

CONFERENCE PROGRAM



42ND INTERNATIONAL CONFERENCE
AND EXPOSITION ON

ADVANCED CERAMICS AND COMPOSITES

JANUARY 21-26, 2018

Hilton Daytona Beach Resort and Ocean Center

Daytona Beach, Florida, USA



Apple Store



Google play

ceramics.org/icacc2018

Organized by the Engineering Ceramics Division of The American Ceramic Society





WELCOME

On behalf of the Engineering Ceramics Division and the American Ceramic Society, I warmly welcome you to the 42nd International Conference & Exposition on Advanced Ceramics & Composites (ICACC). ICACC continues its strong tradition as the leading international meeting on advanced structural and functional ceramics, composites, and other emerging ceramic materials and technologies.

Since its inception in 1977, this prestigious conference has been organized by Engineering Ceramics Division (ECD) of The American Ceramic Society (ACerS). Over the years, the conference has experienced tremendous growth in interest and participation from ceramic researchers and developers from national, regional, and global technical communities. This year's meeting continues the tradition for its 42nd year.

Topical areas at this conference include advanced structural, functional and nanocrystalline ceramics, composites, and other emerging ceramic materials and integration technologies. The technical program of the ICACC 2018 consists of 17 symposia, three focused sessions, honorary symposium, and 7th Global Young Investigator Forum. The ICACC Exposition, held on Tuesday and Wednesday evenings, will provide a place for attendees to connect with business partners, develop prospects, and explore new business opportunities — all in one place at one time. Poster sessions will again be held in conjunction with the Expo.

The well-established symposia at this conference include Mechanical Behavior and Performance of Ceramics and Composites, Advanced Ceramic Coatings, Solid Oxide Fuel Cells, Armor Ceramics, Bioceramics and Biocomposites, Advanced Materials and Technologies for Direct Thermal Energy Conversion and Rechargeable Energy Storage, Functional Nanomaterials and Thin films, Advanced Processing & Manufacturing Technologies, Porous Ceramics, Virtual Materials Design and Ceramic Genome, industrial root technologies, materials for extreme environments, ceramics for sustainable nuclear energy and fusion energy, crystalline materials for electrical, optical, and medical applications, additive manufacturing, and 3-D printing technologies. In addition, two core new symposia: geopolymers and photonics will round out the technical program.

The ICACC 2018 will include three focused sessions on emerging technologies: bio-inspired processing of advanced materials, tomography and microscopy based modeling of ceramics, and chemical processing of functional materials.

We are extremely pleased to hold the Dr. Mrityunjay Singh honorary symposium at ICACC2018. This key event is an international symposium entitled "Advancing frontiers of ceramics for sustainable societal development". This symposium honors Dr. Singh for his long-term and innumerable outstanding contributions to the science and technology of advanced ceramic materials technologies. The 7th Global Young Investigator Forum (GYIF) will again be organized and facilitated by a group of our young, up and coming researchers.

Our special thanks go to our sponsors including SEL, KITECH, Wiley, CeramTec, HARROP, Saint-Gobain, Zircar, AdValue Technology, Fraunhofer IKTS, Applied Research Center, A-Tech system, Dandan materials, RDWEBB and Elsevier whose generous support facilitates a more successful conference.

The ECD Executive Committee and volunteer organizers, together with The American Ceramic Society, thank you for joining us in Daytona Beach, Florida for what should be a stimulating and beneficial experience.

P.S. Please be reminded that no photography, audio recording, or videotaping of presenters in oral sessions is permitted. See policy on pg iv.

2018 Program Chair



Manabu Fukushima
National Institute of
Advanced Industrial
Science and Technology

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Engineering Ceramics Division Leadership

Trustee: **Tatsuki Ohji**, AIST

Chair: **Jingyang Wang**, Shenyang National Laboratory for Materials

Chair-Elect: **Manabu Fukushima**, National Institute of Advanced Industrial Science & Technology

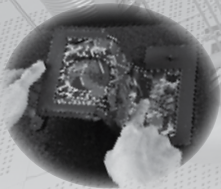
Vice-Chair/Treasurer: **Surojit Gupta**, University of North Dakota

Secretary: **Valerie Wiesner**, NASA Glenn Research Center

Crystalline Oxide Semiconductor brings the extremely low-power society

The CAAC-IGZO SEL discovered and developed will enable extremely low-power LSI and replace backplanes of all displays

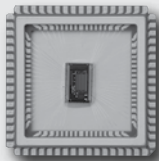
SEL
SEMICONDUCTOR ENERGY LABORATORY



Tri-fold Display with Touch Sensor



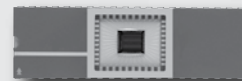
Flexible Battery



NOSRAM



Automotive image sensor



FPGA



8K OLED Display



Laminate type cell

SEMICONDUCTOR ENERGY LABORATORY CO.,LTD.

398 Hase, Atsugi-shi, Kanagawa, 243-0036 JAPAN

TEL: +81-46-270-1170 FAX: +81-46-248-7847

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MEETING REGULATIONS



No photography/recording
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.

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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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 21, 2018

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 22, 2018

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 23, 2018

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
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 24, 2018

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.	



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 24, 2018 (continued)

Student and Young Professional Talk "Publishing in American Ceramic Society Journals: Writing for Search Engine Optimization and Self Marketing"	12:00 p.m.- 1:15 p.m.	Hilton
Concurrent technical sessions	1:30 p.m. – 5:00 p.m.	Hilton
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 25, 2018

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
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. to 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

AWARD AND PLENARY SPEAKERS

MONDAY, 22-JAN, 2018 | 8:30 A.M. – 12:00 P.M.

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

JAMES I. MUELLER AWARD | 9:00 AM



George G. Wicks, CTO, Applied Research Center, S.C.; VP/CTO, SpheroFill LLC; Wicks Consulting Services LLC; adjunct professor, Medical College of Georgia, Georgia Regents University; consulting scientist (retired), Savannah River National Laboratory

Wicks

Abstract: Tiny bubbles or porous wall hollow glass microspheres (PWHGMs), represent an example of multi-use technologies. The technology was originally developed for nuclear applications at the Savannah River National Laboratory and now is being further advanced and tailored for a multitude of new uses in other fields and disciplines. This work is currently being conducted at the Applied Research Center (ARC) in Aiken, S.C., as well as at a new biotech spin off company, SpheroFill LLC. Among the interesting initiatives are applications of tailored PWHGMs in medicine (e.g., drug delivery platforms, contrast agents, tissue augmentation, laryngeal use), security (e.g., nonproliferation, anticounterfeiting), energy (e.g., hydrogen storage, batteries), and environmental remediation (e.g., CO₂ sequestration).

The PWHGMs are tiny hollow glass microspheres or microballoons about one-third the diameter of a human hair. They range in size from a few to 100 microns in diameter, and have thin outer shells approximately 1-2 microns thick. The most unique feature that distinguishes these microspheres from others, is that a continuous, through-wall porosity is induced via phase separation and subsequently controlled on a scale of 100 to 1,000 Angstroms. This provides pathways from the outside of the microspheres to their interior, and allows the tiny glass cocoons to be filled with cargos of interest, including solids, liquids and gases. The cargos or payloads can then later be released on demand. The development of these unique materials and some of the exciting new applications being studied will be discussed.

BRIDGE BUILDING AWARD | 9:40 AM



Yanchun Zhou, professor and deputy director of science and technology of Advanced Functional Composite Laboratory at the Aerospace Research Institute of Materials and Processing Technology of China

Zhou

Abstract: Transition metal carbides, nitrides and borides are potential materials for extreme environment applications. However, the brittleness and defect sensitivity are main obstacles to their applications. Formation of nanolaminated structures like MAX phases (Mn+1AX_n, where M is an early transition metal, X is carbon or nitrogen, A is a IIIA-VIA group element, n=1-6) has been proven to be an effective approach to overcome the brittleness of transition metal carbides and nitrides. These materials are characterized by a transition metal carbide or nitride Mn+1X_n layer interleaved by a close packed A-group element layer, which exhibit a unique combination of the merits of both metals and ceramics. These properties have been proven to be underpinned by the diverse chemical bonding. The continuous discovery of new members and properties, and new applications of MAX phases engenders an enormous interest in searching for materials with similar structure and properties. In this presentation, the multi-scale structural features and the applications of MAX

phases will be introduced first. Then strategies for searching for new layer structured damage tolerant ceramics will be proposed. Finally, the structure and properties of Cr, Si, Al or Y containing new layer structured materials including MAB phases, (MC)_nAl₃C₂, (MC)_nAl₄C₃ and (MC)_n[Al(Si)]₄C₃ phases will be described.

PLENARY SPEAKERS | 10:40 AM



Richard Brook, Emeritus Professor, Dept. of Materials, University of Oxford, United Kingdom

Brook

Abstract: The motives for undertaking research are many and diverse, but three major driving forces can be identified; these are presented. The relationships between research sponsor and research performer are similarly of many different types. The one between researcher and government is, however, particularly prevalent; the ambitions of the two sides are not always parallel and risks then arise for the shared enterprise. Rules for the judgement and support of research are reviewed and some thought is given to the approaches which can be taken by the researcher in search of true originality.

11:20 AM



Frank Mücklich, Univ.-Prof. Dr.-Ing., Head, Institute for Functional Materials, Department of Materials Science & Engineering, Saarland University, Germany

Mücklich

Abstract: The term microstructure refers to the complete "internal" structure of a material on the micro, nano and atomic scales. On one hand it records de facto, the entire history of material's processing procedures through its phase composition, defect structure and microstructural morphology. On the other hand, almost all properties are predetermined by the microstructure. Thus, it can be seen as the "multi-scale archive" from which we can "read" at each relevant scale the precise information about the genesis of microstructure formation processes as well as predict the final material properties. Recent advances in 3D tomography methods on the micro, nano and atomic scales allow not only for higher local resolution but also for correlative combination of microscopic techniques in order to investigate microstructures with higher morphological and topological complexity, which is very crucial for modeling and quantitative understanding of high performing materials in the future. On the other hand, in our daily experimental work but also in commercial quality control, the best possible classification of microstructures by individual experts using image analysis tools is the typical procedure, which conveys our investigation. In case of high morphological complexity of the microstructure, also the 2D data mining procedures for such classifications could very much benefit from morphological "3D-signatures" of the microstructural elements. In addition to that, the Deep Learning methods have shown surprisingly good performance in vision applications by learning the features from data together with such classification steps. This will be presented for the method of Fully Convolutional Neural Networks.



SPECIAL EVENTS

WELCOME RECEPTION

SUNDAY, JAN. 21, 2018 | 5:30 – 7:00 P.M.
HILTON – COQUINA FOYER

NEW MEMBER RECEPTION

MONDAY, JAN. 22, 2018 | 5:30 – 6:30 P.M.
HILTON – COQUINA FOYER

ACERS GLOBAL GRADUATE RESEARCHER NETWORK

Student and Young Professional Networking Mixer

MONDAY, JAN. 23, 2018 | 7:30 – 9:00 P.M. | HILTON – OCEANVIEW
Swap stories with fellow students and young professionals during this relaxed evening event.



SCHOTT SHOT GLASS CONTEST

TUESDAY, 23-JAN, 2018
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!



PUBLISHING IN AMERICAN CERAMIC SOCIETY JOURNALS:

Writing for Search Engine Optimization and Self Marketing

WEDNESDAY, JAN. 24, 2018 | 12:00 – 1:00 PM
HILTON - FLAGLER

Sponsored by:

Monica Ferraris, Hua-Tay Lin and Bill Fahrenholtz will lead a discussion on writing papers with titles, abstracts, and body text designed not only to be published, but also to be discovered, read and cited. Examples of actions authors can take to promote their articles will also be presented.



Box lunches will be available on a first-come, first-served basis. Our seminars have been extremely popular so come early to guarantee your seat.

THE STUDENT AND INDUSTRY FAILURE TRIALS (SIFT) COMPETITION

WEDNESDAY, JAN. 24, 2018 | 5:30 – 6:30 PM
THE OCEAN CENTER, EXHIBIT SHOW FLOOR

This new 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, 25-JAN, 2018 | 5:30 – 6:30 P.M.
HILTON – COQUINA FOYER

EXPOSITION & POSTER SESSION HOURS

TUESDAY, JAN. 23, 2018 | 5:00 – 8:00 P.M.
WEDNESDAY, JAN. 24, 2018 | 5:00 – 7:30 P.M.
OCEAN CENTER CONFERENCE CENTER/ARENA

HONORARY SYMPOSIUM:

ADVANCING FRONTIERS OF CERAMICS FOR SUSTAINABLE SOCIETAL DEVELOPMENT —

International symposium in honor of Dr. Mrityunjay Singh

MONDAY – FRIDAY, JAN. 22 – 26

HILTON - COQUINA SALON E



Global population growth and tremendous economic development has brought us to the crossroads of long-term sustainability and risk of irreversible changes in the ecosystem. Energy efficient and ecofriendly technologies and systems are essentially important for further growth and sustainable development of our society. Because of their unique properties and performances, ceramic materials and components are frequently used as key parts in cutting-edge products and systems that solve these issues in

various fields including energies, environments, transportation, electronics, biotechnologies, manufacturing industries, etc. Keeping these aspects in view, the aim of this symposium is to address and discuss the latest issues, challenges, and opportunities in a variety of advanced materials and technologies that are critically needed for sustainable societal development.

This symposium honors Dr. Mrityunjay Singh, Ohio Aerospace Institute, USA, and past president of the American Ceramic Society (2015-16). It recognizes his long-term and outstanding contributions to science and technology of advanced ceramic materials and technologies, as well as his tireless efforts in mentoring students and young professionals, promoting and developing human network and collaborations among the materials community worldwide.

THE 7TH GLOBAL YOUNG INVESTIGATORS FORUM

MONDAY, JAN. 22 – TUESDAY, JAN. 23

HILTON – COQUINA SALON G

THE ECD GLOBAL YOUNG INVESTIGATOR AWARD

MONDAY, JAN. 22, 2018 | 1:30 P.M. | HILTON – COQUINA SALON F



Fischer

Thomas Fischer, Institute of Inorganic Chemistry, University of Cologne, Germany

Title: *Electrospun metal oxide fiber meshes for improved sensing of toxic analytes in the gas phase*

MECHANICAL PROPERTIES OF CERAMICS AND GLASS SHORT COURSE

THURSDAY, JAN. 25, 2018 | 8:30 A.M. – 4:30 P.M.

FRIDAY, JAN. 26, 2018 | 8:30 A.M. – 4:00 P.M.

LOCATION: HILTON – TOMOKA B/C

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

Additional registration fee is required.

WELCOME 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 this page, 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.



HILTON MEETING ROOM FLOOR PLAN

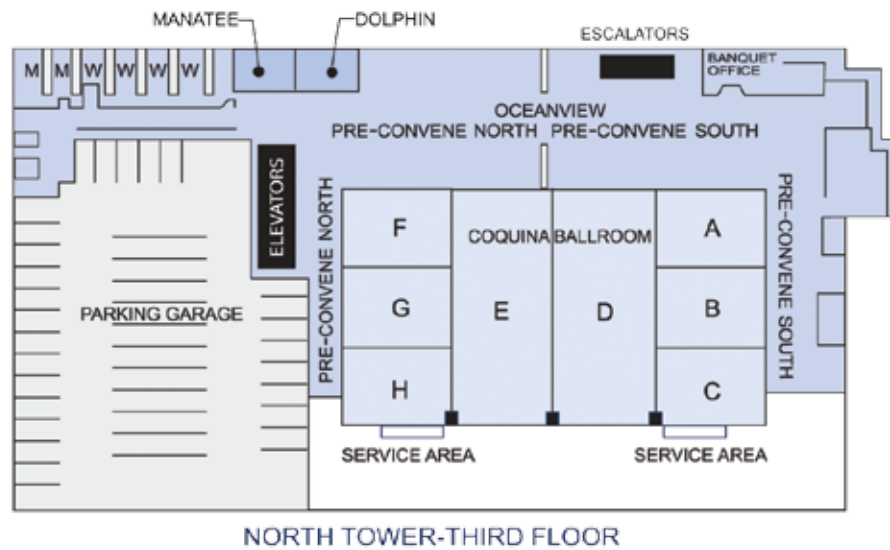
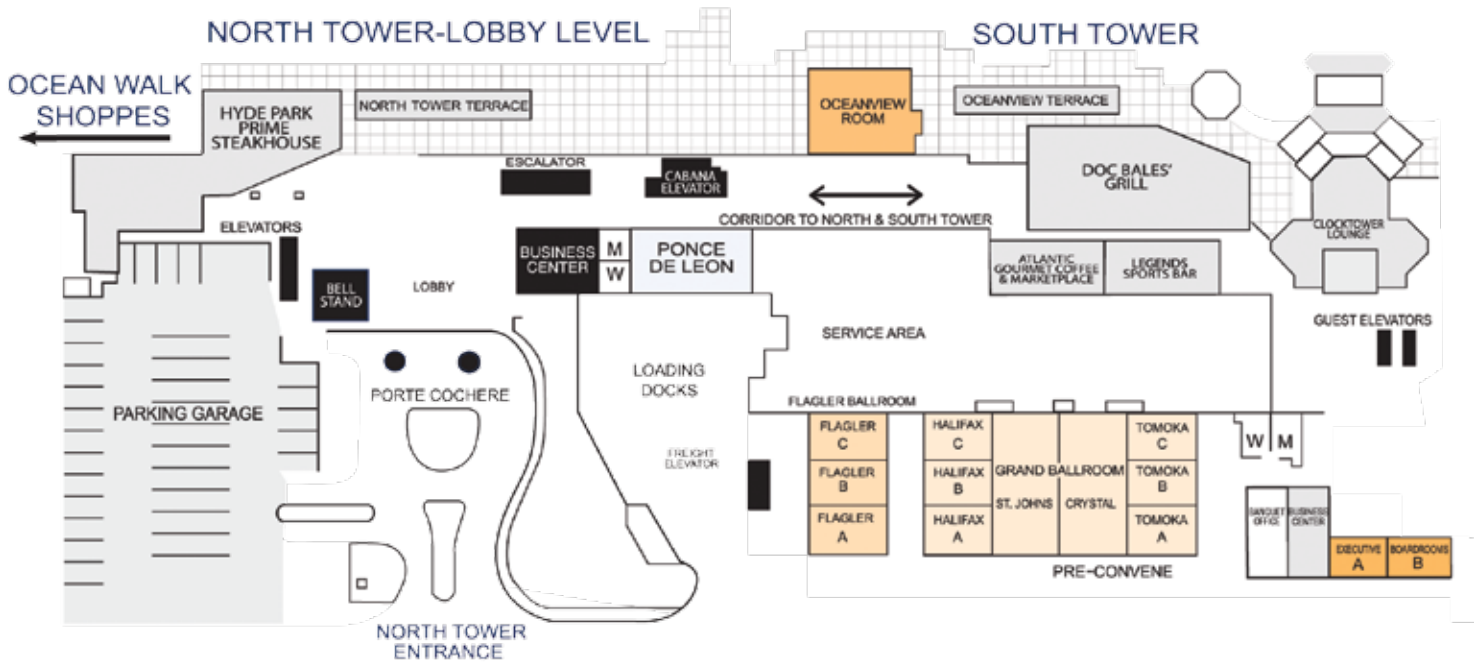


EXHIBIT FLOOR PLAN AND BOOTH INFORMATION

TUESDAY, JAN. 23, 2018: 5 – 8 PM | WEDNESDAY, JAN. 24, 2018 | 5 – 7:30 PM

OCEAN CENTER (across the street from the Hilton)

NEW IN 2018!

