:00 PM**Break****Terminal Ballistics / Quasi-Static and Dynamic Behavior II**

Room: Coquina Salon F

Session Chairs: Jerry LaSalvia, U.S. Army Research Laboratory; Jonathan Ligda, US Army Research Laboratory

3:20 PM**(ICACC-S4-005-2019) A Comparison of Long Rod Penetration Data with Continuum Scale Simulations (Invited)**B. Aydelotte*¹; J. Niederhaus²

1. US Army Research Laboratory, USA
2. Sandia National Laboratories, USA

3:50 PM**(ICACC-S4-006-2019) Compression Strength Anisotropy of Hot-Pressed Boron Carbide**J. J. Pittari*¹; J. Swab²

1. U.S. Army Research Laboratory, Material Response and Design Branch, USA
2. U.S. Army Research Laboratory, Ceramic and Transparent Materials Branch, USA

4:10 PM**(ICACC-S4-007-2019) Influence of stress states during amorphization of single crystal boron carbide**J. Ligda*¹; J. LaSalvia¹; B. Schuster¹

1. US Army Research Laboratory, USA

4:30 PM**(ICACC-S4-008-2019) Onset Conditions to Induce Amorphization in Doped Boron Carbides in a Diamond Anvil Cell**M. C. Schaefer*¹; R. A. Haber¹; V. Domnich¹

1. Rutgers University, USA

4:50 PM**(ICACC-S4-009-2019) Static and Dynamic Properties of B₄C-BAM Composites**R. A. Riera*¹; M. DeVries¹; G. Subhash¹

1. University of Florida, Mechanical and Aerospace Engineering, USA

5:10 PM**(ICACC-S4-010-2019) Extreme Fast Granular Flow of Boron Carbide by Pressure Shear Plate Impact**X. Sun*¹; A. Tonge²; J. LaSalvia¹; K. Ramesh¹

1. The Johns Hopkins University, Mechanical Engineering, USA
2. US Army Research Laboratory, USA

5:30 PM**(ICACC-S4-011-2019) Aluminum-dodecaboride-, boroncarbide-based and silicon carbide lightweight ceramics**T. Prikhna*²; P. Barvitskiy²; V. Moshchil²; R. A. Haber¹; V. Domnich¹; S. Dub²; M. Karpets²; V. Muratov³

1. The State University of New Jersey, USA
2. Institute for Superhard Materials of the National Academy of Sciences of Ukraine, Ukraine
3. Institute for Problems in Material Science, NAS Ukraine, Ukraine

5:50 PM**(ICACC-S4-012-2019) Failure and Fragmentation Process of Al₂O₃ and SiC under Quasistatic and Impact Loadings**Q. Zhang¹; Y. Zheng¹; F. Zhou*¹

1. Ningbo University, Engineering Mechanics, China

S6: Advanced Materials and Technologies for Direct Thermal Energy Conversion and Rechargeable Energy Storage**Li Batteries I**

Room: Tomoka A

Session Chairs: Palani Balaya, National University of Singapore; Olivier Guillon, Forschungszentrum Juelich

1:30 PM**(ICACC-S6-001-2019) Lithium metal/lithium ion conducting ceramics composite electrode for high energy density batteries (Invited)**N. Imanishi*¹; S. Watanabe¹; S. Taminato¹; D. Mori¹

1. Mie University, Chemistry, Japan

2:00 PM**(ICACC-S6-002-2019) Microscopic Insights into Solid Electrolytes-Electrode Interfaces (Invited)**M. Chi*¹

1. Oak Ridge National Lab, USA

2:30 PM**(ICACC-S6-003-2019) Improved Li- and Na-ion Storage Capacity of Organic Cathodes Based on Surface-Controlled Charge Storage Mechanism (Invited)**B. Lee¹; T. Liu¹; M. J. Lee¹; S. Lee*¹

1. Georgia Institute of Technology, Mechanical Engineering, USA

3:00 PM**Break****Thermoelectrics I**

Room: Tomoka A

Session Chairs: Emmanuel Guilmeau, CNRS CRISMAT; Jon Goldsby, NASA Glenn Research Center

3:20 PM**(ICACC-S6-004-2019) Thermoelectric oxides: An environmentally friendly solution (Invited)**F. Delorme*¹; C. Chen²; F. Giovannelli³

1. University of Sheffield, Department of Materials Science and Engineering, United Kingdom
2. BAM Federal Institute for Materials Research and Testing, Germany
3. University of Tours, France

3:50 PM**(ICACC-S6-005-2019) Tailoring electronic and thermal properties of bulk Cu₂₆M₂(Ge,Sn)₆S₃₂ colusite through defects engineering and functionalization of the conductive network (Invited)**E. Guilmeau*¹

1. CNRS CRISMAT, France

4:20 PM**(ICACC-S6-006-2019) Nanostructuring and defect engineering for enhanced thermoelectric properties in ZnO-based ceramics (Invited)**S. Bernik*¹; A. Rečnik¹; T. Tian²; G. Li²; E. Guilmeau³

1. Jozef Stefan Institute, Department for Nanostructured Materials, Slovenia
2. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
3. Laboratoire CRISMAT, France

4:50 PM**(ICACC-S6-007-2019) High Temperature Thermoelectric Power Studies of Cadmium Substituted Cobalt Ferrite Nanoparticles (Invited)**D. Ravinder*¹

1. Osmania University, Department of Physics, India

5:20 PM**(ICACC-S6-008-2019) Thermal stability of thermoelectric mechanically alloyed ZnSb**C. M. James*¹; M. S. Wickleder¹; W. E. Mueller²

1. University of Cologne, Inorganic Chemistry, Germany
2. DLR - German Aerospace Center, Institute for Material Research, Germany

S8: 13th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT13)

Advanced Sintering Technologies I

Room: Coquina Salon A

Session Chairs: Alexander Mukasyan, University of Notre Dame; Thanh Son Nguyen, Koshiro National College of Technology

1:30 PM**(ICACC-S8-001-2019) Attainment of Low Temperature and High Strain Rate Superplastic Flow in Structural Ceramics by Application of Strong Electric-field (Invited)**H. Yoshida*¹; Y. Sasaki²

1. National Institute for Materials Science (NIMS), Japan
2. Tokyo University of Science, Dept. Materials Science and Technology, Japan

2:00 PM**(ICACC-S8-002-2019) Transparent Er:YAG ceramics with doping gradient processed by SPS (Invited)**M. Lagny¹; A. Katz¹; J. Boehmler¹; Y. Lorgouilloux²; S. Lemonnier¹; S. Bigotta¹; A. L. Leriche*²

1. ISL, France
2. University de Valenciennes, France

2:30 PM**(ICACC-S8-003-2019) Fabrication and Microstructure of B₄C-TiB₂-SiC composites with improved mechanical properties (Invited)**W. Wang*¹; Q. He¹; A. Wang¹; W. Ji¹; Z. Fu¹; H. Wang¹

1. Wuhan University of Technology, China

3:00 PM**Break****3:20 PM****(ICACC-S8-004-2019) Highly Porous Hardystonite Glass-Ceramics by Direct Foaming or Digital Light Processing and Sinter-Crystallization**H. Elsayed¹; M. Picicco²; J. Kraxner³; D. Galusek³; E. Bernardo*¹

1. University of Padova, Department of Industrial Engineering, Italy
2. CETMIC, Argentina
3. FunGlass – Centre for Functional and Surface Functionalized Glass Alexander Dubček University of Trenčín, Slovakia

3:40 PM**(ICACC-S8-005-2019) Processing of Multi-Layered Composite Coatings for Corrosion and Wear Applications**E. Medvedovskij*¹

1. Endurance Technologies Inc., Canada

4:00 PM**(ICACC-S8-006-2019) Reaction products of late-stage oxidation of Zircaloy-4 in nitrogen-rich atmosphere**T. Do*¹; V. Do³; Y. Matsumoto¹; T. Ogawa²; T. Nakayama⁴; H. Suematsu¹

1. Nagaoka University of Technology, Nuclear System Safety Engineering, Japan
2. Japan Atomic Energy Agency, Japan
3. Hitachi-GE Nuclear Energy, Japan
4. Nagaoka University of Technology, Japan

4:20 PM**(ICACC-S8-007-2019) Adaptive Ceramic Processing Via Real-Time Monitoring and Intelligent System Control**J. Hollenbach*¹; M. C. Golt²

1. Drexel University, USA
2. US Army Research Laboratory, USA

4:40 PM**(ICACC-S8-008-2019) Vacuum furnaces for advanced ceramics - Case history**A. Fiorese*¹

1. TAV VACUUM FURNACES SPA, R&D, Italy

5:00 PM**(ICACC-S8-009-2019) Effect of External Electric Field/Current on Grain Growth: A Case Study of Bi₂O₃-doped ZnO**J. Nie*¹; J. Luo¹

1. University of California, San Diego, USA

S11: Advanced Materials and Innovative Processing Ideas for Production Root Technologies

Sustainable Energy Concepts and Applications

Room: Ponce de Leon

Session Chairs: Sungwook Mhin, Korea Institute of Industrial Technology; Hyuksu Han, Korea Institute of Industrial Technology

1:30 PM**(ICACC-S11-001-2019) Amorphous-crystal semiconductor junction: A new class of charge-separating semiconductor system**H. Han*¹; S. Mhin¹; H. Choi²

1. Korea Institute of Industrial Technology, Republic of Korea
2. Universität zu Köln, Germany

1:50 PM**(ICACC-S11-002-2019) Oxygen evolution reaction of Co-Mn-O electrocatalyst**S. Mhin*¹

1. Korea Institute of Industrial Technology, Heat Treatment R&D Group, Republic of Korea

2:10 PM**(ICACC-S11-003-2019) Synthesis of porous geopolymer for hydrogen recombination catalyst supports in wet radioactive waste containers (Invited)**H. Suematsu*¹; T. Utsumi¹; T. Do¹; I. Kudo²; K. Takase³; T. Nakayama¹; T. Ogawa⁴

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
2. Nagaoka University of Technology, Technical Development Center, Japan
3. Nagaoka University of Technology, Department of Nuclear System Safety Engineering, Japan
4. Japan Atomic Energy Agency, Collaborative Laboratories for Advanced Decommissioning Science, Japan

2:30 PM**(ICACC-S11-004-2019) Lithium Recovery from Used Li-ion Batteries by Innovative Electrolysis using a Lithium Ionic Conductor Membrane (Invited)**T. Hoshino*¹

1. National Institutes for Quantum and Radiological Science and Technology (QST), Breeding Functional Materials Development Group, Department of Blanket Systems Research, Rokkasho Fusion Institute, Fusion Energy Research and Development Directorate, Japan

2:50 PM**Break****3:10 PM****(ICACC-S11-005-2019) Intrinsic properties of LaCoO₃ from First-Principles Density Functional Theory Calculations (Invited)**D. Lee*¹

1. Pohang University of Science and Technology(POSTECH), Materials Science and Engineering, Republic of Korea

3:40 PM**(ICACC-S11-006-2019) Economic discovery and processing optimization of commercializable functional materials using quantum mechanical computations**H. Choi*¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

4:00 PM**(ICACC-S11-007-2019) Solvent-deficient method for the sustainable synthesis of advanced functional ceramics (Invited)**S. Zeljkovic²; H. Maruyama¹; J. C. Nino^{*1}

1. University of Florida, MSE, USA
2. University of Banja Luka, Department of Chemistry, Bosnia and Herzegovina

4:30 PM**(ICACC-S11-008-2019) Tape casting porous and textured lead-free piezoelectrics for ultrasound transducers (Invited)**A. B. Haugen^{*1}; K. Andersen¹; N. Van Nong¹; E. Ringgaard²; F. Levassort³

1. Technical University of Denmark, Energy Conversion and Storage, Denmark
2. Meggitt A/S, Denmark
3. University of Tours, GREMAN UMR, France

5:00 PM**(ICACC-S11-009-2019) Single-Source-Precursor Synthesis and Processing of Silicide-Containing Polymer-Derived Ceramic Nanocomposites (Invited)**E. Ionescu^{*1}

1. Technical University Darmstadt, Materials Science, Germany

S12: Advanced MAX/MXene Phases and UHTC Materials for Extreme and High Temperature Environment**Novel Applications and Device Fabrication I**

Room: St. Johns

Session Chairs: Michel Barsoum, Drexel University; Thierry Cabioch, University of Poitiers

1:30 PM**(ICACC-S12-001-2019) Tracking Phase Changes in Cr₂AlC by in-situ Resistivity Measurements (Invited)**B. Stelzer¹; P. Bliem¹; X. Chen¹; J. M. Schneider^{*1}

1. RWTH Aachen University, Materials Chemistry, Germany

2:00 PM**(ICACC-S12-002-2019) Microstructure and surface preparation effects on the oxidation behavior of Ti₃AlC₂ and Ti₂AlC MAX phases (Invited)**V. Gauthier-Brunet^{*1}; E. Drouelle²; B. Levraut¹; J. Cormier¹; P. Villechaise¹; P. Chartier¹; S. Dubois¹; P. Sallot²

1. Institut PPRIME, Physique et Mécanique des Matériaux, France
2. SAFRAN, CRT, France

2:30 PM**(ICACC-S12-003-2019) Breakaway oxidation in wedge-shaped Ti₂AlC MAX phase**Y. Chen^{*1}; Z. Zhan¹; T. Duong¹; A. Talapatra¹; R. Arroyave¹; A. Srivastava¹; M. Radovic¹

1. Texas A&M University, Materials Science & Engineering, USA

2:50 PM**(ICACC-S12-004-2019) Oxidation of Ti₂AlC/Ti-Al composites with Nb or Mo additions**G. A. Hug^{*1}; A. Jankowiak²; S. Mellac¹; K. Piven¹

1. ONERA, LEM, France
2. ONERA, DMAS, France

3:10 PM**Break****Novel Applications and Device Fabrication II**

Room: St. Johns

Session Chairs: Miladin Radovic, Texas A&M University; Gilles Hug, ONERA

3:20 PM**(ICACC-S12-005-2019) Environmental resistance of MAX phases under aggressive working conditions (Invited)**J. Gonzalez-Julian^{*1}; T. Go¹; D. Mack¹; G. Mauer¹; R. Vassen¹

1. Forschungszentrum Juelich, Germany

3:50 PM**(ICACC-S12-006-2019) A description of (211) MAX Phases Electronic Structure based on Rigid Band Models (Invited)**D. Pinek^{*1}; T. Ito²; M. Ikemoto³; T. Ouisse¹

1. Grenoble INP, France
2. Nagoya University, Japan
3. Nagoya University Synchrotron Radiation Research Center, Japan

4:20 PM**(ICACC-S12-007-2019) Compatibility of Zr₂AlC MAX Phase with Liquid Lead-Bismuth Eutectic (LBE) and Lead (Pb)**B. Tunca Altintas^{*1}; T. Lapauw²; R. Delville¹; J. Hadermann³; A. Marshal⁴; K. Pradeep⁵; J. M. Schneider⁶; E. Caspi¹; J. Vleugels¹; K. Lambrinou¹

1. SCK-CEN, Nuclear Materials Science Institute, Belgium
2. KU Leuven, Materials Engineering, Belgium
3. University of Antwerp, Department of Physics, Belgium
4. RWTH Aachen University, Materials Chemistry, Germany
5. Indian Institute of Technology, India
6. Nuclear Research Centre-Negev, Physics Department, Israel

4:40 PM**(ICACC-S12-008-2019) Compatibility of candidate MAX phase coating materials for accident-tolerant fuel clads with water and high-temperature steam**K. Van Loo^{*1}; C. Bail¹; R. Bosch²; M. Grosse²; J. Vleugels¹; K. Lambrinou³

1. KULeuven, Department of Materials Engineering, Belgium
2. Karlsruhe Institute of Technology, Germany
3. Nuclear Materials Science Institute, SCK-CEN, Belgium

5:00 PM**(ICACC-S12-009-2019) Thermal expansion of MAX phases solid solutions**T. Cabioch^{*1}; P. Chartier¹; B. Tunca²; J. Vleugels²; K. Lambrinou³

1. University of Poitiers, France
2. KULeuven, Belgium
3. SCK-CEN, Belgium

5:20 PM**(ICACC-S12-010-2019) High temperature water vapor oxidation of Cr₂AlC coatings on Zircoloy-4 claddings for Accident tolerant fuels (ATFs)**Y. Lei^{*1}; J. Zhang¹; J. M. Schneider²; J. Wang¹

1. Institute of Metal Research, Chinese Academy of Sciences, High-performance Ceramics Division, China
2. RWTH Aachen University, Materials Chemistry, Germany

5:40 PM**(ICACC-S12-011-2019) Microwave Absorption Study of SrFe₁₂O₁₉/Ti₃SiC₂ Nanocomposites**A. Garg^{*1}; N. Kumari²; S. Tyagi¹

1. Central Scientific Instruments Organisation, Chandigarh, India, Ubiquitous Analytical Techniques, India
2. Central Scientific Instruments Organisation, Chandigarh, Thin Film Division, India

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems

Ceramic Fuel Materials, Technologies, and Characterization

Room: Coquina Salon H

Session Chair: Yutai Katoh, Oak Ridge National Laboratory

1:30 PM

(ICACC-S13-001-2019) UCO TRISO Fuel Particle Performance Demonstration (Invited)

P. A. Demkowicz*¹

1. Idaho National Laboratory, USA

2:00 PM

(ICACC-S13-002-2019) Characterization of TRISO fuel particles with modified multilayered SiC shells

R. Seibert*¹; M. Balooch²; D. Schappel³; B. Jolly¹; K. Terrani¹

1. Oak Ridge National Laboratory, USA
2. University of California, Berkeley, USA
3. University of Tennessee, USA

2:20 PM

(ICACC-S13-003-2019) Spark plasma sintering of ceramic nuclear fuels from sol-gel feedstock

A. M. Raftery*¹; J. W. McMurray¹; M. Trammell¹; K. Terrani¹

1. Oak Ridge National Laboratory, USA

2:40 PM

(ICACC-S13-004-2019) Demonstration of Fuel as Fiber LCVD Concept Using Uranium Disilicide

S. Harrison*¹; J. Pegna¹; J. L. Schneider¹; K. L. Williams¹; R. K. Goduguchinta¹; E. G. Vaaler¹

1. Free Form Fibers, USA

3:00 PM

Break

Novel Ceramics and Composites for Nuclear Systems I

Room: Coquina Salon H

Session Chair: Paul Demkowicz, Idaho National Lab

3:20 PM

(ICACC-S13-005-2019) New Silicon Carbide Matrix Compositions for Fully Ceramic Microencapsulated Fuels

Y. Kim*¹; Y. Kim¹; S. Lee²; K. Lim²

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea
2. KEPCO Nuclear Fuel, Materials Development Group, Republic of Korea

3:40 PM

(ICACC-S13-006-2019) Multiphysics modeling of SPS based manufacturing of SiC-matrix FCM pellet

G. Singh*¹; C. K. Ang¹; Y. Katoh¹; L. Snead²

1. University of Tennessee, USA
2. Stony Brook University, USA

4:00 PM

(ICACC-S13-007-2019) Consolidation mechanism of SiC matrix hosting nuclear fuel kernels

C. K. Ang*¹; Y. Katoh¹; G. Singh¹; L. Snead²

1. University of Tennessee, Nuclear Engineering, USA
2. Stony Brook University, Old Engineering Bldg, USA

4:20 PM

(ICACC-S13-008-2019) Cold sintering of iodate-substituted calcium hydroxyapatite (IO-HAp)

M. ul Hassan*¹; H. Ryu¹

1. Korea Advanced Institute of Science and Technology (KAIST), NQE-NFML, Republic of Korea

4:40 PM

(ICACC-S13-009-2019) Sintering of YH₂ for nuclear reactor moderator applications

A. P. Shivprasad*¹; J. T. White¹; T. A. Saleh¹; J. R. Wermer²; D. Rao³

1. Los Alamos National Lab, Materials Science and Technology, USA
2. Los Alamos National Lab, Sigma Division, USA
3. Los Alamos National Lab, Civilian Nuclear Programs, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications

Optical Materials I

Room: Tomoka C

Session Chairs: Kenji Toda, Niigata University; Romain Gaume, University of Central Florida

1:30 PM

(ICACC-S14-001-2019) Correlation between variation of network and luminescence properties of glasses (Invited)

H. Masai*¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Department of Materials and Chemistry, Japan

1:50 PM

(ICACC-S14-002-2019) Sintered Glass Ceramics for High-Power White-Light-Emitting Diodes

A. Longato¹; S. Picco¹; M. Buffolo²; N. Trivellin²; C. De Santi²; L. Borgato²; M. Meneghini²; A. Martucci*¹

1. University of Padova, Industrial Engineering, Italy
2. University of Padova, Information Engineering, Italy

2:10 PM

(ICACC-S14-003-2019) Design of novel phosphors with narrow f-f emission by band-gap engineering

Y. Sato*¹; J. Odahara¹; T. Iwamoto¹; Y. Iwashita¹; M. Kakihana²

1. Okayama University of Science, Department of Chemistry, Japan
2. Tohoku University, Institute of Multidisciplinary Research for Advanced Materials, Japan

2:30 PM

(ICACC-S14-004-2019) Preparation of Transparent MgAl₂O₄ Ceramics for LED Applications

Z. Lences*¹; M. Radwan¹; P. Sajgalik¹

1. Institute of Inorganic Chemistry, Slovak Academy of Sciences, Ceramics Department, Slovakia

2:50 PM

(ICACC-S14-005-2019) Polycrystalline transparent ceramics fabrication by a combination of Spark Plasma Sintering (SPS) and Hot Isostatic Pressing (HIP) processes

S. Cohen*¹; B. Ratzker¹; M. Sokol²; S. Kalabukhov¹; N. Frage¹

1. Ben-Gurion University of the Negev, Materials Engineering, Israel
2. Drexel University, Materials science&engineering, USA

3:10 PM

Break

3:20 PM

(ICACC-S14-006-2019) Fabrication of transparent magneto-optical YIG ceramics

C. French¹; M. Julian¹; A. Schülzgen*¹; R. M. Gaume¹

1. University of Central Florida, CREOL, USA

3:40 PM

(ICACC-S14-007-2019) Investigation of storage luminescent materials for radiation detectors (Invited)

T. Yanagida*¹; N. Kawaguchi¹

1. Nara Institute of Science and Technology, Japan

4:10 PM**(ICACC-S14-008-2019) Analysis of the relaxation processes of excited states in self-activated scintillators using transient absorption spectroscopy (Invited)**M. Koshimizu^{*1}; Y. Muroya²; S. Yamashita³; H. Yamamoto⁴; T. Yanagida⁵; Y. Fujimoto¹; K. Asai¹

1. Tohoku University, Department of Applied Chemistry, Japan
2. Osaka University, Japan
3. The University of Tokyo, Japan
4. National Institutes for Quantum and Radiological Science and Technology, Japan
5. Nara Institute of Science and Technology, Japan

4:40 PM**(ICACC-S14-009-2019) Synthesis and Properties of Gd₃(Ga,Al)₅O₁₂:Ce Transparent Ceramics**Y. Wang^{*1}; J. Glodo¹; U. Shirwadkar¹; C. Brecher¹; D. Chartier¹; N. Cicchetti¹; K. Shah¹

1. Radiation Monitoring Devices, Inc., Research, USA

5:00 PM**(ICACC-S14-010-2019) Borate glass scintillators for charged-particle detection (Invited)**N. Kawaguchi^{*1}; T. Kato¹; G. Okada¹; Y. Fujimoto²; T. Yanagida¹

1. Nara Institute of Science and Technology, Graduate School of Materials Science, Japan
2. Tohoku University, Japan

5:20 PM**(ICACC-S14-011-2019) Effects of Gd³⁺ doping on luminescence properties of (Gd,Ce):SrF₂ nanopowders and transparent ceramics**I. Milisavljevic^{*1}; Y. Wu¹

1. Alfred University, Materials Science, USA

S15: 3rd International Symposium on Additive Manufacturing and 3-D Printing Technologies**Stereolithography I**

Room: Coquina Salon B

Session Chair: Soshu Kirihaara, Osaka University

1:30 PM**(ICACC-S15-001-2019) New applications of hybrid ceramic multi-materials and smart design (Invited)**R. Gaignon^{*1}

1. CEO, France

2:00 PM**(ICACC-S15-002-2019) Multi-ceramic additive manufacturing based on novel digital light processing technology (Invited)**H. Yun^{*1}

1. Korea Institute of Materials Science, Engineering Ceramics Department, Republic of Korea

2:30 PM**(ICACC-S15-003-2019) Establishment of Stereolithographic Additive Manufacturing for Fine Ceramic Production (Invited)**T. Houki^{*1}; Y. Fujii²; S. Kirihaara³

1. SHASHIN-KAGAKU Co., Ltd., Development, Japan
2. SK FINE Co., Ltd., President, Japan
3. Osaka University, Joining and Welding Research Institute, Japan

3:00 PM**Break****Stereolithography II**

Room: Coquina Salon B

Session Chair: Hui-suk Yun, Korea Institute of Materials Science

3:20 PM**(ICACC-S15-004-2019) Lithographic additive manufacturing of silicon carbide ceramics**M. Schwentenwein^{*1}; A. Altun¹; J. Homa¹

1. Lithoz GmbH, Austria

3:40 PM**(ICACC-S15-005-2019) Lithography based additive manufacturing of Mg stabilized zirconia**E. Adolfsson^{*1}; E. Johansson¹; G. Llanos¹

1. Swerea IVF AB, Sweden

4:00 PM**(ICACC-S15-006-2019) 3D printing of complex alumina components by DLP: A comparison between 'bottom-up' and 'top-down' approaches utilizing the same slurry and light source**O. Santoliquido^{*1}; G. Bianchi¹; A. Ortona¹

1. SUPSI, MEMTI, Switzerland

4:20 PM**(ICACC-S15-007-2019) DLP Stereolithography of Zirconia Dental Restorations**E. Willems^{*1}; F. Zhang¹; B. Van Meerbeek²; J. Vleugels¹

1. KULeuven, Department of Materials Engineering, Belgium
2. KULeuven, Department of Oral Health Sciences, BIOMAT and UZ Leuven, Dentistry, Belgium

Stereolithography III

Room: Coquina Salon B

Session Chair: Martin Schwentenwein, Lithoz GmbH

4:40 PM**(ICACC-S15-008-2019) Ceramic components additively manufactured by vat photo polymerization**U. Scheithauer^{*1}; E. Schwarzer¹; T. Moritz¹; H. Klemm¹; A. Michaelis¹

1. Fraunhofer IKTS, Shaping, Germany

5:00 PM**(ICACC-S15-009-2019) Additive Manufacturing of Polymer-Derived Ceramic Composites**T. Schaedler^{*1}; K. A. Porter¹; P. P. Bui¹; M. R. O'Masta¹; J. M. Hundley¹; Z. C. Eckel¹

1. HRL Laboratories, USA

5:20 PM**(ICACC-S15-010-2019) 3D Printing of ceramic-based porous structures using stereolithography**A. Dieraert^{*1}; C. Sanchez²; P. Belleville¹

1. CEA, Le Ripault, France
2. Université Pierre et Marie Curie (Paris VI), Collège de France, Chimie de la Matière Condensée de Paris, France

5:40 PM**(ICACC-S15-011-2019) Polymer-derived SiC-SiOC ceramic matrix composites fabricated via stereolithography 3D printing**S. A. Brinckmann^{*1}; J. Yao¹; R. S. Fertig¹; C. Frick¹

1. University of Wyoming, Mechanical Engineering, USA

S17: Advanced Ceramic Materials and Processing for Photonics and Energy**Advanced Nanostructured Materials for Photovoltaics and Solar Fuels I**

Room: Halifax A/B

Session Chairs: Haiguang Zhao, Qingdao University; Rafik Naccache, Concordia University; Alberto Vomiero, Lulea University of Technology

1:30 PM**(ICACC-S17-001-2019) 2-D oxides optimized for energy storage and sensing: Key roles of surfaces and defects (Invited)**S. T. Mixture^{*1}

1. Alfred University, MSE, USA

2:00 PM**(ICACC-S17-002-2019) Plasmonics of 2D molybdenum sulfides and oxides (Invited)**K. Kalantar-zadeh*¹; J. Ou²

1. University of New South Wales (UNSW), School of Chemistry, Australia
2. RMIT University, School of Engineering, Australia

2:30 PM**(ICACC-S17-003-2019) Hollow Multi-shelled Structures: Synthesis and Applications (Invited)**D. Wang*¹

1. Institute of Process Engineering/CAS, State Key Laboratory of Biochemical Engineering, China

3:00 PM**Break****3:20 PM****(ICACC-S17-004-2019) Optical Gas Sensors Based on Localised Surface Plasmon Resonance (Invited)**A. Martucci*¹

1. University of Padova, Industrial Engineering, Italy

3:50 PM**(ICACC-S17-005-2019) Halide/oxide perovskites for efficient hybrid optoelectronic devices (Invited)**R. Nechache*¹

1. Ecole de technologie Supérieure, Electrical Engineering, Canada

4:20 PM**(ICACC-S17-006-2019) Carbon dots as hybrid hole-transporting material and downshifting layer for highly efficient and stable inverted perovskite solar cells**D. Benetti*¹; E. Jokar²; H. Zhao³; A. Vomiero⁴; E. Diau²; F. Rosei¹

1. Institut National de la Recherche Scientifique, Énergie Matériaux Télécommunications, Canada
2. National Chiao Tung University, Department of Applied Chemistry, Taiwan
3. Qingdao University, College of physics, China
4. Lulea University of Technology, Engineering Sciences & Mathematics, Sweden

4:40 PM**(ICACC-S17-007-2019) Energy related devices based on bismuth ferrite (BFO) nanomaterial**S. S. Bouzidi*¹; P. Fourmont¹; S. G. Cloutier¹; R. Nechache¹

1. Ecole de technologie supérieure, Génie électrique, Canada

FS3: Chemically Processing of Functional Materials: Understanding the Conversion of Molecular Structures to Solid-State Compounds**Precursor Chemistry and Applications**

Room: Coquina Salon C

Session Chairs: Sanjay Mathur, University of Cologne; Emanuel Ionescu, Technical University Darmstadt

1:30 PM**(ICACC-FS3-001-2019) Energy Landscapes and Thermodynamic Control of Synthesis Pathways in Complex Ceramics (Invited)**A. Navrotsky*¹

1. University of California, Davis, Peter A. Rock Thermolab and NEAT ORU, USA

2:00 PM**(ICACC-FS3-002-2019) Block Copolymer Directed Advanced Ceramics and Composites (Invited)**U. Wiesner*¹

1. Cornell University, Materials Science and Engineering, USA

2:30 PM**(ICACC-FS3-003-2019) Hybrid Halide Perovskites: New Optical Materials for Energy Conversion Devices (Invited)**J. Vela*¹

1. Iowa State University, Department of Chemistry, USA

2:50 PM**(ICACC-FS3-004-2019) Chemically Engineered Functional Nanostructures for Energy and Health Applications (Invited)**S. Mathur*¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

3:10 PM**Break****Solution Processing and Rare Earth Materials**

Room: Coquina Salon C

Session Chairs: Javier Vela, Iowa State University; Uli Wiesner, Cornell University

3:30 PM**(ICACC-FS3-005-2019) Upconversion Nanoparticles in Nanobiomedicine (Invited)**J. A. Capobianco*¹

1. Concordia University, Chemistry and Biochemistry, Canada

4:00 PM**(ICACC-FS3-006-2019) Chemical formation and PL properties of β -SiAlON:Eu²⁺ phosphors derived from single source precursors (Invited)**D. Hamana¹; J. Iihama¹; J. Duclère²; T. Asaka¹; Y. Daiko¹; S. Honda¹; S. Bernard²; T. Hayakawa¹; Y. Iwamoto*¹

1. Nagoya Institute of Technology, Japan
2. Univ. Limoges, CNRS, IRCER, France

4:20 PM**(ICACC-FS3-007-2019) Low valent uranium: Perspectives of a forgotten element (Invited)**M. S. Wickleder*¹

1. University of Cologne, Department of Chemistry, Germany

4:40 PM**(ICACC-FS3-008-2019) Chemical Processing of Nanostructured Uranium Oxides- Investigations on Structural and Electronic Properties**J. Leduc*¹; M. Frank¹; T. Fischer¹; S. Mathur¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

5:00 PM**(ICACC-FS3-009-2019) Sol-gel rare-earth-doped glasses and glass-ceramic materials for optical applications (Invited)**F. Enrichi*¹

1. Centro Studi e Ricerche E. Fermi (Italy) and Luleå University of Technology (Sweden), Italy

5:20 PM**(ICACC-FS3-010-2019) Dinuclear lanthanide complexes as multifunctional magneto-optical systems**R. Marin*¹; M. Murugesu¹; E. Hemmer¹

1. University of Ottawa, Department of Chemistry and Biomolecular Sciences, Canada

Tuesday, January 29, 2019

40th Anniversary Richard M. Fulrath Award Symposium on Frontiers of Ceramics for Sustainable Society

Fulrath Session I

Room: Coquina Salon E

Session Chairs: Mrityunjay Singh, Ohio Aerospace Institute; Yoshihiko Imanaka, Fujitsu Laboratories Ltd.

8:30 AM

Opening Remarks

8:40 AM

(ICACC-FUL-001-2019) The Unprecedented Promise of Perovskite Solar Cells for Cheap, Efficient and Clean Energy for a Sustainable Future (Invited)

N. P. Padture*¹

1. Brown University, School of Engineering, USA

9:10 AM

(ICACC-FUL-002-2019) A new ceramic capacitor for energy storage (Invited)

T. Tsurumi*¹

1. Tokyo Institute of Technology, Japan

9:40 AM

(ICACC-FUL-003-2019) Hydrogen-selective Si-based inorganic-organic hybrid membranes for solar hydrogen production via photoelectrochemical water-splitting (Invited)

Y. Iwamoto*¹

1. Nagoya Institute of Technology, Japan

10:00 AM

Break

10:20 AM

(ICACC-FUL-004-2019) The photochemical reactivity of Polar surface domains on non-polar surfaces (Invited)

G. Rohrer*¹

1. Carnegie Mellon University, USA

10:50 AM

(ICACC-FUL-005-2019) Growth and characterization of novel single crystals for electro-optical applications (Invited)

K. Shimamura*¹; V. Garcia¹

1. National Institute for Materials Science, Japan

11:10 AM

(ICACC-FUL-006-2019) Development of Glass-Based Solid Electrolyte for All-Solid-State Lithium and Sodium Batteries (Invited)

A. Hayashi*¹

1. Osaka Prefecture University, Department of Applied Chemistry, Japan

11:30 AM

(ICACC-FUL-007-2019) Additive Manufacturing for Aerospace Applications (Invited)

M. C. Halbig*¹; M. Singh²

1. NASA Glenn Research Center, USA
2. Ohio Aerospace Institute, USA

11:50 AM

(ICACC-FUL-008-2019) Effect of synthesis routes on the enhancement in conductivity of cathode material PrBaCo₂O_{6-δ}: SSR vs ACR (Invited)

P. Singh*¹

1. Indian Institute of Technology(BHU), Department of Physics, India

Fulrath Session II

Room: Coquina Salon E

Session Chairs: Gregory Rohrer, Carnegie Mellon University; Takaaki Tsurumi, Tokyo Institute of Technology

1:30 PM

(ICACC-FUL-009-2019) Seeing the Invisible: Dynamic Interfacial Phenomena in Energy Materials (Invited)

V. P. Dravid*¹

1. Northwestern University, Materials Science and Engineering, USA

2:00 PM

(ICACC-FUL-010-2019) Why Soft Processing(=Low-Energy Production) of Advanced Materials is Difficult but Necessary for Sustainable Society? (Invited)

M. Yoshimura*¹

1. National Cheng Kung University, Mater. Sci. & Eng., Taiwan

2:20 PM

(ICACC-FUL-011-2019) State of Play in the Developing Story of Cold Sintering (Invited)

C. Randall*¹; X. Zhao¹; J. Guo¹; K. Wang¹; T. H. de Beauvoir¹; B. Li¹; A. Ndayishimiye¹; J. Seo¹

1. Pennsylvania State University, Materials Science and Engineering, USA

2:40 PM

(ICACC-FUL-012-2019) Solvothermal Synthesis of Barium Titanate Nanocubes and Their Assembly (Invited)

S. Wada*¹

1. University of Yamanashi, Material Science and Technology, Japan

3:00 PM

Break

3:20 PM

(ICACC-FUL-013-2019) Ceramics to metal joining for next generation power deviecs (Invited)

K. Suganuma*¹

1. Osaka University, Japan

3:50 PM

(ICACC-FUL-014-2019) Engineered Refractory Ceramic Materials for Energy and Environmental Efficiency (Invited)

J. G. Hemrick*¹

1. Reno Refractories, Inc., Research and Development, USA

4:10 PM

(ICACC-FUL-015-2019) Femtosecond laser-fabricated three-dimensional structures for medical applications (Invited)

R. Narayan*¹

1. NC State University, USA

4:30 PM

(ICACC-FUL-016-2019) Epsilon-WO₃: Ferroelectric Poling and Ferro-Chromic Effects (Invited)

P. Kouma*¹

1. The Ohio State University, MSE, USA

4:50 PM

(ICACC-FUL-017-2019) 3D printing of Ceramics for biomedical applications: Opportunities and challenges (Invited)

S. Bose*¹

1. Washington State University, Department of Chemistry, USA

5:10 PM

(ICACC-FUL-018-2019) Development of Low Thermal Cordierite Porcelain Cook wares (Invited)

L. K. Sharma*¹

1. CSIR-Central Glass & Ceramic Research institute, India

8th Global Young Investigator Forum**Frontiers in Ceramic Materials: Advances and Challenges in Novel Materials Design, Synthesis, Performance, and Reliability II**

Room: Coquina Salon G

Session Chair: Ryan Paul, GrafTech International Holdings Inc.