Stop by any vendor booth in our ICACC 2018 Expo and receive a raffle ticket for a drawing to win the following exciting prizes:

First prize:

Phase Equilibria Diagrams PC Database, Version 4.2 USB single license (\$1,095 value)

Second prize:

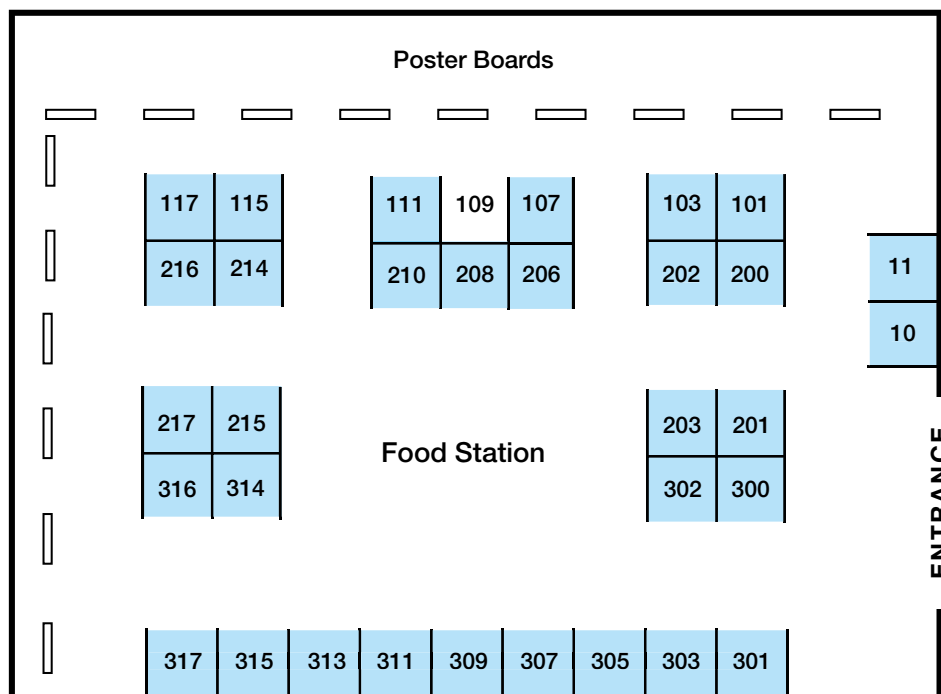
ICACC 2019 free registration (\$730 value)

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 (109) 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 24, 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.
AdValue Technology, LLC	316	Lithoz GmbH	103
Akrometrix, LLC	301	Microtrac	314
Alfred University	315	Nanoscience Instruments	201
American Ceramic Society (The)	10	Netzsch Instruments	300
AVS	307	Oxy-Gon Industries, Inc.	215
B3 Systems, Inc.	317	Praxair Surface Technologies, Inc.	217
BCC Research	117	Reserved	216
Centorr	200	Sonoscan	302
Ceramics Expo	115	Springer	107
CM Furnaces	210	TA Instruments	311
Gasbarre (PTX)	203	Tev Tech	214
H.C. Starck Surface Technology and Ceramic Powders GmbH	305	Thermal Wave	202
Haiku Tech	208	Thermcraft, Inc.	303
Harper International Corp.	309	Virtual Lab	111
J. Rettenmaier USA	313	Wiley	11
		Zeiss Microscopy	101
		Zircar Ceramics, Inc.	206



ICACC EXPO PREVIEW

Exhibit dates:

Tuesday, 23-Jan, 2018: 5:00 – 8:00 p.m. | Wednesday, 24-Jan, 2018: 5:00 – 7:30 p.m.

AdValue Technology, LLC

Booth No. 316

AdValue Technology specializes in areas of alumina, fused quartz, sapphire and zirconia. Products range from alumina and silicon dioxide powders, crucibles, tubes and rods, plates and discs, sample pans, UV cuvettes, quartz wool, ceramic membranes, and cerium polishing powders. We strive to be your valuable partner in material science!

wang@advaluetech.com | advaluetech.com



Akrometrix LLC

Booth No. 301

Akrometrix manufactures, sells, and services worldwide: Warpage metrology systems -50°C to 300°C; Strain metrology systems 25°C to 300°C; Low cost room temperature warpage metrology systems; and unique software solutions/reports to enable effective use of warpage/strain data. Akrometrix's test lab in Atlanta GA can provide warpage metrology test data on qualified samples.

sales@akrometrix.com | akrometrix.com



Alfred University

Booth No. 315

Kazuo Inamori School of Engineering/New York State College of Ceramics at Alfred University: B.S. and M.S. degrees in ceramic engineering, glass, biomaterials, materials science and engineering, electrical and mechanical engineering. Ph.D. degrees in ceramics, glass and materials science. Short courses for ceramics and glass professionals. Research in glass, ceramics and biomaterials. Analytical services.

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American Ceramic Society (The)

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Gasbarre Products

Booth No. 203

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susan.vogel@hcstarck.com | hcstarck.com



Haiku Tech

Booth No. 208

Haiku Tech offers tape casting (coating) equipment; as well as stackers, isostatic laminators, furnaces, and materials for the development and manufacturing of Multilayer Ceramic products, including Substrates, Solid Oxide Fuel Cells, etc. We also offer prototyping and consulting services to develop tape casting formulations for standard or customized ceramic powders.

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ICACC EXPO PREVIEW

Exhibit dates:

Tuesday, 23-Jan, 2018: 5:00 – 8:00 p.m. | Wednesday, 24-Jan, 2018: 5:00 – 7:30 p.m.

Harper International Booth No. 309

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J. Rettenmaier USA, part of the global JRS Group, is a manufacturer of organic cellulose and wood particles modified for pore formation in the ceramic industry. During sintering, natural particles are completely burned out so that pores remain. Large varieties of available particle structures create different pore size distributions and effects in the production process.

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Nanoscience Instruments Booth No. 201

Nanoscience Instruments provides surface science, microscopy and nanotechnology solutions to customers in academia, research, and industrial markets. Our customers benefit from our products' ease of use, user-friendly interface, and low cost of ownership. Our team of scientists and engineers have diverse backgrounds to help our customers find the solutions they need.

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Netzsch Instruments Booth No. 300

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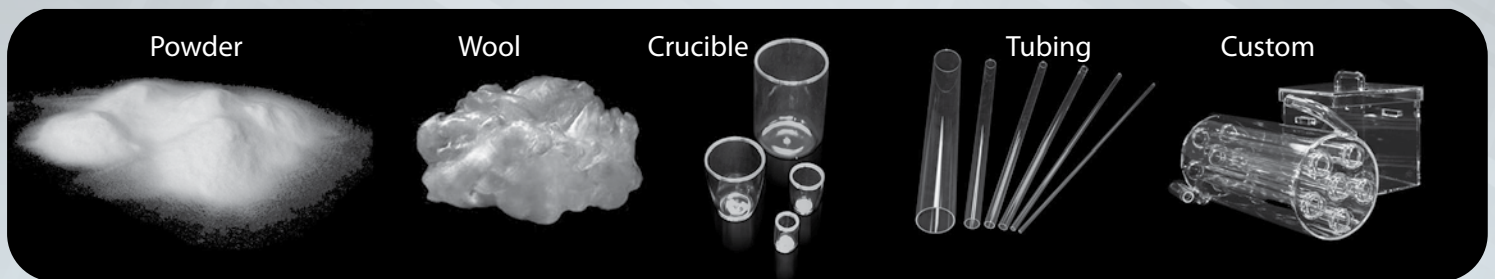


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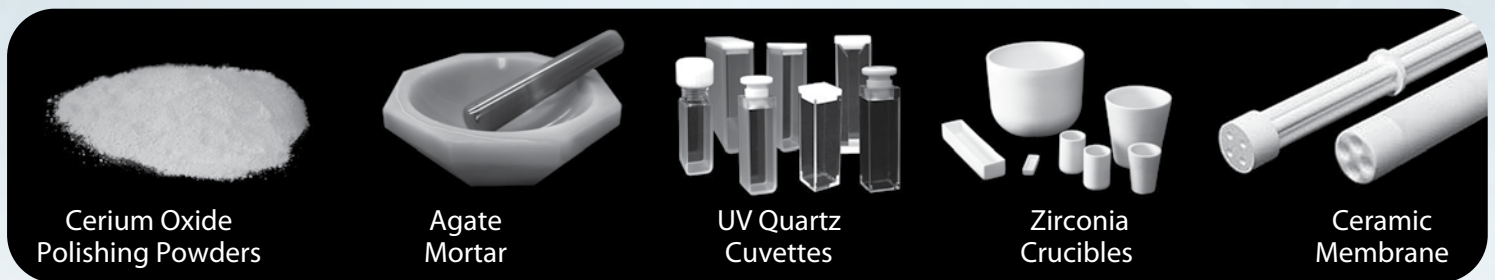
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SYMPOSIA

2018 PROGRAM CHAIR: Manabu Fukushima, National Institute of Advanced Industrial Science and Technology(AIST), Japan

S1: MECHANICAL BEHAVIOR AND PERFORMANCE OF CERAMICS & COMPOSITES

Dileep Singh, Argonne National Laboratory, USA; ; Jonathan A. Salem, NASA Glenn Research Center, 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 APPLICATIONS

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: 15TH INTERNATIONAL SYMPOSIUM ON SOLID OXIDE FUEL CELLS (SOFC): MATERIALS, SCIENCE AND TECHNOLOGY

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

S4: ARMOR CERAMICS – CHALLENGES AND NEW DEVELOPMENTS

Jerry LaSalvia, ARL, USA; Jeffrey Swab, ARL, USA; Kristopher Behler, ARL, USA; Sikhanda Satapathy, USA; Brady Aydelotte, ARL, USA; David Stepp, ARO, USA; Andrew Wereszczak, ORNL, USA; Victoria Blair, ARL, USA; Michael Golt, ARL, USA; Ghatu Subhash, UFL, USA; Peter Brown, DSTL, UK; Tyrone Jones, ARL, USA

S5: NEXT GENERATION BIOCERAMICS AND BIOCOSMOSITES

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 CUSA, 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; Ryoji Funahashi, AIST, Osaka, Japan; Mickael Dollé, University of Montreal, Canada; Wei Lai, Michigan State University, USA; Naoaki Yabuuchi, Tokyo Denki University, Japan; Valerie Pralong, CNRS CRISMAT, France; XiangXin Guo, Shanghai Institute of Ceramics, China; Jang Wook Choi, KAIST, South Korea; Terry Tritt, Clemson University, USA; Fei Chen, Wuhan University of Technology, China

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, University of Cologne, Germany; Gustavo Costa, NASA Glenn Research Center, USA; Yoon-Bong Hahn, Chonbuk National University, Korea; Esko I. Kauppinen, Aalto University, Finland; Marlies van Bael, Hasselt University, Belgium; Alberto Vomiero, Luleå University of Technology, Sweden; Jih-Jen Wu, National Cheng Kung University, Taiwan; Shaohua Shen, Xian Jiaotong University, China; Teresa Andreu, The Catalonia Institute for Energy Research, Spain; Renata Solarska, University of Warsaw, Poland; Yang Yang, University of Central Florida, USA; Chenhu Sun, National Energy Technology Lab, USA; Roger Narayan, North Carolina State University, USA; Chung-Li Dong, Tamkang University, Taiwan

S8: 12TH INTERNATIONAL SYMPOSIUM ON ADVANCED PROCESSING AND MANUFACTURING TECHNOLOGIES FOR STRUCTURAL AND MULTI-FUNCTIONAL MATERIALS AND SYSTEMS (APMT12)

Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Mrityunjay Singh, Ohio Aerospace Institute, NASA Glenn Research Center, OH, USA; Zhengyi Fu, Wuhan University of Technology, China; Enrico Bernardo, University of Padova, Italy; Mirosław Bućko, AGH University of Science and Technology, Poland; Thomas Graule, Empa, Switzerland; Surojit Gupta, University of North Dakota, ND, 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, Purdue University, IN, 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, OH, 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; Samuel Bernard, Institut Européen des Membranes, France; Giorgia Franchin, University of Padova, Italy; Go Kawamura, Toyohashi University of Technology, Japan; Fabrice Rossignol, CNRS Limoges, France; Kurosch Rezwan, University of Bremen, Germany; Hutha Sarma, Corning Environmental Technologies, USA; Jian-feng Yang, Xi'an Jiaotong University, China

S10: VIRTUAL MATERIALS (COMPUTATIONAL) DESIGN AND CERAMIC GENOME

Jingyang Wang, Institute of Metal Research, Chinese Academy of Sciences, China; William J. Weber, University of Tennessee, USA; Gerard L. Vignoles, University of Bordeaux, France; Paul Rulis, University of Missouri-Kansas City, USA; Katsuyuki Matsunaga, Nagoya University, Japan; Hans J. Seifert, Karlsruhe Institute of Technology, Germany; Jian Luo, University of California, San Diego, USA; Sean Smith, The University of New South Wales, Australia; 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; Geoff Brennecke, Colorado School of Mines, USA; Ali Erdemir, Argonne National Laboratory, USA; Jun Akedo, AIST, Japan; Byungkoog Jang, NIMS, 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

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

Surojit Gupta University of North Dakota USA; Johanna Rosen, Linköping University, Sweden; Thierry Cabioch, Université de Poitiers, France; Qing Huang, Ningbo Institute of Materials Technology & Engineering, China; Michael Naguib, ORNL, USA; Babak Anasori, Drexel University, USA; Jochen Schneider, RWTH Aachen, Germany; Miladin Radovic, Texas A&M University, USA; Sylvain Dubois, Université de Poitiers, Poitiers, France; Per Eklund, Linköping University, Sweden; Konstantza Lambrinou, SCK • CEN, Belgium; Yanchun Zhou, Aerospace Research Institute of Material & Processing Technology, China; Michael Walock, ARL, USA; Elizabeth Opila, University of Virginia, USA; Jon Binner, University of Birmingham, UK; Erica L. Corral, University of Arizona, USA; William G. Fahrenholtz, Missouri S&T, USA; Greg Hilmas, Missouri S&T, USA; Sea-Hoon Lee, KIMS, Korea; Frederic. Monteverde, ISTE-CNR, Italy; Luc J Vandeperre, Imperial College, UK; Guo-Jun Zhang, Donghua University, Shanghai, China

S13: ADVANCED CERAMICS AND COMPOSITES FOR NUCLEAR FISSION AND FUSION

Yutai Katoh, Oak Ridge National Laboratory, USA; Jake Amoroso, Savannah River National Laboratory, USA; Theodore Besmann, University of South Carolina, USA; Nicholas Brown, Pennsylvania State University, USA; Christian Deck, General Atomics, USA; Monica Ferraris, Politecnico di Torino, Italy; Peter Hosemann, University of California, Berkeley, USA; Weon-Ju Kim, Korea Atomic Energy Research Institute, Korea; Takaaki Koyanagi, Oak Ridge National Laboratory, USA; Konstantza Lambrinou, SCK-CEN, Belgium; Takashi Nozawa, National Institutes for Quantum and Radiological Science and Technology, Japan; Lance Snead, Stony Brook University, USA; Melissa Teague, Sandia National Laboratories, USA

S14: CRYSTALLINE MATERIALS FOR ELECTRICAL, OPTICAL AND MEDICAL APPLICATIONS

Kiyoshi Shimamura, National Institute for Materials Science, Japan; Noboru Ichinose, Waseda University, Japan; Nerine J. Cherepy, Lawrence Livermore National Laboratory, USA; Joanna McKittrick, University of California San Diego, USA; Victoria Blair, U.S. Army Research Laboratory, USA; Mariya Zhuravleva, University of Tennessee, USA; Yoshihiko Imanaka, Fujitsu Laboratories Ltd., Japan; Kenji Toda, Niigata University, Japan; Romain Gaume, University of Central Florida, USA; Juejun Hu, Massachusetts Institute of Technology, USA; Takayuki Yanagida, Nara Institute of Science and Technology, Japan

S15: ADDITIVE MANUFACTURING AND 3D PRINTING TECHNOLOGIES

Soshu Kirihaara, Osaka University, Japan; Mrityunjay Singh, Ohio Aerospace Institute, USA; Michael Halbig, NASA Glenn Research Center, USA; Elizabeth Kupp, Pennsylvania State University, USA; Cesar R. Foschini, Universidae Estadual Paulista, Brazil; Martin Schwentenwein, Lithoz GmbH, Austria; Miranda Fateri, FH Aachen, Germany; Andrea Zocca, BAM, Germany; Lisa Rueschhoff, Purdue University, USA

S16: GEOPOLYMERS, INORGANIC POLYMERS AND SUSTAINABLE MATERIALS

Waltraud M. Kriven, University of Illinois at Urbana-Champaign, USA; Joseph Davidovits, Geopolymer Institute, France; Claus H. Rüscher, Leibniz University of Hannover, Germany; Sylvie Rossignol, GEMH-ENSCI, France; Iannis Pontikes, Katholieke Universiteit, Leuven, Belgium; Flavio de Silva, Pontificia Universidade Católica do Rio de Janeiro, Brazil

S17: ADVANCED CERAMIC MATERIALS AND PROCESSING FOR PHOTONICS AND ENERGY

Alberto Vomiero, Luleå University of Technology, Sweden; Federico Rosei, University du Quebec, Canada; Yasuhiro Tachibana, RMIT University, Australia; David Kisailus, University of California at Riverside, USA; Tohru Sekino, Osaka University, Japan; Guozhong Cao, University of Washington, USA

FS1: BIO-INSPIRED PROCESSING OF ADVANCED MATERIALS

Yiquan Wu, Alfred University, USA; Di Zhang, Shanghai Jiaotong University, China; Zhengyi Fu, Wuhan University of Technology, China; Joachim Bill, University of Stuttgart, Germany; Eduardo Saiz, Imperial College London, UK; Tolou Shokuhfar, University of Illinois at Chicago, USA; Atsushi Hozumi, AIST, Japan; Joaquin Ramirez-Rico, University of Seville, Spain

FS2: TOMOGRAPHY AND MICROSCOPY BASED MODELLING OF CERAMICS

Tobias Fey, Friedrich-Alexander-University Erlangen-Nürnberg, Germany; Yasuo Kogo, Tokyo University of Science, Japan; You Zhou, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Satoshi Tanaka, Nagaoka University of Technology, Japan; Michael Scheffler, Otto-von-Guericke University, Germany; Alberto Ortona, SUSPI, Switzerland; Lorenzo Valdevit, UC Irvine, 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, 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; Hiromitsu Kozuka, Kansai University, Japan; Philippe Miele, Ecole Nationale Supérieure de Chimie de Montpellier, France; Simon Elliott, Tyndall National Institute, Ireland; Hirokazu Katsui, Tohoku University, Japan

7TH GLOBAL YOUNG INVESTIGATOR FORUM

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HONORARY SYMPOSIUM: ADVANCING FRONTIERS OF CERAMICS FOR SUSTAINABLE SOCIETAL DEVELOPMENT - INTERNATIONAL SYMPOSIUM IN HONOR OF DR. MRITYUNJAY SINGH

Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Sanjay Mathur, University of Cologne, Germany; Palani Balaya, National University of Singapore, Singapore; Monica Ferraris, Politecnico Di Torino – DISAT, Italy; Jow-Lay Huang, National Cheng Kung University, Taiwan; Hai-Doo Kim, Korea Institute of Materials Science (KIMS), South Korea; Hua-Tay Lin, Guangdong University of Technology, China; Jerzy Lis, AGH University of Science and Technology, Poland; Alexander Michaelis, Fraunhofer IKTS, Germany; Reginaldo Muccillo, IPEN, Brazil; Pavol Sajgalik, Slovak Academy of Sciences, Slovakia; Lalit Sharma, CSIR-Central Glass & Ceramic Research Institute, India; Dileep Singh, Argonne National Laboratory, USA; Richard D. Sisson, Jr., Worcester Polytechnic Institute, USA; Yu Zhou, Harbin Institute of Technology, China