8:30 AM**(ICACC-GYIF-010-2019) Eu/Y:Al₂O₃ films and powders from alkoxide precursors**M. Ek*¹; G. Westin¹

1. Uppsala University, Chemistry Ångström, Sweden

8:50 AM**(ICACC-GYIF-011-2019) Modelling and design of Thermal protection system for hypersonic space vehicles using UHTC**C. Zuccarini*¹

1. Kingston University London, Mechanical and Aerospace Engineering, United Kingdom

9:10 AM**(ICACC-GYIF-012-2019) Electrolytic deposition of protective coating for solid oxide fuel cell interconnects**M. K. King*¹; M. Mahapatra¹

1. University of Alabama at Birmingham, Materials Science and Engineering, USA

9:30 AM**(ICACC-GYIF-013-2019) Nowotny Phase Mo_{4.8}Si₃C_{0.6} Dispersed in a Porous SiC/C Nanocomposite Matrix: A Novel Catalyst for Electrochemical Water Splitting (Invited)**Z. Yu*¹

1. Xiamen University, China

10:00 AM**Break****Novel Characterization Tools and Methods of Ceramics and Composites**

Room: Coquina Salon G

Session Chair: Matthew Appleby, The University of Akron

10:20 AM**(ICACC-GYIF-014-2019) Molecular Design and External Magnetic Field Effects on Structure Formation in Chemical Vapor Deposition**D. Stadler*¹; T. Brede²; D. Bialuschewski¹; A. Moellmann¹; T. Fischer¹; C. A. Volkert²; S. Mathur¹1. University of Cologne, Institute of Inorganic Chemistry, Germany
2. Georg-August-University, Institute of Materials Physics, Germany**10:40 AM****(ICACC-GYIF-015-2019) Determination of intrinsic strength of carbon fibers (Invited)**Y. Sugimoto*¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

11:10 AM**(ICACC-GYIF-016-2019) Synthesis and Characterization of Novel PEEK-MAX Composites**S. Javaid*¹; M. Dey¹; N. Kaabouch²; S. Gupta¹1. University of North Dakota, Mechanical Engineering, USA
2. University of North Dakota, EE, USA**Careers in Science, Technology, Engineering and Mathematics (STEM)**

Room: Coquina Salon G

Session Chair: Matthew Appleby, The University of Akron

11:30 AM**(ICACC-GYIF-017-2019) Navigating from PhD to Industry: Some Best Practices (Invited)**R. M. Paul*¹

1. GrafTech International Holdings Inc., Technology, USA

Ceramic Hybrid Materials and Composites for Aerospace, Armor, Biomedical, Electronics, Sensors and Actuators, Energy Conversion and Storage, Photo-catalysis, and Environmental Applications I

Room: Coquina Salon G

Session Chair: Daniele Benetti, Institut National de la Recherche Scientifique

1:30 PM**(ICACC-GYIF-018-2019) Advancing Development of Environmental Barrier Coatings Resistant to Attack by Molten Calcium-Magnesium-Aluminosilicate (CMAS) (Invited)**V. L. Wiesner*¹; B. J. Harder¹; A. Garg¹; N. P. Bansal¹

1. NASA Glenn Research Center, Materials and Structures Division, USA

2:00 PM**(ICACC-GYIF-019-2019) The emerging roles of carbon dots in solar energy devices**D. Benetti*¹; Y. Zhou¹; H. Zhao³; A. Vomiero²; F. Rosei¹1. INRS, EMT, Canada
2. Luleå University of Technology, Sweden
3. Qingdao University, College of Physics, China**2:20 PM****(ICACC-GYIF-020-2019) Development of regenerative catalyst containing spinel oxide for reforming hydrocarbons**S. Yamaguchi*¹; T. Ozaki¹; T. Suyama¹

1. Osaka Research Institute of Industrial Science and Technology, Applied Material Chemistry, Japan

2:40 PM**(ICACC-GYIF-021-2019) Freestanding Nitrogen Doped d-Ti₃C₂/GO Films for High Performance Supercapacitors**W. Zheng*¹; L. Yang¹; P. Zhang¹; J. Chen¹; W. Zhang¹; W. Tian¹; Y. Zhang¹; Z. Sun¹

1. Southeast University, School of Materials Science and Engineering, China

3:00 PM**Break****Ceramic Hybrid Materials and Composites for Aerospace, Armor, Biomedical, Electronics, Sensors and Actuators, Energy Conversion and Storage, Photo-catalysis, and Environmental Applications II**

Room: Coquina Salon G

Session Chairs: Daniele Benetti, Institut National de la Recherche Scientifique; Valerie Wiesner, NASA Glenn Research Center

3:20 PM**(ICACC-GYIF-022-2019) In situ grown metal nanoparticle catalysts: Properties and control (Invited)**T. Oh*¹

1. Auburn University, USA

3:50 PM**(ICACC-GYIF-023-2019) Graphene-like clay hybrid materials for environmental and energy applications (Invited)**C. Ouellet-Plamondon*; P. Nguyen-Tri¹; K. Jhimi¹

1. ÉTS, Construction, Canada

4:20 PM**(ICACC-GYIF-024-2019) Nd³⁺ doped single band nanothermometry and its integration within decoupled theranostics**A. Skripka*; T. Cheng¹; A. Morinvil¹; G. Jarockyte²; V. Karabanovas²; R. Rotomskis²; F. Vetrone¹

1. Institut National de la Recherche Scientifique, Canada
2. National Cancer Institute, Lithuania

4:40 PM**(ICACC-GYIF-025-2019) Novel Methods for Designing Carbonate Ceramics**M. Ahmann*; M. Alshaya¹; A. Miles¹; A. Minhas¹; M. Abdulrahman¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

5:00 PM**(ICACC-GYIF-026-2019) In-Situ Phase Diagram Determination of the HfO₂-Ta₂O₅ Binary Up to 3000 °C**S. J. McCormack*; K. Tseng¹; R. Weber²; S. Ushakov²; D. Kapush³; A. Navrotsky²; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
2. Materials Development, Inc., USA
3. University of California, Davis, Peter A. Rock Thermochemistry Laboratory and NEAT-ORU, USA

FS3: Chemically Processing of Functional Materials: Understanding the Conversion of Molecular Structures to Solid-State Compounds**Photocatalysis and Photovoltaics**

Room: Coquina Salon C

Session Chairs: Graziella Malandrino, Università degli Studi di Catania; Mats Boman, Institute of Chemistry - Angstrom

8:30 AM**(ICACC-FS3-011-2019) Stability Enhancement in Perovskite Solar Cells with Functional Nanocomposites (Invited)**Y. Hahn*¹

1. Chonbuk National University, School of Semiconductor and Chemical Engineering, Nanomaterials Processing Research Center, Republic of Korea

8:50 AM**(ICACC-FS3-012-2019) Functional Applications ZnO Tetrapod Nanomaterials made by Flame Transport Synthesis (Invited)**Y. K. Mishra*; L. Siebert¹; F. Schütt¹; F. Ceynowa¹; M. Mintken¹; S. Shree¹; I. Paulowicz¹; O. Lupan¹; S. Kaps¹; R. Adelung¹

1. Kiel University, Institute for Materials Science, Germany

9:10 AM**(ICACC-FS3-013-2019) The role of gold clusters on electron transfer reactions for hydrogen production over rutile TiO₂(110) single crystal (Invited)**K. Katsiev¹; G. Thornton¹; G. T. Harrison³; H. Idriss*²

1. University College London (UCL), Center for Nanotechnology, United Kingdom
2. King Abdullah University of Science and Technology (KAUST), SABIC Corporate R&D, Saudi Arabia
3. King Abdullah University of Science and Technology (KAUST), KAUST Solar Center, Saudi Arabia

9:40 AM**(ICACC-FS3-014-2019) Solution-processing of nanostructured materials for solar energy conversion (Invited)**J. Wu*¹

1. National Cheng Kung University, Department of Chemical Engineering, Taiwan

10:00 AM**Break****Molecular Precursor Approaches for Vapor-phase Synthesis (ALD, CVD) of Materials**

Room: Coquina Salon C

Session Chairs: Hicham Idriss, SABIC; Yogendra Mishra, Kiel University

10:20 AM**(ICACC-FS3-015-2019) Synthesis of functional hard materials by homogeneous and heterogeneous decomposition of molecular precursors (Invited)**M. Boman*; L. von Fieandt¹; M. Halvarsson²; H. Larsson³; T. Larsson⁵; O. Bäcke²; A. Forslund*³

1. Sandvik Coromant AB, Sweden
2. Chalmers University of Technology, Sweden
3. Royal Institute of Technology, Sweden
4. Uppsala University, Dep. of Chemistry Angstrom, Sweden
5. Seco Tools AB, Sweden

10:50 AM**(ICACC-FS3-016-2019) Crystalline metal-organic thin films by ALD/MLD: fundamentals and potential applications (Invited)**M. Karppinen*¹

1. Aalto University, Finland

11:10 AM**(ICACC-FS3-017-2019) Atomic Layer Deposition of Functional Complex Oxides - A Necessary Challenge (Invited)**H. H. Sønsteby*¹

1. University of Oslo, Department of Chemistry, Norway

11:30 AM**(ICACC-FS3-018-2019) Full vapor phase MOCVD/MLD approach to hybrid metalorganic-inorganic systems (Invited)**A. Pellegrino¹; G. G. Condorelli¹; A. Speghini¹; G. Malandrino*¹

1. Università degli Studi di Catania, Dipartimento Scienze Chimiche, Italy
2. Università degli Studi di Catania, Dipartimento di Biotecnologie, Italy

11:50 AM**(ICACC-FS3-019-2019) Consolidation of diamond powders with CVD-coated ceramic layers**H. Katsui*¹; T. Goto²; N. Kondo¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Structural Materials Research Institute, Japan
2. Tohoku University, New Industry Creation Hatchery Center, Japan

Gas Phase Depositions and In-Situ Characterization

Room: Coquina Salon C

Session Chairs: Samuel Bernard, CNRS IRCER; Ravi Kumar, IIT BHU

1:30 PM**(ICACC-FS3-020-2019) 3D nanoarchitectures for energy technologies and bio-medical sensing - enhancing functionality through correlative microscopy (Invited)**S. Christiansen*¹

1. Helmholtz Center for Materials and Energy, HZB, Germany

2:00 PM**(ICACC-FS3-021-2019) In-situ and in-operando characterization in CVD processes (Invited)**T. Fischer*¹; S. Mathur¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

2:20 PM**(ICACC-FS3-022-2019) X-ray based in situ studies of the ALD growth and thermal stability of Pt nanoparticles (Invited)**E. Solano*²; R. K. Ramachandran¹; M. Minjauw¹; G. Portale⁵; D. Hermida-Merino⁴; A. Coati¹; C. Detavernier¹; J. Dendooven¹

1. Ghent University, Solid State Sciences, Belgium
2. ALBA Synchrotron Light Source, SWEET-NCD beamline, Spain
3. Synchrotron SOLEIL, SixS beamline, France
4. ESRF European Synchrotron, DUBBLE beamline, France
5. University of Groningen, Macromolecular Chemistry & New Polymeric Materials, Netherlands

2:40 PM**(ICACC-FS3-023-2019) High Activity Heterogeneous Catalysts by Plasma-assisted Chemical Vapor Deposition of Volatile Palladium Complexes on Biomorphic Carbon**M. Frank*¹; L. Czypiel¹; T. Fischer¹; S. Mathur¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

3:00 PM**Break****Solution Processing and Photocatalysts**

Room: Coquina Salon C

Session Chairs: Silke Christiansen, Helmholtz-Zentrum für Materialien und Energie Berlin (HZB); Thomas Fischer, University of Cologne

3:20 PM**(ICACC-FS3-024-2019) Crosslinking chemistry of liquid preceramic polymers toward processable precursors of functional Si-based carbides, carbonitrides and nitrides (Invited)**D. Lopez-Ferber¹; A. Lale¹; M. Schmidt¹; M. Wynn¹; S. Bernard*¹

1. CNRS IRCER, France

3:50 PM**(ICACC-FS3-025-2019) Highly porous TiNb₂O₇/carbon microtube composites as a novel anode material for lithium-ion batteries**R. Kumar*¹

1. Indian Institute of Technology-Madras (IIT Madras), Department of Metallurgical and Materials Engineering, India

4:10 PM**(ICACC-FS3-026-2019) DFT-guided design of heterojunctioned photocatalysts (Invited)**H. Choi*¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

4:30 PM**(ICACC-FS3-027-2019) Nano-structured sponges through solution chemistry (Invited)**G. Westin*¹

1. Uppsala University, Sweden

4:50 PM**(ICACC-FS3-028-2019) Application of Water-soluble Titanium Complexes for Synthesis of Titania Nanocrystals (Invited)**M. Kobayashi*¹; H. Kato¹; M. Kakihana¹

1. Tohoku University, Japan

5:10 PM**(ICACC-FS3-029-2019) Semiconductor Nanoheterostructures for Photoconversion Applications (Invited)**Y. Chiu¹; M. Kuo¹; T. Lai¹; P. Hsieh¹; Y. Hsu*¹

1. National Chiao Tung University, MSE Department, Taiwan

5:30 PM**(ICACC-FS3-030-2019) Facile precursor-mediated synthesis of binary and ternary G11 metal selenide-based nanomaterials for improved photocatalysis**S. Mishra*¹; S. Gahlot¹

1. University of Lyon, Institut de recherches sur la catalyse et l'environnement de Lyon (IRCELYON), France

S1: Mechanical Behavior and Performance of Ceramics & Composites**Fibers, Matrices, Coatings, and Interfaces**

Room: Coquina Salon D

Session Chairs: Emmanuel Boakye, UES Inc.; Craig Smith, Ohio Aerospace Institute

8:30 AM**(ICACC-S1-011-2019) The Effect of Grain Size on Creep Resistance of Silicon Carbide Fiber**K. Wada*¹; M. Oakmura¹; M. Takeda¹

1. NGS Advanced Fibers Co., Ltd., Japan

8:50 AM**(ICACC-S1-012-2019) Effect of Amorphous SiC fiber degradation on mechanical properties of Ceramic Matrix Composites**S. Kanazawa*¹; N. Yamazaki¹; K. Kubushiro¹; T. Nakamura¹

1. IHI Corporation, Materials, Japan

9:10 AM**(ICACC-S1-013-2019) Innovative manufacturing process of the new SILAFIL[®] silicon carbide fiber**W. Humbs*¹; M. Rothmann¹

1. BJS Ceramics GmbH, Germany

9:30 AM**(ICACC-S1-014-2019) Rare earth disilicate fiber coatings for SiC/SiC CMCs**E. E. Boakye*¹; P. Mogilevsky¹; T. A. Parthasarathy¹; T. Key¹; M. Cinibulk²; R. Hay²; S. Opeka¹

1. UES Inc., Materials Science, USA

2. Materials Directorate AFRL, USA

9:50 AM**Break****10:10 AM****(ICACC-S1-015-2019) Development of fiber-matrix interface for non-oxide CMC for gas turbine applications**C. Steinborn*¹; H. Klemm¹; A. Michaelis¹

1. Fhg IKTS Dresden, Germany

10:30 AM**(ICACC-S1-016-2019) The Role of Heat Treatment on Mechanical and Thermal Properties of Carbon-Silicon Carbide Hybrid Nano-Fibers**S. Nabat Al-Ajrash*¹; K. Lafdi¹

1. University of Dayton, Chemical and Materials Engineering, USA

10:50 AM**(ICACC-S1-017-2019) Properties of BN-coated SiC fibers in SiC-based matrices**E. B. Callaway*¹; F. W. Zok¹

1. University of California, Santa Barbara, Materials Engineering, USA

11:10 AM**(ICACC-S1-018-2019) Evaluation of tensile strength distribution of SiC fiber filaments within a multifilament tow**S. Okuzumi*¹; T. Aoki²; Y. Asakura¹; T. Ogasawara¹

1. Tokyo University of Agriculture and Technology, Graduate School of Engineering, Japan

2. Japan Aerospace Exploration Agency, Japan

11:30 AM**(ICACC-S1-019-2019) Effects of Boria on Rare Earth Silicate Environmental Barrier Coatings**R. Guarriello*¹; E. J. Opila¹

1. University of Virginia, Materials Science and Engineering, USA

Processing - Microstructure - Mechanical Properties Correlation I

Room: Coquina Salon D

Session Chairs: Yogesh Singh, The University of Akron; Michael Presby, University of Akron

1:30 PM

(ICACC-S1-020-2019) High Temperature Fatigue Property of SiC/SiC CMC Manufactured from Low Temperature Melt Infiltration Process

K. Kubushiro^{*1}; S. Kanazawa¹; N. Yamazaki¹; T. Nakamura¹

1. IHI Corporation, Japan

1:50 PM

(ICACC-S1-021-2019) Net shape CMC components obtained by pyrolysis and reactive melt infiltration of continuous carbon fibers and PEEK matrix preforms produced by composite flow molding

G. Bianchi^{*1}; A. Vodermaier²; A. Ortona¹

1. SUPSI, MEMTI, Switzerland
2. icotec, Switzerland

2:10 PM

(ICACC-S1-022-2019) Composites elaborated with acid-based geopolymers

V. Mathivet^{*1}; H. Celerier¹; J. Jouin¹; S. Rossignol¹; M. Parlier²

1. Laboratoire IRCER, France
2. ONERA, France

2:30 PM

(ICACC-S1-023-2019) Coherency Strains and Strengthening of Bulk Polycrystalline MgO-based 'Ceramic Alloys'

L. Gurnani^{*1}; U. Kumar¹; A. Mukhopadhyay¹

1. IIT Bombay, Metallurgical Engineering and Materials Science, India

2:50 PM

Break

3:10 PM

(ICACC-S1-024-2019) Fracture, Fatigue, and Wear in Alumina/ Graphene Nanocomposites

Q. Wang^{*1}; C. Watts¹; O. López²; A. L. Ortiz²; N. P. Padture¹

1. Brown University, Engineering, USA
2. Universidad de Extremadura, Spain

3:30 PM

(ICACC-S1-025-2019) Evaluation of Mechanical and Micro-Failure Sensing of Composites via Pencil Led Drawing Paper Sensor and Electrical Resistance Mapping

J. Park^{*1}; H. Park¹; P. Shin¹; J. Kim¹; Y. Baek¹; L. K. DeVries²

1. Gyeongsang Natl University, Materials Eng. & Convergence Technology, Republic of Korea
2. The University of Utah, Dept of Mechanical Engineering, USA

3:50 PM

(ICACC-S1-026-2019) Fabrication of SiC/silicides composites by melt infiltration method

T. Tsunoura^{*1}; N. Hayama²; K. Yoshida³; T. Yano³; T. Aoki⁴; T. Ogasawara⁵

1. Tokyo Institute of Technology, Department of Materials Science and Engineering, Japan
2. Tokyo University of Science, Department of Mechanical Engineering, Japan
3. Tokyo Institute of Technology, Laboratory for Advanced Nuclear Energy, Japan
4. Japan Aerospace Exploration Agency, Aeronautical Technology Directorate, Japan
5. Tokyo University of Agriculture and Technology, Department of Mechanical Systems Engineering, Japan

4:10 PM

(ICACC-S1-027-2019) SiC/Eutectic silicon alloy matrix composites fabricated by melt-infiltration processing

T. Aoki^{*1}; T. Tsunoura²; K. Yoshida²; T. Ogasawara³

1. Japan Aerospace Exploration Agency, Advanced Composite Research Center, Institute of Aeronautical Technology, Japan
2. Tokyo Institute of Technology, Japan
3. Tokyo University of Agriculture and Technology, Japan

4:30 PM

(ICACC-S1-028-2019) Fabrication of SiC/ternary silicon alloy matrix composites by melt infiltration method

N. Hayama^{*1}; S. Ogihara¹; R. Kitamura¹; T. Tsunoura²; T. Aoki³; T. Ogasawara⁴

1. Tokyo University of Science, Japan
2. Tokyo Institute of Technology, Japan
3. Japan Aerospace Exploration Agency, Japan
4. Tokyo University of Agriculture and Technology, Japan

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications

Environmental Barrier Coatings - Materials, Processing & Properties II

Room: Tomoka B

Session Chair: Kang Lee

8:30 AM

(ICACC-S2-009-2019) Development of environmental barrier coatings for non-oxide ceramic matrix composites (Invited)

H. Klemm^{*1}; W. Kunz¹; B. Grönde¹; K. Schönfeld¹

1. FhG IKTS Dresden, Germany

9:00 AM

(ICACC-S2-010-2019) High Temperature, High Velocity Water Vapor Stability of the Oxides and Silicates in the Y₂O₃ - SiO₂ System

C. G. Parker^{*1}; E. J. Opila¹

1. University of Virginia, Materials Science and Engineering, USA

9:20 AM

(ICACC-S2-011-2019) Residual stress distribution of Si bond coat layer in Mullite/Si/RB-SiC EBC system after heat exposure above melting point of Si

Y. Arai^{*1}; M. Sato¹; H. Hatta¹; Y. Kagawa¹

1. Tokyo University of Technology, Japan

9:40 AM

(ICACC-S2-012-2019) Mass transfer in Yb₂Si₂O₇ under oxygen and water vapor potential gradients at high temperatures

M. Wada^{*1}; T. Matsudaira¹; N. Kawashima¹; D. Yokoe¹; T. Ogawa¹; S. Kitaoka¹; M. Takata¹

1. Japan Fine Ceramics Center, Japan

10:00 AM

Break

Thermal Barrier Coatings - Materials, Processing & Properties I

Room: Tomoka B

Session Chair: Eric Jordan, University of Connecticut

10:20 AM

(ICACC-S2-013-2019) Mechanical properties of different YSZ and Gd₂Zr₂O₇ thermally sprayed thermal barrier coatings (Invited)

R. Vassen^{*1}; B. Lu¹; D. Koch¹; E. Bakan¹; R. Muecke¹

1. Forschungszentrum Juelich, IEK-1, Germany

10:50 AM

(ICACC-S2-014-2019) Crack Formation and Propagation Phenomena in Air Plasma Sprayed Ceramic Coatings

S. V. Shinde^{*1}; E. J. Gildersleeve¹; S. Sampath¹

1. Center for Thermal Spray Research, SUNY Stony Brook University, NY, Material Science, USA

11:10 AM

(ICACC-S2-015-2019) Investigation of the bond coat surface topography effect on TBC lifetime

J. P. Martins¹; P. Xiao^{*1}; Y. Chen¹; G. Brewster²; R. McIntyre²

1. University of Manchester, School of Materials, United Kingdom
2. Rolls Royce plc, Surface Engineering - Materials Engineering, United Kingdom

11:30 AM**(ICACC-S2-016-2019) Temperature Mapping at the Thermal Barrier Coating/Bond Coat Interface by Luminescence Lifetime Imaging Using Integrated Erbium-Doped Sublayers**J. I. Eldridge*¹; A. C. Wroblewski¹; D. E. Wolfe²

1. NASA Glenn Research Center, USA
2. Pennsylvania State University, USA

Thermal Barrier Coatings - Materials, Processing & Properties II

Room: Tomoka B

Session Chair: Robert Vassen, Forschungszentrum Juelich

1:30 PM**(ICACC-S2-017-2019) Yttrium Aluminum Garnet (YAG) Coatings in Relation to Currently Used TBCs (Invited)**E. H. Jordan*¹; M. Gell²; C. Jiang²; R. Kumar²

1. University of Connecticut, Mechanical Engineering, USA
2. Solution Spray Technologies LLC, USA

2:00 PM**(ICACC-S2-018-2019) Process-Induced Architectural Variations in Plasma Sprayed Thermal Barrier Coatings and Their Implications on Performance in a Thermal Gradient Environment with and Without Siliceous Debris**E. J. Gildersleeve*¹; S. Sampath¹

1. Stony Brook University, Materials Science, USA

2:20 PM**(ICACC-S2-019-2019) Beyond YSZ: Aluminate-zirconate composite coatings for enhanced durability of next-generation high temperature TBCs**M. Schmitt*³; J. Stokes¹; A. K. Rai²; D. E. Wolfe¹

1. Pennsylvania State University, USA
2. UES, Inc., USA
3. HAMR Industries LLC, USA

2:40 PM**(ICACC-S2-020-2019) Extending the lifetime of T-EBC coatings during thermal cycling above 2400°F**J. Deijkers*¹; H. Wadley¹

1. University of Virginia, Materials Science & Engineering, USA

3:00 PM**Break****CMAS Degradation of EBC/TBC: Effects and Mitigation Strategies I**

Room: Tomoka B

Session Chair: Hagen Klemm, FhG IKTS Dresden

3:20 PM**(ICACC-S2-021-2019) Effects of CMAS Deposits on Delamination and Damaging Mechanisms in Thermal Barrier Coatings and Gas Turbine Engine Components**K. Chen*¹; V. Pankov¹; L. Jiang¹; P. Patnaik¹

1. National Research Council Canada, Aerospace Research Centre, Canada

3:40 PM**(ICACC-S2-022-2019) Interaction of Yb₂Si₂O₇ and Yb₂SiO₅ environmental barrier coating materials with CMAS melts**R. Webster*¹; E. J. Opila¹

1. University of Virginia, Materials Science & Engineering, USA

4:00 PM**(ICACC-S2-023-2019) Thermal Environmental Barrier Coating Ceramics Based on Rare-Earth Pyrosilicates and their High-Temperature Interactions with Calcia-Magnesia-Alumino-Silicate (CMAS) Glass**L. R. Turcer*¹; H. Sternlicht¹; C. Watts¹; M. Koval¹; H. Garces¹; N. P. Padture¹

1. Brown University, Engineering, USA

4:20 PM**(ICACC-S2-024-2019) Dissolution and Diffusion of Thermal Barrier Oxides in Molten Silicates**C. S. Holgate*¹; D. L. Poerschke²; C. G. Levi¹

1. University of California, Santa Barbara, Materials, USA
2. University of Minnesota, Chemical Engineering and Materials Science, USA

4:40 PM**(ICACC-S2-025-2019) Complex Melting Behavior of Si-lean, Fe-Ti-CMAS and its Effects on the Recession of EB-PVD Gadolinium-Zirconate TBC**P. Mechnich*¹

1. DLR - German Aerospace Center, Institute of Materials Research, Germany

S3: 16th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology**Novel Processing**

Room: Crystal

Session Chair: John Pietras, Saint-Gobain

8:30 AM**(ICACC-S3-008-2019) Supported films for SOFC applications (Invited)**A. Sanson*¹; A. Gondolini¹; E. Mercadelli¹

1. CNR-ISTEC, Italy

9:00 AM**(ICACC-S3-009-2019) 3D Printing of Ceramics for Application in Solid Oxide Fuel Cells (Invited)**A. Morata¹; A. Hornés¹; V. Esposito²; M. Rosa²; C. Chaput³; G. Le Meillour³; L. Hernández⁴; F. Ramos⁵; J. Guimbao⁶; C. Crawshaw⁷; A. Ansar⁷; D. Liefink⁸; A. Tarancón*⁸

1. IREC, Spain
2. DTU, Denmark
3. 3DCERAM, France
4. ULL, Spain
5. FAE, Spain
6. Promethean Particles, United Kingdom
7. SAAN Energi, Sweden
8. HyGEAR, Netherlands

9:30 AM**(ICACC-S3-010-2019) Artificial intelligence for automatic optical inspection of multilayered solid oxide membranes**R. Hoepfner*¹; A. Litke²; P. Martens²; G. Norsworthy¹

1. Haiku Tech Inc., USA
2. Haiku Tech Europe BV, Netherlands

9:50 AM**Break****Sealants and Mechanical and Thermomechanical Aspects of Manufacturing**

Room: Crystal

Session Chair: Federico Smeacetto, Politecnico di Torino

10:10 AM**(ICACC-S3-011-2019) New Silver-Based Alloys for Solid Oxide Cell Brazing and Circuit Patterning (Invited)**Q. Zhou¹; Y. Ma¹; T. R. Bieler¹; J. D. Nicholas*¹

1. Michigan State University, Chemical Engineering and Materials Science, USA

10:40 AM**(ICACC-S3-012-2019) Modelling of local interfacial failures in solid oxide cell stacks**X. Miao*¹; M. Navasa¹; H. L. Frandsen¹

1. Technical University of Denmark, Denmark

11:00 AM**(ICACC-S3-013-2019) Torsion test for joined SOFC components**S. De La Pierre^{*1}; A. Sabato¹; H. Javed¹; F. Smeacetto²; J. Malzbender³; M. Ferraris¹

1. Politecnico di Torino, DISAT, Italy
2. Politecnico di Torino, DENERG, Italy
3. Forschungszentrum Jülich, Germany

Electrolytes

Room: Crystal

Session Chair: Olivier Guillon, Forschungszentrum Juelich

1:30 PM**(ICACC-S3-014-2019) Enhanced grain boundary conductivity in Gd doped CeO₂ through solvent deficient synthesis method**H. Maruyama^{*1}; S. Zeljkovic²; J. C. Nino¹

1. University of Florida, Materials Science and Engineering, USA
2. University of Banja Luka, Chemistry, Bosnia and Herzegovina

1:50 PM**(ICACC-S3-015-2019) Flash sintering of oxygen ion and mixed conductors and characteristics for application in SOFC**H. Charalambous^{*1}; S. K. Jha¹; K. H. Christian¹; J. Okasinski²; T. Tsakalakos¹

1. Rutgers University, Materials Science and Engineering, USA
2. Argonne National Lab, Advanced Photon Source, USA

2:10 PM**(ICACC-S3-016-2019) A scalable protonic ceramic fuel cells**H. An^{*1}; H. Lee¹; B. Kim¹; J. Son¹; K. Yoon¹; H. Kim¹; D. Shin²; H. Ji¹; J. Lee¹

1. Korea Institute of Science and Technology, Republic of Korea
2. Hanyang University, Republic of Korea

2:30 PM**(ICACC-S3-017-2019) Barium Zirconate Based Electrolyte Densification Using Reactive Sintering Aids**B. Hu^{*1}; M. Reisert¹; A. Aphale¹; S. Belko¹; O. Marina¹; J. W. Stevenson³; D. Ding²; U. Pasaogullari¹; P. Singh¹

1. University of Connecticut, Center for Clean Energy Engineering, USA
2. Idaho National Laboratory, USA
3. Pacific Northwest National Laboratory, USA

2:50 PM**Break****Stack / Cell Performance and Durability**

Room: Crystal

Session Chair: Mihails Kusnezoff, Fraunhofer IKTS

3:10 PM**(ICACC-S3-018-2019) Online health monitoring of SOFCs and accelerated degradation (Invited)**V. Subotic^{*1}; M. Preininger¹; B. Stoeckl¹; M. Kusnezoff²; C. Hochenauer¹

1. Graz University of Technology, Institute of Thermal Engineering, Austria
2. Fraunhofer IKTS, Germany

3:40 PM**(ICACC-S3-019-2019) Accelerated testing of CFY stacks / Degradation analysis of CFY-stacks**S. Rothe^{*1}; S. Hielscher¹; C. Folgner¹; V. Sauchuk¹; S. Megel¹; M. Kusnezoff²; A. Michaelis¹

1. Fraunhofer IKTS, Germany

4:00 PM**(ICACC-S3-020-2019) Degradation of gasified biomass-fueled SOFC**O. Guillon^{*1}; H. Jeong¹; M. Geis²; S. Fendt²; S. Herrmann²; N. H. Menzler¹

1. Forschungszentrum Juelich, IEK-1, Germany
2. TU München, Germany

4:20 PM**(ICACC-S3-021-2019) Electrochemical characterization and performance assessment of SOC stacks in electrolysis mode**M. Preininger^{*1}; V. Subotic¹; B. Stoeckl¹; R. Schaupter²; C. Hochenauer¹

1. Graz University of Technology, Institute of Thermal Engineering, Austria
2. AVL List GmbH, Fuel Cell Systems, Austria

4:40 PM**(ICACC-S3-022-2019) Development of Metal-Supported Solid Oxide Fuel Cell Fabricated by Atmospheric Plasma Spraying in INER**C. Chang^{*1}; C. Tsai¹; C. Fu¹; C. Yang¹; S. Yang¹; R. Lee²

1. Institute of Nuclear Energy Research, Physics Division, Taiwan
2. Institute of Nuclear Energy Research, Taiwan

S4: Armor Ceramics - Challenges and New Developments**Materials Characterization I**

Room: Coquina Salon F

Session Chairs: Lionel Vargas, US Army Research Laboratory; Anthony DiGiovanni, US Army Research Laboratory

8:30 AM**(ICACC-S4-013-2019) A Brief History of Industrial Diamond Materials and Technology: Converting Fantasy to Fact and Profit (Invited)**A. A. DiGiovanni^{*1}

1. US Army Research Laboratory, USA

9:00 AM**(ICACC-S4-014-2019) SiC-bonded diamond materials – Superhard materials for a wide range of applications (Invited)**M. Herrmann¹; B. Matthey¹; S. Kunze^{*1}; M. Zins¹; A. Michaelis¹

1. Fraunhofer IKTS, Germany

9:30 AM**(ICACC-S4-015-2019) Reaction Bonded (SiC & SiC/B₄C) + Diamond Composites: Uniform and Graded Structures (Invited)**S. Salamone^{*1}; G. Evans¹; M. Aghajanian¹; C. R. Baker²

1. M Cubed Technology, Inc., USA
2. US Army, Soldier Protection and Individual Equipment Program Executive Office Soldier, USA

10:00 AM**Break****Materials Characterization II**

Room: Coquina Salon F

Session Chair: Christopher Marvel, Lehigh University

10:20 AM**(ICACC-S4-016-2019) Interfacial characteristics and properties of a reaction bonded SiC/diamond composite (Invited)**Y. Zhang¹; J. Wynn²; M. Aghajanian³; P. Koindikar³; C. Ni^{*1}

1. University of Delaware, Materials Sci.&Eng., USA
2. TA Instruments, USA
3. II-VI M cubed Technologies Inc., USA

10:50 AM**(ICACC-S4-017-2019) Characterization of Al-doped boron carbide**S. Xiang¹; B. Yang²; C. Hwang²; R. Haber²; K. Y. Xie^{*1}

1. Texas A&M University, Materials Science and Engineering, USA
2. Rutgers University, Materials Science and Engineering, USA

11:10 AM**(ICACC-S4-018-2019) Characterization of residual stresses: Implications on failure of B₄C/SiC armors**T. Shoulders^{*1}; A. A. DiGiovanni¹; L. Vargas¹

1. US Army Research Laboratory, USA

11:30 AM**(ICACC-S4-019-2019) Fabrication of dense B₄C-SiC composite via preceramic polymer route**C. Hwang^{*1}; Q. Yang¹; S. Xiang²; V. Domnich¹; A. U. Khan¹; K. Xie²; K. Hemker³; R. A. Haber¹

1. Rutgers University, Dept. of Materials Science and Engineering, USA
2. Texas A&M University, Department of Mechanical Engineering, USA
3. Johns Hopkins University, Department of Mechanical Engineering, USA

Materials Characterization III

Room: Coquina Salon F

Session Chair: Kristopher Behler, U.S. Army Research Lab

1:30 PM**(ICACC-S4-020-2019) Structure and Chemical Quantification of Grain Boundaries in a Boron Carbide and Silicon Hexaboride Diffusion Couple (Invited)**C. Marvel^{*}; A. M. Etzold²; V. Domnich²; K. D. Behler³; J. LaSalvia³; R. Haber²; M. P. Harmer¹

1. Lehigh University, Materials Science and Engineering, USA
2. Rutgers University, Materials Science and Engineering, USA
3. US Army Research Laboratory, WMRD, USA

2:00 PM**(ICACC-S4-021-2019) Solute-Acceleration and Microstructural Evolution of Alumina (Invited)**R. Moshe^{*}; W. D. Kaplan^{*}

1. Technion - Israel Institute of Technology, Dept. of Materials Science and Engineering, Israel

2:30 PM**(ICACC-S4-022-2019) Alignment development α -Alumina Platelets Formed via Shear/Elongational Flows of Thermoplastic Polymer and Ceramic Blends for Improved Transparency**W. J. Costakis^{*}; A. Schlup¹; R. Trice¹; J. P. Youngblood¹

1. Purdue University, Materials Engineering, USA

2:50 PM**(ICACC-S4-023-2019) Hot Pressing Platelet Morphology α -Al₂O₃: Effect of Particle Alignment and Processing Parameters**A. Schlup^{*}; W. J. Costakis¹; R. Trice¹; J. P. Youngblood¹

1. Purdue University, Materials Engineering, USA

3:10 PM**Break****Materials and Process Modeling I**

Room: Coquina Salon F

Session Chairs: Shawn Coleman, US Army Research Laboratory;

Jennifer Dunn, U.S. Army Research Laboratory

3:30 PM**(ICACC-S4-024-2019) A Data Fingerprint for Ceramic Design (Invited)**K. Rajan^{*}

1. University at Buffalo-the State Univ. of NY, Materials Design and Innovation, USA

4:00 PM**(ICACC-S4-025-2019) Hardness Prediction in Icosahedral Boron Rich Ceramics**A. Cheenady^{*}; A. Awasthi¹; G. Subhash¹

1. University of Florida, Mechanical Engineering, USA

4:20 PM**(ICACC-S4-026-2019) Ceramics under high pressures: Compression characteristics of B4C using molecular dynamics**A. Awasthi^{*}; M. DeVries¹; G. Subhash¹

1. University of Florida, Mechanical and Aerospace Engineering, USA

4:40 PM**(ICACC-S4-027-2019) Atomistic response of boron carbide under shock impact conditions using molecular dynamics**M. DeVries^{*}; A. Awasthi¹; G. Subhash¹

1. University of Florida, Mechanical and Aerospace Engineering, USA

5:00 PM**(ICACC-S4-028-2019) Modeling of Influence of Structural Defects in Cubic SiC on its Interaction with Shock Waves**I. Kartuzov^{*}

1. IPMS NASU, Ukraine

S6: Advanced Materials and Technologies for Direct Thermal Energy Conversion and Rechargeable Energy Storage**Li Batteries II**

Room: Tomoka A

Session Chairs: Valerie Pralong, CNRS ENSICAEN; Do Kyung Kim, Korea Advanced Institute of Science and Engineering (KAIST)

8:30 AM**(ICACC-S6-009-2019) Electrochemical thermodynamics of lithium batteries and their materials (Invited)**H. J. Seifert^{*}; W. Zhang¹; D. Li¹

1. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

9:00 AM**(ICACC-S6-010-2019) ARTISTIC Project: modeling-driven prediction of optimal rechargeable battery manufacturing parameters (Invited)**A. A. Franco^{*}

1. Université de Picardie Jules Verne, Laboratoire de Réactivité et Chimie des Solides, UMR CNRS 7314, France

9:30 AM**(ICACC-S6-011-2019) In quest of high voltage insertion compounds for Li-ion and Na-ion batteries (Invited)**M. Reynaud¹; A. Wizner¹; N. Katcho¹; M. Galceran¹; J. Carrasco¹; T. Rojo¹; M. Armand¹; M. Casas-Cabanas^{*}

1. CIC energigune, Spain

10:00 AM**Break****Thermoelectrics II**

Room: Tomoka A

Session Chairs: Michitaka Ohtaki, Kyushu University; Olivier Delaire, Duke University

10:20 AM**(ICACC-S6-012-2019) Atomic Dynamics and Strong Anharmonicity in Thermoelectrics and Superionics (Invited)**O. Delaire^{*}

1. Duke University, USA

10:50 AM**(ICACC-S6-013-2019) Rapid densification of thermoelectric compounds by flash sintering (Invited)**M. Mikami^{*}; Y. Kinemuchi¹; K. Kubo²; N. Uchiyama²; H. Miyazaki²; Y. Nishino³

1. National Institute of Advanced Industrial Science and Technology, Japan
2. Atsumitec Co., Ltd., Japan
3. Nagoya Institute of Technology, Japan

11:20 AM**(ICACC-S6-014-2019) Developing specialty glasses as anti-sublimation barrier for thermoelectric materials**Y. Sadia^{*}

1. Ben-Gurion University of the Negev, Material Engineering, Israel

11:40 AM**(ICACC-S6-015-2019) Growth of flexible, nanoporous and transferable Ca₃Co₄O₉ thin films for thermoelectrics**P. Eklund^{*}; B. Paul¹

1. Linköping University, Dept. of Physics, Chemistry, and Biology, Sweden

Beyond Li Batteries I

Room: Tomoka A

Session Chairs: Shyue Ping Ong, University of California, San Diego; Nobuyuki Imanishi, Mie University

1:30 PM**(ICACC-S6-016-2019) Studies on Next Generation Battery Materials (Invited)**M. Doeff*¹

1. Lawrence Berkeley National Laboratory, USA

2:00 PM**(ICACC-S6-017-2019) Rechargeable sodium-ion batteries utilizing amide-based ionic liquid electrolytes (Invited)**T. Yamamoto*¹; K. Matsumoto²; R. Hagiwara²; T. Nohira¹

1. Kyoto University, Institute of Advanced Energy, Japan
2. Graduate School of Energy Science, Kyoto University, Japan

2:30 PM**(ICACC-S6-018-2019) A Nanotube-structured Na₂V₃O₇ Cathode Material for Sodium-Ion Batteries with High-rate and Stable Cycle Performances (Invited)**N. Tanibata*¹; Y. Kondo¹; S. Yamada¹; M. Maeda¹; M. Nakayama¹; A. Kitajou²; S. Okada²

1. Nagoya Institute of Technology, Advanced Ceramics, Japan
2. Kyushu University, Japan
3. Yamaguchi University, Japan

3:00 PM**Break****Li Batteries III**

Room: Tomoka A

Session Chairs: Alejandro Franco, Université de Picardie Jules Verne; Montse Casas-Cabanas, CIC energigune

3:20 PM**(ICACC-S6-019-2019) Achieving full capacity in multi-electron LiVOPO₄ polymorphs (Invited)**S. Ong*¹; Y. Lin¹; M. Hidalgo²; A. Grenier²; D. Xiao²; R. Tran¹; F. Omenya²; I. Chu¹; Z. Wang¹; X. Li¹; N. Chernova²; K. Chapman³; G. Zhou¹; M. Whittingham²

1. University of California, San Diego, Department of NanoEngineering, USA
2. Binghamton University, Department of Chemistry, USA
3. Argonne National Lab, Advanced Photon Source, USA
4. Binghamton University, Department of Mechanical Engineering, USA

3:50 PM**(ICACC-S6-020-2019) Spectroscopic study of charge compensation in Li₃MO₄ (M=Ru, Ir) during electrochemical cycling (Invited)**J. Cabana*¹

1. University of Illinois at Chicago, Chemistry, USA

4:20 PM**(ICACC-S6-021-2019) Polymer-derived Ceramic Fiber-based Electrodes for Electrochemical Energy Storage (Invited)**R. Cuccato²; S. Mukherjee¹; G. Franchin²; P. Colombo²; G. Singh*¹

1. Kansas State University, Mechanical and Nuclear Engineering Dept., USA
2. University of Padova, Industrial Engineering, Italy

4:50 PM**(ICACC-S6-022-2019) Discussing the Homogeneity of Aluminum Distribution in LiCo_{1-y}Al_yO₂ for Low Doping Amounts (y ≤ 0.04)**M. Duffiet*¹; M. Blangero²; K. Song²; P. Cabelguen³; C. Delmas¹; D. Carlier¹

1. ICMCB-CNRS, France
2. Umicore, Republic of Korea
3. Umicore, Belgium

5:10 PM**(ICACC-S6-023-2019) Hierarchical structured inorganic oxides@graphene nanocomposites as anodes for lithium/sodium ion batteries**J. Chen*¹; H. Xu¹; D. Wang¹; P. Zhang¹; W. Zhang¹; W. Tian¹; Z. Sun¹

1. Southeast University, School of Materials Science & Engineering, China

S8: 13th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT13)**Advanced Sintering Technologies II**

Room: Coquina Salon A

Session Chair: Ralf Goller, University of Applied Sciences

8:30 AM**(ICACC-S8-010-2019) MoO₃ porous materials for neutron irradiation targets for production of ⁹⁹Mo/^{99m}Tc (Invited)**H. Suematsu*¹; M. Seki¹; T. Do²; M. Nanko²; T. Suzuki³; D. V. Dong¹; T. Nakayama¹; K. Niihara¹

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
2. Nagaoka University of Technology, Department of Mechanical Engineering, Japan
3. Nagaoka University of Technology, Department of Nuclear System Safety Engineering, Japan

9:00 AM**(ICACC-S8-011-2019) Microwave Synthesis of Red-Emitting Ca₂Si₂N₆:Eu²⁺ Phosphor and its Photoluminescence Properties for White-LEDs**W. Chou¹; C. Chang¹; S. Huang¹; T. Hsieh¹; S. Chung*¹

1. National Cheng Kung University, Chemical Engineering, Taiwan

9:20 AM**(ICACC-S8-012-2019) In-situ coagulation casting of ceramic suspension via Dispersant Removal**K. Gan*¹; Y. Lu¹; X. Zhang¹; J. Yang¹; Y. Huang¹

1. Tsing Hua University, Materials Science and Engineering, China

9:40 AM**(ICACC-S8-013-2019) Highly-efficient preparation of anisotropic ZrB₂-SiC powders and dense ceramics with outstanding mechanical properties**J. Liu*¹; H. Zhang¹

1. Wuhan University of Science and Technology, The State Key Laboratory of Refractories and Metallurgy, China

10:00 AM**Break****10:20 AM****(ICACC-S8-014-2019) Processing of Novel Spinel Transparent Ceramics through Aqueous Gel-casting Technique (Invited)**H. Wang*¹; X. Zong¹; H. Zhang¹; Z. Liu¹; L. Ren¹; W. Wang¹; Z. Fu¹

1. Wuhan University of Technology, China

10:50 AM**(ICACC-S8-015-2019) Densification in Ionic Materials Nanoparticulate System under Simultaneous Applied Electric and Thermal Fields: An in situ time-resolved line broadening study using energy dispersive x-ray diffractometry with an ultrahigh energy synchrotron probe (Invited)**I. Savkliyildiz*¹; E. Akdogan²; T. Tsakalakos²; Z. Zhong³; H. Bicer⁴

1. Konya Technical University, Turkey
2. Rutgers University, USA
3. Brookhaven National Laboratory, USA
4. Dumlupinar University, Turkey

11:20 AM**(ICACC-S8-016-2019) Macroscale internal structure and density distribution in powder compact made by granule die-pressing**S. Tanaka*¹

1. Nagaoka University of Technology, Materials Science and Technology, Japan

Advanced Manufacturing and Processing I

Room: Coquina Salon A

Session Chairs: Anne Leriche, University of Valenciennes; Hao Wang, Wuhan University of Technology

1:30 PM**(ICACC-S8-017-2019) Hybrid SHS-based Technologies to Fabricate Advanced Ceramics and Composites (Invited)**A. Mukasyan*¹

1. University of Notre Dame, Chemical and Biomolecular Engineering, USA

2:00 PM**(ICACC-S8-018-2019) Si₃N₄/graphene nanocomposites for tribological applications**C. Balazsi*¹; K. Balazsi¹

1. HAS Centre for Energy Research, Hungary

2:20 PM**(ICACC-S8-019-2019) Evaluation of the carbon fiber orientation in the composites materials by using X-ray**Y. Sugimoto*¹; Y. Hotta¹; D. Shimamoto¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

2:40 PM**(ICACC-S8-020-2019) Development of the Production Process of a Prepreg for BN Particle Dispersion SiC/SiC Composites without Fiber/Matrix Interface**S. Ogitani*¹; K. Kamoshida¹; A. Kato¹; S. Taguchi¹; K. Toujinbara¹; S. Aratani¹; N. Miwa¹; K. Ashitaka¹; K. Shimoda²; T. Kanayama³; K. Yamaoka⁴; A. Edano⁴; K. Igawa⁴; T. Hinoki²

1. Fujimi Incorporated, Advanced Technology Research Center, Japan
2. Kyoto University, Japan
3. National Institute for Materials Science (NIMS), Japan
4. Marui Orimono Co., Ltd., Japan

3:00 PM**Break****3:20 PM****(ICACC-S8-021-2019) Effect of machining on surface quality of Oxide Ceramic Matrix Composites - OCMCs (Invited)**R. Goller*¹

1. University of Applied Sciences, Mechanical Engineering, Germany

3:50 PM**(ICACC-S8-022-2019) Fabrication of Three Dimensional Nanostructures by Two-Photon Polymerization Method and Their Motion Control in Electric Field (Invited)**T. Nguyen*¹; T. Nakayama²; T. Takahashi¹; Y. Tokoi³; H. Suematsu²; M. B. Mohd Pauzi¹; K. Moriya⁴; K. Niihara²

1. Kushiro National College of Technology, Department of Creative Engineering, Japan
2. Nagaoka University of Technology, Japan
3. Nagaoka National College of Technology, Japan

4:20 PM**(ICACC-S8-023-2019) Understanding the Electrical properties of epoxy MoS₂ nanocomposites**N. Peddamallu*¹; K. Sridharan¹; T. Nakayama²; S. Ramanujam¹

1. IIT Madras, Electrical Engineering, India
2. Nagaoka University of Technology, Japan

4:40 PM**(ICACC-S8-024-2019) Innovative manufacturing technique for ceramic fiber and particle reinforced aluminum components**M. Jiménez Martínez*¹; R. Gadow¹

1. University of Stuttgart, Institute for Manufacturing Technologies of Ceramic Components and Composites, Germany

5:00 PM**(ICACC-S8-025-2019) SiC_x/SiC Ceramic Matrix Composites using Microwave Enhanced Chemical Vapour Infiltration**M. Porter*¹; A. D'Angio²; J. Binner¹; M. Cinibulk³

1. University of Birmingham, Metallurgy and Materials, United Kingdom
2. National Composites Centre, United Kingdom
3. Air Force Research Lab, USA

S11: Advanced Materials and Innovative Processing Ideas for Production Root Technologies**New Concepts and Emerging Technologies for Enhanced Product Performance I**

Room: Ponce de Leon

Session Chairs: Kyoung Il Moon, KITECH; Tadachika Nakayama, Nagaoka Univ of Tech

8:30 AM**(ICACC-S11-010-2019) Synthesis and signal detection of pressure sensor for IoT application (Invited)**T. Nakayama*¹

1. Nagaoka Univ of Tech, Japan

9:00 AM**(ICACC-S11-011-2019) Microstructural Evolution of Polymer Precursor-derived SiC on Core/Rim Structure (Invited)**L. Ji Hwoan*¹; J. Byung-Koog¹

1. Kyushu University, Interdisciplinary Graduate School, Republic of Korea

9:20 AM**(ICACC-S11-012-2019) Electrically and Thermally Conductive Liquid-Phase Sintered Silicon Carbide Ceramics (Invited)**Y. Kim*¹; Y. Kim¹

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea

9:40 AM**(ICACC-S11-013-2019) Fractography of Al₂O₃ and Si₃N₄ Ceramics Fractured in Torsion (Invited)**F. Feng*¹; K. Yasuda¹

1. Tokyo Institute of Technology, Department of Materials Science and Engineering, Japan

10:00 AM**Break****10:20 AM****(ICACC-S11-014-2019) The development of CFRTP having both high mechanical properties and high recyclability (Invited)**T. Irisawa*¹; Y. Tanabe¹; N. Nagao¹; S. Kobayashi¹

1. Nagoya University, Japan

10:50 AM**(ICACC-S11-015-2019) The two-stage crack-healing reaction in Yttrium titanate-TiC composite (Invited)**H. Iwasawa*²; S. T. Nguyen¹; W. J. Paulo²; A. Okawa²; T. Nakayama²; K. Sugiyama²; H. Suematsu²; T. Suzuki¹; K. Niihara²

1. National Institute of Technology, Kushiro College, Japan
2. Nagaoka University of Technology, Japan

11:10 AM**(ICACC-S11-016-2019) Recovering the crack-healing agents in the self-repairing nanocomposites and their high-temperature strength (Invited)**T. Nguyen*¹; T. Nakayama²; H. Suematsu²; K. Niihara²; K. Sugiyama²; H. Iwasawa²

1. Kushiro National College of Technology, Department of Creative Engineering, Japan
2. Nagaoka University of Technology, Japan

11:30 AM**(ICACC-S11-017-2019) Effect of TiC addition on Y₂Ti₂O₇-Y₂TiO₅ ceramics on their mechanical properties and promotion of a self-healing process (Invited)**A. Okawa*¹; S. T. Nguyen²; W. J. Paulo¹; H. Iwasawa¹; T. Nakayama¹; K. Sugiyama¹; H. Suematsu¹; T. Suzuki¹; K. Niihara¹

1. Nagaoka University of Technology, Japan
2. National Institute of Technology, Kushiro College, Japan

New Concepts and Emerging Technologies for Enhanced Product Performance II

Room: Ponce de Leon

Session Chairs: Giovanni Ramirez, Bruker Nano Surfaces; Sungwook Mhin, Korea Institute of Industrial Technology

1:30 PM

(ICACC-S11-018-2019) Enhancement of tribological surfaces by tribocatalysis (Invited)

G. Ramirez^{*1}; O. Eryilmaz²; A. Erdemir²

1. Bruker Nano Surfaces, USA
2. Argonne National Laboratory, USA

2:00 PM

(ICACC-S11-019-2019) Development and characterization of Zr Based multi component nanocomposite coating for low friction applications (Invited)

K. Moon^{*1}; H. Lee¹; H. Yoon¹

1. KITECH, Republic of Korea

2:20 PM

(ICACC-S11-020-2019) Overstoichiometric TMN_{x>1} transition metal nitrides: New generation of coatings (Invited)

S. Kos^{*1}; J. Musil¹; G. Remnev²

1. University of West Bohemia, Czechia
2. Tomsk Polytechnic University, Russian Federation

2:40 PM

(ICACC-S11-021-2019) The effect of element addition on the mechanical properties of AlCr-based coatings (Invited)

H. Lee^{*1}; H. Yoon¹; K. Moon¹

1. KITECH, Heat Treatment Technology R&D Group, Republic of Korea

3:00 PM

Break

3:20 PM

(ICACC-S11-022-2019) Effect of electric current on grain refinement during solidification in aluminum

M. Kim^{*1}; J. Choi¹; M. La²; D. Kim¹; K. Choe¹

1. Korea Institute of Industrial Technology, Liquid Processing & Casting Technology R&D Group, Republic of Korea
2. Korea Institute of Industrial Technology, Molds & Dies R&D group, Republic of Korea

3:40 PM

(ICACC-S11-023-2019) Cast bonding of Aluminum-Cast Iron bimetals for automotive applications

D. Kim^{*1}; T. Kim¹; J. Yang¹; J. Shin¹

1. Korea Institute of Industrial Technology, Republic of Korea

4:00 PM

(ICACC-S11-024-2019) Material characteristics and clinical performance of a newly-developed calcium-based bone void filler (Ezechbone[®]Granule) (Invited)

J. Chern Lin^{*1}; C. Ju¹; B. Yang¹; J. Lee²; W. Hong³; S. Chiou⁵; C. Lin⁴; C. Li⁴

1. National Cheng-Kung University, Materials Science and Engineering, Taiwan
2. National Cheng-Kung University Medical College and Hospital, Surgery, Taiwan
3. Wei-En Dental Clinic, Taiwan
4. Joy Medical Devices Corp, Taiwan
5. Livingstone Dental Clinic, Taiwan

4:20 PM

(ICACC-S11-025-2019) Densification Optimization of Ceramics Using Dilatometer Results and Kinetic Analysis (Invited)

E. Post^{*1}

1. NETZSCH Geraetebau GmbH, Germany

S12: Advanced MAX/MXene Phases and UHTC Materials for Extreme and High Temperature Environment

Boride Properties and Oxidation

Room: St. Johns

Session Chairs: William Fahrenholtz, Missouri University of Science & Technology; Bai Cui, University of Nebraska, Lincoln

8:30 AM

(ICACC-S12-012-2019) Ablation behavior of ZrB₂ based ceramics and composites at ultra-high temperature (Invited)

J. Zou^{*1}; W. Hillman¹; J. Binner¹

1. University of Birmingham, School of Metallurgy and Materials, United Kingdom

9:00 AM

(ICACC-S12-013-2019) Evaluation of Rare-Earth Elements Co-Dopants (Sm and Er) on the Total Hemispherical Emittance of ZrB₂/SiC Composites

A. A. Pena^{*1}

1. Purdue University, Materials Science and Engineering, USA

9:20 AM

(ICACC-S12-014-2019) Oxidation Behavior of Ultra-High Temperature Ceramics Fabricated by Colloidal Processing Routes

K. Mueller^{*1}; J. Slagle¹; D. Pinnisi¹; N. Craft¹; K. Gjata¹; E. J. Opila¹; C. Tallon¹

1. University of Virginia, USA

9:40 AM

(ICACC-S12-015-2019) In Situ Oxide Scale Investigation of Sm-Doped ZrB₂/SiC Billets

A. Brenner^{*1}; R. Trice¹

1. Purdue University, Materials Engineering, USA

10:00 AM

(ICACC-S12-016-2019) Intrinsic Thermal Properties of ZrB₂ and HfB₂

A. Stanfield^{*1}; W. Fahrenholtz¹; G. Hilmas¹

1. Missouri University of Science & Technology, Material Science and Engineering, USA

10:20 AM

(ICACC-S12-017-2019) Understanding and predicting the thermomechanical behavior of multiscale porous UHTCs via microstructure-properties using Material Point Method

S. Povolny^{*1}; G. Seidel¹; C. Tallon²

1. Virginia Tech, Aerospace and Ocean Engineering, USA
2. Virginia Tech, Materials Science and Engineering, USA

10:40 AM

(ICACC-S12-018-2019) Synthesis and Properties of (Zr,Ta)B₂ Ceramics

A. N. Dorner^{*1}; W. Fahrenholtz¹; G. Hilmas¹

1. Missouri University of Science & Technology, Materials Science and Engineering, USA

Carbide Properties and Oxidation I

Room: St. Johns

Session Chairs: Bai Cui, University of Nebraska, Lincoln; William Fahrenholtz, Missouri University of Science & Technology

11:00 AM

(ICACC-S12-019-2019) The zeta phase in the transition metal carbides and nitrides: Structure, microstructure and properties (Invited)

C. R. Weinberger^{*1}; H. Yu²; G. Thompson³

1. Colorado State University, Mechanical Engineering, USA
2. Drexel University, Mechanical Engineering and Mechanics, USA
3. University of Alabama, Department of Metallurgical and Materials, USA

11:30 AM

(ICACC-S12-020-2019) Thermal and Mechanical Properties of Zeta Phase Tantalum Carbide

E. C. Schwind^{*1}; G. Hilmas¹; W. Fahrenholtz¹

1. Missouri University of Science & Technology, Materials Science and Engineering, USA

11:50 AM

(ICACC-S12-021-2019) Composite NbC as a model material for fuel matrices in Nuclear Thermal PropulsionC. K. Ang^{*}; K. Bennessy³; S. J. Zinkle¹; P. Venneri²

1. University of Tennessee, Nuclear Engineering, USA
2. USNC, Advanced Systems, USA
3. NASA Marshall, Space Flight Center, USA

Progress on Mxenes and Their Composites

Room: St. Johns

Session Chair: Vadym Mochalin, Missouri University of Science & Technology

1:30 PM

(ICACC-S12-022-2019) MXenes: A progress report (Keynote)M. Barsoum^{*}

1. Drexel University, Materials Science and Engineering, USA

2:00 PM

(ICACC-S12-023-2019) MXenes and their Composites for Energy Storage (Invited)Z. Sun^{*}; W. Zheng¹; L. Yang¹; H. Zhang¹; P. Zhang¹; J. Chen¹; W. Tian¹; W. Zhang¹; Y. Zhang¹

1. Southeast University, School of Materials Science and Engineering, China

2:30 PM

(ICACC-S12-024-2019) Assembling 2D MXenes into supercapacitor electrodes with high energy and power densities (Invited)M. Beidaghi^{*}; A. VahidMohammadi¹; J. Orangi¹; E. Kayali¹

1. Auburn University, USA

3:00 PM

Break

Novel Processing of Mxenes and Their Composites I

Room: St. Johns

Session Chairs: Zhenqming Sun, Southeast University; Majid Beidaghi, Auburn University

3:20 PM

(ICACC-S12-025-2019) Discovery of new MAB phase and 2 D nanosheets in Cr-Al-B system (Invited)Y. Zhou^{*}; H. Zhang¹; H. Xiang¹; F. Dai¹; Z. Zhang²

1. Aerospace Research Institute of Materials & Processing Technology, China
2. Beijing Jiaotong University, School of Mechanical, Electronic and Control Engineering, China

3:50 PM

(ICACC-S12-026-2019) Chemistry and Applications of 2D Transition Metal Carbides (MXenes) (Invited)V. N. Mochalin^{*}

1. Missouri University of Science & Technology, USA

4:20 PM

(ICACC-S12-027-2019) Layer-by-Layer Processing of Surface Agnostic MXene/Polymer Coatings for Sensing ApplicationsH. An²; T. Habib²; S. A. Shah²; H. A. Gao³; M. Radovic^{*}; M. J. Green²; J. L. Lutkenhaus²

1. Texas A&M University, Materials Science & Engineering, USA
2. Texas A&M University, Chemical Engineering, USA
3. Texas A&M University, Mechanical Engineering, USA

4:40 PM

(ICACC-S12-028-2019) Synthesis of 2D transition metal carbide (MXenes) with randomly distributed vacancies by etching of their solid solutions MAX phasesJ. Halim^{*}; J. Palisaitis¹; J. Lu¹; j. Thornberg¹; E. Moon²; M. Precner³; P. Eklund¹; P. Persson¹; M. Barsoum²; J. Rosen¹

1. Linköping University, Department of Physics, Chemistry and Biology, Sweden
2. Drexel University, USA
3. Slovak Academy of Sciences, Institute of Electrical Engineering, Slovakia

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems**Joining and Technologies for Reactor Components**

Room: Coquina Salon H

Session Chair: Takaaki Koyanagi, Oak Ridge National Laboratory

8:30 AM

(ICACC-S13-010-2019) Laser Supported Joining of SiC/SiC Claddings for the Application in Nuclear Reactors (Invited)M. Herrmann^{*}; M. Graffé¹; W. Lippmann¹; A. Hurtado¹

1. Technische Universität Dresden, Institute of Power Engineering, Germany

9:00 AM

(ICACC-S13-011-2019) Characterization of Fusion Welds in the SiC-ZrB₂-ZrC SystemJ. Jarman^{*}; W. Fahrenholtz¹; G. Hilmas¹; J. Watts¹; D. King²

1. Missouri University of Science & Technology, Department of Material Science and Engineering, USA
2. UES, Inc., USA

9:20 AM

(ICACC-S13-012-2019) Development of joining process technology for SiC core materialsS. Suyama^{*}; M. Ukai¹; M. Akimoto¹; H. Sato¹; H. Heki¹

1. Toshiba Energy Systems & Solutions Corporation, Japan

9:40 AM

(ICACC-S13-013-2019) Fabrication of SiC-SiC joints in representative cladding geometriesS. Gonderman^{*}; E. Song¹; K. Shapovalov¹; G. Jacobsen¹; H. Khalifa¹; T. Koyanagi²; C. Petrie²; C. Deck¹

1. General Atomics, NTM, USA
2. Oak Ridge National Lab, USA

10:00 AM

Break

Coating Technologies for Reactor Components

Room: Coquina Salon H

Session Chair: Marion Herrmann, Technische Universität Dresden

10:20 AM

(ICACC-S13-014-2019) Development of Hydrothermal Corrosion Resistant Coating Technology for Silicon Carbide Fuel Cladding (Invited)R. Ishibashi^{*}; T. Kondo¹; S. Yamashita²; T. Fukahori²

1. Hitachi-GE Nuclear Energy, Japan
2. Japan Atomic Energy Agency, Japan

10:50 AM

(ICACC-S13-015-2019) Evaluation of SiC/SiC Coating Technologies for Accident-Tolerant LWR FuelsY. Katoh^{*}; T. Koyanagi¹; P. J. Doyle²; X. Hu¹; S. S. Raiman¹; C. Petrie¹; C. K. Ang²; P. Xu³; C. Deck⁴

1. Oak Ridge National Laboratory, USA
2. University of Tennessee, USA
3. Westinghouse Electric Company, USA
4. General Atomics, USA

11:10 AM

(ICACC-S13-016-2019) Coatings for SiC based components for light water reactorsV. Casalegno^{*}; M. Salvo¹; P. Gianchandani¹; F. D'Isanto¹; L. Manna¹; M. Ferraris¹

1. Politecnico di Torino, DISAT, Italy

11:30 AM

(ICACC-S13-017-2019) Effect of Dry Neutron Irradiation on SiC Coated with TiN, CrN, or CrP. J. Doyle^{*}; K. Terrani²; Y. Katoh²; C. K. Ang¹; S. S. Raiman²; S. J. Zinkle¹

1. University of Tennessee, Nuclear Engineering, USA
2. Oak Ridge National Lab, USA

Novel Ceramics and Composites for Nuclear Systems II

Room: Coquina Salon H

Session Chair: Young-Wook Kim, University of Seoul

1:30 PM

(ICACC-S13-018-2019) 3D Printing and Densification of Silicon Carbide Components with Complex Geometry

B. Jolly^{*1}; M. Trammell¹; K. Terrani¹; A. Schumacher¹

1. Oak Ridge National Laboratory, USA

1:50 PM

(ICACC-S13-019-2019) ZrC materials for nuclear applications produced by additive manufacturing methods

M. Trammell^{*1}; B. Jolly¹; A. Schumacher¹; K. Terrani¹

1. Oak Ridge National Lab, USA

2:10 PM

(ICACC-S13-020-2019) Low Temperature Synthesis Zirconium Carbide Powders by Solid State Reaction

Y. Zhou^{*1}; W. Fahrenholtz¹; G. Hilmas¹

1. Missouri University of Science & Technology, Materials Science and Engineering, USA

2:30 PM

(ICACC-S13-021-2019) Development of YSZ environmental barrier coatings for the molten salt fast reactor

L. J. Espinoza Perez¹; F. Cano¹; S. Esquivel¹; E. Lopez-Honorato^{*1}

1. CINVESTAV, Mexico

2:50 PM

(ICACC-S13-022-2019) Validation of tungsten carbide ceramics as a neutron shielding material

S. A. Humphry-Baker^{*1}

1. Imperial College London, Materials, United Kingdom

3:10 PM

Break

Modelling Nuclear Ceramic Fuels and Structures

Room: Coquina Salon H

Session Chair: Nicholas Brown, Pennsylvania State University

3:30 PM

(ICACC-S13-023-2019) Modeling Nuclear Fuel Performance of Accident Tolerant Fuel Cladding Concepts (Invited)

B. Wirth^{*1}; R. Sweet¹; D. Schappel¹

1. University of Tennessee, USA

4:00 PM

(ICACC-S13-024-2019) Multi-Physics Simulation of SiC/SiC Composite Cladding

K. Shirvan^{*1}; W. Li¹

1. Massachusetts Institute of Technology, USA

4:20 PM

(ICACC-S13-025-2019) Deformation Analysis of SiC-SiC Channel Box for BWR Applications

G. Singh^{*2}; J. Gorton³; D. Schappel²; N. Brown³; Y. Katoh¹; B. Wirth²; K. Terrani¹

1. Oak Ridge National Lab, USA

2. University of Tennessee, USA

3. Pennsylvania State University, USA

4:40 PM

(ICACC-S13-026-2019) Stress and bowing analysis of a SiC/SiC channel box irradiation experiment in the High Flux Isotope Reactor

C. Petrie^{*1}; J. Burns¹; C. Deck²; Y. Katoh¹

1. Oak Ridge National Lab, USA

2. General Atomics, USA

5:00 PM

(ICACC-S13-027-2019) Validation of Mesoscale Simulations of UO₂ fuel behavior by Comparing to Separate Effects Data

M. R. Tonks^{*1}; C. Bhave¹; X. Wu¹; Y. Zhang¹; J. Lian²

1. University of Florida, Materials Science and Engineering, USA

2. Rensselaer Polytechnic Institute, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications

Optical Materials II

Room: Tomoka C

Session Chair: Takayuki Yanagida, Nara Institute of Science and Technology

8:30 AM

(ICACC-S14-012-2019) Post-processing of CVD-grown ZnSe ceramics for three-wave mixing applications (Invited)

R. M. Gaume^{*1}; X. Chen¹

1. University of Central Florida, CREOL, USA

9:00 AM

(ICACC-S14-013-2019) Synthesis of Fe:ZnSe nanopowder by co-precipitation method for sintering transparent ceramics (Invited)

S. Yu^{*1}; Y. Wu¹

1. Alfred University, Materials Science, USA

9:20 AM

(ICACC-S14-014-2019) Sapphire characterization and development at II-VI Optical Systems (Invited)

M. Seitz^{*1}

1. II-VI Optical Systems, Project Engineering, USA

9:50 AM

(ICACC-S14-015-2019) Development of Laser Sintering Process of Alumina using Nd:YAG Laser (Invited)

T. Kimura^{*1}; S. Suehiro¹

1. Japan Fine Ceramics Center, Japan

10:10 AM

Break

Semiconductors and Dielectrics I

Room: Tomoka C

Session Chair: Tetsuo Tsuchiya, National Institute of Advanced Industrial Science and Technology (AIST)

10:20 AM

(ICACC-S14-016-2019) Photocatalyst anode using nanoparticle deposition for artificial photosynthesis system (Invited)

Y. Imanaka^{*1}; T. Anazawa¹; T. Manabe¹; H. Amada¹

1. Fujitsu Laboratories Ltd., Japan

10:50 AM

(ICACC-S14-017-2019) Simple Fabrication of Nanostructured Hybrid Semiconductor Materials Photodetector

D. M. Gedamu^{*1}

1. École de technologie supérieure (ETS), Department of Electrical Engineering, Canada

11:10 AM

(ICACC-S14-018-2019) Controlled Assembly of 2D Materials for Electrical Applications (Invited)

M. Osada^{*1}

1. Nagoya University, Japan

11:40 AM**(ICACC-S14-019-2019) Synthesis of Nano Materials by a Novel Selective Dissolution Method (Invited)**K. Toda*¹

1. Niigata University, Japan

Semiconductors and Dielectrics II

Room: Tomoka C

Session Chairs: Minoru Osada, National Institute for Materials Science; Yoshihiko Imanaka, Fujitsu Laboratories Ltd.

1:30 PM**(ICACC-S14-020-2019) Fundamental study of highly reactive chemical vapor deposition of AlTiN films (Invited)**T. Ishigaki*¹

1. Mitsubishi Materials Corporation, Central Research Institute, Japan

2:00 PM**(ICACC-S14-021-2019) Diffusion Properties of Dopants during Sintering Process of BaTiO₃ Ceramics (Invited)**Y. Iwazaki*¹

1. TAIYO YUDEN CO., LTD., Research and Development Laboratory, Japan

2:30 PM**(ICACC-S14-022-2019) Development of Novel Soft Chemistry (Invited)**K. Toda*¹

1. Niigata University, Japan

3:00 PM**Break****3:20 PM****(ICACC-S14-023-2019) Development of flexible oxide thin films by using photo-reaction of hybrid solution process (PRHS) (Invited)**T. Tsuchiya*¹; Y. Uzawa¹; T. Nakajima¹; J. Nomoto¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

3:50 PM**(ICACC-S14-024-2019) Lithium-ion Battery Management IC using C-Axis Aligned Crystalline In-Ga-Zn-O FETs**S. Harada¹; Y. Okamoto*¹; K. Takahashi¹; T. Ishizu¹; R. Tajima¹; K. Nei¹; T. Takeuchi¹; M. Kozuma¹; T. Matsuzaki¹; T. Ikeda¹; S. Yamazaki¹

1. Semiconductor Energy Laboratory Co., Ltd., Japan

4:10 PM**(ICACC-S14-025-2019) Dynamic Photoresponse Enhancement of Zinc-Tin Oxide (ZTO) Thin Film Transistor via Gate Voltage Pulse**J. Chen*¹; C. Chang¹; T. Lin¹

1. National Cheng Kung University, Materials Science and Engineering, Taiwan

4:30 PM**(ICACC-S14-026-2019) Microstructure-Electrical Properties Correlation of Pressureless Sintered Al₂O₃-CaTiO₃ Nanocomposites**P. K. Mallik*¹; J. K. Sahoo¹; S. Mallick¹; S. C. Patnaik¹

1. Indira Gandhi Institute of Technology Sarang, Metallurgical and Materials Engineering, India

S15: 3rd International Symposium on Additive Manufacturing and 3-D Printing Technologies**Direct Writing**

Room: Coquina Salon B

Session Chair: Paolo Colombo, University of Padova

8:30 AM**(ICACC-S15-012-2019) Dense powder beds for powder-based additive manufacturing of ceramics (Invited)**J. Guenster*¹; A. Zocca¹

1. BAM Federal Institute for Materials Research and Testing, Germany

9:00 AM**(ICACC-S15-013-2019) Direct ink writing of advanced ceramics: Process design for dense components**G. Franchin*¹; A. Borgna¹; N. Mondin¹; S. Diener²; N. Katsikis²; P. Colombo¹

1. University of Padova, Industrial Engineering, Italy
2. H.C. Starck Ceramics GmbH, Germany

9:20 AM**(ICACC-S15-014-2019) A workflow for formulating printable direct-ink write suspensions of various advanced armor ceramics**C. A. Marsico*¹; N. Ku²; L. Vargas²

1. University of Washington, Materials Science and Engineering, USA
2. US Army Research Laboratory, Weapons and Materials Research Directorate, USA

9:40 AM**(ICACC-S15-015-2019) Shaping of high performance porous structured ceramics by 3D micro-extrusion**M. Rombouts*¹; J. Lefevere¹; V. Middelkoop¹; B. Michiels¹

1. Vito, Sustainable Materials Management, Belgium

10:00 AM**Break****Fused Deposition**

Room: Coquina Salon B

Session Chair: Jens Guenster, BAM Federal Institute for Materials Research and Testing

10:20 AM**(ICACC-S15-016-2019) 3D Printing of mullite-based ceramics from preceramic polymers and alumina with Fused Deposition Modelling (FDM)**R. Tonello²; L. Gorjan²; G. Franchin¹; S. Tutu²; P. Colombo*¹; F. Clemens²

1. University of Padova, Industrial Engineering, Italy
2. Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for High Performance Ceramics, Switzerland

10:40 AM**(ICACC-S15-017-2019) On the Development of Novel MAXPOL Composites by Fused Deposition Modelling (FDM)**K. Hall*²; C. Matzke¹; Y. Ji²; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA
2. University of North Dakota, Chemical Engineering, USA

11:00 AM**(ICACC-S15-018-2019) Ceramic matrix composites fabricated by Fused Filament Fabrication (FFF)**H. Klemm*¹; J. Abel¹; A. Michaelis¹; M. Singh²

1. FhG IKTS Dresden, Germany
2. Ohio Aerospace Institute, USA

11:20 AM**(ICACC-S15-019-2019) Thermoplastic-based Additive Manufacturing of multi-functional and multi-material ceramic components**U. Scheithauer*¹; J. Abel¹; S. Weingarten¹; T. Moritz¹; H. Klemm¹; A. Michaelis¹

1. Fraunhofer IKTS, Shaping, Germany

11:40 AM**(ICACC-S15-020-2019) Glass material for Directed Energy Deposition**F. Spirrett*¹; I. Ashcroft¹; E. Saleh¹; K. C. Datsiou¹; R. Goodridge¹

1. University of Nottingham, United Kingdom

Ink Jet Printing I

Room: Coquina Salon B

Session Chair: Andrea Zocca, BAM Federal Institute for Materials Research and Testing

1:30 PM**(ICACC-S15-021-2019) Inkjet technology for ceramic products: Influence of some process variables on ink penetration (Invited)**J. Amorós¹; A. Moreno^{*1}; E. Blasco¹; J. Pérez²; S. Navarro²; S. Reverter²

1. University Jaume I, Instituto de Tecnología Cerámica, Spain
2. Color Esmalt S.A., R&D, Spain

2:00 PM**(ICACC-S15-022-2019) Additive Manufacturing for Achieving Innovative Electric Motor Designs**M. C. Halbig^{*1}

1. NASA Glenn Research Center, USA

2:20 PM**(ICACC-S15-023-2019) Direct Writing of Conductive Silver Pastes for Electric Motor Applications**A. C. Salem^{*2}; H. S. Leonard²; M. Singh¹; M. C. Halbig¹

1. NASA Glenn Research Center, Materials and Structures, USA
2. Washington University in St. Louis, Engineering, USA
3. RIT, Engineering, USA

2:40 PM**(ICACC-S15-024-2019) Evaluation of Conductive Silver Coils in Additively Manufactured Axial Flux Electric Motors**H. S. Leonard^{*1}; A. C. Salem²; M. C. Halbig³; M. Singh⁴

1. Rochester Institute of Technology, USA
2. Washington University in St. Louis, USA
3. NASA Glenn Research Center, USA
4. Ohio Aerospace Institute, USA

3:00 PM**Break****Ink Jet Printing II**

Room: Coquina Salon B

Session Chair: Craig Smith, Ohio Aerospace Institute

3:20 PM**(ICACC-S15-025-2019) Layerwise Slurry Deposition for Additive Manufacturing of Ceramics**A. Zocca^{*1}; P. Lima²; S. Diener²; T. Mühler³; J. Luchtenborg¹; J. Guenster¹

1. BAM Federal Institute for Materials Research and Testing, Ceramic Processing and Biomaterials, Germany
2. H.C. Starck Ceramics GmbH, Germany
3. Clausthal University of Technology, Germany

3:40 PM**(ICACC-S15-026-2019) Binder Jet Additive Manufacturing of Soft Magnetic Materials for Aircraft Electric Propulsion Systems**D. Oropeza Gomez^{*1}; S. M. Geng²; M. C. Halbig²; A. Hart¹; M. Singh³

1. Massachusetts Institute of Technology, USA
2. NASA Glenn Research Center, USA
3. Ohio Aerospace Institute, USA

4:00 PM**(ICACC-S15-027-2019) Reactive binders for mitigating distortion during sintering of 3D printed green bodies**L. O. Grant¹; C. F. Higgs²; Z. C. Cordero^{*1}

1. Rice University, Materials Science and NanoEngineering, USA
2. Rice University, Mechanical Engineering, USA

4:20 PM**(ICACC-S15-028-2019) A Novel Method to Increase Density of Ceramic Parts in Binder Jetting Additive Manufacturing**W. Du¹; G. Miao¹; Z. Pei¹; C. Ma^{*1}

1. Texas A&M University, USA

4:40 PM**(ICACC-S15-029-2019) Large scale additive manufacturing of artificial stone**F. Gobbin^{*1}; G. Franchin¹; P. Colombo¹; A. Italiano²; A. Beretta²; A. Zecchini¹; A. Cervesato¹; G. Rangon¹

1. University of Padova, Industrial Engineering, Italy
2. Desamanera, Italy

S17: Advanced Ceramic Materials and Processing for Photonics and Energy**Advanced Nanostructured Materials for Photovoltaics and Solar Fuels II**

Room: Halifax A/B

Session Chairs: Alessandro Martucci, University of Padova; Riad Nechache, Ecole de technologie Supérieure; Alberto Vomiero, Lulea University of Technology

8:30 AM**(ICACC-S17-008-2019) New Directions in Luminescent Nanoparticles (Invited)**C. Wickleder^{*1}; A. Mattner¹; L. Zimmermann¹; J. Olchowka²; S. Lienenklaus³; S. Weiß³

1. University of Siegen, Chemistry/Biology, Germany
2. Université de Bordeaux, Chargé de Recherche CNRS, France
3. Hannover Medical School, Germany

9:00 AM**(ICACC-S17-009-2019) Solution based synthesis of advanced Ln doped materials; from molecules to materials (Invited)**G. Westin^{*1}

1. Uppsala University, Sweden

9:30 AM**(ICACC-S17-010-2019) Multifunctional Carbon Dots for Sensing Applications (Invited)**J. Macairan¹; F. Yarur¹; F. Victoria¹; F. Noun¹; R. Naccache^{*1}

1. Concordia University, Chemistry and Biochemistry, Canada

9:55 AM**Break****10:15 AM****(ICACC-S17-011-2019) Solution processed chalcogenides and oxides for solar cells and solar water splitting (Invited)**L. H. Wong^{*1}

1. Nanyang Technological University, Singapore

10:45 AM**(ICACC-S17-012-2019) Heterostructured Nanocrystals for Solar-driven Photoelectrochemical Hydrogen Production (Invited)**H. Zhao^{*1}

1. Qingdao University, College of Physics, China

11:10 AM**(ICACC-S17-013-2019) Surface Engineering of Nanostructured Functional Ceramics (Invited)**O. K. Varghese^{*1}; R. Neupane¹; M. Paulose¹; B. Kandel¹; A. Alex¹

1. University of Houston, Department of Physics, USA

11:40 AM**(ICACC-S17-014-2019) A Mechanistic study of the Photoluminescence Blinking in CsPb₂Br₅ Perovskite Crystals**Z. Qin^{*1}; L. Ouyang²; F. Lin¹; S. Yue¹; Z. Wang¹; J. Bao³

1. University of Electronic Science and Technology of China, USA
2. Yunnan University, China
3. University of Houston, USA

Advanced Nanostructured Materials for Photovoltaics and Solar Fuels III

Room: Halifax A/B

Session Chairs: Lydia Wong, Nanyang Technological University; Mauro Epifani, CNR-IMM; Alberto Vomiero, Lulea University of Technology

1:30 PM

(ICACC-S17-015-2019) Ultrafast exciton dynamics in PbS/CdS and CdSe/CdS nanocrystals and in coupled nanoparticle systems (Invited)

M. Zavelani-Rossi*¹

1. Politecnico di Milano, Energy Department, Italy

2:00 PM

(ICACC-S17-016-2019) Tuned Metal Oxide Nanosurfaces and Hetero-Interfaces for Solar Energy Conversion (Invited)

S. Mathur*¹; J. Leduc¹; T. Fischer¹

1. University of Cologne, Germany

2:30 PM

(ICACC-S17-017-2019) Flame Annealed TiO₂ and its Heterojunctions for the Production of Solar Fuels (Invited)

K. Shankar*¹; S. Zeng¹

1. University of Alberta, Electrical and Computer Engineering, Canada

3:00 PM

Break

3:20 PM

(ICACC-S17-018-2019) Fluoride thin films for energy-conversion in photovoltaics: Pros and cons of MOCVD and sol-gel approaches (Invited)

A. Pellegrino¹; A. Speghini²; G. Malandrino*¹

1. Università degli Studi di Catania, Dipartimento Scienze Chimiche, Italy

2. Università degli Studi di Verona, Dipartimento di Biotecnologie, Italy

3:50 PM

(ICACC-S17-019-2019) Materials Captured in Space and Time (Invited)

A. Yurtsever*¹

1. Institut national de la recherche scientifique (INRS), Canada

4:20 PM

(ICACC-S17-020-2019) Color Tunable Hybrid Polymer Light Emitting Diodes using Electrospaying

X. Guo*¹; J. A. Benavides¹; D. Banerjee¹; F. Roy-Moisan¹; S. G. Cloutier¹

1. École de technologie supérieure, Electrical Engineering, Canada

4:40 PM

(ICACC-S17-021-2019) Enhancement of sensing through surface-induced deformation in silicon nanostructures

M. Nasr Esfahani*¹; M. Jabbari²

1. University of Warwick, WMG, United Kingdom

2. University of Manchester, United Kingdom

Poster Session A

Room: Ocean Center

5:00 PM

(ICACC-GYIF-P001-2019) Fabrication and plasma corrosion behavior of yttrium oxyfluoride ceramics

T. Tsunoura*²; K. Miyashita²; R. Tahara²; K. Yoshida²; T. Yano¹

1. Tokyo Institute of Technology, Research Laboratory for Nuclear Reactors, Japan

2. Tokyo Institute of Technology, Department of Materials Science and Engineering, Japan

3. Tokyo Institute of Technology, Laboratory for Advanced Nuclear Energy, Japan

(ICACC-GYIF-P002-2019) Unmanned Aircraft Systems Far-Field Laser Power Transfer

P. Carr¹; P. R. Dougherty*¹; N. Kaabouch¹; S. Gupta²

1. University of North Dakota, EE, USA

2. University of North Dakota, ME, USA

(ICACC-GYIF-P003-2019) Cyclic Voltammetry - A tool for selecting electrodeposition parameters

M. K. King*¹; M. Mahapatra¹

1. University of Alabama at Birmingham, Materials Science and Engineering, USA

(ICACC-GYIF-P004-2019) Dynamic response of ice-templated ceramics with directional porosity

D. A. Terrones*¹; A. Grabowski¹; S. Akurati¹; M. Banda¹; D. Ghosh¹

1. Old Dominion University, Mechanical & Aerospace Engrg, USA

(ICACC-GYIF-P005-2019) REU Project: Design of Novel Sustainable Materials for Multifunctional Applications

M. Ahmann*¹; A. Miles¹; M. Abdulrahman¹; A. Minhas¹; M. Alshaya¹; S. Gupta¹

1. University of North Dakota, USA

(ICACC-FS2-P006-2019) 3D Intermittent observation of coarse pore evolution during sintering in alumina ceramics prepared from spray-dried granules

S. Tanaka*¹

1. Nagaoka University of Technology, Materials Science and Technology, Japan

(ICACC-FS3-P007-2019) Microstructures of silver molybdates for enhanced photochemical degradation under visible light irradiation

S. Adhikari¹; D. Kim*¹

1. Chonnam National University, School of Chemical Engineering, Republic of Korea

(ICACC-FS3-P008-2019) NIR-Emitting Quantum Dots – Ideal Candidates for Bio-Imaging

M. Adlung*¹; K. Schneider¹; C. Wickleder¹

1. Universität, Inorganic Chemistry, Germany

(ICACC-FS3-P009-2019) High Temperature Pyrolysis of Polymer Precursor Hydridopolycarbosilane/Polymethylhydrosiloxane: A Reactive Dynamics Simulation Study

H. Gao*¹; H. Wang¹; X. Fan¹; L. Su¹

1. Xi'an Jiaotong University, China

(ICACC-FS3-P010-2019) Femtosecond Laser Structuring of Metal Oxide Thin Films for Enhanced Optical Properties

D. Bialuschewski*¹; J. Hoppius²; E. L. Gurevich²; S. Mathur¹

1. University of Cologne, Institute of Inorganic and Material Chemistry, Germany

2. Ruhr-University Bochum, Chair of Applied Laser Technology, Germany

(ICACC-FS3-P011-2019) Design and Software Integration of a miniaturized CVD-reactor

M. Grosch*¹; T. Fischer¹; S. Mathur¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

(ICACC-FS3-P012-2019) Phase and Morphology Engineering of Plasma CVD Grown Hexagonal Boron Nitride (h-BN)

A. Sutorius*¹; D. Stadler¹; R. Frohnhoven¹; Y. Gönüllü¹; Y. K. Mishra²; S. Mathur¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

2. Kiel University, Germany

(ICACC-S2-P013-2019) Oxidation behavior of MCrAlY bond coat in thermal barrier coating system

J. Tang*¹; Y. Bai²

1. Xi'an Aeronautical University, China

2. Xi'an Jiaotong University, China

(ICACC-S2-P014-2019) Characterisation of electrospayed nanohydroxyapatite coatings on Si₃N₄ and CNT/Si₃N₄ ceramic composite