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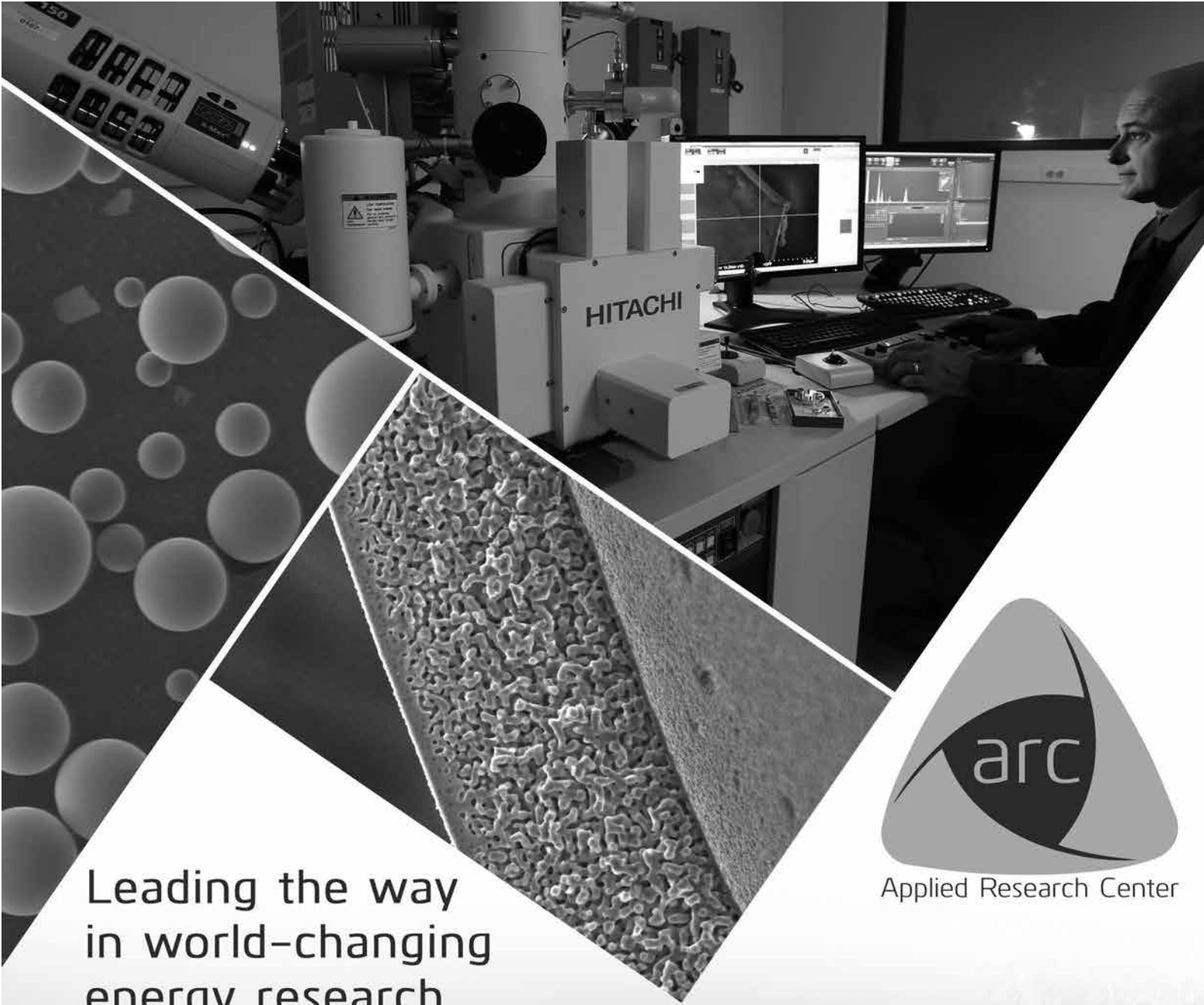


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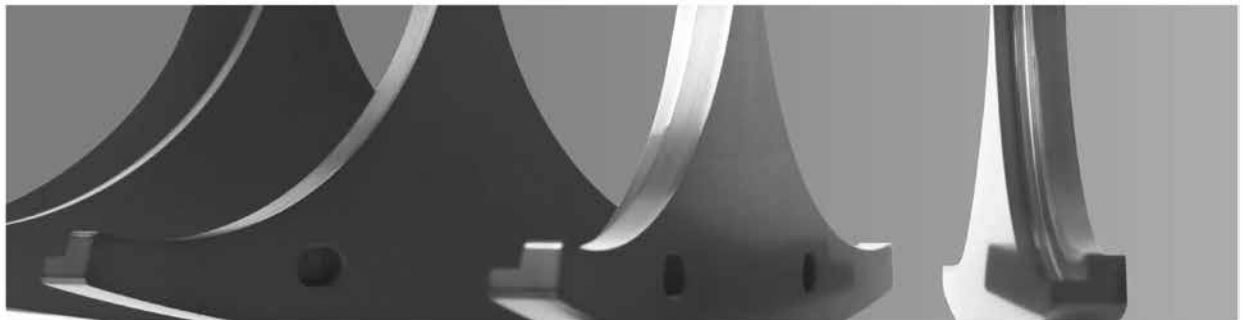
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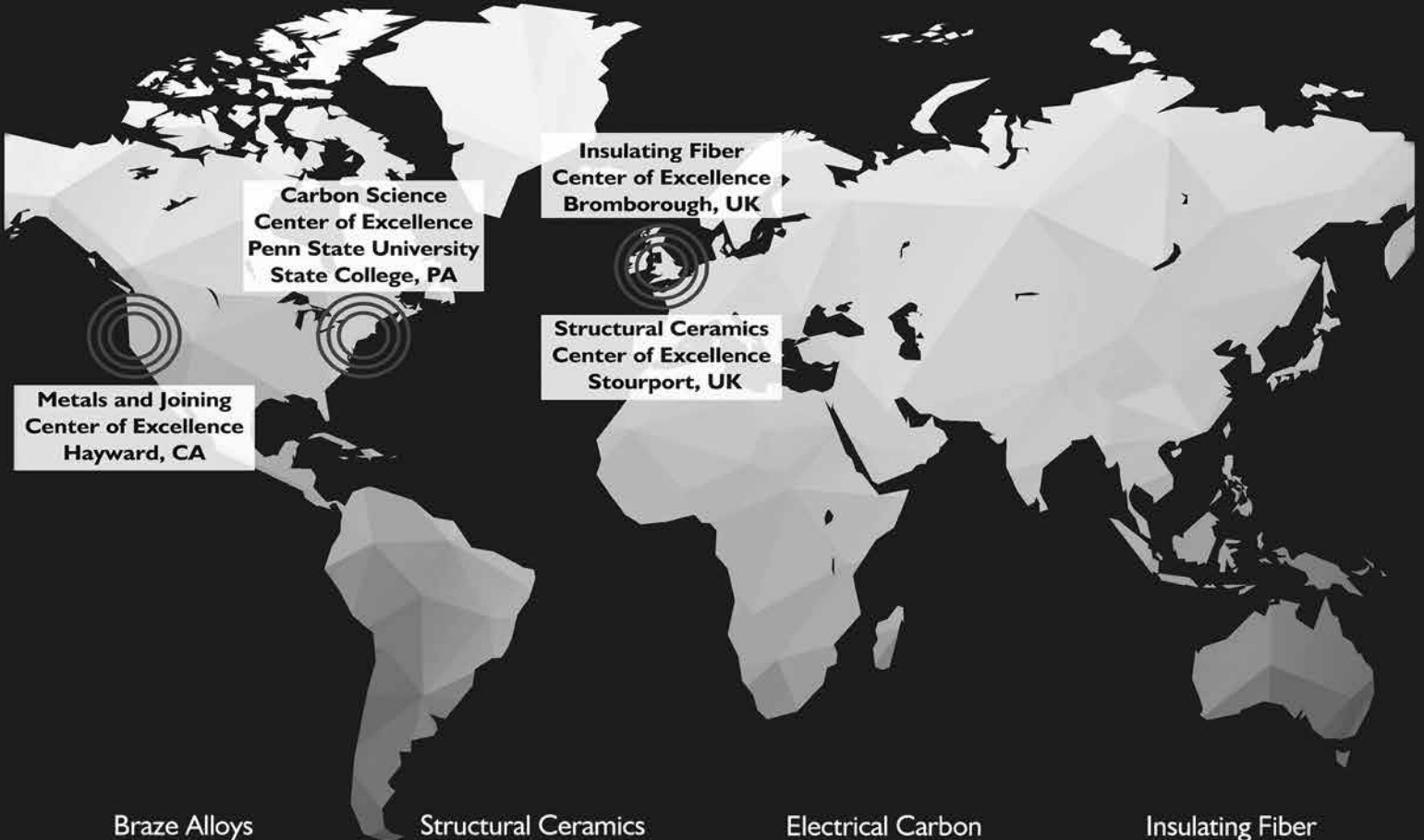
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Oral Presenters

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Bermejo, R.	23-Jan	11:10AM	Coquina Salon D	18	Chua, D.	23-Jan	2:20PM	Coquina Salon C	29
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Bernard, S.	24-Jan	2:30PM	Coquina Salon G	47	Cicoira, F.	23-Jan	1:30PM	Halifax A/B	32
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Fey, T.	26-Jan	10:10AM	Coquina Salon H	68	Han, H.	22-Jan	4:30PM	Ponce de Leon	14
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Hilmas, A.	23-Jan	9:00AM	Coquina Salon G	25	Kale, G.	23-Jan	11:10AM	Coquina Salon E	25
Hinoki, T.	22-Jan	5:20PM	St. John	10	Kanamori, K.	26-Jan	11:20AM	Coquina Salon A	69
Hintsala, E.D.	22-Jan	1:30PM	Coquina Salon D	9	Kang, S.L.	22-Jan	4:30PM	Coquina Salon E	17
Hirobe, D.	23-Jan	4:20PM	Coquina Salon A	29	Kannan, M.	24-Jan	10:50AM	Coquina Salon D	36
Hisatomi, T.	23-Jan	9:20AM	Tomoka C	23	Karl, D.	23-Jan	1:30PM	Coquina Salon G	33
Hoffmann, M.J.	24-Jan	10:50AM	Coquina Salon E	43	Karppinen, M.	25-Jan	10:50AM	Coquina Salon A	61
Honda, S.	22-Jan	4:30PM	Coquina Salon D	9	Kartuzov, E.	22-Jan	2:20PM	Coquina Salon F	11
Honda, S.	25-Jan	4:00PM	Coquina Salon G	63	Kashyap, S.K.	25-Jan	8:30AM	Tomoka B	57
Hoshino, T.	23-Jan	11:10AM	Ponce de Leon	22	Kata, D.B.	23-Jan	4:50PM	Coquina Salon D	26
Hoskins, A.	23-Jan	11:00AM	St. John	19	Katoh, Y.	23-Jan	2:20PM	Coquina Salon H	30
Hoskins, A.	25-Jan	11:40AM	Tomoka A	56	Katsiki, A.	25-Jan	9:00AM	Ponce de Leon	59
Hostasa, J.	23-Jan	3:10PM	Tomoka C	31	Katsui, H.	26-Jan	11:00AM	Coquina Salon A	69
Hozumi, A.	24-Jan	3:30PM	St. John	51	Kawaguchi, N.	24-Jan	2:30PM	Tomoka C	49
Hsu, C.	24-Jan	2:50PM	Coquina Salon D	44	Kawamura, G.	25-Jan	2:00PM	Coquina Salon G	63
Hsu, Y.	22-Jan	5:20PM	Coquina Salon C	13	Kawanishi, K.	24-Jan	9:10AM	Coquina Salon D	36
Hu, H.	24-Jan	3:30PM	Tomoka B	48	Kawano, N.	24-Jan	3:20PM	Tomoka C	49
Hu, T.	23-Jan	4:50PM	Tomoka B	30	Keane, P.F.	24-Jan	10:40AM	Ponce de Leon	42
Hu, W.	23-Jan	4:30PM	St. John	27	Kedir, N.	23-Jan	1:50PM	Coquina Salon D	26
Huang, K.	22-Jan	4:20PM	Crystal	11	Kenny, J.	24-Jan	9:10AM	Coquina Salon F	38
Hurwitz, F.	24-Jan	2:50PM	Coquina Salon G	47	Kerans, R.J.	25-Jan	10:20AM	Coquina Salon E	60
Hussainova, I.	24-Jan	4:00PM	Coquina Salon A	46	Khader, B.A.	25-Jan	1:50PM	Coquina Salon B	62
Hussainova, I.	25-Jan	9:30AM	St. John	60	Khalid, H.	22-Jan	4:50PM	Halifax A/B	17
Hwang, C.	24-Jan	10:30AM	Coquina Salon F	38	Khan, A.U.	24-Jan	9:50AM	Coquina Salon F	38
		I			Kiebach, R.	23-Jan	10:20AM	Crystal	19
Iirisawa, T.	23-Jan	10:30AM	Ponce de Leon	22	Kim, B.	25-Jan	5:10PM	Coquina Salon H	67
Ikarashi, Y.	24-Jan	9:30AM	Coquina Salon D	36	Kim, D.	23-Jan	9:10AM	Ponce de Leon	22
Imanaka, N.	23-Jan	11:30AM	Coquina Salon E	25	Kim, S.	22-Jan	2:00PM	St. John	10
Imanaka, Y.	23-Jan	10:10AM	Tomoka C	23	Kim, S.	22-Jan	2:30PM	Tomoka C	15
Inoue, R.	24-Jan	10:40AM	Coquina Salon G	40	Kim, Y.	23-Jan	5:00PM	Coquina Salon E	33
Inoue, R.	25-Jan	3:20PM	Coquina Salon H	66	Kim, Y.	24-Jan	3:20PM	Coquina Salon A	46
Ionescu, E.	23-Jan	2:00PM	Coquina Salon G	33	King, D.	22-Jan	3:50PM	Coquina Salon H	15
Ionescu, E.	25-Jan	9:00AM	Coquina Salon A	60	King, D.	24-Jan	10:10AM	Coquina Salon D	36
Ionescu, E.	26-Jan	11:50AM	Coquina Salon A	69	King, M.K.	24-Jan	9:00AM	Crystal	37
Iqbal, S.	25-Jan	11:10AM	Coquina Salon B	55	Kinski, I.	22-Jan	1:30PM	Tomoka C	15
Ishihara, T.	25-Jan	2:00PM	Crystal	61	Kirihaara, S.	22-Jan	2:40PM	Coquina Salon B	16
Ishikawa, T.	25-Jan	11:10AM	Coquina Salon E	60	Kisanuki, S.	22-Jan	4:50PM	Coquina Salon B	16
Isogai, M.	23-Jan	2:00PM	Tomoka C	31	Kita, K.	23-Jan	2:30PM	Coquina Salon G	33
Ito, A.	25-Jan	1:30PM	Coquina Salon A	67	Kitaoka, S.	23-Jan	8:30AM	St. John	18
Iwamoto, Y.	25-Jan	9:30AM	Coquina Salon A	60	Klang, K.	25-Jan	11:10AM	Coquina Salon G	57
Iwamoto, Y.	26-Jan	9:40AM	Coquina Salon E	68	Klemm, H.	25-Jan	11:30AM	Coquina Salon E	60
		J			Ko, F.	23-Jan	9:00AM	Crystal	19
Jacobsen, G.	25-Jan	10:50AM	Coquina Salon H	58	Koch, B.	22-Jan	5:20PM	Coquina Salon F	11
Jacobsohn, L.G.	23-Jan	4:20PM	Tomoka C	31	Koch, D.	24-Jan	4:30PM	Coquina Salon D	44
Jahani, B.	25-Jan	3:50PM	Coquina Salon D	61	Koel, B.E.	22-Jan	1:30PM	Coquina Salon C	12
Jain, H.	25-Jan	10:30AM	Coquina Salon B	55	Kondo, S.	24-Jan	1:30PM	Coquina Salon H	48
Jang, B.	23-Jan	9:30AM	Ponce de Leon	22	Koroglu, L.	25-Jan	3:50PM	Coquina Salon B	62
Jang, B.	24-Jan	9:30AM	St. John	37	Kota, S.	23-Jan	9:20AM	Tomoka B	22
Jang, S.	23-Jan	11:30AM	Tomoka C	24	Kotani, A.	22-Jan	2:20PM	Coquina Salon G	17
Jaramillo, R.	23-Jan	11:00AM	Tomoka C	24	Koyanagi, T.	23-Jan	3:20PM	Coquina Salon H	30
Jarvis, L.	25-Jan	11:20AM	Coquina Salon F	57	Kozawa, T.	23-Jan	11:10AM	Tomoka A	20
Jenkins, M.G.	25-Jan	8:30AM	Coquina Salon H	58	Kozawa, T.	24-Jan	10:50AM	Coquina Salon A	39
Jenkins, M.G.	25-Jan	9:40AM	Coquina Salon H	58	Krenkel, W.	25-Jan	1:30PM	Coquina Salon E	65
Jia, D.	24-Jan	3:50PM	Coquina Salon E	50	Kriven, W.M.	24-Jan	10:20AM	Ponce de Leon	42
Jiang, K.	24-Jan	3:20PM	Tomoka A	45	Kriven, W.M.	25-Jan	10:40AM	Ponce de Leon	59
Jiang, S.	23-Jan	10:30AM	Coquina Salon E	25	Kriven, W.M.	25-Jan	3:40PM	Ponce de Leon	64
Johnson, K.	26-Jan	9:20AM	Coquina Salon E	68	Kroll, P.	25-Jan	2:30PM	Coquina Salon A	67
Johnson, S.M.	25-Jan	8:30AM	Coquina Salon E	59	Kroll, P.	26-Jan	9:30AM	Coquina Salon F	67
Jones, T.	24-Jan	10:20AM	Coquina Salon B	42	Ku, N.	25-Jan	10:20AM	Tomoka C	58
Jordan, E.H.	22-Jan	1:40PM	St. John	10	Kunka, C.	23-Jan	11:00AM	Coquina Salon F	20
Jun, B.	24-Jan	9:10AM	St. John	36	Kuo, C.	24-Jan	1:30PM	Coquina Salon C	45
Jürgensen, L.	25-Jan	11:10AM	Coquina Salon A	61	Kuo, C.	25-Jan	4:40PM	Coquina Salon G	63
		K			Kuo, M.	25-Jan	2:00PM	Coquina Salon C	62
Ka, I.	22-Jan	4:40PM	Coquina Salon C	13	Kupp, E.R.	24-Jan	9:30AM	Tomoka C	41
Kabel, J.	25-Jan	9:20AM	Coquina Salon H	58	Kuranari, K.	26-Jan	11:40AM	Coquina Salon F	68
Kadok, J.	25-Jan	10:50AM	Coquina Salon G	57	Kusnezoff, M.	22-Jan	5:10PM	Crystal	11
Kagawa, Y.	23-Jan	11:40AM	St. John	19			L		
Kagawa, Y.	23-Jan	2:30PM	Coquina Salon E	32	Lai, W.	22-Jan	5:10PM	Tomoka A	12
					Lai, W.	24-Jan	10:20AM	Tomoka A	38
					Lambrinou, K.	22-Jan	2:30PM	Tomoka B	14

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Lancaster, M.J.	24-Jan	11:30AM	Coquina Salon D	36	Marcus, K.	23-Jan	9:30AM	Coquina Salon C	21
Lara-Curzio, E.	23-Jan	1:30PM	Crystal	27	Martucci, A.	24-Jan	9:30AM	Halifax A/B	43
Laurencin, C.	22-Jan	1:30PM	Coquina Salon E	17	Martucci, A.	25-Jan	4:10PM	St. John	66
Lavin, J.M.	23-Jan	5:20PM	Coquina Salon B	32	Marvel, C.J.	23-Jan	9:40AM	Coquina Salon F	20
Lee, C.A.	22-Jan	2:00PM	Coquina Salon G	17	Marvel, C.J.	23-Jan	10:40AM	Coquina Salon F	20
Lee, D.	24-Jan	5:00PM	Coquina Salon C	46	Masai, H.	23-Jan	1:30PM	Tomoka C	31
Lee, H.	22-Jan	2:10PM	Ponce de Leon	13	Mascher, P.	24-Jan	10:50AM	Halifax A/B	43
Lee, H.	24-Jan	11:00AM	Tomoka A	38	Mason, J.H.	23-Jan	3:10PM	Crystal	27
Lee, H.	24-Jan	3:20PM	Coquina Salon H	49	Masuda, T.	23-Jan	3:50PM	Tomoka A	28
Lee, K.N.	22-Jan	3:40PM	St. John	10	Matsunaga, K.	25-Jan	2:30PM	Coquina Salon F	63
Lee, S.	25-Jan	8:30AM	Tomoka A	55	Mauchamp, V.	23-Jan	10:20AM	Tomoka B	22
Lefevere, J.	23-Jan	3:40PM	Coquina Salon B	31	McCauley, J.W.	22-Jan	5:20PM	Coquina Salon E	17
Lei, Y.	22-Jan	4:10PM	Tomoka B	14	McCauley, J.W.	23-Jan	11:20AM	Coquina Salon F	20
Leide, A.J.	22-Jan	4:10PM	Coquina Salon G	18	McKittrick, J.	22-Jan	3:20PM	Tomoka C	15
Lenk, R.	23-Jan	11:10AM	Coquina Salon B	24	McKittrick, J.	23-Jan	2:20PM	Coquina Salon A	29
Lenz Leite, M.	22-Jan	4:20PM	St. John	10	Mechnich, P.	24-Jan	11:20AM	St. John	37
Leonard, R.L.	24-Jan	4:10PM	Coquina Salon B	45	Mechnich, P.	25-Jan	2:00PM	Coquina Salon E	65
Leriche, A.L.	22-Jan	3:20PM	Coquina Salon B	16	Medvedovski, E.	23-Jan	1:30PM	St. John	26
Lerondel, G.J.	23-Jan	10:20AM	Halifax A/B	24	Medvedovski, E.	23-Jan	1:50PM	St. John	26
Levraut, B.	22-Jan	1:50PM	Tomoka B	14	Medvedovski, E.	24-Jan	8:30AM	Coquina Salon A	39
Levraut, B.	22-Jan	3:50PM	Tomoka B	14	Medvedovski, E.	24-Jan	10:20AM	Crystal	37
Lewinsohn, C.	25-Jan	4:10PM	Coquina Salon D	61	Melo, P.	25-Jan	2:10PM	Coquina Salon B	62
Li, J.	24-Jan	10:20AM	Coquina Salon A	39	Messing, G.L.	22-Jan	1:30PM	Coquina Salon A	13
Li, M.	22-Jan	2:50PM	Tomoka B	14	Millican, S.	24-Jan	4:20PM	Halifax A/B	50
Li, M.	25-Jan	1:30PM	Coquina Salon C	62	Millican, S.	25-Jan	11:20AM	Tomoka A	56
Li, N.	25-Jan	3:30PM	St. John	66	Mishra, S.	25-Jan	2:00PM	Coquina Salon A	67
Li, Q.	23-Jan	4:40PM	Coquina Salon B	32	Mishra, Y.K.	24-Jan	4:20PM	Coquina Salon C	46
Li, Q.	24-Jan	10:20AM	Tomoka C	41	Misture, S.T.	22-Jan	3:50PM	Halifax A/B	16
Li, Q.	24-Jan	3:20PM	Coquina Salon C	46	Misture, S.T.	25-Jan	9:00AM	Coquina Salon C	56
Li, Y.	24-Jan	1:30PM	Coquina Salon A	46	Mitic, V.	24-Jan	11:30AM	Coquina Salon A	39
Li, Y.	24-Jan	2:50PM	St. John	51	Mitic, V.	24-Jan	5:10PM	Coquina Salon E	51
Li, Y.	24-Jan	3:50PM	Tomoka C	49	Mizuno, Y.	22-Jan	4:10PM	Ponce de Leon	14
Li, Y.	25-Jan	9:40AM	Coquina Salon F	57	Montinaro, D.	23-Jan	10:50AM	Crystal	19
Li, Y.	25-Jan	10:50AM	St. John	60	Morelli, D.T.	25-Jan	9:30AM	Tomoka A	56
Li, Z.	25-Jan	10:30AM	St. John	60	Mori, S.	22-Jan	4:40PM	Tomoka C	15
Ligda, J.	22-Jan	4:00PM	Coquina Salon F	11	Mori, S.	23-Jan	9:40AM	Tomoka A	20
Lima Junior, L.	25-Jan	3:20PM	Ponce de Leon	64	Moriwake, H.	26-Jan	8:30AM	Coquina Salon F	67
Lin, H.	24-Jan	11:20AM	Coquina Salon E	43	Moro, T.	22-Jan	2:50PM	Ponce de Leon	13
Lin, T.	24-Jan	2:00PM	Crystal	44	Morscher, G.N.	25-Jan	9:40AM	Coquina Salon E	60
Lis, J.	22-Jan	5:00PM	Coquina Salon E	17	Moscinski, M.	24-Jan	1:30PM	Coquina Salon D	43
Liu, B.	24-Jan	2:30PM	Coquina Salon F	47	Mouche, P.	24-Jan	4:20PM	Coquina Salon H	49
Liu, C.	22-Jan	5:30PM	Crystal	11	Muccillo, R.	25-Jan	4:20PM	Coquina Salon E	65
Liu, D.	22-Jan	4:10PM	Coquina Salon A	13	Muecklich, F.	22-Jan	11:20AM	Coquina Salon D	9
Liu, J.	22-Jan	3:50PM	Coquina Salon A	13	Mühler, T.	24-Jan	9:30AM	Ponce de Leon	42
Liu, X.	24-Jan	8:30AM	Crystal	37	Multari, C.	24-Jan	3:30PM	Coquina Salon B	45
Liu, X.	25-Jan	9:50AM	St. John	60	Munakata, H.	24-Jan	4:10PM	Tomoka A	45
Loganathan, A.	24-Jan	8:50AM	Tomoka B	40	Murai, S.	25-Jan	10:20AM	Coquina Salon G	57
Lopez Pernia, C.	23-Jan	4:10PM	Coquina Salon G	33	Muskovin, E.	25-Jan	5:10PM	Coquina Salon A	67
Lu, K.	23-Jan	2:40PM	Coquina Salon C	29					
Lu, M.Y.	24-Jan	2:20PM	Crystal	44			N		
Lu, R.	23-Jan	4:00PM	Coquina Salon B	32	Naccache, R.	24-Jan	8:30AM	Halifax A/B	42
Lu, Y.	25-Jan	2:30PM	Crystal	61	Naguib, M.	23-Jan	2:30PM	Tomoka B	30
Lüchtenborg, J.	23-Jan	11:30AM	Coquina Salon B	24	Naim Katea, S.	23-Jan	8:30AM	Coquina Salon G	25
Luo, J.	24-Jan	1:30PM	Coquina Salon F	47	Naito, M.	23-Jan	10:50AM	Coquina Salon E	25
Luscombe, C.	23-Jan	9:00AM	Halifax A/B	24	Nakamura, M.	24-Jan	11:10AM	Tomoka C	41
		M			Nakayama, T.	22-Jan	1:50PM	Ponce de Leon	13
M'Barki, A.	23-Jan	4:20PM	Coquina Salon B	32	Nakayama, T.	24-Jan	10:40AM	Tomoka C	41
Mackey, J.	25-Jan	8:50AM	Coquina Salon D	54	Nakayama, T.	26-Jan	8:30AM	Coquina Salon H	68
Madden, N.J.	24-Jan	10:50AM	Coquina Salon H	41	Nakayama, T.	26-Jan	11:20AM	Coquina Salon E	68
Madsen, L.D.	22-Jan	1:30PM	Halifax A/B	16	Naraparaju, R.	24-Jan	11:40AM	St. John	37
Maegawa, K.	22-Jan	4:50PM	Coquina Salon G	18	Narayan, R.	26-Jan	10:40AM	Coquina Salon E	68
Magdaluyo, E.d.	23-Jan	4:40PM	Halifax A/B	32	Narisawa, M.	23-Jan	10:30AM	Coquina Salon A	21
Magnuson, M.	25-Jan	3:20PM	Tomoka C	64	Navrotsky, A.	23-Jan	9:30AM	St. John	19
Magnuson, M.	26-Jan	9:00AM	Coquina Salon F	67	Nechache, R.	23-Jan	10:50AM	Halifax A/B	24
Maher, I.	24-Jan	4:10PM	Coquina Salon G	47	Nemati, A.	24-Jan	11:40AM	Tomoka C	41
Mai, L.	23-Jan	3:20PM	Tomoka A	28	Nemeth, N.	23-Jan	10:20AM	St. John	19
Maillet, E.	24-Jan	3:50PM	Coquina Salon D	44	Nguyen, S.T.	22-Jan	2:30PM	Ponce de Leon	13
Maillet, E.	25-Jan	1:30PM	Coquina Salon D	61	Nie, Z.	25-Jan	9:00AM	Coquina Salon G	56
Mansour, R.	24-Jan	2:10PM	Coquina Salon D	43	Nili, B.	22-Jan	4:50PM	Coquina Salon H	15
					Nonemacher, J.F.	22-Jan	4:30PM	Tomoka A	12

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Nouvian, L.	23-Jan	4:30PM	Coquina Salon G	33	Reggiani, A.	25-Jan	9:30AM	Ponce de Leon	59
Nozaki, H.	23-Jan	9:40AM	Coquina Salon B	24	Reitz, R.B.	24-Jan	3:40PM	Coquina Salon A	46
Nozawa, T.	25-Jan	10:20AM	Coquina Salon H	58	Ribero, D.	23-Jan	10:10AM	Coquina Salon A	21
O					Ribero, D.	23-Jan	4:00PM	Coquina Salon A	29
O'Connell, K.	25-Jan	2:30PM	Coquina Salon B	62	Ricart, S.	26-Jan	10:10AM	Coquina Salon A	69
Oakes, L.	25-Jan	2:30PM	Ponce de Leon	64	Ricci, M.	25-Jan	2:00PM	Tomoka C	64
Ogasawara, K.	26-Jan	10:20AM	Coquina Salon F	67	Riccò, R.	25-Jan	2:00PM	Halifax A/B	65
Ohji, T.	24-Jan	8:30AM	Coquina Salon B	41	Riedel, R.	24-Jan	8:30AM	Coquina Salon E	43
Ohta, M.	25-Jan	10:50AM	Tomoka A	56	Riedel, R.	25-Jan	3:10PM	Coquina Salon A	67
Ohtaki, K.	23-Jan	2:00PM	Coquina Salon H	30	Rincon, A.	25-Jan	2:00PM	Ponce de Leon	64
Ohtaki, M.	24-Jan	9:40AM	Coquina Salon E	43	Ritucci, I.	23-Jan	11:20AM	Crystal	19
Oistad, B.	23-Jan	4:10PM	Coquina Salon D	26	Rivera, K.	25-Jan	2:20PM	Tomoka C	64
Ojo, E.B.	25-Jan	4:00PM	Ponce de Leon	64	Rogers, D.J.	25-Jan	10:50AM	Halifax A/B	59
Okuma, G.	25-Jan	4:40PM	Coquina Salon H	66	Rohbeck, N.	22-Jan	5:00PM	St. John	10
Oliveira Silva, R.	25-Jan	10:50AM	Coquina Salon D	54	Rohde, M.	22-Jan	4:50PM	Tomoka A	12
Orgiu, E.	25-Jan	9:30AM	Halifax A/B	59	Rosei, F.	25-Jan	9:30AM	Coquina Salon B	55
Ortgies, D.H.	24-Jan	3:50PM	Coquina Salon B	45	Rosen, J.	23-Jan	2:00PM	Tomoka B	30
Ortona, A.	24-Jan	1:30PM	Coquina Salon G	46	Ross, D.M.	23-Jan	3:40PM	Tomoka C	31
Ortona, A.	24-Jan	2:10PM	Coquina Salon G	47	Rousseau, B.	24-Jan	3:50PM	Coquina Salon G	47
Osada, N.	22-Jan	4:50PM	Crystal	11	Rousseau, B.	25-Jan	8:30AM	Coquina Salon F	57
Osaka, A.	25-Jan	1:30PM	Coquina Salon B	62	Rousseau, B.	26-Jan	9:00AM	Coquina Salon H	68
Ostdiek, G.C.	25-Jan	2:10PM	Coquina Salon D	61	Roychoudhury, S.	23-Jan	4:20PM	Crystal	27
Ouimet, R.	23-Jan	5:00PM	Crystal	27	Rueschhoff, L.M.	23-Jan	10:50AM	Coquina Salon A	21
Ouisse, T.	23-Jan	10:50AM	Tomoka B	23	Ruggles-Wrenn, M.	24-Jan	8:30AM	Coquina Salon D	36
Ozaki, T.	24-Jan	4:20PM	Coquina Salon A	46	Rulis, P.	24-Jan	2:00PM	Coquina Salon F	47
Ozkan, C.S.	24-Jan	2:30PM	Halifax A/B	50	Rummel, M.	25-Jan	4:20PM	Halifax A/B	65
Ozkan, M.	24-Jan	3:20PM	Halifax A/B	50	S				
P					Sa Ribeiro, R.A.	25-Jan	11:30AM	Ponce de Leon	59
Pan, B.	25-Jan	2:00PM	Coquina Salon H	66	Sabarou, H.	24-Jan	3:40PM	Crystal	44
Pan, L.	25-Jan	2:30PM	St. John	66	Saberi, A.	22-Jan	4:50PM	Ponce de Leon	14
Panakarajupally, R.	24-Jan	8:50AM	Coquina Salon D	36	Sajgalik, P.	23-Jan	9:30AM	Coquina Salon E	25
Park, Y.	23-Jan	10:10AM	Coquina Salon E	25	Sakaguchi, S.	23-Jan	10:50AM	Ponce de Leon	22
Parker, C.G.	22-Jan	4:40PM	St. John	10	Sakuda, A.	22-Jan	2:30PM	Tomoka A	12
Parker, S.S.	22-Jan	2:20PM	Coquina Salon H	15	Salameh, C.	26-Jan	12:10PM	Coquina Salon A	69
Paul, R.M.	22-Jan	3:20PM	Coquina Salon G	17	Salem, A.	23-Jan	2:20PM	Coquina Salon B	31
Paul, T.R.	25-Jan	9:10AM	Tomoka B	57	Salem, J.	23-Jan	8:50AM	Coquina Salon D	18
Pena, A.A.	24-Jan	4:30PM	Tomoka B	48	Sampath, S.	22-Jan	3:20PM	St. John	10
Peng, Y.	25-Jan	11:30AM	Coquina Salon D	54	Sankar, K.	24-Jan	1:30PM	Ponce de Leon	49
Peng, Z.	24-Jan	1:30PM	Tomoka A	45	Sanson, A.	23-Jan	8:30AM	Crystal	19
Penttinen, J.P.	26-Jan	9:20AM	Coquina Salon A	69	Santarelli, M.	22-Jan	3:50PM	Crystal	11
Petit, F.	23-Jan	10:50AM	Coquina Salon B	24	Santato, C.	23-Jan	2:00PM	Coquina Salon C	29
Petrie, C.	23-Jan	4:40PM	Coquina Salon H	31	Santato, C.	25-Jan	3:20PM	Halifax A/B	65
Piat, R.	22-Jan	4:10PM	Coquina Salon H	15	Sarikaya, A.	22-Jan	2:00PM	Crystal	10
Piat, R.	25-Jan	2:00PM	Coquina Salon F	63	Sato, H.	25-Jan	5:20PM	Coquina Salon E	65
Ping, H.	24-Jan	3:50PM	St. John	51	Sato, M.	24-Jan	3:30PM	Coquina Salon D	44
Poerschke, D.L.	23-Jan	10:20AM	Coquina Salon G	25	Sato, Y.	22-Jan	3:50PM	Tomoka C	15
Poerschke, D.L.	24-Jan	8:50AM	St. John	36	Schaedler, T.	22-Jan	4:30PM	Coquina Salon B	16
Porter, M.	24-Jan	2:20PM	Coquina Salon A	46	Schlup, A.	24-Jan	10:50AM	Coquina Salon F	38
Post, E.	22-Jan	5:10PM	Ponce de Leon	14	Schmidt, J.E.	22-Jan	4:10PM	Coquina Salon B	16
Powell, A.V.	25-Jan	9:00AM	Tomoka A	55	Schmidt, J.E.	22-Jan	5:10PM	Coquina Salon B	16
Pralong, V.	23-Jan	9:00AM	Tomoka A	20	Schubert, M.	23-Jan	2:10PM	St. John	26
Prehn, E.	23-Jan	9:00AM	Tomoka B	22	Schuh, C.A.	24-Jan	2:00PM	Coquina Salon E	50
Presby, M.J.	22-Jan	3:50PM	Coquina Salon D	9	Schulz, M.	23-Jan	2:40PM	Tomoka A	28
Prikhna, T.	22-Jan	2:10PM	Tomoka B	14	Schwentenwein, M.	22-Jan	2:00PM	Coquina Salon B	16
Prikhna, T.	23-Jan	2:40PM	Coquina Salon F	28	Schwentenwein, M.	23-Jan	2:50PM	Coquina Salon D	26
Puchas, G.	25-Jan	2:30PM	Coquina Salon D	61	Seal, S.	25-Jan	3:20PM	Coquina Salon E	65
Q					Sekino, T.	22-Jan	3:20PM	Halifax A/B	16
Quinn, G.D.	23-Jan	8:30AM	Coquina Salon D	18	Seo, D.	24-Jan	8:30AM	Ponce de Leon	42
R					Seo, D.	25-Jan	1:30PM	Coquina Salon G	63
Raiman, S.S.	24-Jan	2:00PM	Coquina Salon H	48	Serizawa, H.	24-Jan	2:40PM	Coquina Salon A	46
Raj, R.	25-Jan	8:30AM	Coquina Salon D	54	Sharma, G.	23-Jan	4:20PM	Tomoka B	30
Ramirez Velasco, J.H.	23-Jan	4:10PM	St. John	27	Sharma, J.	23-Jan	4:00PM	Tomoka C	31
Ramirez-Rico, J.	25-Jan	9:10AM	St. John	60	Sharma, L.K.	26-Jan	11:40AM	Coquina Salon E	68
Ramirez-Rico, J.	25-Jan	11:30AM	St. John	60	Sheeder, J.	23-Jan	9:20AM	Coquina Salon H	23
Ramirez, G.	22-Jan	1:50PM	Coquina Salon D	9	Shenderova, O.	23-Jan	1:30PM	Coquina Salon C	29
Ramirez, M.	25-Jan	10:40AM	Tomoka C	58	Shi, D.	25-Jan	10:10AM	Coquina Salon B	55
Ravindran, S.	25-Jan	11:30AM	Coquina Salon G	57	Shi, S.	24-Jan	11:30AM	Coquina Salon B	42
					Shi, S.	25-Jan	4:30PM	Coquina Salon D	61
					Shih, C.P.	25-Jan	11:20AM	Coquina Salon H	58
					Shimamura, A.	24-Jan	9:20AM	Coquina Salon G	40