K. Balazsi*¹; T. Zagyva¹; C. Balazsi¹

1. Centre for Energy Research HAS, Thin Film Physics, Hungary

(ICACC-S2-P015-2019) Synthesis and Thermal Properties of Multicomponent Rare Earth Monosilicates

M. J. Ridley*¹; E. J. Opila¹

1. University of Virginia, Materials Science and Engineering, USA

(ICACC-S2-P016-2019) Study of Multiferroic Properties and Enhanced Magnetoelectric Coupling in (BFCO-PZT) Composites

A. Marzouki*¹

1. Laboratoire Structures, Propriétés et Modélisation des Solides, CentraleSupélec, CNRS-UMR8580, Université Paris-Saclay, France

(ICACC-S3-P017-2019) Modeling degradation due to chromium poisoning in solid oxide fuel cell cathodesJ. H. Mason^{*}; I. B. Celik¹; H. Abernathy¹; G. Hackett¹

1. National Energy Technology Laboratory, USA

(ICACC-S3-P018-2019) LSM/YSZ & LSCF Button Cell Tests in Cathode Air with Measured Cr ConcentrationsJ. S. Hardy^{*}; C. A. Coyle¹; J. Neeway¹; D. J. Edwards¹; A. Devaraj¹; N. L. Canfield¹; J. W. Stevenson¹

1. Pacific Northwest National Laboratory, Materials Science, USA

(ICACC-S3-P019-2019) Performance evaluation for solid oxide fuel cell by addition of tetragonal zirconia polycrystal in anode substrateH. Kuo^{*}; T. Lin¹; C. Yeh¹; W. Kao¹; Y. Cho¹; C. Liu¹; Y. Cheng¹; R. Lee¹

1. Institute of Nuclear Energy Research, Nuclear Fuels and Materials Division, Taiwan

(ICACC-S3-P020-2019) Influence of Calcium and Dysprosium co-doping on Enhancement of Electrical Conductivity of Samarium Doped Ceria ElectrolyteS. L. Reis¹; E. N. Muccillo^{*}

1. Institute of Nuclear Energy Research, Brazil

(ICACC-S3-P021-2019) Analysis of Infiltration on Performance Enhancement via Multi-step Oxygen Reduction Reaction MechanismT. Yang^{*}; S. Lee²; J. Liu²; W. Li³; X. Liu³; H. Abernathy²; G. Hackett¹

1. U.S. DOE, National Energy Technology Laboratory, USA
2. AECOM, NETL, USA
3. West Virginia University, Mechanical and Aerospace Engineering, USA

(ICACC-S3-P022-2019) Electrical Power Generation Characteristics of SOFC Stack System with Nitrogen Compounds as FuelR. Morikawa^{*}

1. KRI, Inc., New Energy Device R&D Laboratory, Japan

(ICACC-S3-P023-2019) Performance and Thermal Properties of Ni/Mo Alloy-Supported Solid Oxide Fuel CellS. Yang^{*}; C. Tsai¹; C. Chang¹; C. Fu¹; C. Yang¹; R. Lee¹

1. Institute of Nuclear Energy Research Atomic Energy Council, Physics Division, Taiwan

(ICACC-S3-P024-2019) Improvement of LSM/CeO₂ nano-composite cathode properties by optimizing interdiffusion between LSM and CeO₂H. Sakuma^{*}; S. Suda¹; M. Hase³; J. P. Wiff²

1. Shizuoka University, Japan
2. Nagaoka University of Technology, Japan
3. National Institute for Materials Science (NIMS), Japan

(ICACC-S3-P025-2019) Optimization of self-expansion vermiculite/talc composite seals for gas-tight sealing on rough substrate at high temperaturesJ. Xu^{*}; S. Suda¹

1. Shizuoka University, Electronics and Materials Science, Japan

(ICACC-S3-P026-2019) Conductivity and Activation Energy of Polycrystalline Lanthanum Silicate in Intermediate-Temperature RangeS. Yagi^{*}; A. Mineshige¹; M. Momai¹; H. Hayakawa¹

1. University of Hyogo, Japan

(ICACC-S4-P027-2019) Unravelling the mystery of new Raman spectral features of amorphized boron carbide: An atomistic studyA. Awasthi^{*}; G. Subhash¹

1. University of Florida, Mechanical and Aerospace Engineering, USA

(ICACC-S4-P028-2019) Elucidating Structure-Property Relations in Compositionally Varied B₄C-SiC Composites Via Automated Quantitative StereologyA. A. DiGiovanni^{*}; T. Shoulders¹; L. Vargas¹

1. US Army Research Laboratory, Ceramic and Transparent Materials, USA

(ICACC-S4-P029-2019) Static and Dynamic Response of B₄C-B₆O CompositeK. Ghaffari^{*}; S. Bavdekar²; G. Subhash²

1. University of Florida, Material Science and Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA

(ICACC-S4-P030-2019) Uniaxial compressive response of ice-templated ceramics with directional porosity: Effects of porosity, morphology and strain rateD. Ghosh^{*}; M. Banda¹; J. E. John¹; D. A. Terrones¹; B. B. Laredo¹

1. Old Dominion University, Mechanical & Aerospace Engrg, USA

(ICACC-S4-P031-2019) Sintering and mechanical properties of Boron suboxide (B₆O)-Iron Boride (FeB) compositesA. U. Khan^{*}; V. Domnich¹; R. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

(ICACC-S4-P032-2019) Laser Shock Processing of Ceramic MaterialsF. Wang¹; X. Yan¹; C. Zhang²; L. Deng²; Y. Lu²; M. Nastasi¹; B. Cui^{*}

1. University of Nebraska, Lincoln, Mechanical & Materials Engineering, USA
2. University of Nebraska-Lincoln, Department of Electrical Engineering, USA

(ICACC-S4-P033-2019) Titanium Diboride Reinforced Si-doped Boron Carbide prepared using Reactive Hot PressingQ. Yang^{*}; A. M. Celik¹; A. U. Khan¹; C. Hwang¹; V. Domnich¹; R. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

(ICACC-S4-P034-2019) Advancing mechanical properties of boron carbide by titanium diboride additionA. M. Celik^{*}; C. Hwang¹; V. Domnich¹; A. U. Khan¹; R. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

(ICACC-S4-P035-2019) Effect of Silica and Rare Earth Silicate Additives on Densification, Microstructure and Hardness in Boron SuboxideK. D. Behler^{*}; J. LaSalvia²; C. Marvel²; J. S. Dunn²; S. D. Walck¹; T. Shoulders¹; M. P. Harmer³

1. US Army Research Laboratory (SURVICE Engineering), Ceramics and Transparent Materials Branch, USA
2. US Army Research Laboratory, Ceramics and Transparent Materials Branch, USA
3. Lehigh University, Material Science Engineering, USA
4. US Army Research Laboratory (ORAU), Ceramics and Transparent Materials Branch, USA

(ICACC-S4-P037-2019) Eutectic Ceramic Composites as Promising Materials with Increased Impact ResistanceI. Kartuzov¹; V. Kartuzov^{*}

1. IPMS NASU, Ukraine

(ICACC-S4-P038-2019) Diamond-Ceramic Composites by Reactive Hot-PressingJ. LaSalvia^{*}; K. D. Behler¹; A. A. DiGiovanni¹; T. Shoulders¹; S. D. Walck¹; L. Vargas¹

1. Army Research Laboratory, USA

(ICACC-S4-P040-2019) DFT Study of Silicon and Rare Earth Adsorption on Oxygen Terminated (101) Boron Suboxide SurfaceJ. S. Dunn^{*}; K. D. Behler¹; J. LaSalvia¹; C. Marvel²; M. P. Harmer²

1. U.S. Army Research Laboratory, USA
2. Lehigh University, Materials Science and Engineering, USA

(ICACC-S4-P041-2019) A multi-mechanism-based constitutive model for the dynamic failure of boron carbideQ. Zeng^{*}; A. Tonge²; K. Ramesh¹

1. The Johns Hopkins University, Hopkins Extreme Materials Institute, USA
2. US Army Research Laboratory, USA

(ICACC-S11-P042-2019) The study on process variables of SiC Radiant Tube including in situ JoiningY. Kim^{*}

1. Inocera inc., LAB., Republic of Korea

(ICACC-S11-P043-2019) Load and speed effects on constant-speed sliding behavior of a semi-carbonized Cu/phenolic-derived semi-metallic friction materialC. Ju^{*}; J. Chern Lin¹; W. Chuang¹; K. Lee²

1. National Cheng-Kung University, Materials Science and Engineering, Taiwan
2. I-Shou University, Materials Science and Engineering, Taiwan

(ICACC-S11-P044-2019) Recovery of Glass Panel and Valuable Metal from Waste LCDH. Hong^{*}; M. Kim¹

1. Sungshin Women's University, Republic of Korea

(ICACC-S14-P045-2019) Synthesis of nanocrystalline $Al_2W_3O_{12}$ and the impact of gallium on its thermal expansionV. L. Blair^{*1}; I. Muller Costa²; K. O. Rose³; B. Marinkovic²

1. US Army Research Laboratory, Weapons and Materials Research Directorate, USA
2. Pontifícia Universidade Católica do Rio de Janeiro, Departamento de Engenharia Química e de materiais, Brazil
3. University of North Texas, USA

(ICACC-S14-P046-2019) Local coordination state of rare earth in eutectic scintillators for neutron detector applicationsH. Masai^{*1}; T. Yanagida²; T. Mizoguchi³; T. Ina⁴; T. Miyazaki⁵; N. Kawaguchi²; K. Fukuda⁶

1. National Institute of Advanced Industrial Science and Technology (AIST), Department of Materials and Chemistry, Japan
2. Nara Institute of Science and Technology, Japan
3. University of Tokyo, Japan
4. Japan Synchrotron Radiation Research Institute (JASRI/SPring-8), Japan
5. Tohoku University, Japan
6. Tokuyama Corporation, Japan

(ICACC-S14-P047-2019) X-ray induced luminescence of oxide glass-ceramicsH. Masai^{*1}; G. Okada²; N. Kawaguchi²; T. Yanagida²

1. National Institute of Advanced Industrial Science and Technology (AIST), Department of Materials and Chemistry, Japan
2. Nara Institute of Science and Technology, Japan

(ICACC-S14-P048-2019) Relaxation processes of electron-hole pairs in $\alpha-Al_2O_3$ probed with transient absorption spectroscopyM. Koshimizu^{*1}; Y. Muroya²; S. Yamashita²; H. Yamamoto²; Y. Fujimoto¹; K. Asai¹

1. Tohoku University, Department of Applied Chemistry, Japan
2. Osaka University, Japan
3. The University of Tokyo, Japan
4. National Institutes for Quantum and Radiological Science and Technology, Japan

(ICACC-S14-P049-2019) Flash sintering of piezoelectric and ferroelectric oxide ceramicsH. Charalambous^{*1}; E. Taghaddos¹; L. Perez-Maqueda²; S. K. Jha¹; M. A. Wassel¹; T. Tsakalakos¹

1. Rutgers University, Materials Science and Engineering, USA
2. University of Seville, Instituto de Ciencia de Materiales de Sevilla, Spain

(ICACC-S14-P050-2019) Investigations of complex anion material for scintillatorsT. Yanagida^{*1}; N. Kawaguchi¹

1. Nara Institute of Science and Technology, Japan

(ICACC-S14-P051-2019) Development of LuAG-based near infrared-emitting scintillatorT. Yanagida^{*1}; N. Kawaguchi¹

1. Nara Institute of Science and Technology, Japan

(ICACC-S14-P052-2019) Fabrication of translucent AlN ceramicsH. Akimoto^{*1}; J. Tatami¹; M. Iijima¹; T. Takahashi¹; M. Yokouchi¹; T. Okuda²

1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

(ICACC-S14-P054-2019) X-ray-induced Luminescence in Sn-doped Zinc Sodium Phosphate GlassesN. Kawaguchi^{*1}; T. Yanagida¹

1. Nara Institute of Science and Technology, Graduate School of Materials Science, Japan

(ICACC-S14-P053-2019) Particle Synthesis for Textured, High Performance $Na_{0.5}Bi_{0.5}TiO_3$ - $K_{0.5}Bi_{0.5}TiO_3$ - $BaTiO_3$ CeramicsO. S. Ates^{*2}; M. Avci¹; E. Suvaci²

1. ENTEKNO Materials Corp., R&D, Turkey
2. Eskisehir Technical University, Material Science and Engineering, Turkey

(ICACC-S14-P055-2019) Sn-doped Gallium Oxide Single Crystals for Radiation DetectionN. Kawaguchi^{*1}; D. Nakauchi¹; T. Yanagida¹

1. Nara Institute of Science and Technology, Graduate School of Materials Science, Japan

(ICACC-S14-P056-2019) Development of Textured, High Performance $Na_{0.5}Bi_{0.5}TiO_3$ - $K_{0.5}Bi_{0.5}TiO_3$ - $BaTiO_3$ CeramicsC. Askin^{*1}; H. Tetik¹; O. S. Ates¹; A. Avci¹; E. Suvaci¹

1. Eskisehir Technical University, Materials Science and Engineering, Turkey
2. ENTEKNO Corp., Turkey

(ICACC-S14-P057-2019) Scintillation properties of Eu-doped SrBr₂ transparent ceramicsH. Kimura^{*1}; T. Kato¹; N. Kawaguchi¹; T. Yanagida¹

1. Nara Institute of Science and Technology, Japan

(ICACC-S14-P058-2019) Scintillation and dosimetric properties of CsCl transparent ceramics and single crystalH. Kimura^{*1}; T. Kato¹; D. Nakauchi¹; N. Kawaguchi¹; M. Koshimizu²; T. Yanagida¹

1. Nara Institute of Science and Technology, Japan
2. Tohoku University, Japan

(ICACC-S14-P059-2019) Lead-free KNN single crystal and its piezoelectric propertiesK. Shimamura^{*1}; X. Fu¹; V. Garcia¹; Y. Kitanaka²; Y. Noguchi²; M. Miyayama²; N. Ohashi¹

1. National Institute for Materials Science, Japan
2. University of Tokyo, Japan

(ICACC-S14-P060-2019) Properties of molybdates phosphors heat-treated by hydrothermal and exposed to beta radiationR. Künzel¹; R. Mazin Latini¹; N. K. Umisedo²; E. M. Yoshimura²; E. Okuno³; A. d. Marques^{*1}

1. Universidade Federal de São Paulo, Chemistry, Brazil
2. Universidade Federal de São Paulo, Physical, Brazil
3. Universidade de São Paulo, Instituto de Física, Brazil

(ICACC-S14-P061-2019) Single crystal phosphors for high-brightness lighteningV. Garcia^{*1}; K. Shimamura¹; D. Inomata²; I. Akira³

1. National Institute for Materials Science (NIMS), Japan
2. Tamura Corporation, Japan
3. Koha Co., Ltd., Japan

(ICACC-S15-P062-2019) Regolith Materials for ISRU in Vacuum Conditions: Approximation of Micro-Gravity influence on materials processing for Additive Manufacturing in SpaceC. Neal^{*1}; L. Pohl²; T. S. Sakthivel¹; D. Britt²; S. Seal³

1. University of Central Florida, Materials Science & Engineering, Nanoscience Technology Center, Advanced Materials Processing & Analysis Center, USA
2. University of Central Florida, Physics, USA
3. University of Central Florida, Materials Science & Engineering, Nanoscience Technology Center, Advanced Materials Processing and Analysis Center, College of Medicine, USA

(ICACC-S15-P063-2019) Alignment of α alumina platlets for transparency through direct ink writingC. Meisel^{*1}; W. J. Costakis¹; A. Schlup¹; R. Trice¹; J. P. Youngblood¹

1. Purdue University, Materials Engineering, USA

(ICACC-S15-P064-2019) Large scale AM of artificial stone: Printers and printed componentsF. Gobbin^{*1}; G. Franchin¹; P. Colombo¹; A. Italiano²; A. Beretta²; M. Bergonzoni¹

1. University of Padova, Industrial Engineering, Italy
2. Desamanera, Italy

(ICACC-S15-P065-2019) Advances in additive manufacturing of 3Y-zirconia based on video projectionC. A. Fortulan^{*1}; L. B. Amaral¹; J. L. Paschoa¹; C. R. Foschini²

1. University of Sao Paulo, Mechanical, Brazil
2. São Paulo State University, Mechanical, Brazil

(ICACC-S17-P066-2019) Effect of using binder free titania paste on the efficiency of solar devicesV. More^{*1}

1. Indian Institute of Technology Bombay, CRNTS, India

(ICACC-S17-P067-2019) Electrochromic performances using sol-gel processes with tungsten trioxide (WO₃) on flexible transparent electrodesH. Kim^{*1}

1. Yeungnam University, School of Materials Science and Engineering, Republic of Korea

(ICACC-WW-P001-2019) Structural and Morphological Characterization of Persistent Phosphor of $Y_3(Al,Ga)_5O_{12}:Ce^{3+},Cr^{3+},Nd^{3+}$ Ceramics Fabricated from NanopowdersZ. Dai^{*1}; V. Boiko¹; M. Markowska¹; A. Gerus¹; M. L. Saladino²; F. Ursi²; D. Hreniak¹

1. The Institute of Low Temperatures and Structural Research, Polish Academy of Sciences, Division of Optical Spectroscopy, Poland
2. University of Palermo, Stebicef Department, Italy

(ICACC-WW-P003-2019) The Impact of Ceramic Raw Materials Variation on Investment Casting RefractoriesE. Jones*¹; S. Blackburn¹; R. Greenwood¹

1. University of Birmingham, Chemical Engineering, United Kingdom

(ICACC-WW-P004-2019) Effect of neodymium oxide doping on the properties of 3Y-TZPE. Willems*¹; F. Zhang¹; T. Van Hout¹; J. Vleugels¹; B. Van Meerbeek²

1. KULeuven, Materials Engineering, Belgium
2. KULeuven, Department of Oral Health Sciences, BIOMAT and UZ Leuven, Dentistry, Belgium

(ICACC-WW-P005-2019) In Vitro Efficacy of Antimicrobial-releasing Mesoporous Ceramics for Load-bearing Implant ApplicationsC. D'Haeyer*¹; K. Thevissen²; A. Braem¹

1. KULeuven, Department of Materials Engineering, Belgium
2. KULeuven, Centre of Microbial and Plant Genetics, Belgium

(ICACC-WW-P006-2019) Studying the mechanism of reactive infiltration of silicon and eutectic Si-Zr alloy in carbon using innovative laser-ablated microchannels and radiography experimentM. K. Naikade*¹; L. Weber²; A. Ortona¹; T. Graule¹

1. Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for High Performance Ceramics, Switzerland
2. EPFL, Mechanical Metallurgy Laboratory, Switzerland

(ICACC-WW-P007-2019) The Conversion of Metal Chlorides to Cobalt-titanium-boron based Hybrid NanostructuresS. Khoshima¹; Z. Altintas¹; M. Somer¹; O. Balci*¹

1. Koc University, Turkey

(ICACC-WW-P008-2019) Multisensor Ti₃C₂T_x MXenes Array Gas-Analytical ChipsH. Pazniak*¹; I. Burmistrov²; E. Kolesnikov¹; A. Varezchnikov²; T. Inerbaev³; V. Sysoev²; D. Kuznetsov¹

1. National University of Science and Technology "MISIS", Russian Federation
2. Saratov State University, Russian Federation
3. L.N. Gumilyov Eurasian National University, Kazakhstan

(ICACC-WW-P009-2019) Strontium/carbonate co-substituted two-phase system of hydroxyapatite and octacalcium phosphate derived from cuttlefish boneA. Ressler*¹; M. Cvetnić¹; M. Ivanković¹; H. Ivanković¹

1. University of Zagreb, Faculty of Chemical Engineering and Technology, Croatia

(ICACC-WW-P010-2019) Electrochemical assessment of NiO-CGO nanocomposites as cermet precursorsJ. Grilo*¹; D. Macedo²; R. M. Nascimento²; F. Marques¹

1. Universidade de Aveiro, Department of Materials and Ceramics Engineering, Portugal
2. Universidade Federal da Paraíba, Department of Materials Science and Engineering, Brazil
3. Universidade Federal do Rio Grande do Norte, Department of Materials Science and Engineering, Brazil

(ICACC-WW-P011-2019) Toughening mechanism of graphene in silicon nitride ceramicsE. Bodis*¹

1. Institute of Materials and Environmental Chemistry, Research Center for Natural Sciences, Hungarian Academy of Sciences, Hungary, Hungary

(ICACC-WW-P012-2019) Preparation of nanoceramic materials by needleless electrospinningI. Shepa*¹; E. Mudra¹; M. Vojtko¹; V. Medvecká²; J. Duszka¹

1. Slovak Academy of Sciences, Institute of Materials Research, Slovakia
2. Comenius University, Faculty of Mathematics, Physics and Informatics, Slovakia

Wednesday, January 30, 2019**40th Anniversary Richard M. Fulrath Award Symposium on Frontiers of Ceramics for Sustainable Society****Fulrath Session III**

Room: Coquina Salon E

Session Chairs: Michael Halbig, NASA Glenn Research Center; Kiyoshi Shimamura, National Institute for Materials Science

8:30 AM**(ICACC-FUL-019-2019) Picometer scale metrology of complex oxides with electrons and Xrays (Invited)**V. Gopalan*¹

1. Pennsylvania State University, Materials Science and Engineering, USA

9:00 AM**(ICACC-FUL-020-2019) In-situ observation of sintering behavior in a ceramic powder compact by optical coherence tomography (Invited)**J. Tatami*¹; F. Sakamoto¹; M. Iijima¹; T. Takahashi²

1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

9:20 AM**(ICACC-FUL-021-2019) Motion Control of Ceramics particles by electric field and its VTV analysis (Invited)**T. Nakayama*¹

1. Nagaoka Univ of Tech, Japan

9:40 AM**(ICACC-FUL-022-2019) Potential of melilite-type single crystals as piezoelectric devices (Invited)**H. Takeda*¹; T. Hoshina¹; T. Tsurumi¹

1. Tokyo Institute of Technology, Japan

10:00 AM**Break****10:20 AM****(ICACC-FUL-023-2019) Reliability Study of Dielectric Ceramic Materials (Invited)**A. Ando*¹

1. Murata Mfg. Co., Japan

10:50 AM**(ICACC-FUL-024-2019) Low temperature ceramic processing to electronics and energy application (Invited)**Y. Imanaka*¹

1. Fujitsu Laboratories Ltd., Japan

11:10 AM**(ICACC-FUL-025-2019) Investigation on electronic Structure at metal/oxide interfaces (Invited)**N. Ohashi*¹; S. Hirose²; T. Ohsawa¹; S. Ueda¹

1. National Institute for Materials Science (NIMS), Japan
2. Murata manufacturing Co., Ltd., Japan

11:30 AM**(ICACC-FUL-026-2019) Experimental and Theoretical Analysis of Dopants for the Improvement of MLCC Lifetime (Invited)**Y. Iwazaki*¹

1. TAIYO YUDEN CO., LTD., Research and Development Laboratory, Japan

11:50 AM**(ICACC-FUL-027-2019) Integrating Data Sciences into Ceramic Science and Engineering Education (Invited)**E. C. Dickey*¹

1. North Carolina State University, Materials Science and Engineering, USA

FS3: Chemically Processing of Functional Materials: Understanding the Conversion of Molecular Structures to Solid-State Compounds

Precursor Chemistry and Polymer Derived Ceramics I

Room: Coquina Salon C

Session Chairs: Ralf Riedel, TU Darmstadt; Zhaoju Yu, Xiamen University

8:30 AM

(ICACC-FS3-031-2019) Structure, energetics and bioactivity of polysiloxane-derived silicon oxycarbide-based glasses with highly connected networks (Invited)

E. Ionescu*¹; S. Sen²; G. Mera¹; A. R. Boccaccini³; A. Navrotsky²

1. Technical University Darmstadt, Materials Science, Germany
2. UC Davis, USA
3. FAU Erlangen-Nürnberg, Germany

9:00 AM

(ICACC-FS3-032-2019) Dimensionality Matters: Molecular Approach Towards Novel 0D, 1D and 2D Nanocarbon-Based Ceramic Composites

G. Mera*¹

1. TU Darmstadt, Materials Science, Germany

9:20 AM

(ICACC-FS3-033-2019) Robust and electrically conducting graphene-modified polymer derived ceramics (Invited)

C. Salameh*²; M. Boussmen¹; D. Voiry¹; P. Miele²

1. Institut Europeen Des Membranes Montpellier, France
2. Ecole Nationale Supérieure de Chimie de Montpellier, France

9:40 AM

(ICACC-FS3-034-2019) New pressure-less sintering process of SiC powder using well-designed interstices

R. Usukawa*¹; T. Ishikawa¹

1. Tokyo University of Science, Yamaguchi, Applied Chemistry, Japan

10:00 AM

Break

Precursor Chemistry and Polymer Derived Ceramics II

Room: Coquina Salon C

Session Chairs: Chrystelle Salameh, Institut Europeen Des Membranes Montpellier; Gunnar Westin, Uppsala University

10:20 AM

(ICACC-FS3-035-2019) High-Pressure Multifunctional Inorganic Nitrides (Invited)

R. Riedel*¹

1. TU Darmstadt, Materials Science, Germany

10:50 AM

(ICACC-FS3-036-2019) Ultra-high temperature ceramic nanocomposites: Molecular synthesis, tailorable microstructure and advanced functional properties (Invited)

Z. Yu*¹

1. Xiamen University, China

11:10 AM

(ICACC-FS3-037-2019) A novel synthesis route to luminescent silicon nanocrystals in an amorphous silicon nitride matrix

G. Soraru*¹; M. Biesuz²; R. Camprostrini¹; P. Bettotti³; M. Bortolotti¹; G. Speranza²; O. Ersen⁴; M. Bahri¹; S. Bernard⁵

1. University of Trento, Industrial Engineering, Italy
2. FBK, Italy
3. University of Trento, Physics Dept., Italy
4. University of Strasbourg, IPCMS, France
5. CNRS, Centre Européen de la Céramique, France

11:30 AM

(ICACC-FS3-038-2019) Revealing interface characteristics of sol-gel derived SiOC glasses through bulk and surface characterization (Invited)

A. Tamayo*¹; F. Rubio¹; A. Mazo¹; J. Rubio¹

1. Institute of Ceramics and Glass, CSIC, Spain

11:50 AM

(ICACC-FS3-039-2019) Molecular manipulations of commercial oligosilazanes for processing of ceramic fibers, functional coatings and catalytically active ceramics

G. Motz*¹; O. Flores¹; L. Ribeiro²; P. Furtat¹

1. University of Bayreuth, Ceramic Materials Engineering, Germany
2. Federal university of Santa Catarina, Chemical Engineering, Brazil

FS4: Green Technologies and Joining of Ceramics

Materials Processing from Ceramic, Plastic, Metallic, and Wastes I

Room: Tomoka C

Session Chairs: Carolina Tallon, Virginia Tech; Khwaja Hossain, Mayville State University

8:30 AM

(ICACC-FS4-001-2019) Additive manufacturing of portland cement pastes with additions of ash waste

L. Vergara¹; H. Colorado*¹

1. Universidad de Antioquia, Colombia

8:50 AM

(ICACC-FS4-002-2019) Glass-ceramic Foams by Weak Alkaline Activation of Waste, Gel-casting and Sintering: Towards Permanent Materials

E. Bernardo*¹

1. University of Padova, Department of Industrial Engineering, Italy

9:10 AM

(ICACC-FS4-003-2019) On the Design of Novel Lignin based Composites

K. Hall²; S. Abu Aldam*¹; Y. Ji²; M. Dey¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA
2. University of North Dakota, Chemical Engineering, USA

9:30 AM

(ICACC-FS4-004-2019) Towards the use of primary battery wastes in Colombia on route for a circular economy model for SME

H. Colorado*¹

1. Universidad de Antioquia, Colombia

9:50 AM

Break

Environmental Technologies

Room: Tomoka C

Session Chair: Kathy Lu, Virginia Tech

10:20 AM

(ICACC-FS4-005-2019) Environmentally Friendly Coatings for Corrosion Protection (Invited)

W. Fahrenholtz*¹; M. O'Keefe¹

1. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

10:50 AM**(ICACC-FS4-006-2019) Lead free Tin Iodide based perovskite solar cells: Optimization of electron and hole transport layers by simulation and analysis towards development of tandem configurations**J. Harris¹; S. Ahmed^{*2}; S. Banerjee¹

1. California State University, Fresno, Mechanical Engineering, USA
2. SUNY Buffalo State, Mechanical Engineering, USA

11:10 AM**(ICACC-FS4-007-2019) Ca₂M₂O₇ Solid Sorbents for CO₂ Capture: An in Situ X-Ray Diffraction Study (Invited)**E. Hassani¹; T. Oh^{*1}

1. Auburn University, USA

11:40 AM**(ICACC-FS4-008-2019) Development and Performance of Zirconia Based Oxygen Transport Membranes for Carbon Capture Processes**S. Pirou^{*1}; P. Hendriksen¹; A. Kaiser¹; R. Kiebach¹

1. Denmark Technical University, Energy, Denmark

Materials Processing from Ceramic, Plastic, Metallic, and Wastes II

Room: Tomoka C

Session Chairs: Milena Salvo, Politecnico di Torino; Surojit Gupta, University of North Dakota

1:30 PM**(ICACC-FS4-009-2019) SiSiC Ceramics based on Wood Polymer Composites (WPC) (Invited)**W. Krenkel^{*1}; T. Liensdorf¹

1. University of Bayreuth, Ceramic Materials Engineering, Germany

2:00 PM**(ICACC-FS4-010-2019) Silicon Oxycarbide Through Flash Pyrolysis (Invited)**K. Lu^{*1}; L. Wang¹; R. Ma¹; D. Erb¹

1. Virginia Tech, USA

2:30 PM**(ICACC-FS4-011-2019) Harnessing the Lignocellulosic Components of Wheat Bran to Develop Bio-composites for Industrial Usage (Invited)**K. G. Hossain^{*1}

1. Mayville State University, Science and Mathematics, USA

3:00 PM**Break****Ceramic Joining for Ambient and Extreme Environmental Applications**

Room: Tomoka C

Session Chairs: Henry Colorado, Universidad de Antioquia; Marion Herrmann, Technische Universität Dresden

3:20 PM**(ICACC-FS4-012-2019) Processing and characterization of advanced ceramic-based joined components (Invited)**M. Ferraris^{*1}; M. Akram¹; M. Bangash¹; V. Casalegno¹; S. De La Pierre¹; P. Gianchandani¹; A. Sabato¹; M. Salvo¹; F. Smeacetto¹

1. Politecnico di Torino, Department of Applied Science and Technology, Italy

3:50 PM**(ICACC-FS4-013-2019) Surface pre-treatments to improve joint strength of ceramics (Invited)**M. Salvo^{*1}; V. Casalegno¹; M. Ferraris¹; C. Wilhelmi²; M. Suess²

1. Politecnico di Torino, Department of Applied Science and Technology (DISAT), Italy
2. Airbus Defence and Space GmbH, Space Systems, Mechanical Products and Engineering GE, Germany

4:20 PM**(ICACC-FS4-014-2019) Novel processing of SOFC glass-ceramic sealants based on the sintering of glass powders mixed with a reactive silicone binder**E. Bernardo^{*1}; H. Elsayed²; H. Javed²; F. Smeacetto³

1. University of Padova, Department of Industrial Engineering, Italy
2. Politecnico di Torino, Department of Applied Science and Technology, Italy
3. Politecnico di Torino, Department of Energy, Italy

4:40 PM**(ICACC-FS4-015-2019) Glass/glass-ceramics for joining of materials in energy sectors**M. Mahapatra^{*1}

1. University of Alabama at Birmingham, Materials Science and Engineering, USA

S1: Mechanical Behavior and Performance of Ceramics & Composites**Processing - Microstructure - Mechanical Properties Correlation II**

Room: Coquina Salon D

Session Chairs: Jonathan Salem, NASA Glenn Research Center; Michael Jenkins, Bothell Engineering and Science Technologies

8:30 AM**(ICACC-S1-029-2019) Forty years after the promises of ceramic steel: Zirconia-based composites with a metal-like mechanical behavior (Invited)**J. Chevalier^{*1}

1. INSA Lyon, Materials Science, France

9:00 AM**(ICACC-S1-030-2019) Can we predict zirconia ageing from processing parameters?**L. Gremillard^{*1}; C. Wei¹

1. INSA-Lyon, MATEIS, France

9:20 AM**(ICACC-S1-031-2019) Reactive Melt Infiltration of carbon fibre reinforced ZrB₂ composites with Zr₂Cu**A. Vinci^{*1}; M. Kuetemeyer²; L. Zoli¹; D. Sciti¹; D. Koch²

1. ISTECCNR, DSCTM, Italy
2. DLR - German Aerospace Center, Germany

9:40 AM**(ICACC-S1-032-2019) Manufacturing of Damage Tolerant Fiber Reinforced Ceramic Composites with UHTC based Matrices via Reactive Melt Infiltration**M. Kuetemeyer¹; A. Vinci²; D. Sciti²; D. Koch^{*1}

1. German Aerospace Center, Institute of Structures and Design, Germany
2. ISTECCNR, DSCTM, Italy

10:00 AM**Break****10:20 AM****(ICACC-S1-033-2019) Damage tolerant carbon fibre reinforced ZrB₂/SiC composites**A. Vinci^{*1}; L. Zoli¹; D. Sciti¹; C. Gutierrez²; S. Rivera²

1. ISTECCNR, DSCTM, Italy
2. Nanoker Research S.L., Spain

10:40 AM**(ICACC-S1-034-2019) Preparation and Characterization of Pure SiC Ceramics via High Temperature Physical Vapor Transport Induced by Seeding with Nano SiC Particles**Y. Deng^{*1}; J. Yang¹; N. Zhang¹; B. Wang¹

1. State Key Laboratory for Mechanical Behavior of Materials, China

11:00 AM**(ICACC-S1-035-2019) Evaluating and Visualizing the Effect of Binders on the Green Strength of Dry-Pressed Spray-Dried Alumina**I. Maher*; R. A. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

11:20 AM**(ICACC-S1-036-2019) Characterizing the influence of local microstructure on ferroelastic deformation in ceramics**C. S. Smith*; J. A. Krogstad¹

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

11:40 AM**(ICACC-S1-037-2019) Thermal Stability of the Mechanically Alloyed 2SiB₃CN Ceramic**P. Zhang*; R. Yu¹; B. Yang¹; D. Jia²; Z. Yang²

1. Henan University of Science and Technology, School of Materials Science and Technology, China
 2. Harbin Institute of Technology, China

Processing - Microstructure - Mechanical Properties Correlation III

Room: Coquina Salon D

Session Chairs: Emmanuel Maillet, GE Global Research; Dietmar Koch, Institute of Structures and Design

1:30 PM**(ICACC-S1-038-2019) Manufacturing of damage tolerant C/C-SiC composites by adjustment of fiber matrix interface during processing**D. Koch*; B. Heidenreich¹; J. Neraj¹; M. Kosin¹; Y. Shi¹; M. R. Buchmeiser²; S. Horn³

1. German Aerospace Center, Institute of Structures and Design, Germany
 2. DITF, Germany
 3. University of Augsburg, Germany

1:50 PM**(ICACC-S1-039-2019) Microstructure formation during C/C-SiC composite manufacturing as a function of carbon fiber surface modification**W. M. Mueller*; M. Schulz¹; B. Brueck¹; T. K. Schneck²; F. Hermanutz²; B. Claus³; B. Heidenreich²; M. R. Buchmeiser³; D. Koch²; S. Horn¹

1. University of Augsburg, Germany
 2. DLR - German Aerospace Center, Germany
 3. DITF - German Institutes of Textile and Fiber Research, Germany

2:10 PM**(ICACC-S1-040-2019) Effects of slurry concentration on the properties of SiC_f/SiC fiber-reinforced ceramic composites made by precursor impregnation and pyrolysis process**S. Lee*; J. Gu¹; H. Lee¹

1. Korea Institute of Materials Science, Republic of Korea

2:30 PM**(ICACC-S1-041-2019) Mechanical Properties of SiC/SiC Minicomposite with Various Matrix Thicknesses at Elevated Temperatures**T. Kato*; K. Kawanishi¹; S. Muto¹

1. IHI Corporation, Materials Technology Department, Japan

2:50 PM**Break****3:10 PM****(ICACC-S1-042-2019) Microstructure-based modeling of the ultimate tensile strength of ceramic matrix composites**E. Maillet*; D. Dunn¹

1. GE Global Research, USA

3:30 PM**(ICACC-S1-043-2019) Microstructure-based modeling of the interlaminar tensile strength of ceramic matrix composites**M. Moscinski*; A. Cerrone¹; P. Meyer¹; E. Maillet¹; D. Dunn¹

1. GE Global Research, USA

3:50 PM**(ICACC-S1-044-2019) Image analysis technique for estimating ceramic matrix composite properties**A. Cerrone*; M. Moscinski¹; A. Santamaria-Pang¹

1. GE Global Research, USA

4:10 PM**(ICACC-S1-045-2019) Microstructure-based modeling of the thermal-elastic properties of ceramic matrix composites**M. Moscinski*; A. Cerrone¹; P. Meyer¹; E. Maillet¹; D. Dunn¹

1. GE Global Research, USA

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications**CMAS Degradation of EBC/TBC: Effects and Mitigation Strategies II**

Room: Tomoka B

Session Chair: Peter Mechnich, DLR - German Aerospace Center

8:30 AM**(ICACC-S2-026-2019) Understanding the Stability of the Garnet Phase in the Context of Reactions Between T/EBCs and Silicate Deposits**E. Godbole*; S. Berens¹; D. L. Poerschke¹

1. University of Minnesota, Chemical Engineering and Materials Science, USA

8:50 AM**(ICACC-S2-027-2019) Effect of initial composition, morphology, and feed rate of synthetic calcium-magnesium-alumino-silicate (CMAS) on the extent of damage to thermal barrier coatings**B. Jun*; E. H. Jordan²; R. C. Cooper²; R. Dibiase¹

1. University of Connecticut, Materials Science, USA
 2. University of Connecticut, Mechanical Engineering, USA

9:10 AM**(ICACC-S2-028-2019) Thermochemical Effect of Alternative Fuel Impurities on the Degradation of YSZ Thermal Barrier Coatings**J. H. Ramirez Velasco*; H. Kenttämää²; G. Kilaz²; R. Trice¹

1. Purdue University, Materials Engineering, USA
 2. Purdue University, Department of Chemistry, USA
 3. Purdue University, School of Engineering Technology, USA

9:30 AM**(ICACC-S2-029-2019) Corrosive Behavior of Yb₂SiO₅ by CMAS and Volcanic Ash for Environmental Barrier Coatings**B. Jang*; S. Kim²; Y. Oh²; H. Kim²

1. Kyushu University, Interdisciplinary Graduate School of Engineering Sciences, Japan
 2. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

9:50 AM**Break****Multifunctional Protective Coatings: Processing, Microstructure and Properties I**

Room: Tomoka B

Session Chair: Peter Mechnich, DLR - German Aerospace Center

10:10 AM**(ICACC-S2-030-2019) Fabrication of Molybdenum Nitride - Graphene Composite by Solution Precursor Plasma Spray for Supercapacitor Electrodes**H. Caouette-Fritsch*; T. W. Coyle¹

1. University of Toronto, Materials Science and Engineering, Canada

10:30 AM**(ICACC-S2-031-2019) Protective Coatings for Super-Critical Water-Cooled Reactor Corrosion Resistance Applications**E. Medvedovski*; M. MacGregor²; J. Lyons²; W. Cook²

1. Endurance Technologies Inc., Canada
 2. University of New Brunswick, Canada

10:50 AM

(ICACC-S2-032-2019) Development of bioinspired SiC/C/Al coatings with superwettabilityP. Hernandez¹; E. Lopez-Honorato^{*1}

1. CINVESTAV, Mexico

11:10 AM

(ICACC-S2-033-2019) Tunable functionality of high entropy carbide thin films via carbon stoichiometryC. M. Rost^{*1}; T. M. Borman²; M. Hossain²; M. Lim³; S. Daigle³; Z. Rak³; D. Brenner³; J. Maria²; P. E. Hopkins¹

1. University of Virginia, Mechanical & Aerospace Engineering, USA
2. The Pennsylvania State University, Materials Science & Engineering, USA
3. North Carolina State University, Materials Science & Engineering, USA

11:30 AM

(ICACC-S2-034-2019) Influence of pulsed high-intensity ion and electron beams on the optical and mechanical properties of Al-Si-N nanocomposite coatingsG. Remnev^{*1}; J. Musil²; I. Egorov¹; A. Kadyrov¹; F. Konusov¹; S. Pavlov¹; V. Tarbokov¹; S. Zenkin¹

1. Tomsk Polytechnic University, Russian Federation
2. University of West Bohemia, Czechia

11:50 AM

(ICACC-S2-035-2019) Tailoring the wettability of hydrophobic ceramic coatings fabricated by solution precursor plasma spray processP. Xu^{*1}; T. W. Coyle¹; L. Pershin¹; J. Mostaghimi¹

1. University of Toronto, Department of Mechanical and Industrial Engineering, Canada
2. University of Toronto, Department of Materials Science and Engineering, Canada

Multifunctional Protective Coatings: Processing, Microstructure and Properties II

Room: Tomoka B

Session Chair: Eugene Medvedovski, Consultant

1:30 PM

(ICACC-S2-036-2019) Titanium dioxide coatings engineered by HVSPFS processing with optimized injectors and combustion chambersM. H. Blum^{*1}; R. Gadow¹; A. Killinger¹

1. University of Stuttgart, Institute for Manufacturing Technologies of Ceramic Components and Composites, Germany

1:50 PM

(ICACC-S2-037-2019) Two-step Fabrication of F-Plasma Resistant YOF Coating with uniform chemical compositionS. Lee^{*1}; Y. Oh¹; S. Park¹

1. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

2:10 PM

(ICACC-S2-038-2019) Processing of an organosilazane-based glass/ZrO₂ composite coating system by laser pyrolysisA. C. Horcher^{*1}; K. Tangermann-Gerk²; G. Barroso¹; W. Krenkel¹; G. Motz¹

1. University of Bayreuth, Ceramic Material Engineering, Germany
2. Bayerisches Laserzentrum GmbH, Germany

2:30 PM

(ICACC-S2-039-2019) Sintering and hardness of glass-zircon GMC coatingsJ. Amorós¹; A. Moreno^{*1}; E. Blasco¹

1. University Jaume I, Instituto de Tecnología Cerámica, Spain

2:50 PM

(ICACC-S2-040-2019) Fabrication and Microstructure Development of Dense Double-layer γ -Y₂Si₂O₇/Y₂O₃-Al₂O₃-SiO₂ Glass Coating on Porous Si₃N₄ SubstrateX. Fan^{*1}; H. Wang¹; M. Niu¹; Y. Wang¹

1. Xi'an Jiaotong University, China

S3: 16th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology**Air Electrode Performance and Durability**

Room: Crystal

Session Chair: Alexander Opitz, Vienna University of Technology

9:00 AM

(ICACC-S3-023-2019) Enhancing SOFC Electrochemical Performance with Nanoceramics Prepared via in situ Carbon TemplatingS. P. Muhoza¹; S. Lee³; M. D. Gross^{*2}

1. Wake Forest University, Chemistry, USA
2. Wake Forest University, Engineering, USA
3. DOE National Energy Technology Lab, USA

9:20 AM

(ICACC-S3-024-2019) Degradation Mechanism Studies of Ba-Fe-O infiltrated LSM/YSZ Solid Oxide Fuel Cell Operated Under Humidified AirY. Fan^{*1}; Y. Chen²; H. Abernathy¹; R. Pineault³; X. Song²; K. Gerdes³; S. Lee¹; T. Kalapos¹; G. Hackett³

1. DOE National Energy Technology Laboratory, AECOM, USA
2. West Virginia University, Department of Mechanical and Aerospace Engineering, USA
3. DOE National Energy Technology Laboratory, USA

9:40 AM

(ICACC-S3-025-2019) Electrochemical impedance spectroscopy of (La_{1-x}Sr_x)Ni_{0.9}Mn_{0.1}O_{4+δ}Y. Sadia^{*1}; S. Skinner²

1. Ben-Gurion University of the Negev, Material Engineering, Israel
2. Imperial College, Material Engineering, United Kingdom

10:00 AM

Break

Fuel Electrode Performance and Durability

Room: Crystal

Session Chair: Scott Barnett, Northwestern Univ

10:20 AM

(ICACC-S3-026-2019) Revisiting hydrogen oxidation kinetics on Ni/YSZ: Bridging the gap between pattern and cermet electrodes (Invited)A. K. Opitz^{*1}

1. Vienna University of Technology, Christian Doppler Laboratory for Interfaces in Metal-Supported Electrochemical Energy Converters, Austria

10:50 AM

(ICACC-S3-027-2019) Development of Anodes with High Resistance to Coking for Solid Oxide Fuel Cells (Invited)A. Manthiram^{*1}; K. Lai¹; D. Yoon¹

1. University of Texas, Austin, Materials Science and Engineering, USA

11:20 AM

(ICACC-S3-029-2019) Nanostructured anode with extremely low Ni content for RedOx cycle tolerance of SOFCJ. Park^{*1}; J. Lee¹; K. Yoon¹; H. Kim¹; H. Ji¹; S. Han²; J. Son¹

1. Korea Institute of Science and Technology, Republic of Korea
2. Korea Advanced Institute of Science and Engineering (KAIST), Republic of Korea

11:40 AM

(ICACC-S3-030-2019) The study of SOFCRoll with an exsolved nickel anodeK. M. Nowicki^{*1}; P. Connor¹; X. Yue¹; J. Irvine¹

1. University of St Andrews, Chemistry, United Kingdom

Interconnects and Coatings

Room: Crystal

Session Chair: Albert Tarancón, IREC

1:30 PM**(ICACC-S3-031-2019) Development of protective coatings for the hydrogen and oxygen side of SOFC/SOEC interconnects (Invited)**S. Molin*¹

1. Gdansk University of Technology, Laboratory of Functional Materials, Faculty of Electronics, Telecommunications and Informatics, Poland

2:00 PM**(ICACC-S3-032-2019) Investigation of La_{1-x}Sr_xCo_{0.2}Fe_{0.8}O₃ as Cr Gettering Materials: Effect of La/Sr Ratio on Reaction and Validation in Stack Fixture Test**Y. Chou*¹; J. Choi¹; N. L. Canfield¹; J. W. Stevenson¹

1. Pacific Northwest National Lab, Materials, USA

2:20 PM**(ICACC-S3-033-2019) Co-deposition of Cu and Fe-doped MnCo spinels on metallic interconnects by electrophoretic method: Structural, compositional modifications and corrosion properties**F. Smeacetto*¹; A. Sabato²; H. Javed²; E. Zanchi²; B. Talic³; S. Molin⁴

1. Politecnico di Torino, Energy, Italy
2. Politecnico di Torino, Applied Science and Technology, Italy
3. DTU, Energy Conversion and Storage, Denmark
4. Gdansk, University of Technology, Poland

2:40 PM**(ICACC-S3-034-2019) Influence of metal coatings on the morphology and the structure of interconnect surface in anode gas ambience**M. Kusnezoff*¹; V. Sauchuk¹; C. Folgner¹; S. Molin²; M. Vinnichenko³; A. Michaelis¹

1. Fraunhofer IKTS, Germany
2. Gdansk University of Technology, Faculty of Electronics, Electrocommunications and Informatics, Poland

3:00 PM**(ICACC-S3-035-2019) Corrosion of Iron Alloy Interconnects under Dual Atmosphere Exposure Conditions in Intermediate Temperature SOFC Systems**M. Reiser*¹; A. Aphale¹; A. Pandey²; P. Singh¹

1. University of Connecticut, Materials Science & Engineering, USA
2. LG Fuel Cell Systems, USA

3:20 PM**Break****HT Electrolysis**

Room: Crystal

Session Chair: Christian Walter, sunfire GmbH

3:40 PM**(ICACC-S3-036-2019) Performance and Long-Term Stability of Electrolyte Supported Solid Oxide Cells in Steam Electrolysis Mode (Invited)**J. Schefold*¹; A. Brisse¹

1. European Institute for Energy Research, EIFER, Germany

4:10 PM**(ICACC-S3-037-2019) Methane Synthesis from Water and CO₂ with Solid Oxide Electrolysis Cells (Invited)**H. Kishimoto*¹; T. Ishiyama¹; T. Yamaguchi²; R. Atsumi²; Y. Fujimaki²; K. Yamaji¹; Y. Fujishiro²; H. Shimada²

1. National Institute of Advanced Industrial Science and Technology (AIST), Research Institute for Energy Conservation (IECO), Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan
3. National Institute of Advanced Industrial Science and Technology (AIST), Japan

4:40 PM**(ICACC-S3-038-2019) Intelligent and Robust Nano-particles on Perovskite for Next Generation Solid Oxide Electrochemical Cells (Invited)**T. Shin*¹; H. Kim¹; K. Hwang¹; M. Kim¹; M. Oh¹

1. Korea Institute of Ceramic Engineering & Technology, Republic of Korea

5:10 PM**(ICACC-S3-039-2019) Performance and Degradation of Metal-Supported Solid Oxide Electrolysis Cells (MS-SOECs) with Infiltrated Catalysts**R. Wang*¹; E. Dogdibegovic¹; M. C. Tucker¹

1. Lawrence Berkeley National Laboratory, Energy Conversion Group, Energy Storage and Distributed Resources Division, USA

5:30 PM**(ICACC-S3-040-2019) A Role of the Oxygen Electrode Overpotential on the Solid Oxide Electrolysis Cell Degradation**B. Park*¹; Q. Zhang¹; P. Voorhees¹; S. Barnett¹

1. Northwestern University, USA

5:50 PM**(ICACC-S3-041-2019) Influence of distribution of oxygen partial pressure on the electrolyte degradation of solid oxide electrolyser cells**Q. Zhang*¹; B. Park¹; Q. Liu¹; S. Barnett¹; P. Voorhees¹

1. Northwestern University, USA

S4: Armor Ceramics - Challenges and New Developments**Materials and Process Modeling II**

Room: Coquina Salon F

Session Chair: Jerry LaSalvia, U.S. Army Research Laboratory

8:30 AM**(ICACC-S4-029-2019) A rate-dependent breakage model for granulated ceramics**M. Cil*¹; R. Hurley¹; L. Graham-Brady¹

1. Johns Hopkins University, Hopkins Extreme Materials Institute, USA

8:50 AM**(ICACC-S4-030-2019) Fragmentation and granular phase transition in brittle ceramics**A. Bhattacharjee*¹; L. Graham-Brady¹

1. Johns Hopkins University, Civil Engineering, USA

9:10 AM**(ICACC-S4-031-2019) Indentation Induced Amorphization of Single Crystal Quartz**K. Andes*¹; K. Ramesh¹

1. Johns Hopkins University, Mechanical Engineering, USA

Synthesis and Processing I

Room: Coquina Salon F

Session Chairs: Lionel Vargas, US Army Research Laboratory; Nicholas Ku, U.S. Army Research Laboratory

9:30 AM**(ICACC-S4-032-2019) Additive Manufacturing of Glass Optics (Invited)**R. J. Dylla-Spears*¹; N. Dudukovic¹; J. Destino²; K. Sasan¹; M. A. Johnson¹; T. D. Yee¹; D. T. Nguyen¹; L. L. Wong¹; T. Fears¹; A. Lange¹

1. Lawrence Livermore National Laboratory, Optics and Materials Science & Technology, USA
2. Creighton University, USA

10:00 AM**Break****10:20 AM****(ICACC-S4-033-2019) Additive Manufacturing for Advanced Armor Ceramics: Techniques, Capability Gaps, and Paths Forward to Enable the Next Generation of Protection (Invited)**L. Vargas*¹; M. C. Golt¹; N. Ku¹

1. U.S. Army Research Laboratory, Weapons and Materials Research Directorate, USA

10:50 AM**(ICACC-S4-034-2019) Additive Manufacturing for Hierarchical Design in Next-Generation Armor Composites**J. Pelz^{*1}; N. Ku²; C. A. Marsico²; L. Vargas²; M. A. Meyers¹

1. University of California, San Diego, MATS, USA
2. US Army Research Laboratory, USA

11:10 AM**(ICACC-S4-035-2019) Binder Jet Fabrication of Boron Carbide-Silicon Carbide Composites**C. L. Cramer^{*1}; R. A. Lowden¹

1. Oak Ridge National Laboratory, ETSD, USA

11:30 AM**(ICACC-S4-036-2019) Producing Dense Boron Carbide Components Using Room Temperature Injection Molding and Pressureless Sintering**E. Weaver^{*1}; R. Trice¹; J. P. Youngblood¹

1. Purdue University, Materials Science & Engineering, USA

11:50 AM**(ICACC-S4-037-2019) Challenges in densifying armor ceramics produced by direct-ink-write additive manufacturing**N. Ku^{*1}; C. A. Marsico¹; R. Dunn¹; J. Pelz²; L. Vargas¹

1. U.S. Army Research Laboratory, USA
2. University of California, San Diego, MATS, USA

Synthesis and Processing II

Room: Coquina Salon F

Session Chairs: Selva Vennila Raju, U.S. Army Research Laboratory; Kristopher Behler, U.S. Army Research Lab; Jerry LaSalvia, U.S. Army Research Laboratory

1:30 PM**(ICACC-S4-038-2019) Complex Shape Components by 3D Printing and Spark-Plasma Sintering (Invited)**E. A. Olevisky^{*1}; G. Lee¹; E. Torresani¹

1. San Diego State University, USA

2:00 PM**(ICACC-S4-039-2019) Effect of boron carbide composition on its densification behavior during spark plasma sintering (SPS)**N. Firshtman^{*1}; S. Kalabukhov¹; N. Frage¹

1. Ben-Gurion University of the Negev, Materials Engineering, Israel

2:20 PM**(ICACC-S4-040-2019) Multi-Phase Armor Production and Characterization Involving B4C-SiC-TiC with SPS Technique**G. Uysal Sapançi^{*1}

1. ROKETSAN, Ballistic Protection Center, Turkey

2:40 PM**(ICACC-S4-041-2019) Studying the incorporation of WC to make B₄C-TiB₂ system more interesting for armour applications**S. Failla^{*1}; L. Zoli¹; D. Sciti¹

1. National Research Council of Italy - Institute of Science and Technology for Ceramics (CNR-ISTEC), Italy

3:00 PM**(ICACC-S4-042-2019) SiB_{2.5} or Si₃B₁₀ – Crystal structure model, electronic structure, and NMR parameters from theoretical calculations**H. Hillebrecht^{*1}

1. University of Freiburg, Institute for Inorganic Chemistry, Germany

3:20 PM**(ICACC-S4-043-2019) Field-Enhanced Processing of Armor Ceramics: SiC-B₄C Composites (Invited)**S. Raju^{*1}; M. Kornecki²; R. E. Brennan³

1. Oak Ridge Associated Universities, USA
2. SURVICE ENGINEERING, USA
3. U. S. Army Research Laboratory, USA

3:50 PM**(ICACC-S4-044-2019) Flash sintering as a new green sintering technique (Invited)**T. Tsakalakos^{*1}; H. Charalambous¹; J. Okasinski²

1. Rutgers University, Materials Science and Engineering, USA
2. Argonne National Lab, Advanced Photon Source, USA

4:20 PM**(ICACC-S4-045-2019) Effect of Excess B₂O₃ and Hot-Pressing time on the Density, Microstructure, and Hardness of Reactively Hot-Pressed Boron Suboxide**K. D. Behler^{*1}; J. LaSalvia²; H. E. Payne³; C. Marvel⁴; S. D. Walck⁵; L. Vargas²; M. P. Harmer⁴

1. US Army Research Laboratory (SURVICE Engineering), Ceramic and Transparent Materials Branch, USA
2. US Army Research Laboratory, Ceramic and Transparent Materials Branch, USA
3. US Army Research Laboratory (CQL-Penn State University), Ceramic and Transparent Materials Branch, USA
4. Lehigh University, Materials Science and Engineering, USA
5. US Army Research Laboratory (SURVICE Engineering), Materials Development & Transition Branch, USA

4:40 PM**(ICACC-S4-046-2019) Development of Transparent Spinel Ceramics**R. Stocky^{*1}; J. Boehmler¹; Y. Lorgouilloux²; S. Lemonnier¹; A. L. Leriche²

1. French-German Research Institute of Saint-Louis, France
2. University of Valenciennes and Hainaut-Cambrésis, France

5:00 PM**(ICACC-S4-047-2019) Optimization of Consolidation Parameters and Characterization of Bulk Silicon-Doped Boron Carbides**M. Gagnepain^{*1}; A. U. Khan¹; C. Hwang¹; R. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

S6: Advanced Materials and Technologies for Direct Thermal Energy Conversion and Rechargeable Energy Storage**Beyond Li Batteries II**

Room: Tomoka A

Session Chair: Hans Seifert, Karlsruhe Institute of Technology

8:30 AM**(ICACC-S6-024-2019) Sodium reactivity on Na₂M₃O₇ (with M = Mn, V) (Invited)**V. Pralong^{*1}; E. Adamczyk¹

1. CNRS, Crismat, France

9:00 AM**(ICACC-S6-025-2019) Operando X-ray study of Na and K ion intercalation in MnO₂ electrodes (Invited)**S. T. Misture^{*1}

1. Alfred University, MSE, USA

9:30 AM**(ICACC-S6-026-2019) Alloying-type electrode materials for emerging K-ion and Mg-ion storage systems (Invited)**R. Berthelot^{*1}; F. Murgia¹; V. Gabaudan¹; M. Sougrati¹; L. Monconduit¹; L. Stievano¹

1. CNRS / ICGM (France), France

10:00 AM**Break**

Thermoelectrics III

Room: Tomoka A

Session Chair: Masashi Mikami, National Institute of Advanced Industrial Science and Technology

10:20 AM**(ICACC-S6-027-2019) Drastically Suppressed Lattice Thermal Conductivity of ZnO-based Thermoelectric Oxides with Extended Solubility Limit on Binary Doping (Invited)**M. Ohtaki*¹

1. Kyushu University, Interdisciplinary Graduate School of Engineering Sciences, Japan

10:50 AM**(ICACC-S6-028-2019) First principles assessment of the thermoelectric performance of Pyrochlore ceramics for direct thermal to electrical energy conversion (Invited)**J. Goldsby*¹

1. NASA Glenn Research Center, Chemistry and Physics, USA

11:20 AM**(ICACC-S6-029-2019) Plasma sprayed transition metal oxides and related multilayer devices for thermoelectric applications**F. R. Caliarri*¹; H. Lee¹; S. Sampath¹

1. Stony Brook University, Center for Thermal Spray Research, USA

11:40 AM**(ICACC-S6-030-2019) Glass-ceramic oxidation protective coatings for manganese- and magnesium-based thermoelectric silicides**F. D'Isanto*¹; M. Salvo¹; F. Smeacetto²; F. Gucci³; K. Chen³; M. Reece³

1. Politecnico di Torino, DISAT, Italy
2. Politecnico di Torino, DENERG, Italy
3. Queen Mary University of London, Nanoforce Technology Ltd, United Kingdom

Beyond Li batteries III

Room: Tomoka A

Session Chairs: Marca Doeff, Lawrence Berkeley National Laboratory; Olivier Guillon, Forschungszentrum Juelich

1:30 PM**(ICACC-S6-031-2019) Aluminum rechargeable batteries with chloroaluminate liquid salt electrolytes (Invited)**T. Tsuda*¹; Y. Uemura¹; H. Gofuku¹; C. Chen²; H. Matsumoto³; S. Kuwabata¹

1. Osaka University, Department of Applied Chemistry, Japan
2. AIST-Kyoto University Chemical Energy Materials Open Innovation Laboratory, Japan
3. National Institute of Advanced Industrial Science and Technology (AIST), Japan

2:00 PM**(ICACC-S6-032-2019) Prototype structures enabling reversible electrochemical Al³⁺ intercalation (Invited)**D. Dambournet*¹

1. Sorbonne Universités, University Pierre and Marie Curie, France

2:30 PM**(ICACC-S6-033-2019) A low-cost intermediate temperature Fe/Graphite battery for large scale energy storage (Invited)**X. Ning*¹

1. Xi'an Jiao Tong University, China

3:00 PM**Break****Li Batteries IV**

Room: Tomoka A

Session Chairs: Damien Dambournet, Sorbonne Universités; Valerie Pralong, CNRS ENSICAEN

3:20 PM**(ICACC-S6-034-2019) Ionic and thermal transport properties of ceramic solid electrolytes**M. Rohde*¹; H. J. Seifert¹

1. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

3:40 PM**(ICACC-S6-035-2019) Impedance of grains and grain boundaries of Li ion conducting ceramic solid electrolytes**S. Seepalakottai¹; P. Balaya*¹

1. National University of Singapore, Department of Mechanical Engineering, Singapore

4:00 PM**(ICACC-S6-036-2019) Engineering transport pathways and interfaces in composite ceramic electrolytes for all solid state batteries**F. Shen¹; M. Dixit¹; K. B. Hatzell*¹

1. Vanderbilt University, Department of Mechanical Engineering, USA

4:20 PM**(ICACC-S6-037-2019) Investigation of Metallic Dendrite Growth in Solid Electrolytes**C. Lei*¹; T. D. Sparks¹; A. V. Virkar¹

1. University of Utah, Materials Science and Engineering, USA

4:40 PM**(ICACC-S6-038-2019) X-Ray Tomography Studies of Dendrite Propagation in Ceramic Solid Electrolytes for Solid-State Battery Applications**F. Shen*¹; M. Dixit¹; K. B. Hatzell¹

1. Vanderbilt University, Department of Mechanical Engineering, USA

S7: 13th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications**Synthesis, Functionalization and Assembly of Inorganic and Hybrid Nanostructures I**

Room: Coquina Salon C

Session Chair: Alberto Vomiero, Lulea University of Technology

1:30 PM**(ICACC-S7-001-2019) Solution-Grown Sodium Bismuth Dichalcogenides: Toward Earth-Abundant, Biocompatible Semiconductors (Invited)**J. Vela*¹

1. Iowa State University, Chemistry, USA

2:00 PM**(ICACC-S7-002-2019) From Lab to Industry: Story of a New Generation Particle Technology: MicNo[®] (Invited)**E. Suvaci*¹; A. Kopal²; R. Demirel²

1. Eskisehir Technical University, Department of Materials Science and Engineering, Turkey
2. Eskisehir Technical University, Biology Department, Turkey

2:30 PM**(ICACC-S7-003-2019) Surface Modification of Cathode Particles with Oxide Electrolyte Nanocoating for Interfacial Resistance Control in All Ceramic Li-ion Battery (Invited)**H. Suzuki*¹; J. K. Padarti¹; T. T. Jupalli²; T. Ohno³; S. Hirai²; T. Kawaguchi²; N. Sakamoto¹; N. Wakiya¹

1. Shizuoka University, Research Institute of Electronics, Japan
2. Shizuoka University, Graduate School of Integrated Science and Technology, Japan
3. Kitami Institute of Technology, Department of Materials Science, Japan

3:00 PM**Break**

Synthesis, Functionalization and Assembly of Inorganic and Hybrid Nanostructures II

Room: Coquina Salon C

Session Chair: Mauro Epifani, CNR-IMM

3:20 PM

(ICACC-S7-004-2019) Carbon-Metal Oxides Nanocomposites for Energy and Environmental Applications (Invited)

N. Pinna*¹

1. Humboldt-Universität zu Berlin, Department of Chemistry, Germany

3:50 PM

(ICACC-S7-005-2019) New generation of chalcogenide and phosphide catalyst for water splitting and PEM fuel cells (Invited)

D. Chua*¹

1. National University of Singapore, Materials Science & Engineering, Singapore

4:20 PM

(ICACC-S7-006-2019) Harnessing Light From Rare Earth Doped Nanoparticles for Diverse Applications in Nanomedicine (Invited)

F. Vetrone*¹

1. Institut National de la Recherche Scientifique, Université du Québec, Centre Énergie, Matériaux et Télécommunications, Canada

4:50 PM

(ICACC-S7-007-2019) Novel Pt@TiO₂ core-shell nanoparticles as catalyst for application in intermediate temperature range fuel cells

P. S. Nbelayim*¹; Y. Ashida¹; G. Kawamura¹; W. K. Tan²; H. Muto²; A. Matsuda¹

1. Toyohashi University of Technology, Electrical and Electronic Information Engineering, Japan
2. Toyohashi University of Technology, Institute of Liberal Arts and Sciences, Japan

S8: 13th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT13)

Advanced Manufacturing and Processing II

Room: Coquina Salon A

Session Chairs: Shaowei Zhang, University of Exeter; Ajayan Vinu, University of Newcastle

8:30 AM

(ICACC-S8-026-2019) High Temperature Mechanical Properties of BN Particle Dispersion SiC Composites Fabricated with Prepreg Technique (Invited)

T. Hinoki*¹; K. Kawasaki¹; F. Shinoda¹; A. Hashimoto¹; N. Tsurui²; S. Hokari²; K. Shimoda³

1. Kyoto University, Japan
2. Kobe Material Testing Laboratory Co., Ltd., Japan
3. National Institute for Materials Science (NIMS), Japan

9:00 AM

(ICACC-S8-027-2019) SiC-bonded diamond materials: A superhard wear and corrosion resistant material

M. Herrmann*¹; B. Matthey¹; S. Kunze¹; A. Kailer²

1. Fraunhofer IKTS, Germany
2. Fraunhofer IWM, Germany

9:20 AM

(ICACC-S8-028-2019) Study of phase transitions of zinc sulfide optical materials

Y. Li*¹; Y. Wu¹

1. Alfred University, Materials Science, USA

9:40 AM

(ICACC-S8-029-2019) Direct formation of photocatalytic anatase TiO₂ on titanium metal (Invited)

T. Ishikawa*¹; K. Tsujikura¹; M. Deguchi¹; A. Aoki¹

1. Tokyo University of Science, Yamaguchi, Applied Chemistry, Japan

10:10 AM

Break

10:30 AM

(ICACC-S8-030-2019) Novel Interfacial Exfoliation by Electrical Pulse Fragmentation for Reuse and High-Grade Recycling (Invited)

G. Granata*¹; C. Tokoro¹

1. Waseda University, Department of Resources and Environmental Engineering, Japan

11:00 AM

(ICACC-S8-031-2019) Aqueous Tape Casting of Multilayer Transparent Nd:YAG Composite Ceramics

X. Chen*¹; Y. Wu¹

1. Alfred University, Materials Science, USA

11:20 AM

(ICACC-S8-032-2019) Fabrication of c-axis oriented (Sr,Ca)₂NaNb₅O₁₅ in rotating high magnetic field with stereolithography

S. Baba*¹; S. Tanaka¹

1. Nagaoka University of Technology, Japan

Joining Technologies and Polymer-based Processing

Room: Coquina Salon A

Session Chairs: Tatsuya Hinoki, Kyoto University; Toshihiro Ishikawa, Tokyo University of Science, Yamaguchi

1:30 PM

(ICACC-S8-033-2019) Multi-Component Carbosilane Systems for the Modular Production and Printing of Polymer-Derived Ceramics (Invited)

M. B. Dickerson*¹; L. Baldwin¹; L. M. Rueschhoff¹; C. Wyckoff¹; M. Cinibulk¹; H. Koerner¹; M. Dalton¹

1. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

2:00 PM

(ICACC-S8-034-2019) Experimental Studies on Joinability of Zircaloy and SiC/SiC Composite with Titanium Powder

H. Serizawa*¹; N. Nakazato²; Y. Sato¹; M. Tsukamoto¹; J. Park²; H. Kishimoto²

1. Osaka University, Joining and Welding Research Institute, Japan
2. Murooran Institute of Technology, Japan

2:20 PM

(ICACC-S8-035-2019) TEM Analysis of Interfaces in Diffusion-Bonded SiC Fiber-Bonded Ceramics Using metal Interlayers

T. Ozaki*¹; Y. Hasegawa¹; H. Tsuda²; S. Mori²; M. C. Halbig³; R. Asthana⁴; M. Singh⁵

1. Osaka Research Institute of Industrial Science and Technology, Japan
2. Osaka Prefecture University, Japan
3. NASA Glenn Research Center, USA
4. University of Wisconsin-Stout, USA
5. Ohio Aerospace Institute, USA

2:40 PM

(ICACC-S8-036-2019) Novel Applications and Improved Processing of Commercial Pre-Ceramic Polymers (PCPs)

Z. D. Apostolov*¹; E. Heckman²; T. Key³; M. Cinibulk¹

1. Air Force Research Laboratory, USA
2. Wright State University, USA
3. UES, Inc., USA

3:00 PM

Break

3:20 PM

(ICACC-S8-037-2019) Pre-ceramic Polymer Routes to Silicon Oxycarbide-Based Ceramics (Invited)

E. Ionescu*¹

1. Technical University Darmstadt, Materials Science, Germany

3:50 PM

(ICACC-S8-038-2019) On the role of wetting and interfacial reactions in joining of ceramics by brazing alloys (Invited)

F. Hodaj*¹

1. Grenoble Institute of Technology, Materials Science, France

4:20 PM**(ICACC-S8-039-2019) Impact of resin-fibre interaction on macro-level impregnation pattern in resin transfer moulding**M. Nasr Esfahani*¹; M. Jabbari²

1. University of Warwick, WMG, United Kingdom
2. University of Manchester, School of Mechanical, Aerospace and Civil Engineering, United Kingdom

4:40 PM**(ICACC-S8-040-2019) Fabricating Energy Absorbing Silicon Carbide Ceramic Nanostructures via Block-Copolymer Soft Templates**L. M. Rueschhoff*¹; L. Baldwin¹; R. Wheeler¹; J. D. Berrigan¹; M. Dalton¹; H. Koerner¹; M. Cinibulk¹; M. B. Dickerson¹

1. Air Force Research Lab, Materials and Manufacturing Directorate, USA

S9: Porous Ceramics: Novel Developments and Applications**High SSA Ceramics**

Room: Coquina Salon E

Session Chairs: Paolo Colombo, University of Padova; Alberto Ortona, SUPSI

1:30 PM**(ICACC-S9-001-2019) Tuning Microporous Ceramic Membranes (Invited)**L. Winnubst*¹

1. University of Twente, Inorganic Membranes, Netherlands

2:00 PM**(ICACC-S9-002-2019) Resilient Ceramic Aerogel (Invited)**H. Wang*¹; L. Su¹

1. Xi'an Jiaotong University, China

2:30 PM**(ICACC-S9-003-2019) Ultralight and Resilient SiC Aerogel**L. Su*¹; H. Wang¹; M. Niu¹; X. Fan¹

1. Xi'an Jiaotong University, China

2:50 PM**(ICACC-S9-004-2019) Polymer-Derived Ceramics with engineered mesoporosity: From design to application in catalysis**S. Bernard*¹

1. CNRS IRCER, France

3:10 PM**Break****Innovations in Processing Methods and Synthesis of Porous Ceramics I**

Room: Coquina Salon E

Session Chairs: Louis Winnubst, University of Twente; Hongjie Wang, Xi'an Jiaotong University

3:30 PM**(ICACC-S9-005-2019) Strategies for Strength Enhancement of Reticulated Porous Ceramics (RPCs) Using Infiltration-Based Strut Functionalization Techniques (Invited)**U. Betke*¹; M. Scheunemann¹; M. Scheffler¹

1. Otto-von-Guericke-University Magdeburg, Institute for Materials and Joining Technology, Germany

4:00 PM**(ICACC-S9-006-2019) Design and Additive Manufacturing of Porous Ceramic Structures (Invited)**A. Ortona*¹

1. SUPSI, MEMTI, Switzerland

4:30 PM**(ICACC-S9-007-2019) Direct Ink Writing of Three Dimensional Porous Ti₂AlC structures**H. Elsayed¹; A. Chmielarz²; M. Potoczek²; T. Fey²; P. Colombo*¹

1. University of Padova, Industrial Engineering, Italy
2. University of Erlangen-Nürnberg, Department of Materials Science (Glass and Ceramics), Germany
3. Rzeszow University of Technology, Faculty of Chemistry, Poland

4:50 PM**(ICACC-S9-008-2019) Scaling properties of woven-fiber preforms densified by chemical vapor infiltration**D. Lilledahl*¹; C. Cha¹; V. Ramanuj²; R. Sankaran²

1. Rolls-Royce Corporation, USA
2. Oak Ridge National Laboratory, USA

S10: Ceramics Modeling, Genome and Informatics**Functional Ceramics I**

Room: Coquina Salon G

Session Chairs: Rajeep Ahuja, Uppsala University; Valentino Cooper, Oak Ridge National Laboratory

8:30 AM**(ICACC-S10-001-2019) Thermoelectric thin film chromium- and scandium-based nitrides studied by an integrated theoretical-experimental approach (Invited)**P. Eklund*¹

1. Linköping University, Dept. of Physics, Chemistry, and Biology, Sweden

8:55 AM**(ICACC-S10-002-2019) Atomic-Scale Modeling in Materials Design and Discovery (Invited)**S. Sinnott*¹

1. Pennsylvania State University, Dept. of Materials Science and Engineering and Dept. of Chemistry, USA

9:20 AM**(ICACC-S10-003-2019) Physics-Informed Machine Learning for Rapid Screening of Potential Inorganic Scintillator Chemistries (Invited)**G. Pilania¹; C. Stanek¹; K. McClellan¹; B. P. Uberuaga*¹

1. Los Alamos National Laboratory, Materials Science and Technology Division, USA

9:45 AM**(ICACC-S10-004-2019) Stability and Transport Properties of Oxygen Vacancy in Perovskite Oxides Superlattice (Invited)**H. Xu*¹

1. Oak Ridge National Lab, Materials Science and Technology Division, USA

10:10 AM**Break****Functional Ceramics II**

Room: Coquina Salon G

Session Chairs: Per Eklund, Linköping University; Susan Sinnott, Pennsylvania State University

10:25 AM**(ICACC-S10-005-2019) Role of Catalysts and Nano Structuring in Hydrogen Storage Materials (Invited)**R. Ahuja*¹

1. Uppsala University, Physics and Astronomy, Sweden

10:50 AM**(ICACC-S10-006-2019) An open-source python library to generate periodic grain boundary structures (Invited)**K. Yang*¹

1. University of California San Diego, Department of NanoEngineering, USA

11:15 AM**(ICACC-S10-007-2019) First principles-based design of energy relevant materials at finite temperature (Invited)**V. R. Cooper^{*1}; K. Pitike¹; S. F. Yuk²; Y. Li³

1. Oak Ridge National Laboratory, Materials Science and Technology Division, USA
2. Pacific Northwest National Lab, Basic & Applied Molecular Foundations, USA
3. Oak Ridge National Lab, National Center for Computational Sciences, USA

11:40 AM**(ICACC-S10-008-2019) Efficiency improvement of synchrotron radiation powder X-ray diffraction and XAFS measurement**K. Fujimoto^{*1}; A. Aimi¹; S. Maruyama²

1. Tokyo University of Science, Japan
2. Tohoku University, Japan

Structural Ceramics I

Room: Coquina Salon G

Session Chairs: Katsuyuki Matsunaga, Nagoya University; Ghatu Subhash, University of Florida

1:30 PM**(ICACC-S10-009-2019) Computing Grain Boundary Diagrams: From Earlier Studies to a Recent Example of Au-doped Si and Beyond (Invited)**C. Hu¹; J. Luo^{*1}

1. University of California, San Diego, USA

2:00 PM**(ICACC-S10-010-2019) Coupled Effects of Electronic and Nuclear Energy Loss on Damage Production in Ceramics (Invited)**W. J. Weber^{*1}; E. Zarkadoulas¹; Y. Zhang²

1. University of Tennessee, Materials Science & Engineering, USA
2. Oak Ridge National Laboratory, USA

2:30 PM**(ICACC-S10-011-2019) CALPHAD modeling of the Si-C-N-H system and combined computational-experimental analysis of polysilazane-derived Si-C-N ceramics (Invited)**H. J. Seifert^{*1}; I. J. Markel¹; M. Steinbrück¹

1. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

3:00 PM**Break****Structural Ceramics II**

Room: Coquina Salon G

Session Chair: Hans Seifert, Karlsruhe Institute of Technology

3:20 PM**(ICACC-S10-012-2019) Bonding Structure and Deformation Mechanism in Ultrahard Icosahedral Ceramics (Invited)**G. Subhash^{*1}; A. Awasthi¹

1. University of Florida, Mechanical and Aerospace Engineering, USA

3:45 PM**(ICACC-S10-013-2019) The use of ab-initio and classical molecular dynamics modeling to design and synthesize complex disordered solid structures (Invited)**R. Sakidja^{*1}; N. Baishnab¹; R. Khadka¹; P. Rulis²; J. Wu³

1. Missouri State University, Physics, Astronomy and Materials Science, USA
2. UMKC, Dept. of Physics & Astronomy, USA
3. The University of Kansas, Physics and Astronomy, USA

4:10 PM**(ICACC-S10-014-2019) Electronic Mechanism of Room-Temperature Large Plasticity of Inorganic Compounds (Invited)**K. Matsunaga^{*1}

1. Nagoya University, JFCC, Japan

4:35 PM**(ICACC-S10-015-2019) Discovery of new promising substrate materials for high-power electronic devices: Cubic Si₃N₄ and Ge₃N₄ (Invited)**H. Xiang^{*1}; Y. Zhou¹

1. Aerospace Research Institute of Materials and Processing Technology, China

S12: Advanced MAX/MXene Phases and UHTC Materials for Extreme and High Temperature Environment**Carbide Properties and Oxidation II**

Room: St. Johns

Session Chair: Miladin Radovic, Texas A&M University

8:30 AM**(ICACC-S12-029-2019) Oxidation Behavior of Hafnium Diboride-50 vol% Hafnium Carbide Composite System**C. M. Young^{*1}; C. Zhang¹; A. Loganathan¹; B. Boesl¹; A. Agarwal¹

1. Florida International University, Mechanical and Materials Engineering, USA

8:50 AM**(ICACC-S12-030-2019) Densification, microstructure and mechanical properties of ZrC-SiC ceramics**L. Feng^{*1}; W. Fahrenholtz¹; G. Hilmas¹

1. Missouri University of Science & Technology, Materials Science and Engineering, USA

High Entropy UHTCs

Room: St. Johns

Session Chairs: Xingang Luan, Northwestern Polytechnical University; Carolina Tallon, Virginia Tech

9:10 AM**(ICACC-S12-031-2019) High-Entropy Metal Diborides (Invited)**J. Luo^{*1}; J. Gild¹; T. Harrington¹; K. Vecchio¹; C. Toher²; P. Sarker²; S. Curtarolo²; J. L. Braun³; L. Backman³; P. Hopkins³; E. J. Opila³; S. Daigle⁴; D. Brenner⁴; J. Maria⁵

1. University of California, San Diego, USA
2. Duke University, USA
3. University of Virginia, USA
4. North Carolina State University, USA
5. Pennsylvania State University, USA

9:40 AM**(ICACC-S12-032-2019) High Entropy Ultra High Temperature Ceramics (Invited)**E. Castle^{*1}; E. C. Schwind²; T. Csanadi²; X. Han³; G. Wickliffe⁶; S. A. Humphrey-Baker⁸; R. Sedlak²; R. Zhang¹; K. Chen¹; M. Radovic¹; P. Svec²; I. Abrahams¹; C. Weber²; N. Bonini²; C. Zhang⁹; N. Orlovskaya⁹; J. Dusza²; W. Fahrenholtz²; M. Reece¹

1. Queen Mary University of London, School of Engineering and Materials Science, United Kingdom
2. Institute of Materials Research, Slovak Academy of Sciences, Slovakia
3. Department of Metal Physics, Slovak Academy of Sciences, Slovakia
4. Missouri University of Science & Technology, USA
5. Kings College London, Theory & Simulation of Condensed Matter, United Kingdom
6. University of Central Florida, USA
7. Texas A&M University, USA
8. Imperial College, United Kingdom
9. Northwestern Polytechnical University, China

10:10 AM**Break****10:20 AM****(ICACC-S12-033-2019) Synthesis of fine powders for high entropy carbide, boride, and nitride ceramics**J. Xing¹; P. Foroughi¹; Z. Cheng^{*1}

1. Florida International University, Mechanical & Materials Engineering, USA

10:40 AM**(ICACC-S12-034-2019) Microstructural Development of High Entropy, Ultra High Temperature Carbide Thin Films**T. M. Borman^{*}; M. Hossain¹; C. M. Rost²; P. E. Hopkins²; D. Brenner³; J. Maria¹

1. Pennsylvania State University, Materials Science and Engineering, USA
2. University of Virginia, Mechanical and Aerospace Engineering, USA
3. North Carolina State University, Materials Science and Engineering, USA

11:00 AM**(ICACC-S12-035-2019) Oxidation Kinetics of High Entropy Carbide and Boride UHTCs**L. Backman^{*}; E. J. Opila¹

1. University of Virginia, Materials Science and Engineering, USA

11:20 AM**(ICACC-S12-036-2019) Mechanical Properties of High Entropy Carbides: Experiment and Theory**M. Hossain^{*}; T. M. Borman¹; C. M. Rost²; P. Hopkins²; D. Brenner³; J. Maria¹

1. Pennsylvania State University, Materials Science and Engineering, USA
2. University of Virginia, Mechanical and Aerospace Engineering, USA
3. North Carolina State University, Materials Science and Engineering, USA

11:40 AM**(ICACC-S12-037-2019) High-Entropy Carbide Ceramics for Extreme Environments**F. Wang^{*}; X. Yan¹; L. Constantin¹; Y. Lu¹; J. Francois²; M. Nastasi¹; B. Cui¹

1. University of Nebraska-Lincoln, USA
2. Institut de Chimie de la Matière Condensée de Bordeaux, France

Structure and Bonding in MAX Phases

Room: St. Johns

Session Chair: William Fahrenholtz, Missouri University of Science & Technology

1:30 PM**(ICACC-S12-038-2019) Electronic structure of MAX phases studied by angle-resolved photoemission spectroscopy (Invited)**T. Ito^{*}; M. Ikemoto²; D. Pinek³; M. Nakatake³; S. Ideta³; K. Tanaka³; T. Ouisse³

1. Nagoya University, Nagoya University Synchrotron Radiation research Center, Japan
2. Nagoya University, Japan
3. Université Grenoble-Alpes, CNRS, LMGP, France
4. Aichi Synchrotron Research Center, Japan
5. UVSOR Facility, Institute for Molecular Science, Japan

2:00 PM**(ICACC-S12-039-2019) Structure and Bonding in MXenes and MAX phases Investigated by X-ray Diffraction and Spectroscopy (Invited)**M. Magnuson^{*}

1. Linköping University, Department of Physics, Chemistry and Biology, Sweden

2:30 PM**(ICACC-S12-040-2019) Are MAX phases elastically anisotropic (Invited)**W. Ching^{*}

1. University of Missouri-Kansas City, USA

3:00 PM**Break****Novel Applications and Device Fabrication III**

Room: St. Johns

Session Chairs: Wai-Yim Ching, University of Missouri-Kansas City; Jesus Gonzalez-Julian, Forschungszentrum Juelich

3:20 PM**(ICACC-S12-041-2019) Accelerated development of MAX phase coatings for accident-tolerant fuel cladding materials**K. Lambrinou^{*}; T. Lapauw²; B. Tunca²; J. Vleugels²; P. Persson³; J. A. Hinks⁴