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Shimamura, K.	25-Jan	4:40PM	Coquina Salon E	65	Tonks, M.R.	22-Jan	1:30PM	Coquina Salon H	15
Shoulders, T.	24-Jan	9:30AM	Coquina Salon F	38	Toprak, M.S.	25-Jan	1:30PM	Halifax A/B	65
Sick (Schönauer), K.	24-Jan	10:40AM	Crystal	37	Tran, Q.	23-Jan	11:30AM	Tomoka B	23
Silva, F.d.	25-Jan	1:30PM	Ponce de Leon	64	Travis, A.W.	22-Jan	4:30PM	Coquina Salon H	15
Singh, D.	24-Jan	2:30PM	Coquina Salon E	50	Trini, M.	23-Jan	3:30PM	Crystal	27
Singh, G.	23-Jan	11:20AM	Coquina Salon H	23	Tsao, c.	25-Jan	9:40AM	Coquina Salon C	56
Singh, G.	25-Jan	11:40AM	Coquina Salon H	58	Tsuchiya, T.	25-Jan	1:30PM	Tomoka C	64
Singh, G.	26-Jan	8:30AM	Coquina Salon A	69	Tsuda, H.	24-Jan	4:50PM	Coquina Salon E	51
Singh, P.	23-Jan	11:30AM	Coquina Salon A	21	Tsunoura, T.	25-Jan	1:50PM	Coquina Salon D	61
Singh, P.	24-Jan	10:20AM	Coquina Salon E	43	Tu, B.	24-Jan	4:40PM	Coquina Salon F	47
Singh, R.N.	23-Jan	2:00PM	Coquina Salon E	32	Turcer, L.R.	24-Jan	10:20AM	St. John	37
Singh, Y.P.	25-Jan	3:30PM	Coquina Salon D	61					
Sisson, R.D.	26-Jan	10:20AM	Coquina Salon E	68			U		
Skafta, T.L.	25-Jan	3:10PM	Crystal	62	Ubaidullah, M.	24-Jan	4:40PM	Coquina Salon C	46
Smeacetto, F.	24-Jan	9:40AM	Crystal	37	Uehara, S.	25-Jan	5:00PM	Coquina Salon F	64
Smith, C.S.	22-Jan	3:10PM	Coquina Salon A	13	Uhlenbruck, S.	22-Jan	2:00PM	Tomoka A	12
Smith, C.S.	23-Jan	10:50AM	Coquina Salon D	18	ul Hassan, M.	24-Jan	9:00AM	Coquina Salon H	41
Smith, G.	23-Jan	10:30AM	Coquina Salon D	18	Umegaki, T.	25-Jan	3:50PM	Tomoka C	64
Snead, L.	23-Jan	3:50PM	Coquina Salon H	30	Urgen, M.	23-Jan	9:00AM	Coquina Salon C	21
Solarska, R.	24-Jan	2:00PM	Coquina Salon C	45					
Son, W.	22-Jan	3:30PM	Tomoka B	14			V		
Song, X.	22-Jan	2:20PM	Coquina Salon B	16	Valdivia, C.	23-Jan	11:20AM	Halifax A/B	24
Soraru, G.	26-Jan	9:00AM	Coquina Salon A	69	Vandepierre, L.J.	23-Jan	8:30AM	Coquina Salon F	20
Soraru, G.D.	24-Jan	1:50PM	Coquina Salon G	46	Varghese, O.K.	24-Jan	1:30PM	Halifax A/B	50
Sprio, S.	26-Jan	10:40AM	Coquina Salon A	69	Varshneya, A.K.	22-Jan	3:20PM	Coquina Salon E	17
Srikanth, H.	24-Jan	11:20AM	Coquina Salon C	39	Vetrone, F.	24-Jan	9:00AM	Halifax A/B	42
Stievano, L.	23-Jan	4:20PM	Tomoka A	28	Vetrone, F.	24-Jan	2:30PM	Coquina Salon B	44
Stokes, J.	23-Jan	3:30PM	St. John	26	Vignoles, G.L.	25-Jan	10:50AM	Coquina Salon E	60
Su, Y.	25-Jan	1:30PM	St. John	66	Vignoles, G.L.	25-Jan	1:30PM	Coquina Salon F	63
Subhash, G.	22-Jan	1:40PM	Coquina Salon F	11	Vinci, A.	24-Jan	11:10AM	Tomoka B	40
Subhash, G.	23-Jan	2:00PM	Coquina Salon F	27	Virkar, A.V.	24-Jan	1:30PM	Coquina Salon E	50
Subramanian, S.	24-Jan	1:50PM	Coquina Salon D	43	Vogt, U.F.	25-Jan	2:20PM	Coquina Salon G	63
Subramanian, S.	24-Jan	2:30PM	Coquina Salon D	44	Vomiero, A.	22-Jan	2:00PM	Coquina Salon C	12
Suda, S.	22-Jan	2:50PM	Coquina Salon D	9	Vomiero, A.	24-Jan	1:30PM	Coquina Salon B	44
Suematsu, H.	23-Jan	11:50AM	Coquina Salon E	25	Vorkötter, C.	22-Jan	2:20PM	St. John	10
Sugahara, Y.	23-Jan	9:00AM	Coquina Salon A	21					
Sugahara, Y.	26-Jan	9:40AM	Coquina Salon A	69			W		
Sumi, H.	22-Jan	3:00PM	Crystal	10	Wada, M.	23-Jan	8:50AM	St. John	19
Sun, S.	24-Jan	4:00PM	Crystal	44	Walker, L.S.	23-Jan	4:30PM	Coquina Salon F	28
Sun, S.	25-Jan	4:20PM	Crystal	62	Walock, M.J.	23-Jan	3:50PM	St. John	27
Sun, X.	22-Jan	5:00PM	Coquina Salon F	11	Walock, M.J.	24-Jan	8:30AM	St. John	36
Sun, Z.	24-Jan	9:20AM	Crystal	37	Walton, R.L.	23-Jan	3:20PM	Coquina Salon A	29
Suvorov, D.	24-Jan	9:00AM	Tomoka C	41	Wang, H.	25-Jan	10:10AM	Coquina Salon D	54
Suyama, S.	24-Jan	3:40PM	Coquina Salon H	49	Wang, J.	25-Jan	10:50AM	Coquina Salon F	57
Suzuki, T.S.	23-Jan	2:00PM	Coquina Salon A	29	Wang, J.	25-Jan	2:20PM	Coquina Salon E	65
Suzuki, T.S.	25-Jan	9:00AM	Tomoka C	58	Wang, M.	24-Jan	2:10PM	Coquina Salon B	44
Suzuki, Y.	23-Jan	8:30AM	Tomoka C	23	Wang, M.	24-Jan	3:10PM	Coquina Salon B	45
Swab, J.	22-Jan	3:20PM	Coquina Salon F	11	Wang, M.	25-Jan	8:50AM	Coquina Salon B	55
Szendrei, A.	23-Jan	9:40AM	Crystal	19	Wang, S.	23-Jan	4:40PM	Coquina Salon A	30
					Wang, W.	25-Jan	9:30AM	Coquina Salon D	54
					Wang, X.	24-Jan	9:20AM	Coquina Salon B	42
					Watremetz, B.	24-Jan	8:30AM	Coquina Salon F	37
					Weber, W.J.	25-Jan	3:50PM	Coquina Salon F	64
					Webster, R.	24-Jan	11:00AM	St. John	37
					Webster, T.	22-Jan	2:00PM	Coquina Salon E	17
					Wereszczak, A.	23-Jan	3:30PM	Coquina Salon D	26
					Westin, G.	22-Jan	2:00PM	Halifax A/B	16
					Westin, G.	25-Jan	8:30AM	Coquina Salon A	60
					Wicks, G.	22-Jan	8:50AM	Coquina Salon D	9
					Wicks, G.	24-Jan	11:40AM	Coquina Salon E	43
					Wollmershauser, J.	22-Jan	3:40PM	Coquina Salon F	11
					Woydt, M.	22-Jan	2:10PM	Coquina Salon D	9
					Wu, J.	23-Jan	5:00PM	Coquina Salon C	29
					Wu, Y.	24-Jan	1:30PM	Tomoka C	49
					Wu, Y.	25-Jan	5:00PM	Coquina Salon E	65
							X		
					Xing, J.	24-Jan	11:10AM	Coquina Salon A	39
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Xu, P.	23-Jan	10:20AM	Coquina Salon H	23	Zekri, A.	24-Jan	3:20PM	Crystal	44
Xue, D.	23-Jan	2:30PM	Halifax A/B	32	Zha, X.	24-Jan	9:30AM	Tomoka B	40
Y					Zhang, D.	22-Jan	4:10PM	Coquina Salon E	17
Yabuuchi, N.	23-Jan	2:00PM	Tomoka A	28	Zhang, D.	24-Jan	1:30PM	St. John	51
Yamaguchi, S.	22-Jan	4:30PM	Coquina Salon G	18	Zhang, J.	23-Jan	8:30AM	Coquina Salon H	23
Yamaguchi, Y.	23-Jan	3:10PM	Coquina Salon G	33	Zhang, L.	24-Jan	4:10PM	St. John	51
Yamamoto, T.	23-Jan	8:50AM	Ponce de Leon	22	Zhang, W.	25-Jan	3:10PM	St. John	66
Yanagida, T.	24-Jan	2:00PM	Tomoka C	49	Zhang, X.	24-Jan	4:30PM	St. John	51
Yang, Q.	23-Jan	3:50PM	Coquina Salon F	28	Zhang, Y.	25-Jan	2:40PM	Tomoka C	64
Yang, Y.	24-Jan	9:00AM	Coquina Salon C	39	Zhang, Y.	25-Jan	3:40PM	Crystal	62
Yasuda, K.	23-Jan	10:10AM	Ponce de Leon	22	Zhao, J.	24-Jan	1:50PM	St. John	51
Yasuda, K.	25-Jan	3:30PM	Coquina Salon G	63	Zhao, W.	23-Jan	9:20AM	Tomoka A	20
Ying, G.	24-Jan	9:10AM	Tomoka B	40	Zheng, Y.	25-Jan	11:10AM	St. John	60
Yoshida, H.	22-Jan	2:00PM	Coquina Salon A	13	Zhou, D.	25-Jan	9:10AM	Coquina Salon D	54
Yoshimura, M.	25-Jan	3:50PM	Halifax A/B	65	Zhou, J.	23-Jan	2:40PM	Coquina Salon B	31
Yoshiya, M.	23-Jan	9:10AM	St. John	19	Zhou, Y.	22-Jan	9:30AM	Coquina Salon D	9
Yoshiya, M.	25-Jan	10:20AM	Coquina Salon F	57	Zhou, Y.	24-Jan	4:10PM	Coquina Salon E	50
Young, C.M.	24-Jan	2:30PM	Tomoka B	48	Zhou, Y.	25-Jan	9:00AM	Coquina Salon F	57
Youngblood, J.P.	23-Jan	5:00PM	Coquina Salon B	32	Zhou, Y.	25-Jan	3:40PM	Coquina Salon H	66
Yu, Z.	22-Jan	3:50PM	Coquina Salon C	12	Zhu, D.	23-Jan	11:20AM	St. John	19
Yu, Z.	23-Jan	4:20PM	Coquina Salon E	33	Zhu, D.	23-Jan	3:20PM	Coquina Salon E	32
Yu, Z.	25-Jan	4:20PM	Coquina Salon A	67	Zhu, T.	24-Jan	8:30AM	Tomoka A	38
Yuan, J.	24-Jan	11:30AM	Ponce de Leon	42	Zinkle, S.J.	23-Jan	1:30PM	Coquina Salon E	32
Z					Zocca, A.	24-Jan	9:00AM	Coquina Salon B	42
Zahed, N.	24-Jan	11:30AM	Coquina Salon G	40					
Zapata-Solvas, E.	22-Jan	1:30PM	Tomoka B	14					
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B					Fukasawa, I.	23-Jan	5:00PM	Ocean Center Arena	35
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D					Jiang, J.	23-Jan	5:00PM	Ocean Center Arena	34
De La Pierre, S.	24-Jan	5:00PM	Ocean Center Arena	52	Ju, C.	23-Jan	5:00PM	Ocean Center Arena	35
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Kumar, S.	23-Jan	5:00PM	Ocean Center Arena	35	Schwind, E.C.	24-Jan	5:00PM	Ocean Center Arena	53
L					Scott, J.A.	24-Jan	5:00PM	Ocean Center Arena	53
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Moyano-Subires, J.	23-Jan	5:00PM	Ocean Center Arena	35	X				
Muccillo, E.N.	23-Jan	5:00PM	Ocean Center Arena	34	Xiong, C.	24-Jan	5:00PM	Ocean Center Arena	53
N					Xu, H.	24-Jan	5:00PM	Ocean Center Arena	53
Nam, C.	24-Jan	5:00PM	Ocean Center Arena	52	Xu, J.	23-Jan	5:00PM	Ocean Center Arena	34
Natarajan, T.	24-Jan	5:00PM	Ocean Center Arena	52	Y				
Nguyen, H.D.	24-Jan	5:00PM	Ocean Center Arena	52	Yanagida, T.	23-Jan	5:00PM	Ocean Center Arena	35
Nguyen, S.T.	24-Jan	5:00PM	Ocean Center Arena	54	Yang, J.	24-Jan	5:00PM	Ocean Center Arena	53
O					Yang, S.	23-Jan	5:00PM	Ocean Center Arena	34
Ornek, M.	23-Jan	5:00PM	Ocean Center Arena	34	Yang, Z.	24-Jan	5:00PM	Ocean Center Arena	51
P					Yoon, J.	23-Jan	5:00PM	Ocean Center Arena	35
Park, J.	23-Jan	5:00PM	Ocean Center Arena	35	Yu, Y.	23-Jan	5:00PM	Ocean Center Arena	33
Paskaramoorthy, R.	24-Jan	5:00PM	Ocean Center Arena	52	Z				
Payne, H.E.	23-Jan	5:00PM	Ocean Center Arena	34	Zera, E.	24-Jan	5:00PM	Ocean Center Arena	53
Pazniak, A.	24-Jan	5:00PM	Ocean Center Arena	53	Zhao, Y.	24-Jan	5:00PM	Ocean Center Arena	53
Piat, R.	24-Jan	5:00PM	Ocean Center Arena	53	Zhu, D.	23-Jan	5:00PM	Ocean Center Arena	33
Porter, M.	23-Jan	5:00PM	Ocean Center Arena	36	Zhu, Y.	24-Jan	5:00PM	Ocean Center Arena	52
Q					Zygmuntowicz, J.M.	24-Jan	5:00PM	Ocean Center Arena	51
Qi, M.	24-Jan	5:00PM	Ocean Center Arena	52					

Monday, January 22, 2018

Plenary Session

Plenary Session

Room: Coquina Salon D

Session Chairs: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences; Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST)

8:30 AM

Opening Remarks

8:50 AM

(ICACC-PLEN-001-2018) Tiny Bubbles: An Innovative Ceramic Opens New Opportunities in Medicine, Security, Energy, and Environmental Remediation

G. Wicks*¹

1. CTO, Applied Research Center, USA

9:30 AM

(ICACC-PLEN-002-2018) Strategies for searching for damage tolerant ceramics: from MAX phases to MAB phases

Y. Zhou*¹

1. Aerospace Research Institute of Materials & Processing Technology, China

10:10 AM

Break

10:40 AM

(ICACC-PLEN-003-2018) Research. Why? For whom? How?

R. J. Brook*¹

1. University of Oxford, Dept. of Materials, United Kingdom

11:20 AM

(ICACC-PLEN-004-2018) 3D Microstructure is the "Know it All" – Advanced Classification and Quantitative Analysis including Data Mining and Deep Learning Methods

F. Muecklich*¹

1. Saarland University and Materials Engineering Center Saarland, Dept. Mat. Science & Engineering, Germany

S1: Mechanical Behavior and Performance of Ceramics & Composites

Wear, Erosion, Oxidation and Shock

Room: Coquina Salon D

Session Chairs: Jonathan Salem, NASA Glenn Research Center; Richard Todd, University of Oxford

1:30 PM

(ICACC-S1-001-2018) Nanoscale Wear of Ceramics by In Situ TEM Scratch Testing

E. D. Hintsala*¹; D. D. Stauffer¹; S. Asif¹

1. Bruker NI, R&D, USA

1:50 PM

(ICACC-S1-002-2018) Novel Benchtop Technique to Study the Behavior of High Friction Materials for Brake Applications

G. Ramirez*¹; S. Shaffer¹; C. Greening²; P. Filip³; K. Farokhzadeh¹

1. Bruker Nano Surfaces, USA
2. Greening Test Laboratories, USA
3. Southern Illinois University Carbondale, USA

2:10 PM

(ICACC-S1-003-2018) Niobium Carbide NbC as cutting tool material and for wear protection

M. Woydt*¹; H. Mohrbacher²; J. Vleugels³; S. Huang³

1. BAM Federal Institute for Materials Research and Testing, Germany
2. Niobelcon bvba, Belgium
3. Katholieke Universiteit Leuven, Department of Metallurgy and Materials Engineering (MTM), Belgium

2:30 PM

(ICACC-S1-004-2018) Assessment of time-temperature equivalence for hydrothermal ageing of zirconia using a fast, stepwise procedure

L. Gremillard*¹; C. Wei¹; J. Chevalier¹; K. Hans²; T. Oberbach²

1. INSA, Materials, Engineering and Science, France
2. Mathys Orthopaedie GmbH, Germany

2:50 PM

(ICACC-S1-005-2018) Quantitative estimation of hydration layer during chemical mechanical polishing of glass

S. Suda*¹; T. Sugimoto¹; S. Kawasaki¹

1. Shizuoka University, Engineering, Japan

3:10 PM

Break

3:30 PM

(ICACC-S1-006-2018) Boron Effects on Sodium Sulfate-Induced Hot Corrosion of SiC

L. A. Herweyer*¹; E. J. Opila¹

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

3:50 PM

(ICACC-S1-007-2018) Erosion Behavior in an Oxide/Oxide Ceramic Matrix Composite

M. J. Presby*¹; N. Kedir¹; L. Sanchez¹; C. Gong¹; D. Faucett¹; S. R. Choi¹

1. Naval Air Systems Command, USA

4:10 PM

(ICACC-S1-008-2018) Effects of Ablation Products on Expanding Hypersonic Flows

B. Donegan*¹; R. Greendyke¹; R. Ravichandran²; S. Lewis²; R. Morgan²; T. McIntyre³

1. Air Force Institute of Technology, Department of Aeronautics and Astronautics, USA
2. The University of Queensland, Centre for Hypersonics, Australia
3. The University of Queensland, School of Mathematics and Physics, Australia

4:30 PM

(ICACC-S1-009-2018) Fracture evaluation of ceramic insulating substrate subjected to cyclic heating

S. Honda*¹; T. Ohno¹; Y. Daiko¹; T. Ideno²; F. Momose³; Y. Iwamoto¹

1. Nagoya Institute of Technology, Japan
2. DOWA Power Device Co., Ltd., Japan
3. Fuji Electric Co., Ltd., Japan

4:50 PM

(ICACC-S1-010-2018) Mechanical properties and thermal shock resistance of Si₃N₄-BN-MAS ceramics

D. Cai*¹; D. Jia¹; Z. Yang¹; Y. Zhou¹

1. Harbin Institute of Technology, School of Materials Science and Engineering, China

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

Thermal Barrier Coatings - Processing & Properties

Room: St. John

Session Chair: Douglas Wolfe, Pennsylvania State University

1:40 PM

(ICACC-S2-001-2018) Three-dimensional Characterization of Rumppling and Cracking in cyclic furnace tests of TBC

E. H. Jordan^{*}; P. Shahbeigi²; N. Asadi Aznjani²; S. Shahabzomohamadi²

1. University of Connecticut, Mechanical Engineering, USA
2. University of Connecticut, Institute of Materials Science, USA
3. University of Florida, Department of Electrical and Computer Engineering, USA

2:00 PM

(ICACC-S2-002-2018) Characteristics of Double-ceramic-layer TBCs Fabricated by Suspension Plasma Spray

S. Kim^{*}; S. Lee¹; Y. Oh¹; S. Lee¹; H. Kim¹; K. Lee²; B. Jang³

1. Korea Institute of Ceramic Engineering and Technology (KICET), Engineering Ceramics Center, Republic of Korea
2. Kookmin University, School of Mechanical Engineering, Republic of Korea
3. National Institute of Materials Science, Research Center for Structural Materials, Japan

2:20 PM

(ICACC-S2-003-2018) Lifetime of plasma sprayed Gadolinium-Zirconate/ Yttria Stabilized Zirconia Thermal Barrier Coatings

C. Vorkötter^{*}; R. Singh¹; M. Tandler¹; R. Vassen¹; O. Guillon¹

1. Forschungszentrum Juelich, IEK-1, Germany

2:40 PM

(ICACC-S2-004-2018) The Influence of Microstructural Defects on Wear Mechanisms in Zirconia-Based Abradable Coatings

K. Bridges^{*}; D. R. Mumm¹

1. University of California, Irvine, USA

3:00 PM

Break

Environmental Barrier Coatings - Processing & Properties I

Room: St. John

Session Chair: Peter Mechnich, DLR - German Aerospace Center

3:20 PM

(ICACC-S2-005-2018) Processing effects on characteristics of rare-earth silicates for considerations as environmental barrier coatings for ceramic composites