1. SCK-CEN, NMS, Belgium
2. KU Leuven, Materials Engineering, Belgium
3. Linköping University, Physics, Sweden
4. University of Huddersfield, Electron Microscopy and Materials Analysis, United Kingdom

3:40 PM**(ICACC-S12-042-2019) Lightweight Ti,Nb-Al-C MAX-Phases - Based Materials: Structure and Heat-Resistance in Oxidizing and Hydrogen Atmosphere**T. Prikhna^{*}; V. Romaka²; T. Serbenyuk¹; O. Ostash³; V. Podhurska³; B. Vasylyv³; V. Sverdun¹; V. Moshchil¹; M. Karpets¹; S. Ponomarov²; A. Starostina¹

1. Institute for Superhard Materials of the National Academy of Sciences of Ukraine, Ukraine
2. Lviv Polytechnic National University, Ukraine
3. Karpenko Physical-Mechanical Institute of the National Academy of Sciences of Ukraine, Ukraine
4. Institute of Semiconductor Physics of the National Academy of Sciences of Ukraine, Ukraine

4:00 PM**(ICACC-S12-043-2019) Intrinsic cleavage and shear behavior of MAX phases: Ceramic or metallic?**A. Srivastava^{*}; W. Son¹; A. Talapatra¹; T. Duong¹; R. Arroyave¹; M. Radovic¹

1. Texas A&M University, Materials Science and Engineering, USA

4:20 PM**(ICACC-S12-044-2019) On the Synthesis and Characterization of Novel Ni-MAX Composite Systems**M. Dey^{*}; S. Javadi¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

4:40 PM**(ICACC-S12-045-2019) Synthesis and characterization of (Ti_{1-x}Zr_x)_{n+1}AlC_n MAX phases through magnetron sputtering and ex-situ annealing**C. Azina^{*}; A. Petruhins¹; J. Rosen¹; P. Eklund¹

1. Linköping University, Department of Physics, Chemistry and Biology (IFM), Sweden

5:00 PM**(ICACC-S12-046-2019) High-throughput investigation of vacancy energetics in pure 211 MAX phases**A. Talapatra^{*}; T. Duong¹; M. Radovic¹; R. Arroyave¹

1. Texas A&M University, USA

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems**Corrosion of Nuclear Ceramics**

Room: Coquina Salon H

Session Chair: Peng Xu, Westinghouse Electric Company

8:30 AM**(ICACC-S13-028-2019) Corrosion Behavior of Arc Welded Ceramic Joints**D. King^{*}; J. Jarman²; J. Watts²; W. Fahrenholtz²; G. Hilmas²

1. UES, Inc., USA
2. Missouri University of Science & Technology, USA

8:50 AM**(ICACC-S13-029-2019) Irradiation-Corrosion of Coated Silicon Carbide for Accident Tolerant Fuel Cladding**S. S. Raiman^{*}; P. J. Doyle¹; T. Koyanagi²; C. K. Ang¹; D. Carpenter³; K. Terrani²; Y. Katoh²

1. University of Tennessee, USA
2. Oak Ridge National Laboratory, USA
3. Massachusetts Institute of Technology, USA

9:10 AM**(ICACC-S13-030-2019) Research Activities on Hydrothermal Corrosion of SiC Ceramics for LWR Fuel Cladding Application**W. Kim^{*}; J. Shin¹; D. Kim¹; H. Lee¹; J. Park¹

1. Korea Atomic Energy Research Institute, Republic of Korea

9:30 AM**(ICACC-S13-031-2019) Corrosion and Irradiation Studies of Silicon Carbide as a Nuclear Fuel Cladding**L. Czerniak^{*}; J. Lyons¹; R. Jacko¹; P. Xu¹; J. Partezana¹; C. Gasparro¹; M. Ruffner¹

1. Westinhouse Electric Company, Research and Technology, USA

9:50 AM

Break

Material Technologies for Enhanced Accident Tolerance LWR Fuels

Room: Coquina Salon H

Session Chair: Weon-Ju Kim, Korea Atomic Energy Research Institute

10:10 AM

(ICACC-S13-032-2019) Exploratory Testing for Westinghouse EnCore SiC/SiC Composite Cladding

P. Xu^{*}; E. J. Lahoda¹; K. Steger¹; M. Conner¹; P. Evans¹; R. Lu¹; R. Oelrich¹; C. Deck²

1. Westinghouse Electric Company, USA
2. General Atomics, USA

10:30 AM

(ICACC-S13-033-2019) Hermeticity evaluation of neutron-irradiated SiC tubes for LWR cladding application

X. Hu^{*}; T. Koyanagi¹; C. Petrie¹; C. K. Ang²; C. Deck²; Y. Katoh¹

1. Oak Ridge National Lab, USA
2. University of Tennessee, USA
3. General Atomics, USA

10:50 AM

(ICACC-S13-034-2019) Post-Irradiation Examination of SiC/SiC composite Cladding

A. Seshadri^{*}; K. Shirvan¹; G. Jacobsen²; C. Deck²

1. Massachusetts Institute Of Technology, Nuclear Science and Engineering, USA
2. General Atomics, Nuclear Technologies and Materials Division, USA

11:10 AM

(ICACC-S13-035-2019) Thermal diffusivity of neutron-irradiated SiC composite tubes measured by laser flash method

T. Koyanagi^{*}; Y. Katoh¹; H. Wang¹; C. Petrie¹; C. Deck²; K. Terrani¹

1. Oak Ridge National Laboratory, USA
2. General Atomics, USA

11:30 AM

(ICACC-S13-036-2019) Kinetics of irradiation defect annealing and thermal conductivity recovery in silicon carbide and potential impact on advanced reactor safety characteristics

N. R. Brown^{*}; T. Koyanagi²; C. Lu¹; Y. Katoh²

1. Pennsylvania State University, Mechanical and Nuclear Engineering, USA
2. Oak Ridge National Lab, USA

Radiation Damage, Defect Production, Evolutions, and Interactions I

Room: Coquina Salon H

Session Chair: Phil Edmondson, Oak Ridge National Lab

1:30 PM

(ICACC-S13-037-2019) Order and amorphization in complex oxides (Invited)

B. P. Uberuaga^{*}

1. Los Alamos National Laboratory, Materials Science and Technology Division, USA

2:00 PM

(ICACC-S13-038-2019) Microstructural Evolution of Ion-Irradiated Zirconium Carbide

R. Florez^{*}; J. Graham¹; W. Fahrenholtz²; G. Hilmas²

1. Missouri University of Science & Technology, Nuclear Engineering, USA
2. Missouri University of Science & Technology, Material Science and Engineering, USA

2:20 PM

(ICACC-S13-039-2019) Defect ordering in yttria stabilized zirconia under 45 MeV ion irradiation

N. J. Madden^{*}; K. Hattar²; J. A. Krogstad¹

1. University of Illinois at Urbana-Champaign, Material Science and Engineering, USA
2. Sandia National Laboratories, USA

2:40 PM

(ICACC-S13-040-2019) Room Temperature Sintering of Yttria Stabilized Zirconia and Ceria Nanoparticles via Ion Irradiation

N. J. Madden^{*}; S. A. Briggs²; C. A. Taylor²; P. M. Price³; T. J. Boyle³; B. R. Muntifer³; K. Hattar²; J. A. Krogstad¹

1. University of Illinois at Urbana-Champaign, Material Science and Engineering, USA
2. Oregon State University, School of Nuclear Science and Engineering, USA
3. Sandia National Laboratories, USA

3:00 PM

Break

Radiation Damage, Defect Production, Evolutions, and Interactions II

Room: Coquina Salon H

Session Chair: Blas Uberuaga, Los Alamos National Laboratory

3:20 PM

(ICACC-S13-041-2019) Advanced characterization of high burnup urania towards understanding mechanism of restructuring

K. Terrani^{*}

1. Oak Ridge National Lab, USA

3:40 PM

(ICACC-S13-042-2019) Annealing of Radiation Damage in Ti-based MAX Phase Alloys

P. Edmondson^{*}; M. B. Pagan²; M. Tunes³

1. Oak Ridge National Lab, USA
2. University of Tennessee, USA
3. University of Huddersfield, United Kingdom

4:00 PM

(ICACC-S13-043-2019) High Temperature Radiation Response of Ti-based M_nAX_{n-1} Phases

M. Tunes^{*}; A. Mir¹; G. Greaves¹; P. E. Donnelly¹; P. Edmondson²

1. University of Huddersfield, SCE, United Kingdom
2. Oak Ridge National Lab, USA

4:20 PM

(ICACC-S13-044-2019) Relating Microstructure and Stored Energy in Irradiated Silicon Carbide

L. Snead^{*}; Y. Katoh¹; T. Koyanagi¹

1. ORNL, USA
2. Stony Brook University, USA

4:40 PM

(ICACC-S13-045-2019) In-situ Ion Irradiation Response of a Silicon Carbide-Carbon Coated Nanostructured Ferritic Alloy Composite

K. K. Bawane^{*}; K. Lu¹; J. Hu²; M. Li²

1. Virginia Tech, Materials Science and Engineering, USA
2. Argonne National Lab, Nuclear Engineering Division, USA

S15: 3rd International Symposium on Additive Manufacturing and 3-D Printing Technologies

Characterization Tools I

Room: Coquina Salon B

Session Chair: Uwe Scheithauer, Fraunhofer IKTS

8:30 AM

(ICACC-S15-030-2019) Analysis of Multi-scale Mechanical Properties of Ceramic Trusses Prepared from Pre-ceramic Polymers

J. E. Schmidt²; N. R. Brodnik^{*}; P. Colombo²; K. Faber¹

1. California Institute of Technology, Materials Science, USA
2. University of Padova, Industrial Engineering, Italy

8:50 AM

(ICACC-S15-031-2019) Mechanical properties of ceramic processed by stereolithography: Effect of surface polishing

D. Hautcoeur^{*}; C. Ott¹; E. Juste¹; F. Petit¹

1. Belgian Ceramic Research Centre, Belgium

9:10 AM

(ICACC-S15-032-2019) Study of the stiffness of ceramic parts using a numerical simulation model of the stereolithography process

J. Tarabeux^{*1}; T. Chartier²; V. Pateloup²; P. Michaud²

1. University Limoges, France
2. IRCER, France

9:30 AM

(ICACC-S15-033-2019) Quality and Testing of Ceramics by Lithography-based Ceramic Manufacturing

S. M. Allan^{*1}

1. Lithoz America, LLC, USA

9:50 AM

Break

Characterization Tools II

Room: Coquina Salon B

Session Chair: Tyrone Jones, US Army Research Laboratory

10:10 AM

(ICACC-S15-034-2019) Additive Manufacturing of Ceramics and Composites for High Temperature Aerospace Applications

C. Smith^{*1}; M. Singh²; M. C. Halbig¹

1. NASA Glenn Research Center, USA
2. Ohio Aerospace Institute, USA

10:30 AM

(ICACC-S15-035-2019) Characterization method for real mechanical behavior of ceramic AM components

U. Scheithauer^{*1}; P. Neumeister¹; S. Roszeitis¹; J. Abel¹; E. Schwarzer¹; S. Weingarten¹; A. Michaelis¹

1. Fraunhofer IKTS, Shaping, Germany

10:50 AM

(ICACC-S15-036-2019) A Novel Method for Characterizing the Dispersion of Additive Manufacturing Ceramic Suspensions

M. K. Alazzawi^{*1}; B. Beyoglu¹; R. A. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

11:10 AM

(ICACC-S15-037-2019) Prospects and measurement challenges for additive manufacturing of cement and concrete components

A. J. Allen^{*1}; S. Jones²; F. Zhang²; J. Richards³

1. NIST, Materials Measurement Science Division, USA
2. NIST, USA
3. Northwestern University, USA

11:30 AM

(ICACC-S15-038-2019) Microstructural Evaluation of SLA Printed Alumina

B. Beyoglu^{*1}; M. K. Alazzawi¹; R. Haber¹

1. Rutgers University, Material Science and Engineering, USA

Emerging Technologies

Room: Coquina Salon B

Session Chair: Michael Halbig, NASA Glenn Research Center

1:30 PM

(ICACC-S15-039-2019) Ceramics Additive Manufacturing (Invited)

A. Michaelis^{*1}

1. Fraunhofer IKTS, Germany

2:00 PM

(ICACC-S15-040-2019) Ballistic Evaluation and Damage Characterization of 3-D Printed, Alumina-based Ceramics for Light Armor Applications

T. Jones^{*1}; L. Vargas¹; C. Meredith¹

1. US Army Research Laboratory, USA

2:20 PM

(ICACC-S15-041-2019) Process optimisation for selective laser melting of soda lime silica glass

K. Datsiou^{*1}; I. Ashcroft¹; R. Goodridge¹; E. Saleh¹; F. Spirrett¹

1. University of Nottingham, Department of Engineering, United Kingdom

2:40 PM

(ICACC-S15-042-2019) Dimensional Modulations of Alumina Components by Stereolithographic Additive Manufacturing

S. Kirihara^{*1}; X. Wang¹; T. Shimizu¹; Y. Fujita¹

1. Osaka University, Joining and Welding Research Institute, Japan

3:00 PM

Break

Discussion Panel: Opportunities & Challenges in Ceramics Additive Manufacturing

Room: Coquina Salon B

Session Chairs: Andrew Allen, NIST; Igor Levin, NIST

3:20 PM

(ICACC-S15-043-2019) Issues in Additive Manufacturing of Ceramics (Invited)

T. Ohji^{*1}

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

3:35 PM

(ICACC-S15-044-2019) Decarbonising ceramic manufacturing using energy efficient sintering technologies (Invited)

I. M. Reaney^{*1}; L. Koh²; T. Ibn-Mohammed²

1. University of Sheffield, Materials Science and Engineering, United Kingdom
2. University of Sheffield, Management School, United Kingdom

3:50 PM

(ICACC-S15-045-2019) Ceramic Additive Manufacturing in Healthcare (Invited)

S. M. Allan^{*1}

1. Lithoz America, LLC, USA

4:05 PM

(ICACC-S15-046-2019) Opportunities & Challenges in Ceramics Additive Manufacturing: Energy & Sustainability (Invited)

B. L. Armstrong^{*1}

1. Oak Ridge National Lab, Material Science & Technology Division, USA

4:20 PM

(ICACC-S15-047-2019) Additive Manufacturing & 3D Printing Technologies: Air Force & Aerospace Applications (Invited)

M. B. Dickerson^{*1}; L. M. Rueschhoff¹

1. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

4:35 PM

Discussion and Q&A

S16: Geopolymers, Inorganic Polymers and Sustainable Materials

Synthesis, Processing and Microstructure

Room: Ponce de Leon

Session Chair: Waltraud Kriven, University of Illinois at Urbana-Champaign

8:30 AM

(ICACC-S16-001-2019) Synthesis of Aluminosilicate Nanoaggregates from Geopolymerization (Invited)

D. Seo^{*1}; S. Chen¹

1. Arizona State University, School of Molecular Sciences, USA

9:00 AM

(ICACC-S16-002-2019) Geopolymer oil composite: Droplet structure and connectivity by X-ray microtomography (Invited)

C. Davy²; B. Planel¹; G. Hauss²; D. Lambertin^{*3}

1. CEA,DAM,DMA,SDAT,LGDA, France
2. Centrale Lille and UCCS UMR CNRS 8181, France
3. CEA DEN, DE2D, SEAD, LCBC, France
4. Plateforme d'imagerie par rayons X ISIS4D, France

9:30 AM

(ICACC-S16-003-2019) Effect of silica and lignocellulosic additives on the formation and distribution of meso and macropores in metakaolin-based geopolymer foams for filtration

M. Youmoue^{*1}; R. T. Tene Fongang²; A. Gharzouni¹; E. Kamseu²; V. M. Sglavo³; I. K. Tonle²; B. Nait-Ali¹; S. Rossignol¹

1. Université de Limoges, Institut de Recherche sur les Céramiques, France
2. University of Dschang, Noxious Chemistry and Environmental Engineering Research Unit, Cameroon
3. Local Material Promotion Authority, Cameroon
4. University of Trento, Department of Materials Engineering and Industrial Technologies, Italy

9:50 AM

Break

10:10 AM

(ICACC-S16-004-2019) Characterization of coal fly ash with potential use in the manufacture of geopolymers to solidify/stabilize heavy metals

P. M. Fonseca Alfonso^{*1}; E. Murillo Ruiz²; M. Díaz Lagos¹

1. Universidad Pedagógica y Tecnológica de Colombia, Colombia
2. Universidad Francisco de Paula Santander, Colombia

10:30 AM

(ICACC-S16-005-2019) Structure-property relation of portland cement paste blended with steel slag

H. Colorado^{*1}; S. S. Sulekar²; J. C. Nino²

1. Universidad de Antioquia, Colombia
2. University of Florida, USA

3-D Printing

Room: Ponce de Leon

Session Chair: Kaushik Sankar, University of Illinois at Urbana-Champaign

11:00 AM

(ICACC-S16-006-2019) 3D Printing of Geopolymers: The path to Innovative Ceramic Composites (Invited)

P. Scanferla^{*1}; G. Franchin¹; P. Colombo¹

1. University of Padova, Industrial Engineering, Italy

11:30 AM

(ICACC-S16-007-2019) Geopolymer for ceramics formation, 3D printing and Cs⁺/Sr²⁺ sealing (Invited)

P. He^{*1}; D. Jia²

1. Harbin Institute of Technology, Institute for Advanced Ceramics, School of Materials Science and Engineering, China
2. Harbin Institute of Technology, Key Laboratory of Advanced Structural-Functional Integration Materials & Green Manufacturing Technology, China

Composites

Room: Ponce de Leon

Session Chair: Nishant Garg, Princeton University

1:30 PM

(ICACC-S16-008-2019) On the Mechanical Behavior of K-based Geopolymer Reinforced with Chopped Basalt Fibers Manufactured for Cement Versus Epoxy-based Applications (Invited)

A. C. Trindade^{*1}; W. M. Kriven²; F. d. Silva¹

1. Pontifical Catholic University of Rio de Janeiro, Civil and Environmental Engineering, Brazil
2. University of Illinois at Urbana-Champaign, Department of Materials Science and Engineering, USA

2:00 PM

(ICACC-S16-009-2019) Basalt Fibers and Minibars as Geopolymer Reinforcements

A. J. Steveson^{*1}; D. W. Blake¹; J. R. Davis¹; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

2:20 PM

(ICACC-S16-010-2019) Alkali-Resistant Glass Fibers as a Geopolymer Reinforcement

D. W. Blake^{*1}; J. R. Davis¹; A. J. Steveson¹; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, USA

2:40 PM

(ICACC-S16-011-2019) Mechanical Properties of Flax and Hemp Felt Geopolymer Composites

P. F. Keane^{*2}; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, USA
2. Construction Engineering Research Laboratory (CERL), USA

3:00 PM

Break

3:30 PM

(ICACC-S16-012-2019) The Effect of Fibers Inclusion on The Properties of Geopolymer Composites: An Experimental Overview (Invited)

M. Al-Mashhadani^{*1}

1. Yildiz Technical University, Turkey

Sustainable Materials

Room: Ponce de Leon

Session Chair: Ghassan Al-Chaar, U.S. Army Corps of Engineers

4:00 PM

(ICACC-S16-013-2019) Amazonian Lateritic Soil-Based Geopolymer Reinforced with Granite-Marble Particulates (Invited)

M. G. Sá Ribeiro¹; M. G. Sá Ribeiro²; W. M. Kriven³; R. A. Sa Ribeiro^{*1}

1. INPA-National Institute for Amazonian Research, LTEE-Structural Engineering Laboratory, Brazil
2. Architect and Urban Planner, Brazil
3. University of Illinois at Urbana-Champaign, USA

4:30 PM

(ICACC-S16-014-2019) Geopolymer-based beads for adsorption purposes (Invited)

E. Papa^{*1}; V. Medri¹; E. Landi¹

1. ISTECC-CNR, Italy

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Multi-functional Materials I

Room: Halifax A/B

Session Chair: Graziella Malandrino, Università degli Studi di Catania

8:30 AM

(ICACC-S17-022-2019) From Supercapacitors to Water Filtering and More with the Same Material: Multifunctional Titania by Inorganic Surface Modification (Invited)

M. Epifani^{*1}

1. CNR-IMM, Italy

9:00 AM

(ICACC-S17-023-2019) Formation of Nanostructured Titania Layers on Ceramic-Metal Composites and Their Photochemical Functions (Invited)

S. Shi¹; T. Goto¹; S. Chou¹; S. Lee²; T. Sekino^{*1}

1. Osaka University, The Institute of Scientific and Industrial Research, Japan
2. Sun Moon University, Department of Environmental and Bio-Chemical Engineering, Republic of Korea

9:30 AM**(ICACC-S17-024-2019) Superhydrophilic TiO₂ thin films produced by atmospheric plasma dielectric barrier discharge (Invited)**Z. Matouk¹; B. Torriss¹; R. Rincon¹; M. Chaker*¹

1. INRS, Energie matériaux télécommunications, Canada

10:00 AM**Break****10:20 AM****(ICACC-S17-025-2019) Carbonaceous materials as enhancers of functional performances in nanostructured metal oxides: A critical overview (Invited)**I. Concina*¹

1. Luleå Tekniska Universitet, Sweden

10:50 AM**(ICACC-S17-026-2019) Rare Earth Doped Nanoparticles With Controlled Architectures (Invited)**F. Vetrone*¹

1. Institut National de la Recherche Scientifique, Université du Québec, Centre Énergie, Matériaux et Télécommunications, Canada

11:20 AM**(ICACC-S17-027-2019) Carbon-based composite materials with applications in Supercapacitors, Fuel Cells and Batteries (Invited)**D. Chua*¹

1. National University of Singapore, Materials Science & Engineering, Singapore

11:50 AM**(ICACC-S17-028-2019) Performance Enhancement of Lithium Ion Battery with Magnetically Aligned Graphene Electrode**F. Lin*¹; G. Yang²; H. Fang³; Z. Wang¹; J. Bao²

1. University of Electronic Science and Technology of China, Institute of Fundamental and Frontier Sciences, China
2. University of Houston, USA
3. Sam Houston State University, USA

Multi-functional Materials II

Room: Halifax A/B

Session Chairs: Isabella Concina, CNR-IDASC SENSOR Laboratory & Brescia University; Fiorenzo Vetrone, Institut National de la Recherche Scientifique, Université du Québec

1:30 PM**(ICACC-S17-029-2019) On the Influence of Elemental Composition on the Optical and Mechanical Properties of SiC_xN_y Thin Films (Invited)**Z. Khatami¹; P. Mascher*¹

1. McMaster University, Engineering Physics and CEDT, Canada

2:00 PM**(ICACC-S17-030-2019) Are solar-cell antiferromagnetic nickel oxide transparent electrodes antiferromagnetic? (Invited)**G. Fanchini*¹

1. University of Western Ontario, Physics and Astronomy, Canada

2:30 PM**(ICACC-S17-031-2019) Upconversion and Downshifting: Lanthanide-based Optical Materials and their Potential Applications (Invited)**E. Hemmer*¹

1. University of Ottawa, Chemistry and Biomolecular Sciences, Canada

3:00 PM**Break****3:20 PM****(ICACC-S17-032-2019) 50 years of glass integrated optics (Invited)**G. C. Righini*¹; S. Berneschi²; M. Ferrari³; G. Nunzi Conti²; S. Pelli²

1. Enrico Fermi Center, Italy
2. IFAC CNR, Italy
3. IFN CNR, Italy

3:50 PM**(ICACC-S17-033-2019) Laser-assisted anatase crystallization and micropatterning of amorphous TiO₂ films**J. A. Benavides*¹

1. L'École de technologie supérieure, Génie électrique, Canada

4:10 PM**(ICACC-S17-034-2019) Novel W/WO₃/MoS₂ Electrode**J. Ting*¹; B. Sie¹

1. National Cheng Kung University, Materials Science and Engineering, Taiwan

Poster Session B

Room: Ocean Center

5:00 PM**(ICACC-FS2-P068-2019) Using AE Energy and Frequency Analysis to Characterize Damage in SiC/SiC Minicomposites**A. J. Gorven*¹; A. S. Almansour²; J. D. Kiser²

1. Boise State University, Mechanical Engineering, USA
2. NASA Glenn Research Center, Ceramic and Polymer Composites Branch, USA

(ICACC-FS4-P069-2019) High temperature shear tests on "RM-Wrap" joined C/SiCP. Gianchandani*¹; V. Casalegno¹; M. Salvo¹; M. Ferraris¹; I. Dlouhy²

1. Politecnico di Torino, DISAT-Department of Applied Science and Technology, Italy
2. Institute of Physics of Materials CAS – Brno, Czech Republic, Czechia

(ICACC-S1-P070-2019) Microcantilever beam testing of single crystal silicon and diamondH. Yamaguchi*¹; J. Tatami¹; M. Iijima¹; T. Takahashi²; T. Yahagi²; H. Nakano³; T. Kondo²

1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan
3. Toyohashi University of Technology, Japan

(ICACC-S1-P071-2019) Solid Particle Erosion of Ceramic Matrix CompositesM. J. Presby*¹; R. Panakarajupally¹; G. N. Morscher¹

1. University of Akron, Mechanical Engineering, USA

(ICACC-S1-P072-2019) International Standards for Properties and Performance of Advanced Ceramics – Thirty-three Years of High-Quality and Rigorous ASTM StandardsM. G. Jenkins*¹; J. Salem²; G. D. Quinn³; J. Helfinstine⁴; S. T. Gonczyk⁵

1. Bothell Engineering and Science Technologies, USA
2. NASA Glenn Research Center, USA
3. Consultant, USA
4. Consultant, USA
5. Gateway Materials Technology, USA

(ICACC-S1-P073-2019) Effect of Alkali-Silane Treatment on the Water Absorption of Kenaf Fibre Reinforced Polypropylene CompositesR. Paskaramoorthy*¹; O. Asumani¹

1. University of the Witwatersrand, Mechanical Engineering, South Africa

(ICACC-S1-P074-2019) Synthesis of zirconia toughened alumina fibers by sol-gel with centrifugal spinningT. Natarajan*¹

1. Indian Institute of Technology Bombay, Metallurgical Engineering and Materials Science, India

(ICACC-S1-P075-2019) Woven Kevlar Fiber Composite based Personal Thermal Management with Cu-Ni Core-shell NanowiresA. Hazarika¹; B. K. Deka¹; D. Kim¹; Y. Park¹; H. Park*¹

1. Ulsan National Institute of Science and Technology, Republic of Korea

(ICACC-S1-P076-2019) Rotational Flexural Strength Testing of Brittle Material CylindersA. Wereszczak*¹; R. Wiles¹; E. Steiner²; B. Kuwik²; O. Jadaan³

1. Oak Ridge National Lab, USA
2. Oak Ridge Associated Universities, USA
3. University of North Florida, USA

(ICACC-S4-P077-2019) Indentation Response of Vitreous Silicates as a Function of Poisson's RatioA. Wereszczak^{*1}; B. Kuwik³; E. Steiner³; B. Hackett²

1. Oak Ridge National Lab, USA
2. University of Tennessee, USA
3. Oak Ridge Associated Universities, USA

(ICACC-S1-P078-2019) Joining of oxide/oxide (Nextel™610/ alumina-zirconia) ceramic composites to Ti₆Al₄VM. Akram^{*1}; V. Casalegno¹; M. Ferraris¹; G. Puchas²; W. Krenkel²

1. Politecnico di Torino, DISAT, Italy
2. University of Bayreuth, Ceramic Materials Engineering, Germany

(ICACC-S1-P079-2019) Advantages of adding diamond to reaction bonded ceramics for wearA. Marshall^{*1}

1. M Cubed Technologies, Inc., USA

(ICACC-S1-P081-2019) Densification of CaCO₃-Li₂MoO₄ Nanoparticle Composites Using the Cold Sintering ProcessD. L. Rennie^{*1}

1. Pennsylvania State University, Materials Science and Engineering, USA

(ICACC-S1-P082-2019) Novel fabrication of magnesium phosphate cements doped with grapheneN. Lu^{*1}; G. He¹; J. Li¹; J. Li¹

1. Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China

(ICACC-S3-P083-2019) Sealing-glass for SOFCs: Properties and stability in relevant conditionsI. Ritucci^{*1}; R. Kiebach¹; H. L. Frandsen¹

1. DTU, Energy, Denmark

(ICACC-S5-P084-2019) Development of high strength boron nitride nanoplate-calcium hydroxyapatite (BNNP-HAP) composite by cold sinteringM. ul Hassan^{*1}; H. Ryu¹

1. Korea Advanced Institute of Science and Technology (KAIST), NQE-NFML, Republic of Korea

(ICACC-S5-P085-2019) The Critical Role of Electrical Conductivity on the Animal Modeling of HA-CaTiO₃ Composite for Biomedical ApplicationP. K. Mallik^{*1}; B. Basu²; K. Balani³

1. Indira Gandhi Institute of Technology Sarang, Metallurgical and Materials Engineering, India
2. Indian Institute of Science, Materials Research Centre, India
3. Indian Institute of Technology, Materials Science and Engineering, India

(ICACC-S5-P086-2019) Hybrid nanoplateforms for magnetic and photothermal therapyC. Multari^{*1}; M. Miola¹; R. Gerbaldo¹; F. Laviano¹; G. Pezzotti²; D. Debellis³; E. Verne¹

1. Politecnico di Torino, DISAT, Italy
2. Kyoto Institute of Technology, Japan
3. IIT, Electron Microscopy Facility, Italy

(ICACC-S5-P087-2019) Palygorskite Sheets Produced by Aqueous Tape Casting ProcessW. Acchar^{*1}; F. Anna Karla²; S. Pergher²

1. Federal University of Rio Grande do Norte, Physics, Brazil
2. Federal University of Rio Grande do Norte, Materials Engineering, Brazil

(ICACC-S5-P088-2019) Fabrication and Performance of Nanofibrous Cell- and Growth Factor-incorporated Tissue Engineering ScaffoldsL. Guo¹; M. Wang^{*1}

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

(ICACC-S6-P089-2019) Preparation and Characterization of Cation-Substituted Na₃SbS₄ Electrolyte with Na⁺ Ion ConductivityN. Masuzawa^{*1}; S. Yubuchi¹; A. Sakuda¹; A. Hayashi¹; M. Tatsumisago¹

1. Osaka Prefecture University, Applied Chemistry, Japan

(ICACC-S6-P090-2019) Effect of annealing temperature on the phase transition and thermoelectric properties of Cu₂SnS₃M. Siyar¹; J. Cho^{*1}; W. Jin¹; Y. Youn¹; S. Han¹; J. Kim²; C. Park¹

1. Seoul National University, Materials Science And Engineering, Republic of Korea
2. Korea Institute of Science and Technology, Center for Electronic Materials, Republic of Korea

(ICACC-S6-P091-2019) Mechanochemical synthesis of Na-Sb alloy negative electrode for all-solid-state sodium batteries with Na₃PS₄ glass-ceramic electrolyteT. Ando^{*1}; S. Yubuchi¹; A. Sakuda¹; A. Hayashi¹; M. Tatsumisago¹

1. Osaka Prefecture University, Applied Chemistry, Japan

(ICACC-S6-P092-2019) Structure, sinterability and Ionic Conductivity of Li_{0.25}Ga_{0.25}La_{3-x}Sr_xZr₂O₁₂ with garnet-type structureD. Mori^{*1}; K. Sugimoto¹; K. Ohmori¹; Y. Matsuda²; S. Taminato¹; Y. Takeda¹; N. Imanishi¹

1. Mie University, Department of Chemistry for Materials, Japan
2. Osaka Institute Technology, Department of Applied Chemistry, Japan

(ICACC-S7-P093-2019) Si-Doped Titania Oxide Nanotubes for Photoelectrochemical Water SplittingZ. Dong¹; D. Ding^{*1}; T. Li¹; C. Ning²

1. Shanghai Jiao Tong University, School of Materials Science and Engineering, China
2. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

(ICACC-S7-P094-2019) Application of Al-doped MicNo[®]-Zinc Oxide Particles as Conductive Fillers in Polymer Matrix CompositesP. Sengun^{*1}; M. Kesim²; M. Caglar²; U. Savaci¹; S. Turan¹; I. Sahin¹; E. Suvaci¹

1. Eskisehir Technical University, Material Science and Engineering, Turkey
2. Entekno Materials, Turkey
3. Eskisehir Technical University, Department of Physics, Turkey

(ICACC-S7-P095-2019) Systematic evaluation of Mn_xCo_{3-x}O₄ spinels as oxygen evolution catalysts for alkaline electrolyzersK. Cysewska¹; S. Molin^{*1}

1. Gdansk University of Technology, Laboratory of Functional Materials, Faculty of Electronics, Telecommunications and Informatics, Denmark

(ICACC-S7-P096-2019) Investigation of Optical and Photochemical Properties of Designed Co and Fe-Doped ZnO (MicNo[®]CZO-MicNo[®]FZO) ParticlesB. Alkan^{*1}; O. S. Ates³; E. Suvaci²

1. Hitit University, Metallurgical and Materials Engineering, Turkey
2. Eskisehir Technical University, Material Science and Engineering, Turkey
3. ENTEKNO Corp., Turkey

(ICACC-S7-P097-2019) Effect of polar and non-polar solvents on the production of Graphene by attrition millingS. Mancillas^{*1}; E. Lopez-Honorato¹

1. Center of Investigation and Advanced Studies of the National Polytechnical Institute, Ceramic Engineering, Mexico

(ICACC-S7-P098-2019) Effect of Interface on dielectric and energy storage properties of SrTiO₃/BiFeO₃ thin film capacitorsC. Diao¹; H. Liu^{*1}; H. Hao¹; Z. Yao¹; M. Cao¹

1. Wuhan University of Technology, China

(ICACC-S7-P099-2019) Ionic conduction based ideal room-temperature gas sensors using highly porous SnO₂ nanorodsC. Kang^{*1}; Y. Song¹; S. Yi¹; G. Kim¹

1. Korea Institute of Science and Technology, Center for Electronic Materials, Republic of Korea

(ICACC-S7-P100-2019) Spectrally matched ceramic nanoparticles as X-Ray fluorescence bioimaging contrast agentY. Li^{*1}; V. Carmen¹; K. S. Doodran¹; J. Larsson¹; H. Hertz¹; M. S. Toprak¹

1. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden

(ICACC-S7-P101-2019) Effect of Substrate on Dy³⁺-doped Strontium Molybdate Thin Film Luminescent PropertiesR. Mazin Latini¹; A. d. Marques^{*1}

1. Federal University of Sao Paulo, Brazil

(ICACC-S8-P102-2019) In-situ observation of dewaxing process of ceramic powder compacts by optical coherence tomographyM. Kato^{*1}; J. Tatami¹; T. Takahashi¹; M. Iijima¹

1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

(ICACC-S8-P103-2019) Enhancement of rare earth elements dissolution from weathered residual rare earth ore by mechanochemical activation and construction of new kinetic modelT. Kato^{*1}; G. Granata²; Y. Tsunazawa³; C. Tokoro²

1. Waseda University, Graduate School of Creative Science and Engineering, Japan
2. Waseda University, Faculty of Science and Engineering, Japan
3. National Institute of Advanced Industrial Science and Technology, Japan

(ICACC-S8-P104-2019) Study of Mechanochemical Activation of Copper Minerals by Experiments and DEM SimulationsM. Minagawa^{*}; T. Kato¹; G. Granata²; C. Tokoro²

1. Waseda University, Graduate School of Creative Science and Engineering, Japan
2. Waseda University, Faculty of Science and Engineering, Japan

(ICACC-S8-P105-2019) Investigation of the HPGR Effect on Copper Liberation by Using DEM with Breakage ModelY. Nagata^{*}; Y. Sawamura¹; M. Minagawa¹; G. Granata²; K. Tsukada¹; Y. Yaguchi²; Y. Ebisu²; K. Mitsuhashi²; C. Tokoro²

1. Furukawa Industrial Machinery Systems Co. Ltd., Design Department Industrial Machinery Section, Japan
2. Furukawa Co., Ltd., Technology Division, Japan
3. Nittetsu Mining Co., Ltd., Research & Development Department, Japan
4. Waseda University, Graduate School of Creative Science and Engineering, Japan
5. Waseda University, Faculty of Science and Engineering, Japan

(ICACC-S8-P106-2019) Suppression of Cracking in Metakaoline Potassium Based Geopolymer and its HardnessD. T. Le^{*}; I. Kudo²; T. Nakayama¹; K. Niihara¹; H. Suematsu¹

1. Nagaoka University of Technology, Extreme Energy - Density Institute, Japan
2. ADVAN ENG. Co., Ltd., Japan

(ICACC-S8-P107-2019) Residual stress free joining of liquid-phase sintered SiC ceramics using a SiC tapeY. Kim^{*}; Y. Kim¹

1. University of Seoul, Department of Materials Science & Engineering, Republic of Korea

(ICACC-S8-P108-2019) Ceramic Carbide powders: Specialized development for sintering applicationsT. Schmidt^{*}; S. E. Vogel²

1. H.C. Starck Surface Technology and Ceramic Powders GmbH, Applied Technology, Germany
2. North American Höganäs LLC, Sales, USA

(ICACC-S8-P109-2019) Examination of micro- and nanosized milled h-BN addition on sintered Si₃N₄/h-BN ceramic compositesK. Balazsi^{*}; M. Furko¹; Z. Fogarassy¹; C. Balazsi¹

1. HAS Centre for Energy Research, Hungary

(ICACC-S8-P110-2019) Effect of attritor milling on grain size and distribution of carbon nanotubes in YSZ/MWCNT compositesK. Balazsi^{*}; S. Lamnini¹; C. Balazsi¹

1. Centre for Energy Research HAS, Thin Film Physics, Hungary

(ICACC-S8-P111-2019) Silicon nitride dispersion strengthened sintered stainless steelC. Balazsi^{*}; H. Ben Zine¹; K. Balazsi¹; A. Horvath¹; V. Ryukhtin¹; L. Almasy²; H. Murakami²; S. Kobayashi³

1. HAS Centre for Energy Research, Hungary
2. Wigner Research Centre, Hungary
3. Iwate University, Japan
4. Nuclear Physics Institute CAS, Czechia

(ICACC-S8-P112-2019) Electronics ceramics microstructure Minkowski hull analysisV. Mitic^{*}; G. Lazovic²; L. Kocic²; V. Paunovic²; S. Veljkovic²; B. Vlahovic¹

1. Serbian Academy of Sciences, Institute of Technical Sciences, Serbia
2. University of Nis, Faculty of Electronic Engineering, Serbia
3. University of Belgrade, Faculty of Mechanical Engineering, Serbia
4. North Carolina Central University, USA

(ICACC-S9-P113-2019) Preparation of self-reinforcement of porous mullite through in situ synthesis of mullite whisker with HF in the precursorH. Zhang^{*}; J. Tang¹

1. Xi'an Aeronautical University, China

(ICACC-S9-P115-2019) Effect of sintering temperature on thermal conductivity of porous nano-SiC ceramicsY. Kim^{*}; Y. Kim¹

1. University of Seoul, Department of Materials Science & Engineering, Republic of Korea

(ICACC-S9-P116-2019) Fibrous Si₃N₄ Ceramic with High Porosity Fabricated through Gas-Solid Reaction of CNT and SiOJ. Yang^{*}; Q. Zhi¹

1. Xi'an Jiaotong University, China

(ICACC-S9-P117-2019) Porous Alumina ceramics by gel casting: Effect of type of sacrificial templateF. Akhtar^{*}; J. Nordin²

1. Luleå University of Technology, Division of Materials Science, Sweden
2. AkzoNobel AB, Sweden

(ICACC-S9-P118-2019) Combustion Synthesis of porous Si₃N₄ ceramics with high porosity and strengthG. He^{*}; L. Wang¹; J. Li¹

1. Technical Institute of Physics and Chemistry, Chinese Academy of Science, China

(ICACC-S10-P119-2019) Effect of the Al₂O₃ Film on Stress Corrosion Cracking of the Ni-Al Alloy in High Temperature and Pressure Water Analyzed by Molecular Dynamics SimulationH. Yanagisawa^{*}; Q. Chen¹; N. Miyazaki¹; Y. Ootani¹; N. Ozawa¹; M. Kubo¹

1. Institute for Materials Research, Tohoku University, Japan

(ICACC-S10-P120-2019) Molecular Dynamics Simulation of Li Behavior in All-Solid-State Lithium Battery AnodeK. Nagai^{*}; N. Miyazaki¹; Y. Ootani¹; N. Ozawa¹; M. Kubo¹

1. Institute for Materials Research, Tohoku University, Japan

(ICACC-S10-P121-2019) Effects of Chemical Reactions on Fracture of SiO₂-Composite Microelectromechanical Systems under Water Condition: Reactive Molecular Dynamics Simulation AnalysisS. Yamashita^{*}; N. Miyazaki¹; Y. Ootani¹; N. Ozawa¹; M. Kubo¹

1. Institute for Materials Research, Tohoku University, Japan

(ICACC-S10-P122-2019) Molecular Dynamics Simulations on Chemical Mechanical Polishing Process of Nitride Substrate with NanobubbleS. Kimura^{*}; N. Miyazaki¹; Y. Ootani¹; N. Ozawa¹; M. Kubo¹

1. Institute for Materials Research, Tohoku University, Japan

(ICACC-S10-P123-2019) DFT Study of Silicon and Rare Earth Adsorption on Oxygen Terminated (0001) Boron suboxide SurfaceJ. S. Dunn^{*}; K. D. Behler¹; J. LaSalvia¹; C. Marvel²; M. P. Harmer²

1. U.S. Army Research Laboratory, USA
2. Lehigh University, Materials Science and Engineering, USA

(ICACC-S12-P124-2019) Synthesis, densification, microstructure and mechanical properties of samarium hexaboride ceramicL. Feng^{*}; W. Fahrenholtz¹; G. Hilmas¹; Y. Hor¹