E. Garcia Granados¹; H. Lee¹; S. Sampath^{*1}

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

3:40 PM

(ICACC-S2-006-2018) Current EBC Development and Testing at NASA

K. N. Lee^{*}; D. Waters¹; B. Puleo¹

1. NASA Glenn Research Center, Materials, USA

4:00 PM

(ICACC-S2-007-2018) Environmental Durability of Environmental Barrier Coatings Deposited Via Plasma Spray-Physical Vapor Deposition

B. J. Harder^{*}; K. Lee¹; S. Kalluri²

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

4:20 PM

(ICACC-S2-008-2018) Development of yttrium and ytterbium silicates from their oxides and an oligosilazane for coating application to protect Si₃N₄ in hot gas environments

M. Lenz Leite^{*1}; G. Barroso¹; W. Krenkel¹; G. Motz¹

1. University of Bayreuth, Ceramic Materials Engineering, Germany

4:40 PM

(ICACC-S2-009-2018) Modeling of Rare Earth Disilicate Environmental Barrier Coating Degradation Through Reaction with Water Vapor

C. G. Parker^{*1}; R. A. Golden¹; V. Tikare²; E. J. Opila¹

1. University of Virginia, Materials Science and Engineering, USA
2. Sandia National Laboratories, Multiscale Science, USA

5:00 PM

(ICACC-S2-010-2018) Degradation of Ytterbium disilicate EBCs in a high temperature steam environment

N. Rohbeck^{*1}; P. Xiao¹; P. Morrell²; R. McIntyre²

1. University of Manchester, Material Science, United Kingdom
2. Rolls-Royce, United Kingdom

5:20 PM

(ICACC-S2-011-2018) Formation of Yb₂Si₂O₇ layer by surface treatment of SiC

T. Hinoki^{*1}; S. Yanagawa¹; K. Kawasaki¹; F. Shinoda¹

1. Kyoto University, Japan

S3: 15th International Symposium on Solid Oxide Fuel Cells (SOFC): Materials, Science and Technology

System Design and Demonstration

Room: Crystal

Session Chair: Narottam Bansal, NASA Glenn Research Center

1:30 PM

(ICACC-S3-001-2018) 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, Department of Energy, USA

2:00 PM

(ICACC-S3-002-2018) All-Ceramic SOFC Technology by Saint-Gobain: Progress in Architecture and Performance (Invited)

A. Sarikaya^{*1}; B. Barry¹; B. Feldman¹; Y. Takagi¹; J. Pietras¹; S. Poizeau¹

1. Saint-Gobain, USA

2:30 PM

(ICACC-S3-003-2018) Solid Oxide Fuel Cell Development at FuelCell Energy (Invited)

J. M. Barton^{*1}; H. Ghezal-Ayagh¹; E. Tang²; A. Torabi¹

1. FuelCell Energy, USA
2. FuelCell Energy, Canada

3:00 PM

(ICACC-S3-004-2018) Development of Portable Solid Oxide Fuel Cell System Driven by Hydrocarbon and Alcohol Fuels (Invited)

H. Sumi^{*1}; T. Yamaguchi¹; H. Shimada¹; Y. Fujishiro¹; M. Awano¹

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

3:30 PM

Break

System Design and Demonstration / High Temperature Electrolysis and rSOC

Room: Crystal

Session Chair: Jeffry Stevenson, Pacific Northwest National Lab

3:50 PM

(ICACC-S3-005-2018) DEMOSOFCC Project: Results From an Industrial-Size Biogas-Fed SOFC (Invited)

M. Santarelli*¹; M. Aciri²; U. Fausone³; E. Fontell⁴; M. Gandiglio⁵; S. Giarola⁵; T. Hakala⁶; A. Hawkes²; J. Kiviahio⁶; A. Lanzini¹; E. Lorenzi²; M. Rautanen⁶

1. Politecnico di Torino, Italy
2. SMAT, Italy
3. Risorse Idriche, Italy
4. CONVION, Finland
5. Imperial College, United Kingdom
6. VTT Technical Research Centre of Finland, Finland

4:20 PM

(ICACC-S3-006-2018) Development of Solid Oxide Metal-air Redox Battery for Stationary Energy Storage – A Progress Report (Invited)

K. Huang*¹

1. University of South Carolina, Mechanical Engineering, USA

4:50 PM

(ICACC-S3-007-2018) High Performance Solid Oxide Electrolysis Cells (SOECs) for Hydrogen Production

N. Osada*¹; M. Yoshino¹; T. Kameda¹

1. Toshiba Corporation, Power and Industrial Systems R&D Center, Japan

5:10 PM

(ICACC-S3-008-2018) SOC co-electrolysis operation

M. Kusnezoff*¹; S. Megel¹; N. Trofimenko¹; M. Jahn¹; E. Reichelt¹; A. Michaelis¹

1. Fraunhofer IKTS, Germany

5:30 PM

(ICACC-S3-009-2018) Performance Test for Anode-supported and Metal-supported Solid Oxide Electrolysis Cell under Different Current Densities

S. Wu¹; J. Lin¹; W. Shiu¹; C. Liu*¹; T. Lin¹; R. Lee¹; H. Ting¹; H. Lin¹; Y. Cheng¹

1. Institute of Nuclear Energy Research, Nuclear Fuels and Materials Division, Taiwan

S4: Armor Ceramics - Challenges and New Developments

Quasi-static and Dynamic Behavior I

Room: Coquina Salon F

Session Chairs: Jerry LaSalvia, Army Research Laboratory; Sikhanda Satapathy, Army Research Laboratory

1:30 PM

Welcome and Opening Remarks

1:40 PM

(ICACC-S4-001-2018) An Extended Mohr-Coulomb Model for Ultrahigh Pressure Response of Structural Ceramics

G. Subhash*¹

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

2:00 PM

(ICACC-S4-002-2018) Generation of polycrystalline microstructures for the discretization on-the-fly of FE models for multi-scale simulations

S. Falco*¹; N. Bombace¹; N. Petrinic¹

1. University of Oxford, United Kingdom

2:20 PM

(ICACC-S4-004-2018) Comparative Analysis of Response to High Velocity Impact of New Ceramic Materials Based on High-boron Compounds Developed at IPMS NASU

E. Kartuzov*¹; V. Kartuzov¹; S. Ivanov¹; B. Galanov¹

1. Frantsevich Institute for Problems in Materials Science NAS of Ukraine, Ukraine

2:40 PM

(ICACC-S4-003-2018) Mesoscale Simulations of Boron Carbide Subjected to Shockwave Propagation

B. Aydelotte*¹; J. Sietins¹; C. Hofmeister¹; T. Holmquist²

1. US Army Research Laboratory, USA
2. Southwest Research Institute, USA

3:00 PM

Break

Quasi-static and Dynamic Behavior II

Room: Coquina Salon F

Session Chair: Jeffrey Swab, Army Research Laboratory

3:20 PM

(ICACC-S4-005-2018) Compression Strength of Ceramics

J. Swab*¹; C. Meredith¹; W. R. Gamble¹

1. Army Research Laboratory, USA

3:40 PM

(ICACC-S4-006-2018) Novel Mechanical Response of Hard Nanocrystalline Ceramics with Grain Sizes Below 30nm

J. Wollmershauser*¹; H. Ryou²; J. Drazin²; K. Wahl¹; E. Gorzkowski¹; B. Feigelson¹

1. U.S. Naval Research Laboratory, USA
2. American Society for Engineering Education Postdoctoral Research Fellow sited at U.S. Naval Research Laboratory, USA

4:00 PM

(ICACC-S4-007-2018) Influence of stress states during amorphization of single crystal boron carbide

J. Ligda*¹; K. D. Behler¹; J. Lloyd¹; V. Domnich²; J. LaSalvia¹; B. Schuster¹

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

4:20 PM

(ICACC-S4-008-2018) In-situ Investigation of Shear Induced Amorphization in Boron Carbide with Varying B/C Ratios

V. Domnich*¹; M. C. Schaefer¹; R. A. Haber¹

1. Rutgers University, USA

4:40 PM

(ICACC-S4-009-2018) Influence of Grain Size and CNT addition on Static and Dynamic Properties and Amorphization of Boron Carbide

M. DeVries*¹; G. Subhash¹

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

5:00 PM

(ICACC-S4-010-2018) High Strain Rate Multi-axial Loading Behavior of Granular Phase Boron Carbide

X. Sun*¹; A. Tonge³; K. Ramesh²; J. LaSalvia³

1. Johns Hopkins University, Mechanical Engineering, USA
2. Hopkins Extreme Materials Institute, USA
3. US Army Research Laboratory, USA

5:20 PM

(ICACC-S4-011-2018) Influence of Microstructure on the Ballistic Behavior of Alumina

B. Koch*¹; C. Lo¹; T. Sano²; J. D. Hogan¹

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

5:40 PM

(ICACC-S4-012-2018) Quantitative Visualization of Fracture and Failure of Soda-lime Glass

H. V. Tippur*¹; B. M. Sundaram¹

1. Auburn University, Department of Mechanical Engineering, USA

S6: Advanced Materials and Technologies for Direct Thermal Energy Conversion and Rechargeable Energy Storage

Solid Electrolytes and All-solid-state-batteries I

Room: Tomoka A

Session Chair: Palani Balaya, National University of Singapore

1:30 PM

(ICACC-S6-001-2018) Garnet-type ionic conductors for all-solid-state lithium ion batteries (Invited)

X. Guo*¹

1. Huazhong University of Science and Technology, Materials Science and Engineering, China

2:00 PM

(ICACC-S6-002-2018) On the Manufacturing and Operation of Inorganic All-solid-state Batteries (Invited)

S. Uhlenbruck*¹; C. Tsai¹; C. Dellen¹; S. Möller¹; S. Lobe¹; A. Windmüller¹; M. Finsterbusch¹; O. Guillon¹

1. Forschungszentrum Juelich, Institute of Energy and Climate Research, Germany

2:30 PM

(ICACC-S6-003-2018) Sulfide materials for Li-S and all-solid-state batteries (Invited)

A. Sakuda*¹; A. Hayashi¹; M. Tatsumisago¹

1. Osaka Prefecture University, Graduate School of Engineering, Department of Applied Chemistry, Japan

3:00 PM

Break

Solid Electrolytes and All-solid-state-batteries II

Room: Tomoka A

Session Chair: Valerie Pralong, CNRS ENSICAEN

3:20 PM

(ICACC-S6-004-2018) Rational design of advanced materials for solid-state Li-metal batteries (Invited)

Y. Guo*¹

1. Institute of Chemistry, Chinese Academy of Sciences, China

3:50 PM

(ICACC-S6-005-2018) Microstructure and phase control of β'' -alumina ceramic electrolytes for sodium salt batteries

M. V. Heinz*¹; M. Bay¹; K. Fiore²; N. Zanon²; U. F. Vogt¹; C. Battaglia¹

1. Swiss Federal Laboratories for Materials Science and Technology, Materials for Energy Conversion, Switzerland
2. FZSonick, Switzerland

4:10 PM

(ICACC-S6-006-2018) Anisotropic properties of Na- β'' -Alumina+YSZ composite synthesized by vapor phase method

L. Ghadbeigi*¹; T. D. Sparks¹

1. University of Utah, Material Science and Engineering, USA

4:30 PM

(ICACC-S6-007-2018) Micro-mechanical characterization of $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ for solid state batteries

J. F. Nonemacher*¹; M. Finsterbusch¹; J. Malzbender¹

1. Forschungszentrum Jülich, Institute of Energy and Climate Research (IEK), Germany

4:50 PM

(ICACC-S6-008-2018) Ionic and Thermal Conductivity in Ceramic Solid Electrolytes for Li-Ion Cells

M. Rohde*¹; Y. Cui¹; C. Ziebert¹; H. J. Seifert¹

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

5:10 PM

(ICACC-S6-009-2018) Lithium Diffusion in Lithium Garnet Oxide $\text{Li}_5\text{La}_3\text{Ta}_2\text{O}_{12}$: A combined quasi-elastic neutron scattering and molecular dynamics study

W. Lai*¹; M. Klenk¹; S. Boeberitz¹

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

S7: 12th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications

Nanomaterials for Photocatalysis, Solar Hydrogen and Thermoelectrics I

Room: Coquina Salon C

Session Chairs: Teresa Andreu, Catalonia Institute for Energy Research (IREC); Francesco Enrichi, Centro Studi e Ricerche E. Fermi (Italy) and Luleå University of Technology (Sweden)

1:30 PM

(ICACC-S7-001-2018) Effects of Composition, Local Structure and in-situ Structural Evolution on the Catalytic Properties of Cobalt and Modified Cobalt (Oxy)hydroxides for the Oxygen Evolution Reaction (Invited)

Z. Chen¹; C. X. Kronawitter²; I. Waluyo³; L. Cai⁴; B. E. Koel*¹

1. Princeton University, Chemical and Biological Engineering, USA
2. University of California, Davis, Chemical Engineering, USA
3. Brookhaven National Laboratory, National Synchrotron Light Source II, USA
4. Xi'an Jiaotong University, State Key Laboratory of Multiphase Flow in Power Engineering, China

2:00 PM

(ICACC-S7-002-2018) Composite nanostructures for high-efficiency Sunlight conversion (Invited)

A. Vomiero*¹

1. Lulea University of Technology, Engineering Sciences & Mathematics, Sweden

2:20 PM

(ICACC-S7-003-2018) Modification and deposition of metaloxide layers via Plasma Enhanced Chemical Vapor Deposition

Y. Gönüllü*¹; S. Mathur¹; T. Fischer¹

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

2:40 PM

Break

Nanomaterials for Photocatalysis, Solar Hydrogen and Thermoelectrics II

Room: Coquina Salon C

Session Chairs: Alberto Vomiero, Lulea University of Technology; Yakup Gönüllü, University of Cologne

3:20 PM

(ICACC-S7-004-2018) Downconversion enhancement by Ag nanoaggregates in $\text{Tb}^{3+}/\text{Yb}^{3+}$ codoped silica-zirconia sol-gel glasses and glass-ceramics for solar cells (Invited)

F. Enrichi*¹

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

3:50 PM

(ICACC-S7-005-2018) Nanoscale Morphology Control in Halide Perovskite/Polymer Composites for Printed LEDs and Beyond (Invited)

Z. Yu*¹

1. Florida State University, Industrial and Manufacturing Engineering, USA

4:20 PM**(ICACC-S7-006-2018) Plasma-catalytic CO₂ conversion to methane using mesoporous Ni-Ce-Al₂O₃**T. Andreu^{*1}; M. Biset¹; J. Guilera¹; J. R. Morante¹

1. Catalonia Institute for Energy Research (IREC), Advanced Materials for Energy Area, Spain

4:40 PM**(ICACC-S7-007-2018) Ultra-broadband perovskite-PbS-quantum-dot sensitized carbon nanotube photodetector**I. Ka^{*1}

1. Ecole de technologie superieure, Genie electrique, Canada

5:00 PM**(ICACC-S7-008-2018) Au@Sulfide Yolk@Shell Nanocrystals with Diverse Shell Compositions Prepared by Anion Exchange Reaction**M. Fang^{*1}

1. National Chiao Tung University, Material Science and Engineering, Taiwan

5:20 PM**(ICACC-S7-009-2018) Semiconductor Nanoheterostructures for Photoconversion Applications (Invited)**Y. Hsu^{*1}

1. National Chiao Tung University, MSE Department, Taiwan

S8: 12th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT12)

Advanced Sintering Technologies -FLASH, SPS, etc.

Room: Coquina Salon A

Session Chairs: Zhengyi Fu, Wuhan University of Technology; Hidehiro Yoshida, National Institute for Materials Science (NIMS)

1:30 PM**(ICACC-S8-001-2018) Cold, Flash, Sparks, Nano - Where are Sintering Processes Headed? (Invited)**G. L. Messing^{*1}; T. Frueh¹; W. Rheinheimer¹; E. R. Kupp¹; M. J. Hoffmann²

1. The Pennsylvania State University, Materials Science and Engineering, USA
2. Karlsruhe Institute of Technology, Institute for Applied Materials – Ceramic Materials and Technologies (IAM-KWT), Germany

2:00 PM**(ICACC-S8-002-2018) Flash-sintering and related phenomena in oxide ceramics (Invited)**H. Yoshida^{*1}; K. Morita¹; B. Kim¹; T. Yamamoto²

1. National Institute for Materials Science (NIMS), Japan
2. Nagoya University, Japan

2:30 PM**(ICACC-S8-003-2018) Ultra-fast densification of boron carbide by flash spark plasma sintering**Z. Fan^{*1}; W. Wang¹; Z. Fu¹

1. Wuhan University of Technology, China

2:50 PM**Break****3:10 PM****(ICACC-S8-004-2018) Quantifying Densification Variability in Ionic Conducting Ceramics via Spark Plasma Sintering**C. S. Smith^{*1}; N. J. Madden¹; J. A. Krogstad¹

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

3:30 PM**(ICACC-S8-005-2018) Influence of grain size on the entropic transformation in high entropy oxides**A. D. Dupuy^{*1}; J. M. Schoenung¹

1. University of California, Irvine, Chemical Engineering and Materials Science, USA

3:50 PM**(ICACC-S8-006-2018) Flash sintering entropy-stabilized oxide**J. Liu^{*1}; D. Liu²; G. Liu¹; Y. Wang³; L. An⁴

1. Southwest Jiaotong University, School of Mechanics and Engineering, China
2. Southwest Jiaotong University, School of Materials Science and Engineering, China
3. Northwestern Polytechnical University, School of Materials Science and Engineering, China
4. University of Central Florida, Department of Materials Science and Engineering, USA

4:10 PM**(ICACC-S8-007-2018) Effect of oxygen partial pressure on temperature for onset of flash sintering 3YSZ**D. Liu^{*1}

1. Southwest Jiaotong University, Key Laboratory of Advanced Technologies of Materials, China

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

Industrial Root Technology Based on KITECH and GIGAKU Concept

Room: Ponce de Leon

Session Chairs: Tadachika Nakayama, Nagaoka Univ of Tech; Sungwook Mhin, Korea Institute of Industrial Technology

1:30 PM**(ICACC-S11-001-2018) In-situ and on-demand synthesis of carbon-based boundary films from lubricating oils by catalytically active composite coatings (Invited)**A. Erdemir^{*1}; G. Ramirez¹; O. Eryilmaz¹

1. Argonne National Lab, USA

1:50 PM**(ICACC-S11-002-2018) Motion control of micromachine by nano 3D printer and electric field control (Invited)**T. Nakayama^{*1}; K. Moriya¹; M. G. Herrera Salazar²; H. Suematsu²; T. Suzuki¹; K. Niihara¹

1. Nagaoka Univ of Tech, Japan
2. University of Aarhus, Finland

2:10 PM**(ICACC-S11-003-2018) The properties of ternary Mo-Cu-X-N, (X= Ni, Si, V) coating synthesized by magnetron sputtering process with single alloying targets**H. Lee^{*1}; H. Yoon¹; G. Bang¹; K. Moon¹

1. Korea Institute of Industrial Technology, Republic of Korea

2:30 PM**(ICACC-S11-004-2018) Modulating the Piezoresistivity and Thickness of Silicone Rubber Coating Films for Pressing-Sensor Applications (Invited)**S. T. Nguyen^{*1}; V. Tran-Khac¹; H. Suematsu¹; T. Suzuki¹; K. Niihara¹; T. Nakayama¹

1. Nagaoka University of Technology, Japan

2:50 PM**(ICACC-S11-005-2018) Electrical characteristics of PIN-PMN-PT ceramics by impurities effect for high temperature application (Invited)**T. Moro^{*1}; T. Nakayama¹; J. Kim²; Y. Kim²; J. Kim²; S. Yamanaka²; T. Katou²; I. Murayama²; M. Takeda¹; N. Yamada¹; H. Suematsu¹; K. Niihara¹

1. Nagaoka Univ of Tech, Japan
2. Daihatsu Motor Co., Ltd., Japan

3:10 PM**Break**

3:30 PM**(ICACC-S11-006-2018) Highly Insulation Property of Aerosol Deposited Al₂O₃ Thick Films (Invited)**R. Aoyagi^{*}; H. Tsuda¹; J. Akedo¹

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

3:50 PM**(ICACC-S11-007-2018) Novel Glass-ceramics from Glass Powders and Reactive Silicone Binders (Invited)**E. Bernardo^{*}; H. Elsayed¹

1. University of Padova, Dipartimento di Ingegneria Industriale, Italy

4:10 PM**(ICACC-S11-020-2018) Solubility limit of B1-GaN to B1-(Cr,Ga)N thin films (Invited)**Y. Mizuno^{*}; T. Nakayama¹; H. Suematsu¹; T. Suzuki¹

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

4:30 PM**(ICACC-S11-009-2018) Cobalt Nickel Sulfide Nanoparticles Anchored on Porous Graphene Aerogel as Efficient Electrocatalysts for Oxygen Evolution Reaction**H. Han^{*}; Y. Hong¹; S. Mhin¹

1. Korea Institute of Industrial Technology, Republic of Korea

4:50 PM**(ICACC-S11-010-2018) Developing low temperature Process Temperature Control Rings for accurate measurement of temperature in range of 560-900°C (Invited)**A. Saberi^{*}; H. Jarnicki¹; J. Amyot²; J. Risse¹

1. Ferro GmbH, R&D, Germany
2. Ferro S.A.R.L, France

5:10 PM**(ICACC-S11-011-2018) Thermophysical Properties of Selected Nitrates and Fluorides Measured by Means of Thermal Analysis and Hyphenated Techniques (Invited)**E. Post^{*}

1. NETZSCH Geraetebau GmbH, Germany

S12: Advanced MAX/mxene Phases and UHTC Materials for Extreme and High Temperature Environment**Novel Applications and Processing Methods for Synthesizing MAX Phases I**

Room: Tomoka B

Session Chairs: Michel Barsoum, Drexel University; Thierry Ouisse, Grenoble INP

1:30 PM**(ICACC-S12-008-2018) Towards single phase Zr_{n+1}Al_n MAX phase ceramics for future fission environments (Invited)**E. Zapata-Solvas^{*}; W. E. Lee¹

1. Imperial College London, Centre for Nuclear Engineering, Dpt. of Materials, United Kingdom

1:50 PM**(ICACC-S12-002-2018) TEM study of Ti₃SiC₂ thin films synthesized on 4H-SiC**C. Bail¹; C. Forgeaud¹; G. Amiard¹; T. Cabioch¹; M. Beaufort¹; J. Nicolai¹; B. Levraut^{*}

1. Institut PPRIME, France

2:10 PM**(ICACC-S12-003-2018) Lightweight MAX phases - based materials heat-resistant in oxidizing and hydrogen atmosphere**T. Prikhna^{*}; O. Ostash²; V. Sverdun¹; T. Cabioch³; M. Karpets¹; A. Ivashyshin²; S. Dub¹; A. Kuprin⁵

1. Institute for Superhard Materials of the National Academy of Sciences of Ukraine, Ukraine
2. Karpenko Physical-Mechanical Institute of the National Academy of Sciences of Ukraine, Ukraine
3. Universite de Poitiers, CNRS/Laboratoire PHYPMAT, UMR 6630 CNRS Universite de Poitiers, France
4. The Institute of Advanced Manufacturing Technology, Poland
5. National Science Center Kharkov Institute of Physics and Technology, Ukraine

2:30 PM**(ICACC-S12-004-2018) Synthesis of Phase-Pure (Zr,Ti)₂(Al,Sn)C MAX Phase Solid Solutions**K. Lambrinou^{*}; B. Tunca Altintas¹; T. Lapauw¹; R. Delville¹; J. Hadermann²; J. Vleugels³

1. SCK-CEN, NMS, Belgium
2. University of Antwerp, EMAT, Belgium
3. KU Leuven, Dept. Materials Engineering, Belgium

2:50 PM**(ICACC-S12-005-2018) Preparation of TiC/Ti₃AlC constituent gradient coating on carbon fiber and investigation on the oxidation resistance properties**M. Li^{*}; J. Wang¹; L. He¹; F. Huang¹; S. Du¹; Q. Huang¹

1. Ningbo Institute of Industrial Technology, Chinese Academy of Sciences, Engineering Laboratory of Specialty Fibers and Nuclear Energy Materials, China

3:10 PM**Break****Theoretical Perspective for Designing MAX Phases and Novel Applications and Processing Methods for Synthesizing MAX Phases - II**

Room: Tomoka B

Session Chairs: Per Eklund, Linkoping University; Miladin Radovic, Texas A&M University

3:30 PM**(ICACC-S12-007-2018) Computational approach to structural, mechanical, and thermodynamic properties of Ti₃(Si_xAl_{1-x})C₂**W. Son^{*}; A. Talapatra¹; T. Duong¹; H. Gao²; M. Radovic¹; R. Arroyave¹

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

3:50 PM**(ICACC-S12-001-2018) Relationship between microstructure and oxidation resistance of the Ti₂AlC MAX phase produced by powder metallurgy route**B. Levraut^{*}; S. Dubois¹; V. Gauthier¹; P. Chartier¹

1. Institut PPRIME, DPMM, France

4:10 PM**(ICACC-S12-009-2018) High temperature water vapor oxidation of typical MAX phases for ATFs**Y. Lei^{*}; J. Zhang¹; X. Wang¹; J. Wang¹

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

4:30 PM**(ICACC-S12-010-2018) Densification and Phase Evolution of SHS Derived MAX Phase Ti₃SiC₂ Active Precursor Powders during Hot Pressing Processes**L. Chlubny^{*}; J. Lis¹; P. Borowiak¹; K. Chabior¹; K. Kozak¹

1. AGH-University of Science and Technology, Poland

4:50 PM**(ICACC-S12-011-2018) A Review of Different Types of MAX-Metal Composite Systems for Multifunctional Applications**M. Dey^{*}; M. Fuka¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

S13: Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy

ATF and Coating Technologies

Room: Coquina Salon H

Session Chairs: Kurt Terrani, Oak Ridge National Lab; Monica Ferraris, Politecnico di Torino

1:30 PM

(ICACC-S13-001-2018) Mechanistic Mesoscale Simulation of UO_2 Sintering and Densification (Invited)

M. R. Tonks^{*1}; I. Greenquist²; Y. Zhang³

1. University of Florida, Materials Science and Engineering, USA
2. Pennsylvania State University, Mechanical and Nuclear Engineering, USA
3. Idaho National Lab, USA

2:00 PM

(ICACC-S13-002-2018) LCVD Approaches for Novel Accident Tolerant Fuel Concepts

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

1. Free Form Fibers, USA

2:20 PM

(ICACC-S13-003-2018) Synthesis and Thermophysical Properties of ThN

S. S. Parker^{*1}; J. T. White¹; A. Parkison²; P. Hosemann³; A. T. Nelson¹

1. Los Alamos National Laboratory, Material Science and Technology Division, USA
2. Los Alamos National Lab, USA
3. University of California, Berkeley, Nuclear Engineering, USA

2:40 PM

(ICACC-S13-004-2018) Processing of uranium fuel with novel additives starting from sol-gel feedstock

S. C. Finkeldei^{*1}; R. Hunt¹; J. Kiggans¹; K. Terrani¹

1. Oak Ridge National Lab, USA

3:00 PM

Break

3:20 PM

(ICACC-S13-005-2018) Electric Current Assisted Joining of SiC-based Ceramic Matrix Composites (Invited)

P. Tatarko^{*1}; S. Grasso²; T. Saunders²; V. Casalegno²; M. Ferraris²; M. Reece²

1. Institute of Inorganic Chemistry, Slovak Academy of Sciences, Department of Ceramics, Slovakia
2. Queen Mary University of London, United Kingdom
3. Politecnico di Torino, Italy

3:50 PM

(ICACC-S13-006-2018) Arc Welding of SiC Based Ceramics

D. King^{*1}; J. Watts²; K. Cissel¹; S. Ganti¹; A. Kadhim¹; G. Hilmas²; W. Fahrenholtz²

1. UES, Inc., USA
2. Missouri University of Science & Technology, USA

4:10 PM

(ICACC-S13-007-2018) Development of the High Temperature Joints for Carbon-Based Materials

R. Piat^{*1}; B. Reznik²; M. Rohde²; S. Lichtenberg²; O. Deutschmann²; H. J. Seifert²

1. Darmstadt University of Applied Science, Germany
2. Karlsruhe Institute of Technology, Germany

4:30 PM

(ICACC-S13-009-2018) Thermal conductivity modeling of UN/ U_3Si_2 composites

A. W. Travis^{*1}; J. T. White²; A. T. Nelson²

1. University of California, Irvine, USA
2. Los Alamos National Lab, USA

4:50 PM

(ICACC-S13-010-2018) Numerical Analysis of Multi-pellet Fabrication of UO_2 fuel pellets using Spark Plasma Sintering

B. Nili^{*1}; G. Subhash¹; J. S. Tulenko¹

1. University of Florida, Material Science and Engineering, Nuclear Engineering Program, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications

Phosphor

Room: Tomoka C

Session Chairs: Joanna McKittrick, UC San Diego; Isabel Kinski, Fraunhofer IKTS

1:30 PM

(ICACC-S14-001-2018) Optimization of polycrystalline ceramic phosphors for applications with blue-light excitation by laser and light-emitting diodes (Invited)

I. Kinski^{*1}; G. Eberhardt¹; M. Kunzer²; M. Arnold⁴

1. Fraunhofer IKTS, Business Division Optics, Germany
2. Laser Display Technology GmbH, Germany
3. Fraunhofer IAF, Optoelectronic, Germany
4. Fraunhofer IKTS, Functional Materials for Hybrid Microsystems, Germany

2:00 PM

(ICACC-S14-002-2018) Crystal Growth of Silicate Phosphors using SiO Vapor (Invited)

K. Toda^{*1}

1. Niigata University, Japan

2:30 PM

(ICACC-S14-003-2018) Development of phosphor-in-glass for high power solid state lighting system (Invited)

S. Kim^{*1}; Y. Nam¹; B. Kim¹; J. Hwang¹; J. Kim¹; Y. Lee¹; D. Jeon¹

1. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

3:00 PM

Break

3:20 PM

(ICACC-S14-004-2018) Phosphor composition prediction and synthesis using a combined experimental and computational approach (Invited)

J. McKittrick^{*1}; J. Ha¹; Z. Wang¹; O. Graeve¹; S. Ong¹

1. UC San Diego, USA

3:50 PM

(ICACC-S14-005-2018) Exploration of novel silicate phosphors by crystal-site engineering approach (Invited)

Y. Sato^{*1}; K. Tomita²; M. Kakihana³

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

4:20 PM

(ICACC-S14-006-2018) Plate and powder form of single crystal phosphors for high-brightness white lighting

K. Shimamura^{*1}; V. Garcia¹; D. Inomata²; A. Ito³

1. National Institute for Materials Science, Japan
2. Tamura Corporation, Japan
3. Koha Co., Ltd., Japan

4:40 PM

(ICACC-S14-007-2018) Microstructures and their relevance to photoluminescence in SrAl_2O_4

S. Mori^{*1}

1. Osaka Prefecture University, Materials Science, Japan

5:00 PM

(ICACC-S14-008-2018) Sol-Gel-Derived $\text{CaTiO}_3:\text{Pr}^{3+}$ Thin Films for Wavelength Conversion (Invited)

T. Hayakawa^{*1}; H. Nakamori¹

1. Nagoya Institute of Technology, Department of Life Science and Applied Chemistry, Japan

S15: Additive Manufacturing and 3-D Printing Technologies

Stereolithography I

Room: Coquina Salon B

Session Chair: Soshu Kirihara, Osaka University

1:30 PM

(ICACC-S15-001-2018) Ceramic Additive Manufacturing: From Basic Science to Aerospace Opportunities (Invited)

M. B. Dickerson*; L. M. Rueschhoff; L. A. Baldwin; C. C. Wyckoff; T. Pruyn; G. Wilks; Z. D. Apostolov; T. Key; H. Koerner; M. Dalton; M. Cinibulk¹

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

2:00 PM

(ICACC-S15-002-2018) Advances in lithographic additive manufacturing of dense ceramics – non-oxides and translucent materials

M. Schwentenwein*; A. A. Altun; J. Homa¹

1. Lithoz GmbH, Austria

2:20 PM

(ICACC-S15-003-2018) Additive manufacturing of flexible 3-3 ferroelectric ceramic/polymer composite based on triply periodic cellular micro-skeleton

X. Song*; L. He; W. Wang; Z. Wang; L. Chen²

1. University of Iowa, Mechanical and Industrial Engineering, USA
2. Mississippi State University, Mechanical Engineering, USA

2:40 PM

(ICACC-S15-005-2018) Stereolithographic Additive Manufacturing of Micro Ceramic Patterns by Ultraviolet Laser Dewaxing and Sintering

S. Kirihara*¹

1. Osaka University, Joining and Welding Research Institute, Japan

3:00 PM

Break

Stereolithography II

Room: Coquina Salon B

Session Chair: Martin Schwentenwein, Lithoz GmbH

3:20 PM

(ICACC-S15-004-2018) Influence of layer orientation on microstructure and mechanical properties of ceramics processed by stereolithography (Invited)

A. L. Leriche*; M. Dehurtevent; F. Petit; J. Hornez; A. Thuault; L. Robberecht; P. Behin; F. J. Cambier²

1. University of Valenciennes, France, France
2. BCRC, RSE, Belgium
3. University of Lille 2, Dental Faculty, France

3:50 PM

(ICACC-S15-035-2018) Inexpensive additive manufacturing using waste materials

H. Colorado*¹

1. Universidad de Antioquia, CCCComposites Laboratory, Colombia

4:10 PM

(ICACC-S15-006-2018) Digital Light Processing of Wollastonite-Diopside Glass-ceramic Complex Structures

J. E. Schmidt*; H. Elsayed; E. Bernardo; P. Colombo¹

1. University of Padova, Industrial Engineering, Italy

Stereolithography III

Room: Coquina Salon B

Session Chair: Anne Leriche, University of Valenciennes

4:30 PM

(ICACC-S15-007-2018) Additive Manufacturing of Reinforced Polymer-Derived Ceramics

Z. C. Eckel; P. P. Bui; J. M. Hundley; T. Schaedler*¹

1. HRL Laboratories, USA

4:50 PM

(ICACC-S15-008-2018) Stereolithographic Additive Manufacturing of Ceramic Chambers to Suppress Noise Generations from High Speed Gas Flames

S. Kisanuki*; S. Kirihara¹

1. Joining and Welding Research Institute, Japan
2. Osaka University, Graduate School of Engineering, Japan

5:10 PM

(ICACC-S15-009-2018) Additive Manufacturing of Ceramics from Preceramic Polymers: From Nanometer to Centimeter

J. E. Schmidt*; L. Brigo; G. Brusatin; P. Colombo¹

1. University of Padova, Industrial Engineering, Italy

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Synthesis

Room: Halifax A/B

Session Chairs: Christine Luscombe, University of Washington; Clara Santato, Ecole Polytechnique de Montreal

1:30 PM

(ICACC-S17-001-2018) Convergence in the Energy Sector (Invited)

L. D. Madsen*¹

1. National Science Foundation, Materials Research, USA

2:00 PM

(ICACC-S17-002-2018) Solution based synthesis of complex shape and composition nano-structures for energy applications (Invited)

G. Westin*¹

1. Uppsala University, Sweden

2:30 PM

(ICACC-S17-003-2018) Modulating the Surface Chemical Composition of Titania Nanocrystals by Solvothermal Synthesis and Surface Related Applications (Invited)

M. Epifani*¹

1. CNR-IMM, Italy

3:00 PM

Break

3:20 PM

(ICACC-S17-004-2018) Synthesis and Multifunctions of Titania Nanotubes-based Low-dimensional Anisotropic Nanocomposites (Invited)

T. Sekino*; S. Eom; Y. Yamasaki; H. Nishida; S. Chou; T. Goto¹

1. Osaka University, The Institute of Scientific and Industrial Research, Japan

3:50 PM

(ICACC-S17-005-2018) Controlling defects – and properties - in 3-D assemblies of oxide nanosheets (Invited)

S. T. Misture*; P. Metz; P. Gao¹

1. Alfred University, MSE, USA

4:20 PM**(ICACC-S17-006-2018) Low-Symmetry Colloidal Nanocrystals (Invited)**P. Cozzoli*¹

1. University of Salento, Department of Mathematics and Physics "E. De Giorgi", Italy

4:50 PM**(ICACC-S17-007-2018) Synthesis of surface modified high aspect ratio akaganeite nanorods with exchange bias at room temperature**H. Khalid*¹; S. Heo¹; W. Yang¹; B. Kim¹; T. Kim¹; S. Seo¹

1. Korea Institute of Industrial Technology, Republic of Korea

Honorary Symposium: Advancing Frontiers of Ceramics for Sustainable Society Development - International Symposium in Honor of Dr. Mrityunjay Singh

Advancing Frontiers of Ceramics I - Biotechnologies, etc.