1. Missouri University of Science & Technology, Materials Science and Engineering, USA

(ICACC-S12-P125-2019) Thermal and Mechanical Properties of a High Entropy CarbideE. C. Schwind^{*}; G. Hilmas¹; W. Fahrenholtz²; E. Castle²; M. Reece²

1. Missouri University of Science & Technology, Materials Science and Engineering, USA
2. Queen Mary University of London, United Kingdom

(ICACC-S12-P126-2019) Intrinsic Mechanical Properties of Zirconium Carbide CeramicsN. Korklan^{*}; G. Hilmas¹; W. Fahrenholtz¹

1. Missouri University of Science & Technology, Material Science and Engineering, USA

(ICACC-S12-P127-2019) Structural and Physical Properties of Ti₂(Al,Bi)CE. Prehn^{*}; Z. Tan¹; A. Talapatra¹; T. Duong¹; R. Arroyave¹; M. Radovic¹; A. Poznyak²

1. Texas A&M University, MSEN, USA
2. National University of Sciences and Technology, Department of Nanofunctional Systems and High-Temperature Materials, Russian Federation

(ICACC-S12-P128-2019) Heterogeneously dispersed ceramic matrix composites for harsh environmentsB. A. Baker^{*}; J. Binner¹

1. University of Birmingham, School of Metallurgy and Materials, United Kingdom

(ICACC-S13-P129-2019) Flexural Strength of CMC Tubes Used as Components in Nuclear Applications: ASTM Draft Standard Using Transverse Loading for Flexure StressM. G. Jenkins^{*}; J. E. Gallego¹

1. Bothell Engineering and Science Technologies, USA

(ICACC-S13-P130-2019) Compressive Strength of CMC Tubes Used as Components in Nuclear Applications: ASTM Draft Standard Using Axial Compression LoadingM. G. Jenkins^{*}; J. E. Gallego¹

1. Bothell Engineering and Science Technologies, USA

(ICACC-S13-P131-2019) Effect of deposition conditions on the production of ZrO₂ coatings produced by PE-CVD as environmental barrier coatings for the Molten Salt ReactorL. J. Espinoza Perez^{*}; E. Lopez-Honorato¹

1. CINVESTAV, Metallurgical and Ceramic Engineering, Mexico

(ICACC-S13-P132-2019) Advanced Metallic-SiC Composite Claddings for Improved Damage ToleranceJ. S. O'Dell^{*}; L. Snead²; K. Shirvan³

1. Plasma Processes, LLC, USA
2. Stony Brook University, USA
3. Massachusetts Institute of Technology, USA

(ICACC-S13-P133-2019) Characterization of SiC_f/SiC Woven Tubular CompositesJ. Nance^{*}; G. Subhash²; C. Deck³

1. University of Florida, Material Science Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA
3. General Atomics, USA

Thursday, January 31, 2019**FS1: Bio-inspired Processing of Advanced Materials****Mechanical Properties of Natural and Bioinspired Materials**

Room: Coquina Salon F

Session Chair: Joaquin Ramirez-Rico, Universidad de Sevilla

8:30 AM**(ICACC-FS1-001-2019) Strong and tough ceramic inspired by nature (Invited)**F. Bouville^{*}

1. Imperial College London, Department of Materials, United Kingdom

9:00 AM**(ICACC-FS1-002-2019) Tailoring architecture and microstructure to design bio-inspired layered ceramics with enhanced damage tolerance (Invited)**R. Bermejo^{*}; A. Hofer¹; R. Walton²; G. L. Messing²

1. Montanuniversitaet Leoben, Institut fuer Struktur- und Funktionskeramik, Austria
2. Pennsylvania State University, Materials science and Engineering, USA

9:30 AM**(ICACC-FS1-003-2019) Biomorphic transformations give nature-inspired 3-D ceramics with enhanced functional and mechanical performance (Invited)**S. Sprio^{*}; A. Tampieri¹; A. Ruffini¹; S. Panseri¹; M. Montesi¹

1. National Research Council of Italy, Institute of Science and Technology for Ceramics, Italy

10:00 AM**Break****10:20 AM****(ICACC-FS1-004-2019) Biomimetic Composites Derived from an Impact Resistant Crustacean (Invited)**N. Yaraghi¹; L. Grunenfelder¹; N. D. Suksangpanya²; D. Restrepo Arango²; P. Zavattieri²; D. Kisailus^{*}

1. University of California, Materials Science and Engineering, USA
2. Purdue University, USA

10:50 AM**(ICACC-FS1-005-2019) Clever mechanisms and impact resistance strategies found in the architecture of some naturally occurring materials (Invited)**N. D. Suksangpanya¹; N. D. Guarin-Zapata¹; D. D. Wang¹; N. Yaraghi²; D. Kisailus²; P. Zavattieri^{*}

1. Purdue University, USA
2. University of California, Riverside, USA

11:20 AM**(ICACC-FS1-006-2019) Geologically-Inspired Ceramics – Understanding the mechanism behind room temperature cold sintering**M. Haug^{*}; F. Bouville¹; A. Studart¹

1. ETH Zurich, Materials, Switzerland

Processing of Biomorphic and Biomimetic Materials

Room: Coquina Salon F

Session Chairs: Florian Bouville, ETH Zürich; Pablo Zavattieri, Purdue University

1:30 PM**(ICACC-FS1-007-2019) New advances in ice-templating technique: From architectural control to biomimetic functional materials (Invited)**H. Bai^{*}

1. Zhejiang University, College of Chemical and Biological Engineering, China

2:00 PM**(ICACC-FS1-008-2019) Colloidal Processing Enabling Microstructure Control and Manufacturing of Bio-inspired Ceramics (Invited)**C. Tallon^{*}

1. Virginia Tech, Materials Science and Engineering, USA

2:30 PM**(ICACC-FS1-009-2019) Robocasting of zirconia scaffolds with multi-scale porous networks**L. Tabard^{*}; E. Prud'Homme¹; L. Gremillard¹; V. Garnier¹

1. INSA Lyon, MATEIS, France

2:50 PM**Break****3:10 PM****(ICACC-FS1-010-2019) Bioprocess-Inspired Synthesis of Advanced Materials: The Design and Implementation (Invited)**H. Xie^{*}; H. Ping¹; Z. Fu¹

1. Wuhan University of Technology, China

3:40 PM**(ICACC-FS1-011-2019) Processing Novel Materials to Engineer Bioinspired Ceramic Composites (Invited)**V. Garcia Rocha^{*}; G. Menendez¹; S. Evans¹; G. Min¹

1. Cardiff University, School of Engineering, United Kingdom

4:10 PM**(ICACC-FS1-012-2019) Electrospayed bioactive calcium phosphate layers starting from biogenic raw materials**C. Balazsi^{*}; K. Balazsi¹

1. HAS Centre for Energy Research, Hungary

4:30 PM**(ICACC-FS1-013-2019) Developing bioinspired graphene/ceramic composites**G. Menendez^{*}; G. Min¹; S. Evans¹; V. Garcia Rocha¹

1. Cardiff University, Cardiff School of Engineering, United Kingdom

FS2: Image based Characterization and Modelling of Ceramics by Non-destructive Examination Techniques

Characterization NDE Technologies for Sintering Analysis, Stress, Void and Distribution I

Room: Coquina Salon A

Session Chair: Amjad Almansour, NASA Glenn Research Center

1:30 PM

(ICACC-FS2-001-2019) Three dimensional microstructure analysis with X-ray microscopy (Invited)

C. Thieme*; R. B. Wehrspohn¹

1. Fraunhofer Institute for Microstructure of Materials and Systems IMWS, Germany

2:00 PM

(ICACC-FS2-002-2019) Non-Destructive Electrical Characterization of Ceramic Microstructures: Outside and Inside the Furnace

M. C. Golt*; E. Hernandez-Rivera¹; K. Strawhecker¹; S. Kilczewski¹

1. U.S. Army Research Laboratory, USA

2:20 PM

(ICACC-FS2-003-2019) Designing High Performance Advanced Ceramics using Advanced Microscopy Characterization, Modelling and Machine Learning Image Segmentation

A. Stratulat*¹

1. Carl Zeiss Microscopy Limited, United Kingdom

2:40 PM

(ICACC-FS2-004-2019) Strain field measurements for tensile-loaded carbon/carbon composites by DIC method at elevated temperatures

H. Sato*; T. Aoki²; R. Kitamura³; S. Ogihara³

1. Tokyo University of Science, Department of Mechanical engineering, Graduate School of Science and Technology, Japan
2. Japan Aerospace Exploration Agency, Aeronautical Technology Directorate, Japan
3. Tokyo University of Science, Department of Mechanical Engineering, Faculty of Science and Technology, Japan

3:00 PM

Break

Characterization NDE Technologies for Sintering Analysis, Stress, Void and Distribution II

Room: Coquina Salon A

Session Chair: Benoit Rousseau, LTN UMR CNRS 6607

3:20 PM

(ICACC-FS2-005-2019) Influence of μ CT resolution on structural parameters determining the minimal Volume-of-Interest (VOI)

T. Fey*¹

1. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany

3:40 PM

(ICACC-FS2-006-2019) Observations of Anti-thermal Grain Growth of Strontium Titanate with Non-Destructive 3D X-ray Diffraction

A. R. Krause*; M. Wang²; A. Roti Roti²; M. P. Harmer²; C. Krill³

1. University of Florida, Materials Science and Engineering, USA
2. Lehigh University, Materials Science and Engineering, USA
3. Ulm University, Germany

4:00 PM

(ICACC-FS2-007-2019) Design of Novel Porous Foams by Pyrolyzing Lignin

S. Gupta*; M. Dey¹; K. Hall¹; C. Matzke¹; G. Ellis¹; S. Javaid¹; Y. Ji²

1. University of North Dakota, Mechanical Engineering, USA
2. University of North Dakota, Chemical Engineering, USA

Influence of Inhomogeneity

Room: Coquina Salon A

Session Chairs: Ashley Hilmas, University of Michigan; Christian Thieme, Fraunhofer Institute for Microstructure of Materials and Systems IMWS

4:20 PM

(ICACC-FS2-008-2019) Properties relied on Internal Structure of Ceramics from 3D View of X-ray tomography

S. Wang*; L. Zhang¹

1. Institute of Metal Research, Shenyang National Laboratory of Materials Science, China

4:40 PM

(ICACC-FS2-009-2019) Contact-free imaging of the thermal conductivity of ceramic thin films at the nanoscale

S. Kazemian¹; S. Ezugwu¹; G. Fanchini*¹

1. University of Western Ontario, Physics and Astronomy, Canada

5:00 PM

(ICACC-FS2-010-2019) Contribution of μ -tomography X to the understanding of thermal radiative transfer in cellular materials

B. Rousseau*¹

1. LTeN UMR6607, France

FS4: Green Technologies and Joining of Ceramics

Future Directions of Materials Innovation and Joining Technology

Room: Tomoka C

Session Chairs: Federico Smeacetto, Politecnico di Torino; Jonathan Ligda, US Army Research Laboratory

8:30 AM

(ICACC-FS4-016-2019) Laser supported heating: An efficient technology for the joining of ceramics (Invited)

M. Herrmann*¹; M. Graffé¹; W. Lippmann¹; A. Hurtado¹

1. Technische Universität Dresden, Institute of Power Engineering, Germany

9:00 AM

(ICACC-FS4-017-2019) Fabrication of Interconnects on ceramic substrates using active brazing materials

M. Rohde*¹; H. J. Seifert¹; V. Schulze²; E. Götze²; T. Stoll³; J. Franke³

1. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany
2. Karlsruhe Institute of Technology, Germany
3. Friedrich-Alexander Universität Erlangen-Nuernberg, Germany

9:20 AM

(ICACC-FS4-018-2019) Joining of ceramics using electric field induced current across the interface

H. Charalambous*¹; S. K. Jha¹; Q. Yang¹; R. T. Lay¹; T. Tsakalakos¹

1. Rutgers University, Materials Science and Engineering, USA

9:40 AM

(ICACC-FS4-019-2019) Enhancement in electron transfer properties in BaTiO₃ based embedded flexible electro-active sensors towards development of wearable energy harvesting textiles

W. Tuff*¹; J. Lor¹; S. Ahmed²; S. Banerjee¹

1. California State University, Fresno, Mechanical Engineering, USA
2. SUNY Buffalo State, Mechanical Engineering, USA

10:00 AM

(ICACC-FS4-020-2019) Small Molecule Adsorption on the Semiconductor/Ionic-Liquid Interface and Application to Green Sensing and Conversion (Invited)

Z. Wang*¹; K. Riley¹

1. Xavier University of Louisiana, Chemistry Dept., USA

S1: Mechanical Behavior and Performance of Ceramics & Composites

Design, Life Prediction and Tribological Performance

Room: Coquina Salon D

Session Chairs: Mathias Woydt, BAM Federal Institute for Materials Research and Testing; Amjad Almansour, NASA Glenn Research Center

8:30 AM

(ICACC-S1-046-2019) The potential of NbC-TiC₂N₃ cermets as cutting tools and for wear protection

M. Woydt^{*1}; H. Mohrbacher²; E. Cannizza³; J. Vleugels⁴; S. Huang⁴

1. BAM Federal Institute for Materials Research and Testing, Germany
2. Niobelcon bvba, Belgium
3. EHT-Engineering Consulting Ltd., Brazil
4. K.U. Leuven, MTM, Belgium

8:50 AM

(ICACC-S1-047-2019) Wear resistance and surface changes of MgAl₂O₄ spinel ceramic after abrasion and scratch exposure

S. von Helden^{*1}; J. Malzbender¹; M. Krüger¹

1. Forschungszentrum Juelich, Institute of Energy and Climate Research (IEK-2), Germany

9:10 AM

(ICACC-S1-048-2019) Evaluation of hydration free energy of glass by electric potential change during chemical mechanical polishing

S. Suda^{*1}; R. Fukuzaki¹; K. Kawahara²

1. Shizuoka University, Engineering, Japan
2. Japan Fine Ceramics Center, Japan

9:30 AM

(ICACC-S1-049-2019) The Effect of Combined Cyclic Loading on Conductance of Resistive Switching Material HfO₂: A Molecular Dynamics Study

M. Kayser^{*1}; A. Adnan¹

1. University of Texas, Arlington, Mechanical, USA

9:50 AM

Break

10:10 AM

(ICACC-S1-050-2019) Slow crack growth of boron nitride for electric propulsion

J. Salem^{*1}; J. Mackey²; H. Kamhawi²

1. NASA Glenn Research Center, Materials and Structures, USA
2. NASA Glenn Research Center, Electric Propulsion Systems, USA

10:30 AM

(ICACC-S1-051-2019) Effect of microcrack propagation on the creep deformation behavior of an orthogonal 3-D woven SiC fiber/SiC matrix composite under tensile loading at elevated temperatures

Y. Ikarashi^{*1}; T. Aoki²; Y. Asakura¹; T. Ogasawara¹

1. Tokyo University of Agriculture and Technology, Japan
2. Japan Aerospace Exploration Agency, Japan

10:50 AM

(ICACC-S1-052-2019) Thermomechanical fatigue damage evolution and lifetime prediction of fiber-reinforced ceramic-matrix composites

L. Li^{*1}

1. Nanjing University of Aeronautics and Astronautics, College of Civil Aviation, China

11:10 AM

(ICACC-S1-053-2019) Effect of Graphene Addition on Crack Propagation Resistance in Glass Fibre Reinforced Polymer Matrix Composite

B. Shanmugavel^{*1}; R. Paskaramoorthy²; G. Vigneshwaran¹

1. Anna University, Mechanical Engineering, India
2. University of the Witwatersrand, Johannesburg, School of Mechanical, Industrial & Aeronautical Engineering, South Africa

11:30 AM

(ICACC-S1-054-2019) Static and Dynamic Compression Strength of Ceramics

J. Swab^{*1}; C. Meredith¹

1. Army Research Laboratory, USA

Mechanics, Characterization Techniques, and Equipment

Room: Coquina Salon D

Session Chairs: Raul Bermejo, Montanuniversitaet Leoben; Matthew Appleby, The University of Akron

1:30 PM

(ICACC-S1-055-2019) Characterization of crack propagation in ceramic matrix composites at high temperature

E. Mailliet^{*1}; M. Schuster¹; V. Gupta²; A. Singhal¹; G. Zorn¹; D. Dunn¹

1. GE Global Research, USA

1:50 PM

(ICACC-S1-056-2019) Mode II Interlaminar Fracture of a SiC/SiC Ceramic Matrix Composite (CMC) using the End-Notched Flexure (ENF) Test

M. J. Presby^{*1}; M. Kannan¹; G. N. Morscher¹; C. Godines²; A. Eftekharian²; J. Ahmad²; F. Abdi²; S. R. Choi²

1. University of Akron, Mechanical Engineering, USA
2. AlphaSTAR Corporation, USA
3. Naval Air Systems Command, USA

2:10 PM

(ICACC-S1-057-2019) Study of direct current spreading in ceramic matrix composites

Y. P. Singh^{*1}; R. Panakarajupally¹; R. Mansour²; D. Koch³; G. N. Morscher¹

1. The University of Akron, Mechanical Engineering, USA
2. Teledyne Scientific Company, USA
3. Institute of Structures and Design, Germany

2:30 PM

(ICACC-S1-058-2019) Modeling of the electrical resistivity of melt-infiltrated ceramic matrix composite laminates: Effects of microstructure and transverse matrix cracking

M. P. Appleby^{*2}; E. Mailliet¹; G. N. Morscher³

1. GE Global Research, USA
2. NASA Glenn Research Center, USA
3. University of Akron, USA

2:50 PM

Break

3:10 PM

(ICACC-S1-059-2019) In situ Stable Fracture of Ceramic Interfaces Tested under Environmental Conditions

F. Giuliani^{*1}; G. Sernicola¹

1. Imperial College London, United Kingdom

3:30 PM

(ICACC-S1-060-2019) Effect of surface flaws and their orientation on the mechanical strength of brittle single crystals for microelectronic applications

M. Gruber^{*1}; I. Krалеva²; P. Supancic¹; D. Kiener¹; A. Leitner¹; R. Bermejo¹

1. Montanuniversitaet Leoben, Austria
2. Materials Center Leoben, Austria

3:50 PM

(ICACC-S1-061-2019) On Crack Branching Angles

G. D. Quinn^{*1}

1. NIST, Materials Measurement Sciences Div, USA

4:10 PM**(ICACC-S1-062-2019) Prediction of fracture in brittle solids and components using a stress-energy coupled criterion**R. Bermejo^{*1}; O. Sevecek²; E. Martin³; D. Leguillon⁴

1. Montanuniversitaet Leoben, Institut fuer Struktur- und Funktionskeramik, Austria
2. Brno University of Technology, Institute of Solid Mechanics, Mechatronics and Biomechanics, Czechia
3. Université de Bordeaux, Laboratoire des Composites Thermo-Structuraux, France
4. Sorbonne Université, Institut Jean Le Rond d'Alembert, France

4:30 PM**(ICACC-S1-063-2019) Quasi-plastic zone characterization of regular and Si-doped boron carbide**S. Xiang¹; K. Y. Xie^{*1}; B. Yang²; C. Hwang²; R. Haber²

1. Texas A&M University, Materials Science and Engineering, USA
2. Rutgers University, USA

S3: 16th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology

Air Electrode Performance

Room: Crystal

Session Chair: Narottam Bansal, NASA Glenn Research Center

8:30 AM**(ICACC-S3-042-2019) Computational Design of Solid Oxide Fuel Cell Cathodes from First-Principles (Invited)**R. Jacobs^{*1}; D. Morgan¹

1. University of Wisconsin - Madison, Materials Science and Engineering, USA

9:00 AM**(ICACC-S3-043-2019) SOFC Cathodes Operated under Aggressive Conditions: AC Impedance, Durability Testing, and Microstructural Analysis**C. Deng^{*1}; M. McAllister¹; A. Cai¹; M. R. De Guire¹; A. H. Heuer¹

1. Case Western Reserve University, Materials Science and Engineering, USA

9:20 AM**(ICACC-S3-044-2019) The electrochemical performance of LSM with A-site non-stoichiometry under cathodic polarization**J. Liu^{*2}; T. Yang¹; Y. Yu²; H. O. Finklea³; H. Abernathy²; T. L. Kalapos²; G. Hackett²; P. Ohodnicki¹

1. NETL, USA
2. AECOM, USA
3. West Virginia University, Eugene Bennett Department of Chemistry, USA

9:40 AM**(ICACC-S3-045-2019) DC and AC single electrode studies of composite LSM/YSZ on a thick YSZ electrolyte over a range of oxygen partial pressures**A. Szendrei^{*1}; T. D. Sparks¹; A. V. Virkar¹

1. University of Utah, Materials Science and Engineering, USA

10:00 AM**Break****Air Electrode: Powders, Fabrication, Contacting**

Room: Crystal

Session Chair: Jason Nicholas, Michigan State University

10:20 AM**(ICACC-S3-046-2019) Development of New Materials to Improve the SOFC Supply Chain (Invited)**N. J. Kidner^{*1}; C. Corwin¹; N. Cooley¹; M. Seabaugh¹; S. L. Swartz¹

1. Nexceris, LLC, USA

10:50 AM**(ICACC-S3-047-2019) Performance degradation by room temperature ageing of (La,Sr)(Co,Fe)O₃ cathodes in solid oxide fuel cells**Y. Xu^{*2}; D. C. Cronauer¹; V. Maroni¹; L. Ge¹; B. J. Ingram¹; A. S. Hock²

1. Argonne National Lab, CSE, USA
2. Illinois Institute of Technology, Chemistry, USA

11:10 AM**(ICACC-S3-048-2019) Optimised composite cathodes for SOFC**A. B. Richter¹; G. Syvertsen-Wiig¹; S. Labonnote-Weber^{*1}; K. Wiik²; M. Angeltveit²

1. Cerpotech, Norway
2. NTNU, Materials Science and Engineering, Norway

11:30 AM**(ICACC-S3-049-2019) Thermal and Electrical Properties of LSCo-Mullite Composite Contact Material for Solid Oxide Fuel Cells**Y. Chou^{*1}; N. L. Canfield¹; J. F. Bonnett¹; J. W. Stevenson¹

1. Pacific Northwest National Lab, Materials, USA

11:50 AM**(ICACC-S3-050-2019) Interactions between magnesium silicate support substrate and state-of-the-art cathodes during co-sintering of an all-ceramic SOFC**S. J. Harboe^{*1}; N. H. Menzler¹; O. Guillon¹; F. Grimm¹; P. Lupetin²

1. Forschungszentrum Juelich, Institute of Energy and Climate Research, Germany
2. Robert Bosch, Applied Research 1 - Advanced Functional and Sintered Materials - Ceramic Materials and Processing (CR/ARM2), Germany

Proton Conducting Fuel Cells I

Room: Crystal

Session Chair: Kiho Bae, Korea University

1:30 PM**(ICACC-S3-051-2019) Reversible Electrochemical Cells for Fuel to and from Electricity (Invited)**S. M. Haile^{*1}; S. Choi¹

1. Northwestern University, Materials Science and Engineering, USA

2:00 PM**(ICACC-S3-052-2019) A Novel Triple Conducting Electrode for Fast Hydrogen Production in Protonic Ceramic Electrochemical Cells**H. Ding^{*1}; W. Wu¹; C. Jiang¹; T. He¹; D. Ding¹

1. Idaho National Lab, USA

2:20 PM**(ICACC-S3-053-2019) Highly Performing Triple-Conductive Pr₂NiO_{4+δ} Anode for Proton-Conducting Steam Solid Oxide Electrolysis Cell**W. Li^{*1}; B. Guan¹; L. Ma²; S. Hu¹; N. Zhang¹; X. Liu¹

1. West Virginia University, Mechanical and Aerospace Engineering, USA
2. Hebei University of Engineering, School of Materials Science and Engineering, China

2:40 PM**(ICACC-S3-054-2019) Catalyst performance of Yttrium doped Barium Zirconate (BZY) in the water gas shift (WGS) reaction**D. Jennings^{*1}; I. Reimanis¹; C. Karakaya²

1. Colorado School of Mines, Materials and Metallurgical Engineering, USA
2. Colorado School of Mines, Mechanical Engineering, USA

3:00 PM**Break**

Proton Conducting Fuel Cells II

Room: Crystal

Session Chair: Sossina Haile, Northwestern University

3:20 PM**(ICACC-S3-055-2019) Fabrication of High Performance Protonic Ceramic Fuel Cells with Thin-Film Electrolytes and Multi-scale Structures (Invited)**K. Bae*¹; H. Choi²; D. Kim²; J. Son³; J. Shim²

1. Stanford University, USA
2. Korea University, Republic of Korea
3. Korea Institute of Science and Technology, Republic of Korea

3:50 PM**(ICACC-S3-056-2019) Enhancing Conductivity Through In Situ Cu Exsolution from Ba_{0.95}Ce_{0.5}Zr_{0.3}Y_{0.16}Cu_{0.04}O_{3-δ}**M. Wang*¹; C. Savaniu¹; J. Hui¹; D. Miller¹; J. T. Irvine¹

1. University of St Andrews, School of Chemistry, United Kingdom

4:10 PM**(ICACC-S3-057-2019) In-depth study of the poisoning effects of carbon dioxide on the anode for proton conducting SOFC**S. Sun¹; Z. Cheng*¹

1. Florida International University, Mechanical and Materials Engineering, USA

S5: Next Generation Bioceramics and Biocomposites**Bioceramics and Biocomposites I**

Room: Coquina Salon B

Session Chairs: Leena Hupa, Åbo Akademi University; Fiorenzo Vetrone, Institut National de la Recherche Scientifique, Université du Québec

8:30 AM**(ICACC-S5-001-2019) Suspension Flame Sprayed Metal Doped Calcium Phosphate Coatings with Antibacterial Properties for Infection Prophylaxis (Invited)**R. Gadow*¹; P. Krieg²; A. Killinger²; A. Bernstein³

1. University of Stuttgart, Graduate School of Excellence Advanced Manufacturing Engineering (GSaME), Germany
2. University of Stuttgart, Institute for Manufacturing Technologies of Ceramic Components and Composites, Germany
3. University of Freiburg, Musculoskeletal Research Lab, Clinics of Orthopedics and Trauma Surgery, Germany

9:00 AM**(ICACC-S5-002-2019) 3D Printing of Bioceramics for Bone Regeneration Applications**S. Esslinger*¹; R. Gadow¹; A. Bernstein²

1. University of Stuttgart, Graduate School of Excellence Advanced Manufacturing Engineering (GSaME), Germany
2. University of Freiburg, Musculoskeletal Research Lab, Clinics of Orthopedics and Trauma Surgery, Germany

9:20 AM**(ICACC-S5-003-2019) Defined open-porous tricalcium phosphate scaffolds produced by additive manufacturing (Invited)**M. Schwentenwein*¹; D. Bomze¹; J. Homa¹

1. Lithoz GmbH, Austria

9:50 AM**Break****10:10 AM****(ICACC-S5-004-2019) Rare Earth Doped Nanoparticles for Theranostics (Invited)**F. Vetrone*¹

1. Institut National de la Recherche Scientifique, Université du Québec, Centre Énergie, Matériaux et Télécommunications, Canada

10:40 AM**(ICACC-S5-005-2019) Structure / property relationships in Biomaterials at the nanoscale (Invited)**F. Rosei*¹

1. INRS, Canada

11:10 AM**(ICACC-S5-006-2019) Differentiation behavior of osteogenic cell on surface potential-controlled TiO₂ scale formed by oxynitridation of Ti (Invited)**M. Hashimoto*¹; T. Ogawa¹; S. Kitaoka¹; M. Furuya²; H. Kanetaka²; S. Muto³; M. Abe⁴; H. Yamashita⁴

1. Japan Fine Ceramics Center, Japan
2. Tohoku University, Japan
3. Nagoya University, Japan
4. Osaka University, Japan

11:40 AM**(ICACC-S5-007-2019) Novel Applications of Hydroxyapatite/ Collagen Bone-Like Nanocomposite as Coating on Ti and Self-Setting Bone Paste (Invited)**M. Kikuchi*¹; T. Sato²; Y. Shirotsaki³; M. Aizawa²; K. Kadowaki¹; M. Uezono⁴; K. Moriyama⁴; T. Uchikoshi³

1. National Institute for Materials Science (NIMS), Bioceramics Group, Japan
2. Meiji University, Japan
3. Kyushu Institute of Technology, Japan
4. Tokyo Medical and Dental University, Japan
5. National Institute for Materials Science (NIMS), Fine Particles Engineering Group, Japan

Bioceramics and Biocomposites II

Room: Coquina Salon B

Session Chair: Enrico Bernardo, University of Padova

1:30 PM**(ICACC-S5-008-2019) Bioactive glasses in vitro and in vivo vs. clinical observations (Invited)**L. Hupa*¹

1. Åbo Akademi University, Johan Gadolin Process Chemistry Centre, Finland

2:00 PM**(ICACC-S5-009-2019) Polymorphism in Metal Oxides and Gas-Selectivity-Building the medical diagnostic tools of the future (Invited)**P. Gouma*¹

1. The Ohio State University, MSE, USA

2:30 PM**(ICACC-S5-010-2019) Multi-Functional Biomaterial Systems Designed by Guided Biofabrication (Invited)**C. Tamerler*¹

1. University of Kansas, Mechanical Eng & BioEngineering, USA

3:00 PM**Break****3:20 PM****(ICACC-S5-011-2019) Continuous Wet Spinning and Dug-loaded Wet-spun Fibers**J. Wu¹; H. Sun¹; L. Guo¹; M. Wang*¹

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

3:40 PM**(ICACC-S5-012-2019) Hierarchically Porous 3D-printed Akermanite Scaffolds from Silicones and Engineered Fillers (Invited)**A. Dasan²; H. Elsayed¹; E. Bernardo*¹

1. University of Padova, Department of Industrial Engineering, Italy
2. Alexander Dubcek University of Trenčin, FunGlass – Centre for Functional and Surface Functionalized Glass, Slovakia

4:10 PM**(ICACC-S5-013-2019) Incorporation, Release and Functioning of Theranostics from Multifunctional Tissue Engineering Scaffolds (Invited)**M. Wang*¹

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

4:40 PM**(ICACC-S5-014-2019) The study of internal stresses and ageing behavior of zirconia inclusions in biomedical grade ZTA composites**C. Wei*¹; L. Gremillard²

1. Northwestern Polytechnical University, School of Mechanics, Civil Engineering and Architecture, China
2. INSA Lyon, MATEIS, France

5:00 PM**(ICACC-S5-015-2019) In situ luminescence analysis of coordination sensors (ILACS): New light on monitoring the formation of bioceramics**H. Terraschke*¹

1. Christian-Albrechts-Universität zu Kiel, Institute of Inorganic Chemistry, Germany

5:20 PM**(ICACC-S5-016-2019) Synthesis of porous bio-ceramic(Silicon and Calcium silicate) implants by selective laser melting for local delivery of Vancomycin**N. K. Kamboj*¹; I. Hussainova¹; M. A. Rodríguez Barbero²; S. Rodrigo²; P. K. Gokuldoss¹

1. Tallinn University of Technology, Mechanical and Industrial Engineering, Estonia
2. Institute of Ceramics and Glasses, Spain

S6: Advanced Materials and Technologies for Direct Thermal Energy Conversion and Rechargeable Energy Storage**Li-O2 and Li-S I**

Room: Tomoka A

Session Chair: Hiroaki Kobayashi, Tohoku University

8:30 AM**(ICACC-S6-039-2019) Rational Approach for Dense $\text{Li}_{1.3}\text{Al}_{0.3}\text{Ti}_{1.7}(\text{PO}_4)_3$ Ceramics by Pressureless Sintering for All-solid-state Lithium-ion Batteries**D. Kim*¹; J. Yun¹; D. Kim¹

1. Korea Advanced Institute of Science and Engineering (KAIST), Department of Materials Science and Engineering, Republic of Korea

8:50 AM**(ICACC-S6-040-2019) The novel low-temperature synthesis route of garnet-type solid electrolyte using precursor oxides**N. Hamao*¹; Y. Yamaguchi¹; K. Hamamoto¹; Y. Fujishiro¹; J. Akimoto¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:10 AM**(ICACC-S6-041-2019) Al-doped $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ - $\text{PEO}_{18}\text{LiTFSI}$ as an Electrolyte for All-Solid-State Batteries**R. Scipioni*¹; S. Barnett¹

1. Northwestern University, Materials Science & Engineering, USA

9:30 AM**(ICACC-S6-042-2019) Exploring Lithium-Based Ionic Liquid and Highly Concentrated Electrolyte Systems for Air and Sulfur Batteries (Invited)**M. L. Thomas*¹; K. Ueno¹; K. Dokko¹; M. Watanabe¹

1. Yokohama National University, Japan

10:00 AM**Break****Li-O2 and Li-S II**

Room: Tomoka A

Session Chair: Palani Balaya, National University of Singapore

10:20 AM**(ICACC-S6-043-2019) Li_2O -Based Cathode Materials Using Redox of Peroxide/Oxide Ions in Solids (Invited)**H. Kobayashi*¹

1. Tohoku University, Institute of Multidisciplinary Research for Advanced Materials, Japan

10:50 AM**(ICACC-S6-044-2019) Exploring Conduction Mechanisms in Argyrodite $\text{Li}_6\text{PS}_5\text{X}$ Solid Electrolytes with Molecular Dynamics Simulations (Invited)**B. Morgan*¹

1. University of Bath, Chemistry, United Kingdom

11:20 AM**(ICACC-S6-045-2019) Nanostructural Design of Porous Matrix by Interwoven Carbon Nanofibers for High-Areal-Capacity Li-S Batteries**J. Yun*¹; J. Kim¹; H. Lee²; D. Kim¹

1. Korea Advanced Institute of Science and Engineering (KAIST), Materials Science and Engineering, Republic of Korea
2. UNIST, Republic of Korea

11:40 AM**(ICACC-S6-046-2019) Beyond the Theoretical Capacity of GeS_2 Conversion-Alloying Hybrid Anode by Electrochemical Amorphization**J. Kim¹; J. Yun¹; D. Kim*¹

1. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea

12:00 PM**(ICACC-S6-047-2019) Polycrystalline 1-D TiN based freestanding composite electrode for better performance Li-polysulfide cell**E. Heo*¹; A. Beyene¹; J. Yun¹; D. Kim¹

1. Korea Advanced Institute of Science and Engineering (KAIST), Republic of Korea

S7: 13th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications**Nanomaterials for Energy Conversion and Storage and Catalysis**

Room: Coquina Salon C

Session Chair: Yakup Gönüllü, University of Cologne

8:30 AM**(ICACC-S7-008-2019) Multifunctional materials for emerging technologies (Invited)**F. Rosei*¹

1. INRS, Canada

9:00 AM**(ICACC-S7-009-2019) Thermoelectric Enhancement and Thermal Stability of Nano $\text{Cu}_{1.8}\text{Se}$, Cu_2Se and solid solution of Nano $\text{Cu}_2\text{Se-Fe}_{3.25}\text{Co}_{0.75}\text{Sb}_{12}$ (Invited)**S. Ballikaya*¹; B. Hamawandi²; T. Temel³; T. Bailey⁴; B. Ozkal³; C. Uher⁴; M. S. Toprak²

1. Istanbul University, Elec. Engineering Dept., Turkey
2. KTH Royal Institute of Technology, Applied Physics Department, Sweden
3. Istanbul Technical University, Material Science and Engineering, Turkey
4. University of Michigan, Physics, USA

9:20 AM**(ICACC-S7-010-2019) Composite ceramic nanostructures for high-efficiency Sunlight conversion (Invited)**A. Vomiero*¹

1. Lulea University of Technology, Engineering Sciences & Mathematics, Sweden

9:40 AM

(ICACC-S7-011-2019) Carbothermal nitridation ZrN:(Eu/La) particles; from gel to nano-phase powdersS. Naim Katea*¹; G. Westin¹

1. Uppsala University, Chemistry-Ångström, Sweden

10:00 AM

Break

Synthesis, Functionalization and Assembly of Inorganic and Hybrid Nanostructures III

Room: Coquina Salon C

Session Chair: Eva Hemmer, University of Ottawa

10:20 AM

(ICACC-S7-012-2019) From molecules to materials: Lanthanide-based structures for biomedical and optical applications (Invited)R. Marin¹; I. Halimi¹; N. Liu¹; N. Panov¹; E. Hemmer*¹

1. University of Ottawa, Chemistry and Biomolecular Sciences, Canada

10:50 AM

(ICACC-S7-013-2019) Formation of Anisotropic Nanostructures in Magnetic Field Assisted Chemical Vapor Deposition and Their Transformation to Catalysts for Renewable Energy HarvestingD. Stadler*²; T. Brede¹; D. Bialuschewski²; A. Moellmann²; T. Fischer²; C. A. Volkert¹; S. Mathur²

1. Georg-August-University, Germany

2. University of Cologne, Institute of Inorganic Chemistry, Germany

11:10 AM

(ICACC-S7-014-2019) Nano-probes for X-ray Fluorescence Bio-imaging (Invited)M. S. Toprak*¹

1. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden

11:30 AM

(ICACC-S7-015-2019) Broadband and efficient enhancement of rare-earth-ion photoluminescence in optical materials by semiconductor or metal nanoaggregates (Invited)F. Enrichi*¹

1. Centro Studi e Ricerche E. Fermi (Italy) and Luleå University of Technology (Sweden), Italy

11:50 AM

(ICACC-S7-016-2019) Probing the stability and dissolution of nano-MoO_x X-Ray fluorescence bioimaging contrast agentV. Carmen*¹; Y. Li¹; E. Yilmaz²; M. S. Toprak¹

1. KTH Royal Institute of Technology, Applied Physics, Sweden

2. National Nanotechnology Research Center (UNAM) Bilkent University, Turkey

Synthesis, Functionalization and Assembly of Inorganic and Hybrid Nanostructures IV

Room: Coquina Salon C

Session Chair: Muhammet Toprak, KTH Royal Institute of Technology

1:30 PM

(ICACC-S7-017-2019) Nanocomposite Electrospun Membranes Designed for Water Treatment (Invited)A. Uheida*¹

1. KTH Royal Institute of Technology, Applied Physics, Sweden

2:00 PM

(ICACC-S7-018-2019) Au nanoparticle decorated rGO/MoS₂ Sandwich PhotoanodeJ. Ting¹; P. Lin*¹

1. National Cheng Kung University, Materials Science and Engineering, Taiwan

2:20 PM

(ICACC-S7-019-2019) Synthesis of BaTiO₃ nanoparticles by hydrothermal method using electrospun TiO₂ nanofibersS. Teber¹; O. Küçük¹; I. Kaya¹; V. Kalem*¹; H. Akyıldız¹

1. Konya Technical University, Metallurgical and Materials Engineering, Turkey

2:40 PM

(ICACC-S7-020-2019) Hydrothermal synthesis of MoS₂/CdS heterostructures on montmorillonite nanosheets for enhanced photocatalytic activityK. Peng*¹; H. Wang¹

1. Xi'an Jiaotong University, China

3:00 PM

Break

Synthesis, Functionalization and Assembly of Inorganic and Hybrid Nanostructures V

Room: Coquina Salon C

Session Chair: Daniel Stadler, University of Cologne

3:20 PM

(ICACC-S7-021-2019) Again on TiO₂. Fundamental Studies and Applications of Colloidal TiO₂ and Complex Nanocrystals (Invited)M. Epifani*¹

1. CNR-IMM, Italy

3:50 PM

(ICACC-S7-022-2019) Development of graphene oxide based materials for the adsorption of arsenic in waterC. Reynosa¹; G. Navarro¹; E. Lopez-Honorato*¹

1. CINVESTAV, Mexico

4:10 PM

(ICACC-S7-023-2019) Economical materials design and processing guided by DFT-thermodynamics calculationsH. Choi*¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

4:30 PM

(ICACC-S7-024-2019) Photocatalytic performance of rGO/Mo_xW_{1-x}S₂ nanocomposite and its application for photoelectrochemical water splittingJ. Ting¹; M. Li*¹

1. National Cheng Kung University, Materials Science and Engineering, Taiwan

4:50 PM

(ICACC-S7-025-2019) ZnO nanorod gas sensors deposited by atomic layer depositionC. R. Foschini*¹; A. Simões¹; C. A. Fortulan²; E. Longo³; K. Zhang⁴; H. Baumgart⁴

1. São Paulo State University - UNESP, Mechanical Engineering, Brazil

2. University of São Paulo, Mechanical Engineering, Brazil

3. Federal University of Sao Carlos, Chemistry, Brazil

4. Old Dominion University, Electrical and Computer Engineering, USA

S8: 13th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT13)**Functional Materials and Composites**

Room: Coquina Salon A

Session Chairs: Fiqiri Hodaj, Grenoble Institute of Technology;

Emanuel Ionescu, Technical University Darmstadt

8:30 AM

(ICACC-S8-041-2019) In-situ Catalytic Preparation of High Performance Ceramic Nanofibers and Reinforced Composites (Invited)S. Zhang*¹

1. University of Exeter, United Kingdom

9:00 AM**(ICACC-S8-042-2019) Bioinspired materials templates by nature species**D. Zhang^{*1}; J. Gu¹; Z. Li¹; W. Zhang¹; Q. Liu¹; D. Xiong¹; Y. Li¹

1. Shanghai Jiao Tong University, China

9:20 AM**(ICACC-S8-043-2019) Formation of Tungsten Carbide Nanoparticles by Wire Explosion Process**P. Ranjan^{*1}; T. Kurosaki²; H. Suematsu²; R. Jayaganthan³; R. Sarathi¹

1. Indian Institute of Technology Madras, Department of Electrical Engineering, India
2. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
3. Indian Institute of Technology Madras, Department of Engineering Design, India

9:40 AM**(ICACC-S8-044-2019) Demonstration of lead-free piezoceramic components**S. Labonnote-Weber^{*1}; M. Christensen¹; G. Syvertsen-Wiig¹; A. B. Richter¹

1. Ceramic Powder Technology AS, Norway

10:00 AM**Break****10:20 AM****(ICACC-S8-045-2019) Nanoporous Nitrides for Energy and Catalysis (Invited)**A. Vinu^{*1}

1. University of Newcastle, Global Innovative Center for Advanced Nanomaterials, Australia

10:50 AM**(ICACC-S8-046-2019) Bioinspired 3D Superhydrophobic Porous Ceramics for Oil-water Separation (Invited)**H. Zhang^{*1}

1. Wuhan University of Science and Technology, State Key Laboratory of Refractories and Metallurgy, China

11:20 AM**(ICACC-S8-047-2019) Electronic Ceramics Science, Solar Energy and Fractal Nature**V. Mitic^{*1}; G. Lazovic³; V. Paunovic²; S. Shaikh⁴; S. Veljkovic²; B. Vlahovic⁵

1. Serbian Academy of Sciences, Institute of Technical Sciences, Serbia
2. University of Nis, Faculty of Electronic Engineering, Serbia
3. University of Belgrade, Faculty of Mechanical Engineering, Serbia
4. Pune University, India
5. North Carolina Central University, USA

S9: Porous Ceramics: Novel Developments and Applications**Modeling and Mechanical Properties of Porous Ceramics**

Room: Coquina Salon E

Session Chair: Tobias Fey, Friedrich-Alexander University Erlangen-Nürnberg

8:20 AM**(ICACC-S9-009-2019) Structural Modeling of Cellular (porous) Ceramics (Invited)**M. Ravichandran^{*1}

1. Corning Research and Development Corporation, USA

8:50 AM**(ICACC-S9-010-2019) Computational Micromechanical Modeling of Compressive Behavior for Freeze-Casted Porous Ceramic (Invited)**O. Kravchenko^{*1}; S. Sattar¹; D. Ghosh¹

1. Old Dominion University, Mechanical and Aerospace Engineering, USA

9:20 AM**(ICACC-S9-011-2019) A systematic mechanical study on ceramic triply periodic minimal surfaces: Design, FEM analysis, stereo lithography, sintering and compression testing**M. Pellanconi¹; O. Al-Ketan²; O. Santoliquido¹; R. Abu Al-Rub²; A. Ortona^{*1}

1. SUPSI, MEMTi, Switzerland
2. Khalifa University of Science and Technology, Mechanical Engineering Department, Masdar Institute, United Arab Emirates

9:40 AM**(ICACC-S9-012-2019) Mechanical properties of porous ceramics with tailored microstructure**B. Wang^{*1}; J. Yang¹

1. Xi'an Jiaotong University, State Key Laboratory for Mechanical Behavior of Materials, China

10:00 AM**Break****Innovations in Processing Methods and Synthesis of Porous Ceramics II**

Room: Coquina Salon E

Session Chairs: Manivannan Ravichandran, Corning Research and Development Corporation; Oleksandr Kravchenko, Case Western Reserve University

10:20 AM**(ICACC-S9-013-2019) Porous silicon nitride: A material for the bioactive composite implants (Invited)**P. Sajgalik^{*1}

1. Institute of Inorganic Chemistry, Slovak Academy of Sciences, Ceramics Department, Slovakia

10:50 AM**(ICACC-S9-014-2019) Novel modular ceramic building blocks / polymer composites based on a near net shape process: Manufacturing, characterisation and application (Invited)**J. Biggemann¹; M. Stumpf¹; B. Diepold¹; M. Pezoldt¹; P. Greil¹; T. Fey^{*1}

1. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany

11:20 AM**(ICACC-S9-015-2019) A process to control the microstructure of porous alumina using spherical porous powder (Invited)**S. Takahashi^{*1}; S. Suehiro¹; H. Okawa¹; T. Kimura¹

1. Japan Fine Ceramics Center, Materials Research and Development Laboratory, Japan

11:50 AM**(ICACC-S9-016-2019) MAX-phase (Ti₂AlC) foams by gelcasting**T. Fey^{*1}; M. Stumpf¹; A. Chmielarz²; P. Colombo³; P. Greil¹; M. Potoczek²

1. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany
2. Faculty of Chemistry, Rzeszow University of Technology, Poland
3. Dipartimento di Ingegneria Industriale, Università di Padova, Italy

Innovations in Processing Methods and Synthesis of Porous Ceramics III

Room: Coquina Salon E

Session Chair: Valentina Medri, National Research Council of Italy

1:30 PM**(ICACC-S9-017-2019) Pore Tunability and Composite Strategies for Reliable Porous Ceramics (Invited)**K. Faber^{*1}; N. Arai¹; C. Kuo¹; C. Keck¹

1. California Institute of Technology, USA

2:00 PM**(ICACC-S9-018-2019) Macroporous alumina ceramics using pre-expanded polymer microspheres as sacrificial templates**M. Ciurans Oset¹; J. Nordin²; F. Akhtar^{*1}

1. Luleå University of Technology, Division of Materials Science, Sweden
2. AkzoNobel Performance Chemicals AB, Expancel, Sweden

2:20 PM**(ICACC-S9-019-2019) Aligning and Engulfment of High-Aspect Ratio Fillers in Freeze Casting**C. Kuo^{*1}; K. Faber¹

1. California Institute of Technology, Material Science, USA

2:40 PM**(ICACC-S9-020-2019) Synthesis of a Highly Porous Nano Fibrous Si₃N₄ Ceramic through Gas-Solid Reaction of CNT and SiO Combined with Liquid-Phase Sintering**Q. Zhi^{*1}; B. Wang¹; Y. Deng¹; N. Zhang¹; J. Yang¹

1. State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, China

3:00 PM**Break****Properties of Porous Ceramics**

Room: Coquina Salon E

Session Chairs: Katherine Faber, California Institute of Technology; Seiji Takahashi, Japan Fine Ceramics Center

3:20 PM**(ICACC-S9-021-2019) Preparation and hydrogen peroxide decomposition behavior of layered double hydroxides (LDHs) composed of various transition metals (Invited)**Y. Kameshima^{*1}; S. Nishimoto¹; M. Miyake¹

1. Okayama University, Japan

3:50 PM**(ICACC-S9-022-2019) Geopolymers Composites for CO₂ Adsorption (Invited)**V. Medri^{*1}; E. Papa¹; E. Landi¹; P. Benito²; A. Vaccari²; M. Minelli²

1. National Research Council of Italy, ISTECC, Italy
2. University of Bologna, Italy

4:20 PM**(ICACC-S9-023-2019) Porous Foam Glass Insulator Properties Understanding through Microscopy Characterization**A. Stratulat^{*1}

1. Carl Zeiss Microscopy Limited, United Kingdom

4:40 PM**(ICACC-S9-024-2019) Pore Morphologies Tailored for Flow and Filtration**N. Arai^{*1}; O. Bateman²; J. A. Kornfield²; K. Faber¹

1. California Institute of Technology, Materials Science, USA
2. California Institute of Technology, Chemistry and Chemical Engineering, USA

5:00 PM**(ICACC-S9-025-2019) Adsorption of Hydrogen on Polymer Derived Porous Silicon Oxycarbide Ceramics**P. K. Chauhan^{*1}; S. Ravindran¹; P. Rajagopalan¹

1. Birla Institute of Technology and Science, Hyderabad Campus, Mechanical Engineering, India

5:20 PM**(ICACC-S9-026-2019) Bulk Cellular SiC with submicron pores: A Study of Processing Temperature's Effect on Microstructure and Mechanical Properties**C. Kassner^{*1}

1. University of Virginia, Materials Science and Engineering, USA

S10: Ceramics Modeling, Genome and Informatics**Structural Ceramics III**

Room: Coquina Salon G

Session Chairs: Paul Rulis, University of Missouri - Kansas City; David Poerschke, University of Minnesota

8:30 AM**(ICACC-S10-016-2019) Electronic structure and mechanical properties of Ni-based superalloys: Haynes282 and Inconel740 (Invited)**W. Ching^{*1}

1. University of Missouri-Kansas City, USA

9:00 AM**(ICACC-S10-017-2019) A double kinetic equation solver for conducto-radiative heat transfer in porous ceramics (Invited)**B. Dubroca²; R. Turpault²; G. L. Vignoles^{*1}

1. University of Bordeaux, LCTS - Lab for ThermoStructural Composites, France
2. Bordeaux INP, IMB - Maths Institute of Bordeaux, France
3. CEA - LCTS, Lab. for ThermoStructural Composites, France

9:30 AM**(ICACC-S10-018-2019) Theoretical prediction on elevated temperature elastic and thermodynamic properties of transition metal diborides (Invited)**Y. Zhou^{*1}; H. Xiang¹

1. Aerospace Research Institute of Materials & Processing Technology, China

10:00 AM**Break****Structural Ceramics IV**

Room: Coquina Salon G

Session Chairs: Wai-Yim Ching, University of Missouri-Kansas City; Gerard Vignoles, University Bordeaux

10:20 AM**(ICACC-S10-019-2019) Utilizing interface mechanics with the extended finite element method to predict crack growth in ZrB₂-carbon based composites**L. Jarvis^{*1}; G. Hilmas¹; W. Fahrenholtz¹; M. A. Zaeem¹

1. Missouri University of Science & Technology, Materials Science and Engineering, USA

10:40 AM**(ICACC-S10-020-2019) First-Principles Study on Impurity Tolerance of Pt/Metal-Oxide Catalyst in Anode of Polymer Electrolyte Fuel Cell**N. Ozawa^{*1}; K. Kuranari¹; M. Kubo¹

1. Tohoku University, Institute for Materials Research, Japan

11:00 AM**(ICACC-S10-021-2019) Workflow for High-Throughput Atomistic Models of Silicon Carbide Grain Boundaries**M. Guziewski^{*1}; C. Carlin¹; S. P. Coleman¹

1. US Army Research Laboratory, USA

11:20 AM**(ICACC-S10-022-2019) Damage Modeling of a 3D Carbon/Carbon Composite - Behavior at Room Temperature**A. Este^{*1}; B. Toson¹; J. El Yagoubi²; J. Saliba²; E. Martin³; S. Morel²

1. CEA, France
2. University Bordeaux, France
3. LCTS - CNRS, France

11:40 AM**(ICACC-S10-023-2019) Predicting Effective Fracture Toughness of ZrB₂-Based Ultra-High Temperature Composite Ceramics by Multi-Phase-Field Modeling**A. Emdadi^{*1}; W. Fahrenholtz²; G. Hilmas¹; M. A. Zaeem²

1. Missouri Univ of Science and Tech, Materials Science and Engineering, USA
2. Colorado School of Mines, Mechanical Engineering, USA

Structural Ceramics V

Room: Coquina Salon G

Session Chair: Martin Magnuson, Linköping University

1:30 PM**(ICACC-S10-024-2019) Thermodynamic calculations and modeling for ceramics (Invited)**O. Rapaud*¹

1. University of Limoges, IRCER, France

1:55 PM**(ICACC-S10-025-2019) Microstructure based modeling of in-reactor behavior of oxide nuclear fuels (Invited)**Y. Zhang*¹

1. Idaho National Lab, Fuel Modeling and Simulation, USA

2:20 PM**(ICACC-S10-026-2019) Predictive Modeling of Complex Disordered Solids: Application to amorphous hydrogenated boron carbide (Invited)**P. Rulis*¹; M. Paquette¹; J. Hwang²1. University of Missouri - Kansas City, Physics and Astronomy, USA
2. Ohio State University, Materials Science and Engineering, USA**2:45 PM****(ICACC-S10-027-2019) Material informatics accelerates innovative design of multifunctional thermal environmental barrier coating materials (Invited)**J. Wang*¹

1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, High-performance Ceramics Division, China

3:10 PM**Break****Structural Ceramics VI**

Room: Coquina Salon G

Session Chair: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences

3:25 PM**(ICACC-S10-028-2019) Chemical thermodynamic calculations for materials synthesis and reactivity: case of Si₃N₄/TiN composite (Invited)**J. Roger*¹; Y. Le Petitcorps¹; M. Dourges¹; L. Nouvian¹; L. Maillé¹

1. Université de Bordeaux-CNRS, Laboratoire des Composites ThermoStructuraux, UMR 5801, France

3:50 PM**(ICACC-S10-029-2019) Atomistic Modeling of Anisotropic Grain Boundary Mobilities in Uranium Dioxide (Invited)**J. French¹; X. Bai*¹

1. Virginia Tech, Materials Science and Engineering, USA

4:15 PM**(ICACC-S10-030-2019) Structure Properties of Transition Metal Borides Investigated by X-ray Spectroscopy and Ab-Initio Electronic-Structure Calculations (Invited)**M. Magnuson*¹

1. Linköping University, Department of Physics, Chemistry and Biology, Sweden

4:40 PM**(ICACC-S10-031-2019) Machine learning for phase selection in multi-principal element alloys (Invited)**H. Zhuang*¹; N. Islam¹; W. Huang¹

1. Arizona State University, School for Engineering of Matter, Transport & Energy, USA

5:05 PM**(ICACC-S10-032-2019) Configuration-dependent corrections in the first-principles calculations of multiplet states of transition-metal ions and rare-earth ions in crystals (Invited)**K. Ogasawara*¹; S. Takemura¹

1. Kwansei Gakuin University, Department of Chemistry, Japan

5:30 PM**(ICACC-S10-033-2019) Reliable prediction of lattice thermal conductivity of La₂Zr₂O₇ TBC material using modified two-channel model**Y. Luo*¹; X. Yang²; J. Wang¹; X. Ruan²1. Institute of Metal Research, Chinese Academy of Sciences, China
2. School of Mechanical Engineering, Purdue University, USA**S12: Advanced MAX/MXene Phases and UHTC Materials for Extreme and High Temperature Environment****Synthesis, Processing, and Densification**

Room: St. Johns

Session Chairs: Ji Zou, University of Birmingham; Jie Zhang, Institute of Metal Research, Chinese Academy of sciences

8:30 AM**(ICACC-S12-047-2019) Design and Manufacturing of Multi-Scale Porous UHTCs for Passive and Active Cooling Components (Invited)**C. Tallon*¹

1. Virginia Tech, Materials Science and Engineering, USA

8:50 AM**(ICACC-S12-048-2019) Manufacture of Designed Porosity for Transpiration Cooling**L. J. Vandeperre*¹; R. Hedgecock¹; C. Fradin¹; D. Glymond¹

1. Imperial College London, Materials, United Kingdom

9:10 AM**(ICACC-S12-049-2019) High temperature adhesives derived from SiBCN precursors (Invited)**S. Chang¹; J. Wang¹; X. Luan*¹; L. Cheng¹

1. Northwestern Polytechnical University, China

9:30 AM**(ICACC-S12-050-2019) Synthesis and ablation performance of c1-Sm_{0.2}Zr_{0.8}O_{1.9} for hypersonic applications**A. Brenner*¹; A. Payne¹; R. Trice¹

1. Purdue University, Materials Engineering, USA

9:50 AM**Break****10:10 AM****(ICACC-S12-051-2019) Synthesis and Flash Sintering of Ta_{0.5}Hf_{0.5}B₂ Solid Solution Nanopowders**P. Foroughi¹; A. Durygin²; Z. Cheng*¹1. Florida International University, Mechanical & Materials Engineering, USA
2. Florida International University, CeSMEC, USA**10:30 AM****(ICACC-S12-052-2019) Hot Isostatic Pressing of Zirconium Diboride for Advanced Manufacturing of Near-Net-Shaped UHTCs components**C. T. Garza*¹; C. Tallon¹

1. Virginia Polytechnic Institute and State University, Materials Science & Engineering, USA

Ultra-High Temperature Composites I

Room: St. Johns

Session Chair: Sea-Hoon Lee, Korea Institute of Materials Science

10:50 AM**(ICACC-S12-053-2019) Testing UHTCMCs at ultra-high temperature and harsh environment (Invited)**D. Sciti^{*1}; L. Zoli¹; L. Silvestroni¹; F. Monteverde¹; R. Savino²; J. Binner³; T. Reimer⁴

1. ISTEC-CNR, Italy
2. University of Naples, Federico II, Italy
3. University of Birmingham, United Kingdom
4. German Aerospace Center, Institute of Structures and Design, Germany

11:10 AM**(ICACC-S12-054-2019) Anisotropic Thermal Conductivity in Flexible Woven Ceramic Fibers for Hypersonic Atmospheric Entry**R. Penide-Fernandez^{*1}; F. Sansoz¹

1. The University of Vermont, Department of Mechanical Engineering, USA

11:30 AM**(ICACC-S12-055-2019) Fabrication and performance of ultra-high temperature ceramic matrix composites through RF enhanced chemical vapour infiltration**V. Venkatachalam^{*1}; V. Rubio²; J. Binner²

1. University of Birmingham, Department of Metallurgy and Materials, United Kingdom
2. National Composites Centre, United Kingdom

11:50 AM**(ICACC-S12-056-2019) Fabrication and Testing of Ultra-High Temperature Ceramic Matrix Composites for Extreme Aerospace Applications**D. King^{*1}; C. Carney²; M. Cinibulk²

1. UES, Inc., USA
2. Air Force Research Lab, USA

Ultra-High Temperature Composites II

Room: St. Johns

Session Chair: Diletta Sciti, ISTEC-CNR

1:30 PM**(ICACC-S12-057-2019) Ablation behavior of ultra-high temperature ceramics**S. Lee^{*1}; J. Kim¹; N. Quyet¹; S. Hong²

1. Korea Institute of Materials Science, Republic of Korea
2. Chonbuk National University, High-enthalpy Plasma Research Center, Republic of Korea

1:50 PM**(ICACC-S12-058-2019) Oxidation resistance of carbon fibre reinforced ZrB₂/SiC composites at T>2000°C**A. Vinci^{*1}; T. Reimer²; L. Zoli¹; D. Sciti¹; D. Koch²

1. ISTEC-CNR, DSCTM, Italy
2. DLR - German Aerospace Center, Germany

Novel Applications and Device Fabrication IV

Room: St. Johns

Session Chairs: Konstantina Lambrinou, SCK-CEN; Guobing Ying, Hohai University, China

2:10 PM**(ICACC-S12-059-2019) Elastic properties of Ti₂AlC and Ti₃SiC₂ MAX phase foams with controlled porosity and pore size produced by powder metallurgy**S. A. Tsipas^{*1}; E. Tabares¹; B. Velasco¹; E. Gordo¹; L. Hu²; M. Radovic²; A. Jimenez-Morales¹

1. Universidad Carlos III de Madrid, Materials Science and Engineering, Spain
2. Texas A&M University, Materials Science and Engineering, USA

2:30 PM**(ICACC-S12-060-2019) HPPMS deposition from composite targets: Effect of two orders of magnitude target power density changes on the composition of Cr-Al-C thin films**H. Rueß^{*1}; M. to Baben²; S. Mráz¹; L. Shang¹; P. Polcik³; S. Kolozsvári³; M. Hans¹; D. Primetzhofner⁴; J. M. Schneider¹

1. RWTH Aachen University, Materials Chemistry, Germany
2. GTT-Technologies, Germany
3. Plansee Composite Materials GmbH, Germany
4. Uppsala University, Department of Physics and Astronomy, Sweden

2:50 PM**(ICACC-S12-061-2019) Understanding inhomogeneity in elastic properties within complex crystals using Raman scattering**J. Lyons^{*1}; W. Clegg²; F. Giuliani¹

1. Imperial College London, United Kingdom
2. University of Cambridge, United Kingdom

3:10 PM**Break****3:30 PM****(ICACC-S12-062-2019) First-principles investigations of inherent cleavage and shear behaviors of M₂AlC (M = Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Y, Zr, Nb, Hf, and Ta)**W. Son¹; A. Talapatra¹; T. Duong^{*1}; A. Srivastava¹; R. Arroyave¹; M. Radovic¹

1. Texas A&M University, Materials Science and Engineering, USA

3:50 PM**(ICACC-S12-063-2019) Novel processing of MAX Phase Ti₃SiC₂ by Powder Injection Molding**E. Tabares^{*1}; S. A. Tsipas¹; E. Gordo¹; A. Jimenez-Morales¹

1. Universidad Carlos III de Madrid, Materials Science and Engineering, Spain

Novel Processing of MXenes and Their Composites II

Room: St. Johns

Session Chair: Joseph Halim, Linköping University

4:10 PM**(ICACC-S12-064-2019) On the Design of Metal Deficient MAX (MAXenes) and MAB (MABenes) Phases**S. Gupta^{*1}

1. University of North Dakota, Mechanical Engineering, USA

4:30 PM**(ICACC-S12-065-2019) Water adsorption on ion intercalated MXene studied with Ambient Pressure XPS**W. B. Zaman^{*1}; M. Dixit¹; F. Shen¹; K. B. Hatzell¹

1. Vanderbilt University, Department of Mechanical Engineering, USA

4:50 PM**(ICACC-S12-066-2019) Tuning the surface properties of Ti₃C₂ MXene using different etching agents**M. Benchakar^{*1}; C. Garnero¹; C. Morais¹; S. Morisset¹; P. Chartier²; C. Canaff¹; V. Mauchamp²; A. Habrioux¹; S. Celerier¹

1. Institut de Chimie des Milieux et Matériaux de Poitiers IC2MP UMR7285, France
2. Institut PPRIME, Physics, France

5:10 PM**(ICACC-S12-067-2019) Self-assembled Ti₃C₂T_x electrodes with improved electrochemical performance for supercapacitor in a solution processing**G. Ying^{*1}; L. Su¹; F. Ma¹; L. Liu¹; K. Zhang¹; C. Zhang¹

1. Hohai University, China, Department of Materials Science and Engineering, China

5:30 PM**Surojit Gupta - Organizer's concluding remarks**

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems

Mechanical Properties and Test Methods

Room: Coquina Salon H

Session Chairs: Lance Snead, ORNL; Koroush Shirvan, Massachusetts Institute of Technology

8:30 AM

(ICACC-S13-046-2019) SiC-SiC CMCs and Graphite for Nuclear Applications: Update on Evolving Chapters in the ASME BPV Code Section III, Division 5, Working Group on Graphite and Composites

M. G. Jenkins*; S. T. Gonczy²; Y. Katoh³

1. Bothell Engineering and Science Technologies, USA
2. Gateway Materials Technology, USA
3. Oak Ridge National Lab, USA

8:50 AM

(ICACC-S13-047-2019) Mechanical Deformation and Damage of Nuclear Grade SiC/SiC Composite Tube under Flexure Loading

X. Huang*; W. Bristow¹; J. Bao¹; D. McCleary¹; K. Shapovalov²; G. Jacobsen²

1. University of South Carolina, Mechanical Engineering, USA
2. General Atomics, USA

9:10 AM

(ICACC-S13-048-2019) Mechanical testing of SiGA cladding under relevant off-normal operating conditions

K. Shapovalov*; G. Jacobsen¹; S. Gonderman¹; C. Deck¹

1. General Atomics, USA

9:30 AM

(ICACC-S13-049-2019) Micro-Mechanical Modeling to Design Micro-Pillar Compression Tests for Interfacial Debond Strength Extraction

P. Prabhakar*; T. Koyanagi²; J. Kabel³; M. Balooch³; P. Hosemann³; Y. Katoh²

1. University of Wisconsin, Civil and Environmental Engineering, USA
2. Oak Ridge National Lab, USA
3. University of California Berkeley, Nuclear Engineering, USA

9:50 AM

(ICACC-S13-050-2019) Small scale mechanical testing of dual-purpose barrier coatings on CVD SiC

J. Kabel*; P. Hosemann¹; T. Koyanagi²; Y. Katoh²

1. University of California, Berkeley, Nuclear Engineering, USA
2. Oak Ridge National Lab, Materials Science Division, USA

10:10 AM

(ICACC-S13-051-2019) Modified Burst Test of SiC/SiC Tubes with Strain Rates Relevant to Reactivity-Initiated Accidents

M. N. Cinbiz*; N. R. Brown²; T. Koyanagi¹; Y. Katoh¹; K. Terrani¹

1. Oak Ridge National Lab, USA
2. The Pennsylvania State University, Mechanical and Nuclear Engineering, USA

S16: Geopolymers, Inorganic Polymers and Sustainable Materials

Phosphates and Other Inorganic Materials

Room: Ponce de Leon

Session Chair: Dong-Kyun Seo, Arizona State University

8:30 AM

(ICACC-S16-015-2019) Acid-based geopolymers: Structural evolutions during consolidation and in temperature (Invited)

V. Mathivet*; H. Celerier¹; J. Jouin¹; S. Rossignol¹; M. Parlier²

1. Laboratoire IRCER, France
2. ONERA, France

9:00 AM

(ICACC-S16-016-2019) Al/P ratio variation of acid-based geopolymers: Structural investigation by NMR and XRD analyses (Invited)

H. Celerier*; J. Jouin¹; V. Mathivet¹; N. Tessier-Doyen¹; I. Sobrados²; A. Gharzouni¹; S. Rossignol¹

1. Laboratoire IRCER, France
2. Instituto de ciencia de materiales de Madrid, Spain

9:30 AM

(ICACC-S16-017-2019) Decision support framework for sustainable materials selection: A case study of mine tailings management (Invited)

M. Sarkkinen*; K. Kujala¹; A. Al-Natsheh²; A. Kuoppala²; S. Gehör¹

1. KAMK University, Mechanical and Mining Engineering, Finland
2. KAMK/CBD, Finland

10:00 AM

Break

Alkali Activated Cements and Materials I

Room: Ponce de Leon

Session Chair: Cristina Leonelli, University of Modena and Reggio Emilia

10:30 AM

(ICACC-S16-018-2019) Alkali-activated materials and their formation mechanisms (Invited)

C. E. White*; K. Gong¹; K. Yang¹

1. Princeton University, Civil and Environmental Engineering, USA

11:00 AM

(ICACC-S16-019-2019) Manipulating Reaction Kinetics of Alkali-activated Materials using Nano-sized Additives (Invited)

N. Garg*; J. Gomez²; C. E. White¹

1. Princeton University, USA
2. University of Illinois at Urbana-Champaign, USA

11:30 AM

(ICACC-S16-020-2019) Quality of Precursors and Nanostructural Evolution of Binding Phases in Slag-Fly Ash-Metakaolin-based Binders (Invited)

K. Sankar*; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, Material Science and Engineering, USA

Alkali Activated Cements and Materials II

Room: Ponce de Leon

Session Chair: Claire White, Princeton University

1:30 PM

(ICACC-S16-021-2019) Alkali activation of volcanic ash and "ghiera" from Mount Etna, Sicily, Italy (Invited)

C. Finocchiaro²; C. Sgarlata²; G. Barone²; I. Lancellotti¹; P. Mazzoleni²; C. Leonelli*¹

1. University of Modena and Reggio Emilia, Department of Engineering "Enzo Ferrari", Italy
2. University of Catania, Dipartimento di Scienze biologiche, geologiche e ambientali, Italy

2:00 PM

(ICACC-S16-022-2019) Investigating the shrinkage and strength properties of a self-compacting, Fe-rich, inorganic polymer grout

G. Beersaerts*; Y. Pontikes¹

1. KU Leuven, Materials Engineering, Belgium

2:20 PM

(ICACC-S16-023-2019) Open-cell porous inorganic polymers from industrial Fe-rich slags

R. Murillo Alarcón*; T. Hertel¹; Y. Pontikes¹

1. KU Leuven, Department of Materials Engineering, Belgium

2:40 PM**(ICACC-S16-024-2019) Investigating different commercial metakaolin sources and waste alkaline solutions for producing geopolymer**D. Samuel*¹; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

3:00 PM**Break****Novel Applications**

Room: Ponce de Leon

Session Chair: Minna Sarkkinen, KAMK University

3:30 PM**(ICACC-S16-025-2019) Potential medical applications of geopolymeric nanomaterials (Invited)**D. Seo*¹

1. Arizona State University, School of Molecular Sciences, USA

4:00 PM**(ICACC-S16-026-2019) Rehabilitation of Deteriorated Wood Railroad Ties using Alkali Activated, Slag Fly Ash Binders (Invited)**G. Al-Chaar*²; K. Sankar¹; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, Material Science and Engineering, USA
2. Construction Engineering Research Laboratory, USA

4:30 PM**(ICACC-S16-027-2019) Amorphous, Self-Glazed (ASG-G) Geopolymer & (ASG-C) Ceramic Composites (Invited)**V. Chadha*¹; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

S17: Advanced Ceramic Materials and Processing for Photonics and Energy**Multi-functional Materials III**

Room: Halifax A/B

Session Chair: Giovanni Fanchini, University of Western Ontario

8:30 AM**(ICACC-S17-035-2019) Enhanced dielectric and piezoelectric response in ferroic thin films for MEMS applications (Invited)**N. Bassiri-Gharb*¹

1. Georgia Institute of Technology, Woodruff School of Mechanical Engineering, USA

9:00 AM**(ICACC-S17-036-2019) Soft Processing for Direct Fabrication of Functionalized Graphenes, Their Hybrids and MoS₂ Inks in Solution under Ambient Conditions (Invited)**M. Yoshimura*¹

1. National Cheng Kung University, Mater. Sci. & Eng., Taiwan

9:30 AM**(ICACC-S17-037-2019) Reversible Sodium and Lithium Insertion in Iron Fluorides (Invited)**N. Pinna*¹

1. Humboldt-Universität zu Berlin, Department of Chemistry, Germany

10:00 AM**Break****10:20 AM****(ICACC-S17-038-2019) Triboelectric Nanogenerator for Energy Harvesting and Self-Powered Sensing (Invited)**X. Sun*¹

1. Soochow University, Institute of Functional Nano & Soft Materials, China

10:50 AM**(ICACC-S17-039-2019) Structure of ionic liquid-metal oxide electrical double layers in ion-gated transistors (Invited)**C. Santato*¹; M. O. Orlandi²; M. Barbosa²

1. Ecole Polytechnique de Montreal, Canada
2. UNESP, Brazil

11:20 AM**(ICACC-S17-040-2019) Molecular/2D-Material Hybrid van der Waals Heterostructures (Invited)**E. Orgju*¹

1. Institut National de la Recherche Scientifique, Energy Materials Telecommunications, Canada

11:50 AM**(ICACC-S17-041-2019) The potential of biomass for the synthesis of carbon dots (Invited)**C. Ouellet-Plamondon*¹; D. Benetti²; A. Nkemealeu¹

1. ETS, Université du Québec, Construction, Canada
2. INRS - Institut National de la Recherche Scientifique Centre -, Energie Materiaux Telecommunications, Canada

Friday, February 1, 2019**FS1: Bio-inspired Processing of Advanced Materials****Bioinspired Materials for Functional Applications**

Room: Coquina Salon F

Session Chairs: Simone Sprio, National Research Council of Italy; Hao Xie, Wuhan University of Technology

8:30 AM**(ICACC-FS1-014-2019) Hard carbon derived from olive stone as anode for sodium-ion batteries: Further insights into the microstructure on Na⁺ storage mechanisms (Invited)**A. Gomez-Martin*¹; J. Martinez-Fernandez²; M. Rutttert²; T. Placke²; J. Ramirez-Rico¹

1. Universidad de Sevilla, Departamento Física de la Materia Condensada, Spain
2. University of Münster, MEET Battery Research Center, Germany

9:00 AM**(ICACC-FS1-015-2019) Porous graphene-like nanosheets from biomass resources as electrodes for energy storage applications**A. Gomez-Martin¹; J. Martinez-Fernandez²; J. Ramirez-Rico*¹

1. Universidad de Sevilla, Spain

9:20 AM**(ICACC-FS1-016-2019) Biomimetic patterned surfaces from sol-gel dewetting**E. Colusso*¹; A. Martucci¹; C. Neto²

1. University of Padova, Italy
2. University of Sydney, Australia

9:40 AM**(ICACC-FS1-017-2019) Biological Crystallization of Ultrahard Teeth and Translation to Multi-Functional Materials**S. Herrera¹; H. Tang¹; R. Zhou¹; M. Nemoto²; D. Kisailus*¹

1. University of California, Materials Science and Engineering, USA
2. Okayama University, Japan

10:00 AM**(ICACC-FS1-018-2019) Protective Role of Sutures Bio-inspired by the Boxfish Carapace**M. Hosseini*¹; S. Garner²; S. E. Naleway²; J. McKittrick³; P. Zavattieri¹

1. Purdue University, Civil Engineering, USA
2. University of Utah, Mechanical Engineering, USA
3. University of California, San Diego, Mechanical Engineering, USA

FS2: Image based Characterization and Modelling of Ceramics by Non-destructive Examination Techniques

Use of NDE Techniques for Detection of Local Microstructural Changes and Damage Characteristics in Ceramic Matrix Composites I

Room: Coquina Salon A

Session Chair: Tobias Fey, Friedrich-Alexander University Erlangen-Nürnberg

8:00 AM

(ICACC-FS2-011-2019) Health Monitoring of Ceramic Matrix Composites using Acoustic Emission, Electrical Resistance, and Digital Image Correlation (Invited)

M. J. Presby*; R. Panakarajupally¹; Y. P. Singh¹; M. Kannan¹; G. N. Morscher¹

1. University of Akron, Mechanical Engineering, USA

8:30 AM

(ICACC-FS2-012-2019) Using X-Ray tomography techniques to study damage progression in SiC/SiC composites (Invited)

A. Hilmas*; K. M. Sevenser¹; Y. Zhou²; A. Singhal²

1. University of Michigan, USA
2. GE Global Research Center, USA

9:00 AM

(ICACC-FS2-013-2019) Discernment of Damage in Ceramic Matrix Composites Using Acoustic Emission (Invited)

G. N. Morscher*¹

1. University of Akron, Mechanical Engineering Dept., USA

9:30 AM

(ICACC-FS2-014-2019) Characterizing Early Damage Evolution in CMCs

B. Swaminathan*; A. S. Almansour²; J. D. Kiser²; K. M. Sevenser³; S. Daly⁴

1. University of California, Santa Barbara, Materials, USA
2. NASA Glenn Research Center, USA
3. University of Michigan, USA
4. University of California, Santa Barbara, Mechanical Engineering, USA

9:50 AM

(ICACC-FS2-015-2019) Use of Digital Imaging and Acoustic Emission to Assess Damage in EBC-CMC Systems

A. S. Almansour*; B. J. Harder²; J. D. Kiser¹; K. Lee²; J. Setlock³; D. Gorican⁴; A. Gorven⁵; M. J. Presby⁶

1. NASA Glenn Research Center, Ceramic and Polymer Composites Branch, USA
2. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
3. University of Toledo at NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
4. Vantage Partners, LLC at NASA Glenn Research Center, Ceramic and Polymer Composites Branch, USA
5. Boise State University, Mechanical Engineering, USA
6. University of Akron, Mechanical Engineering, USA

10:10 AM

(ICACC-FS2-016-2019) Developing structure-property linkages for damage initiation/propagation in continuous ceramic fiber reinforced ceramics matrix composites (Invited)

D. Patel¹; D. Rapking*; T. A. Parthasarathy¹; M. V. Braginsky²; C. P. Przybyla³

1. UES, Inc., USA
2. UDRI, USA
3. Air Force Research Lab, USA

S5: Next Generation Bioceramics and Biocomposites

Bioceramics and Biocomposites III

Room: Coquina Salon B

Session Chairs: Akiyoshi Osaka, Okayama University; Faleh Tamimi, McGill University

8:30 AM

(ICACC-S5-017-2019) Finite Element model calculation on osteoporosis modeling (Invited)

J. Liu¹; J. Wang¹; X. Chen¹; G. Wang¹; A. Osaka*¹

1. Henan University of Science & Technology, Sch Mat Sci & Eng, China

9:00 AM

(ICACC-S5-018-2019) Porous Silica-Polymer Hybrid Gels for Oligo Delivery

D. Kapusuz*¹

1. Gaziantep University, Metallurgical and Materials Engineering, Turkey

9:20 AM

(ICACC-S5-019-2019) Tough and aging resistant zirconia composites for dental implants

E. Adolfsson*; N. Courtois²; P. Palmero²; J. Chevalier³; T. Fuerderer²; R. Kohal⁶; H. Reveron⁴

1. Swerea IVF AB, Sweden
2. Anthogyr, France
3. Politecnico di Torino, Italy
4. INSA, France
5. DoCeram, Germany
6. UNIVERSITÄTSKLINIKUM, Germany

9:40 AM

Break

10:00 AM

(ICACC-S5-020-2019) Selective Regulation of Brushite Bioceramics by Chiral Biomolecules (Invited)

W. Jiang¹; H. Moussa¹; A. Mansour¹; A. Alsheghri¹; J. Song¹; M. McKee¹; F. Tamimi*¹

1. McGill University, Canada

10:30 AM

(ICACC-S5-021-2019) Enhanced tendon to bone healing by PLLA/CPS composite films prepared by a simple melt-pressing method

C. Ning*¹; J. Guo¹; J. Zhao²

1. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
2. Shanghai Jiao Tong University Affiliated Sixth People's Hospital, Department of Sports Medicine, China

10:50 AM

(ICACC-S5-022-2019) Development of novel zirconium containing bioactive glass fibers: Physical and mechanical properties

S. Mokhtari*¹; A. W. Wren¹

1. Alfred University, Materials Science and Engineering, USA

11:10 AM

(ICACC-S5-023-2019) In Vitro Efficacy of Antimicrobial-releasing Mesoporous Ceramics for Load-bearing Implant Applications

C. D'Haeyer¹; K. Thevissen²; A. Braem*¹

1. KULeuven, Department of Materials Engineering, Belgium
2. KULeuven, Centre of Microbial and Plant Genetics, Belgium

S10: Ceramics Modeling, Genome and Informatics**Structural Ceramics VII**

Room: Coquina Salon G

Session Chairs: Jérôme Roger, University of Bordeaux; Xianming Bai, Virginia Tech

8:30 AM**(ICACC-S10-034-2019) Large-scale DFT study of complex surfaces and interfaces with the CONQUEST code (Invited)**T. Miyazaki*¹

1. National Institute for Materials Science (NIMS), International Center for Materials Nanoarchitectonics (WPI-MANA), Japan

8:55 AM**(ICACC-S10-035-2019) Computationally-Guided Design of Multicomponent Thermal and Environmental Barrier Coatings for Improved Multifunctional Performance (Invited)**D. L. Poerschke*¹

1. University of Minnesota, Chemical Engineering and Materials Science, USA

9:20 AM**(ICACC-S10-036-2019) Chemical Evolution of Ceramic Interfaces in Nuclear Reactor Environments (Invited)**J. Xi*¹

1. University of Wisconsin-Madison, Materials Science and Engineering, USA

9:45 AM**(ICACC-S10-037-2019) Role of Impurities on the Surface Properties of HfC**J. M. Rimsza*¹; S. Foiles¹; W. Mackie²; J. Michael¹; K. Larson¹

1. Sandia National Laboratories, USA
2. AP Tech, USA

10:05 AM**Break****Structural Ceramics VIII**

Room: Coquina Salon G

Session Chairs: Tsuyoshi Miyazaki, National Institute for Materials Science (NIMS); Jianqi Xi, University of Wisconsin-Madison

10:20 AM**(ICACC-S10-038-2019) Ab initio modeling of interfaces and defects in Ni (γ -phase) and Ni₃Al (γ' -phase)**S. San*¹; W. Ching¹

1. University of Missouri, Kansas City, Physics and Astronomy, USA

10:40 AM**(ICACC-S10-039-2019) Molecular Dynamics Simulation Study on Synthesis and Characterization of Boron Carbide from Orthocarborane**N. Baishnab*¹; R. Khadka¹; P. Rulis²; R. Sakidja¹

1. Missouri State University, Materials Science, USA
2. University of Missouri, Kansas City, Physics and Astronomy, USA

11:00 AM**(ICACC-S10-040-2019) The Structure of amorphous hydrogenated boron carbide (a-BC: H) studied using a Hybrid Reverse Monte Carlo algorithm (HRMC)**R. Khadka*¹; N. Baishnab¹; G. Opletal²; P. Rulis³; M. Paquette³; N. Oyler³; J. Hwang⁴; R. Sakidja¹

1. Missouri State University, Physics, Astronomy and Material Science, USA
2. CSIRO, Molecular Materials Modelling, Australia
3. University of Missouri, Kansas City, Physics and Astronomy, USA
4. Ohio State University, Material Science and Engineering, USA

11:20 AM**(ICACC-S10-041-2019) Generation of a classical interatomic potential for boron and its application to amorphous molecular solids containing boron icosahedra**P. Khanal*¹; P. Rulis¹

1. University of Missouri, Kansas City, Physics and Astronomy, USA

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55 Cs 132.9054 Cesium	56 Ba 137.327 Barium	57 La 138.90547 Lanthanum	58 Ce 140.12 Cerium	59 Pr 140.90765 Praseodymium	60 Nd 144.242 Neodymium	61 Pm (145) Promethium	62 Sm 150.36 Samarium	63 Eu 151.964 Europium	64 Gd 157.25 Gadolinium	65 Tb 158.92535 Terbium	66 Dy 162.5 Dysprosium	67 Ho 164.93032 Holmium	68 Er 167.259 Erbium	69 Tm 168.93421 Thulium	70 Yb 173.054 Ytterbium	71 Lu 174.967 Lutetium	
87 Fr (223) Francium	88 Ra (226) Radium	89 Ac (227) Actinium	90 Th 232.03756 Thorium	91 Pa 231.03688 Protactinium	92 U 238.02891 Uranium	93 Np (237) Neptunium	94 Pu (244) Plutonium	95 Am (243) Americium	96 Cm (247) Curium	97 Bk (247) Berkelium	98 Cf (251) Californium	99 Es (252) Einsteinium	100 Fm (257) Fermium	101 Md (258) Mendelevium	102 No (259) Nobelium	103 Lr (262) Lawrencium	

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