Room: Coquina Salon E

Session Chairs: Sanjay Mathur, University of Cologne; Jerzy Lis, AGH University of Science and Technology

1:30 PM**(ICACC-HON-001-2018) Regenerative Engineering of Bone: Next Generation Inductive Graphene-Ceramics (Invited)**L. Daneshmandi¹; S. Gohil¹; L. Nair²; A. Arnold²; B. Holt²; S. Sydlík²; C. Laurencin*¹

1. University of Connecticut, Biomedical Engineering, USA
2. Carnegie Mellon University, Chemistry, USA
3. University of Connecticut Health Center, Orthopedic Surgery, USA

2:00 PM**(ICACC-HON-002-2018) Green Biomaterials: Pioneering Environmentally-Safe Nanophase Materials for Tissue Engineering Applications (Invited)**T. Webster*¹

1. Northeastern University, USA

2:30 PM**(ICACC-HON-003-2018) Elements of Medical Product Translation: Importance of Ceramic Components (Invited)**A. J. Coury*¹

1. Northeastern University, Chemical Engineering, USA

3:00 PM**Break****3:20 PM****(ICACC-HON-004-2018) Life-saving applications of strengthened glass (Invited)**A. K. Varshneya*¹

1. Saxon Glass Technologies, Inc., USA

3:50 PM**(ICACC-HON-005-2018) Oxynitride Glasses for Potential Biomedical Usage (Invited)**S. Hampshire*¹

1. University of Limerick, Materials and Surface Science Institute, Ireland

4:10 PM**(ICACC-HON-006-2018) Bioinspired materials templates by nature species (Invited)**D. Zhang*¹; J. Gu¹; W. Zhang¹; Q. Liu¹; S. Zhu¹; H. Su¹

1. Shanghai Jiao Tong University, China

4:30 PM**(ICACC-HON-007-2018) Ceramics Research Endeavor at the Korea Institute of Ceramic Engineering and Technology (KICET) (Invited)**S. L. Kang*¹; S. Lee¹

1. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

5:00 PM**(ICACC-HON-008-2018) Modern ceramic education as a response to the needs of economy and industry - from the experience of AGH UST (Invited)**J. Lis*¹; M. M. Bucko¹

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

5:20 PM**(ICACC-HON-037-2018) Dynamic Inelastic Deformation Mechanisms in Al₂O₃, AlN and AlON (Invited)**J. W. McCauley*¹

1. Johns Hopkins University/Army Research Laboratory, USA

7th Global Young Investigator Forum

Frontiers in Ceramic Chemistry and Physics: New Precursors for Functional Ceramics, Ceramics and Catalysis, Functional Surfaces

Room: Coquina Salon G

Session Chair: Manoj Mahapatra, University of Alabama at Birmingham

1:30 PM**(ICACC-GYIF-001-2018) Electrospun Metal Oxide Fiber Meshes for Improved Sensing of Toxic Analytes in the Gas Phase (Invited)**T. Fischer*¹; D. Graf¹; A. Lepcha¹; Y. Gönüllü¹; S. Mathur¹

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

2:00 PM**(ICACC-GYIF-002-2018) Formation mechanism of critical microstructures in ceramics by infrared spectroscopy**C. A. Lee*²; J. Ren¹; K. Chen¹; M. Li¹; Y. Chen¹

1. The Chinese University of Hong Kong, Energy and Catalysis Laboratory, Department of Mechanical and Automation Engineering, China
2. Energy and Catalysis Laboratory, Department of Mechanical and Automation Engineering/The Shun Hing Institute of Advanced Engineering, The Chinese University of Hong Kong, China

2:20 PM**(ICACC-GYIF-003-2018) Magnetic textures in the ferromagnetic insulating phase of La_{0.875}Sr_{0.125}MnO₃**A. Kotani*¹; H. Nakajima²; K. Harada³; Y. Ishii¹; S. Mori¹

1. Osaka Prefecture University, Materials Science, Japan
2. Kyushu University, Applied Quantum Physics and Nuclear Engineering, Japan
3. the Institute of Physical and Chemical Research, Center for Emergent Matter Science, Japan

2:40 PM**Break**

Applications: Ceramic Sensors and Actuators, Energy Generation, Saving and Storage, Photocatalysis and Biomedical Applications

Room: Coquina Salon G

Session Chairs: Giorgia Franchin, University of Padova; Daniele Benetti, Institut National de la Recherche Scientifique

3:20 PM**(ICACC-GYIF-004-2018) Graphite – The Critical Carbon (Invited)**R. M. Paul*¹

1. GrafTech International Holdings Inc., Technology, USA

3:50 PM**(ICACC-GYIF-005-2018) Additive manufacturing of TiC porous targets for nuclear physics applications in radiopharmacy**G. Franchin^{*}; A. Zanini¹; A. Girotto¹; S. Corradetti²; A. Andrighetto²; P. Colombo¹

1. University of Padova, Industrial Engineering, Italy
2. Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali di Legnaro, Italy

4:10 PM**(ICACC-GYIF-006-2018) Reaction-bonded silicon carbide for nuclear fusion**A. J. Leide^{*}; R. I. Todd¹; S. G. Roberts¹; K. Yoshida²; T. Yano²; M. Gorley³; D. E. Armstrong¹

1. University of Oxford, Department of Materials, United Kingdom
2. Tokyo Institute of Technology, Laboratory for Advanced Nuclear Energy, Institute of Innovative Research, Japan
3. Culham Centre for Fusion Energy, United Kingdom

4:30 PM**(ICACC-GYIF-007-2018) Evaluation of power generation from biomass using Solid Oxide Fuel Cell (SOFC) and downdraft gasifier**S. Yamaguchi^{*}; K. Katagiri¹; T. Ozaki¹; T. Ehiro¹; A. Kakitsuji¹

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

4:50 PM**(ICACC-GYIF-008-2018) Performance enhancement of medium-temperature anhydrous fuel cells by incorporation of proton conductive material to the three-phase interface**K. Maegawa^{*}; K. Ya¹; G. Kawamura¹; T. Hattori¹; 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

5:10 PM**(ICACC-GYIF-009-2018) Carbon Dots and their application in energy harvesting devices**D. Benetti^{*}; Y. Zhou¹; H. Zhao¹; A. Vomiero²; F. Rosei¹

1. Institut National de la Recherche Scientifique, Materials, Energy and Telecommunication, Canada
2. Lulea University of Technology, Engineering Sciences & Mathematics, Sweden

Tuesday, January 23, 2018**S1: Mechanical Behavior and Performance of Ceramics & Composites****Strength and Fracture Toughness of Monolithics**

Room: Coquina Salon D

Session Chairs: Jonathan Salem, NASA Glenn Research Center; Raul Bermejo, Montanuniversitaet Leoben

8:30 AM**(ICACC-S1-011-2018) Fracture Toughness of Modern and Ancient Glasses and Glass Ceramics as Measured by the SEPB Method**G. D. Quinn^{*}; J. Swab³; R. Brill²; S. Koob²

1. National Institute of Standards and Technology, Materials Measurement Sciences Division, USA
2. Corning Museum of Glass, USA
3. U.S. Army Research Laboratory, USA

8:50 AM**(ICACC-S1-012-2018) Observations in Fracture Toughness Testing of Glasses and Optical Ceramics**J. Salem^{*}

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

9:10 AM**(ICACC-S1-013-2018) Toward seashells under stress: Novel concepts to design tough layered ceramic composites**R. Bermejo^{*}; Y. Chang²; 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-S1-014-2018) Effect of Control Mode and Load Rate on Fracture Toughness**J. Salem¹; B. Hausmann^{*2}

1. NASA Glenn Research Center, Materials and Structures, USA
2. Case Western Reserve University, Materials Science, USA

9:50 AM**Break****10:10 AM****(ICACC-S1-015-2018) Crack-Path Dependent Fracture Toughness in Additively Manufactured Ceramic Composites with Anisotropic Heterogeneities**N. R. Brodnik^{*}; C. Hsueh³; S. Biesboer²; T. Schaedler²; Z. C. Eckel³; G. Ravichandran³; K. Bhattacharya³; K. Faber¹

1. California Institute of Technology, Materials Science, USA
2. HRL LLC, USA
3. California Institute of Technology, Mechanical Engineering, USA

10:30 AM**(ICACC-S1-016-2018) Overcoming challenges and obstacles in measurement of fracture toughness of plasma sprayed ceramics**G. Smith^{*}; S. Sampath¹

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

10:50 AM**(ICACC-S1-017-2018) Mechanical behavior of single domain polycrystalline and single crystal ferroelastic ceramics**C. S. Smith^{*}; J. A. Krogstad¹

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

11:10 AM**(ICACC-S1-018-2018) Orientation dependent fracture behaviour of LiTaO₃ and LiNbO₃ brittle single crystals and its atomistic origin**M. Gruber¹; M. Popov³; P. Supancic¹; D. Kiener²; R. Bermejo^{*1}

1. Montanuniversitaet Leoben, Institut fuer Struktur- und Funktionskeramik, Austria
2. Montanuniversitaet Leoben, Material Physics, Austria
3. Materials Center Leoben, Austria

11:30 AM**(ICACC-S1-019-2018) In Situ Fracture Tests of Ceramic Grain Boundaries**F. Giuliani^{*}; G. Sernicola¹

1. Imperial College London, United Kingdom

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications**Environmental Barrier Coatings - Fundamentals**

Room: St. John

Session Chair: Dongming Zhu, NASA Glenn Research

8:30 AM**(ICACC-S2-012-2018) Effect of Electrical Characteristics on Oxygen Shielding Properties and Structural Stability of Bilayer Oxide Films**S. Kitaoka^{*}; T. Matsudaira¹; M. Tanaka¹; T. Sato²; O. Sakurada²; Y. Kagawa³

1. Japan Fine Ceramics Center, Japan
2. Gifu University, Japan
3. Tokyo University of Technology, Japan

8:50 AM**(ICACC-S2-013-2018) Effect of water vapor on mass transfer in polycrystalline $\text{Yb}_2\text{Si}_2\text{O}_7$, under oxygen potential gradients at high temperatures**

M. Wada*¹; T. Matsudaira¹; N. Kawashima¹; D. Yokoe¹; T. Kato¹; S. Kitaoka¹; M. Takata¹; M. Takeuchi²

1. Japan Fine Ceramics Center, Japan
2. University of Tokyo, Japan

9:10 AM**(ICACC-S2-014-2018) Local Bonding as a Dominant Factor Governing Thermal Expansion of High Temperature Ceramic Materials**

M. Yoshiya*¹; Y. Akada¹; Y. Sumi¹

1. Osaka University, Department of Adaptive Machine Systems, Japan

9:30 AM**(ICACC-S2-015-2018) Calorimetric Studies of Refractory Oxides at High Temperature (Invited)**

A. Navrotsky*²; S. Ushakov¹; D. Kapush¹

1. University of California, Davis, Peter A. Rock ThermoLab and NEAT ORU, USA
2. University of California, Davis, Peter A. Rock Thermochemistry Laboratory, USA

10:00 AM**Break****Environmental Barrier Coatings - Processing & Properties II**

Room: St. John

Session Chair: Kang Lee

10:20 AM**(ICACC-S2-016-2018) Weibull-Based Stochastic Simulation of Mud-Crack Damage Formation in an Environmental Barrier Coating**

N. Nemeth*¹; S. Mital²; P. L. Murthy¹; B. A. Bednarczyk¹; E. J. Pineda¹; D. Zhu¹; H. Wadley²; S. M. Arnold¹

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

10:40 AM**(ICACC-S2-017-2018) Yb silicate anti-oxidation fiber/matrix interface coating for SiC/SiC for higher temperature durability**

K. Goto¹; A. Ito²; M. Sekiyama³; T. Matsuda³; S. Takahashi³; S. Kitaoka³; T. Goto*⁴

1. Japan Aerospace Exploration Agency, Institute of Space and Astronautical Science, Japan
2. Yokohama National University, Japan
3. Japan Fine Ceramics Center, Japan
4. Tohoku University, Japan

11:00 AM**(ICACC-S2-018-2018) Ultrathin Ceramic Coatings to Stabilize SiC Against Steam Oxidation**

A. Hoskins*¹; A. Coffey¹; C. B. Musgrave¹; A. W. Weimer¹

1. University of Colorado Boulder, Chemical and Biological Engineering, USA

11:20 AM**(ICACC-S2-019-2018) Performance and Durability of Advanced Environmental Barrier Coating Systems**

D. Zhu*¹; B. J. Harder¹; G. Costa¹; V. L. Wiesner¹; K. Lee¹; B. Puleo¹; J. B. Hurst¹

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

11:40 AM**(ICACC-S2-020-2018) Damage Evolution of Environmental Barrier Coatings under Mechanical Loading Condition (Invited)**

Y. Kagawa*¹; Y. Aoki¹; Y. Arai¹; H. Hatta¹

1. Tokyo University of Technology, The Center for Ceramic Matrix Composites, Japan

S3: 15th International Symposium on Solid Oxide Fuel Cells (SOFC): Materials, Science and Technology**Electrolytes, Oxygen Ion, Proton and Mixed Conductors, Conduction Mechanisms**

Room: Crystal

Session Chair: Scott Barnett, Northwestern Univ

8:30 AM**(ICACC-S3-010-2018) Proton Conductive Multilayers: manufacturing key issues (Invited)**

A. Sanson*¹; E. Mercadelli¹; A. Gondolini¹

1. CNR-ISTEC, Italy

9:00 AM**(ICACC-S3-011-2018) Electrolyte Film Deposited on Porous Anode by Ultrasonic Spray Pyrolysis and Microwave Energy Modification for Anode-supported SOFC**

F. Ko*¹; H. Chang¹

1. National Taiwan Ocean University, Department of Marine Engineering, Taiwan

9:20 AM**(ICACC-S3-012-2018) Electrochemical studies on a Na-β"-Alumina+ YSZ composite mixed ionic conductor**

L. Ghadbeigi*¹; T. D. Sparks¹; A. V. Virkar¹

1. University of Utah, Material Science and Engineering, USA

9:40 AM**(ICACC-S3-013-2018) Electrolyte Conductivity and Area Specific Electrode Polarization Resistance of Pt/8YSZ/Pt Over a Wide Temperature Range using a DC Method**

A. Szendrei*¹; T. D. Sparks¹; A. V. Virkar¹

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

10:00 AM**Break****Sealing Materials, Designs and Approaches**

Room: Crystal

Session Chair: Federico Smeacetto, Politecnico di Torino

10:20 AM**(ICACC-S3-014-2018) Development of SOFC sealing materials at the Technical University of Denmark – Towards solutions for today's and tomorrow's challenges (Invited)**

R. Kiebach*¹; I. Ritucci¹; K. Agersted¹; P. Zielke¹; P. V. Hendriksen¹; A. Wulff¹; F. Smeacetto²; A. Sabato²

1. DTU, Denmark
2. Politecnico di Torino, Department of Applied Science and Technology, Italy

10:50 AM**(ICACC-S3-015-2018) Effects of contaminants on the ageing of glass ceramic sealants for solid oxide cells (Invited)**

D. Montinaro*¹

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

11:20 AM**(ICACC-S3-016-2018) Mechanical properties and strength between an SOFC glass ceramic seals and Crofer22APU**

I. Ritucci*¹; R. Kiebach¹; L. Han¹; P. Zielke¹; K. Agersted¹; P. Hendriksen¹; H. L. Frandsen¹

1. DTU, Energy, Denmark

S4: Armor Ceramics - Challenges and New Developments

Materials Characterization I

Room: Coquina Salon F

Session Chair: Christopher Marvel, Lehigh University

8:30 AM

(ICACC-S4-013-2018) Measuring hardness when indents are severely damaged

L. J. Vandeperre*¹

1. Imperial College London, Materials, United Kingdom

8:50 AM

(ICACC-S4-015-2018) Disorder energy and excess free energies effects on grain growth in MgAl₂O₄ spinels

D. Ferreira Muche*¹; R. Castro¹

1. University of California, Davis, Materials Science and Engineering, USA

9:10 AM

(ICACC-S4-016-2018) Applying Data Science to Material Science to Advance Armor Ceramic Research (Invited)

M. C. Golt*¹

1. U.S. Army Research Laboratory, USA

9:40 AM

(ICACC-S4-017-2018) Grain Boundary Segregation of Rare-Earth Additives in Boron Suboxide

C. J. Marvel*¹; K. D. Behler²; J. S. Dunn²; J. LaSalvia²; M. P. Harmer¹

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

10:00 AM

Break

Materials Characterization II

Room: Coquina Salon F

Session Chair: Jerry LaSalvia, Army Research Laboratory

10:20 AM

(ICACC-S4-018-2018) Mitigation of Amorphization in Boron Carbide Achieved by Silicon doping Through High Temperature Coupling of Boron Carbide and Silicon Hexaboride

A. M. Etzold¹; V. Domnich*¹; K. D. Behler²; K. Xie²; J. LaSalvia³; R. A. Haber¹

1. Rutgers University, Materials Science and Engineering, USA
2. Johns Hopkins University, USA
3. US Army Research Laboratory, Multifunctional Materials Branch, USA

10:40 AM

(ICACC-S4-021-2018) The Kinetics and Mechanisms of Abnormal Grain Growth Grain in Si-doped Boron Suboxide

C. J. Marvel*¹; K. D. Behler²; J. LaSalvia²; M. P. Harmer¹

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

11:00 AM

(ICACC-S4-020-2018) Nanotwinning in Boron Suboxide

C. Kunka*¹; Q. An²; G. Subhash¹

1. University of Florida, Mechanical and Aerospace Engineering, USA
2. University of Nevada, Reno, Chemical and Materials Engineering, USA

11:20 AM

(ICACC-S4-019-2018) An Analysis and Interpretation of Planar Features in Boron Carbide (Invited)

J. W. McCauley*¹

1. Johns Hopkins University/Army Research Laboratory, USA

S6: Advanced Materials and Technologies for Direct Thermal Energy Conversion and Rechargeable Energy Storage

Materials Design for Lithium Batteries and Super-capacitors I

Room: Tomoka A

Session Chair: Naoaki Yabuuchi, Tokyo Denki University

8:30 AM

(ICACC-S6-010-2018) Precise Surface Control of Cathode Materials for Improved Battery Performance (Invited)

A. Cao*¹

1. Institute of Chemistry, Chinese Academy of Sciences, China

9:00 AM

(ICACC-S6-011-2018) Electrochemical activity in borates and oxyborates toward lithium

V. Pralong*¹; B. LeRoux²; S. Malo¹; A. Guesdon¹; F. Laine¹; J. F. Colin²; C. Martin¹

1. CRISMAT ENSICAEN Université de Caen, Laboratoire de Cristallographie et Sciences des Matériaux, France
2. CEA, Laboratoire d'Innovation pour les Technologies des Energies Nouvelles et les Nanomatériaux, France

9:20 AM

(ICACC-S6-012-2018) Thermodynamic characterization of de-lithiated LiNi_{0.4}Mn_{0.4}Co_{0.2}O₂ (NMC) cathode materials for Lithium-ion batteries

W. Zhao*¹; H. J. Seifert¹

1. Karlsruhe Institute of Technology, IAM-AWP, Germany

9:40 AM

(ICACC-S6-046-2018) Crystallization behavior of the Li₂S–P₂S₅ glass electrolyte for sulfide-based all-solid-state lithium batteries

S. Mori*¹

1. Osaka Prefecture University, Materials Science, Japan

10:00 AM

Break

Materials Design for Lithium Batteries and Super-capacitors II

Room: Tomoka A

Session Chair: Valerie Pralong, CNRS ENSICAEN

10:20 AM

(ICACC-S6-013-2018) Hierarchically structured cathode materials for lithium ion batteries (Invited)

J. R. Binder*¹; A. Höweling¹; N. Bohn¹; A. Wagner¹

1. Karlsruhe Institute of Technology, Institute for Applied Materials (IAM), Germany

10:50 AM

(ICACC-S6-014-2018) A Step Toward Designing Electrodes for Higher Energy Density Lithium-ion Batteries

P. Antitomaso*¹; L. Savignac²; L. Taylor³; S. Généreux¹; S. Rousselot¹; T. Bibienne⁴; M. Pasquali²; S. Schougaard²; M. Dolle¹

1. University of Montreal, Canada
2. University of Quebec in Montreal, Canada
3. Rice University, USA
4. Nemaska Lithium, Canada

11:10 AM

(ICACC-S6-015-2018) Strain effect on cathode properties of LiNi_{0.5}Mn_{1.5}O₄ spinel for Li-ion batteries

T. Kozawa*¹

1. Osaka University, Joining and Welding Research Institute, Japan

S7: 12th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications

Functional Nanostructures for Energy Conversion and Storage and Catalysis I

Room: Coquina Salon C

Session Chairs: Dawit Gedamu, École de technologie supérieure (ETS); Daniel Chua, National University of Singapore

8:30 AM

(ICACC-S7-010-2018) In situ Synchrotron X-ray Spectroscopic Characterization of Energy Material (Invited)

C. Dong*¹

1. Tamkang University, Department of Physics, Taiwan

9:00 AM

(ICACC-S7-011-2018) Molten salt oxidation of nickel in KOH melts for the direct production of electroactive nickel oxides to be used in supercapacitor applications (Invited)

M. Urgan*¹; N. Tokmak¹

1. Istanbul Technical University, Turkey

9:30 AM

(ICACC-S7-012-2018) Freestanding Holey Thin Films for Battery Energy Storage Systems (Invited)

K. Marcus*¹; Y. Yang¹

1. University of Central Florida, Materials Science and Engineering, USA

10:00 AM

Break

Perovskites and Other Optical Materials for Light Management

Room: Coquina Salon C

Session Chair: Chung-Li Dong, Tamkang University

10:20 AM

(ICACC-S7-013-2018) Frequency Converting Lanthanide-Based Materials and Molecules (Invited)

E. Hemmer*¹

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

10:50 AM

(ICACC-S7-014-2018) Semiconducting halide perovskite materials for PV and as photodetectors (Invited)

D. M. Gedamu*¹; I. M. Asuo²; F. Rosei²; S. G. Cloutier¹; R. Nechache¹

1. École de technologie supérieure (ÉTS), Department of Electrical Engineering, Canada
2. INRS-EMT, Centre for Energy, Materials and Telecommunications, Canada

11:20 AM

(ICACC-S7-015-2018) High-performance organohalide perovskite nanowire photodetector (Invited)

I. M. Asuo*¹

1. L'École de technologie supérieure (ETS), Electrical, Canada

11:40 AM

(ICACC-S7-016-2018) Electrospun Perovskite Fibers – New Flexible 1D Nanocomposites for Light Harvesting Applications (Invited)

C. Bohr*¹; S. Oez¹; A. Lepcha¹; M. Schütz¹; F. Staub²; T. Kirchartz²; S. Mathur¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany
2. Forschungszentrum Juelich, IEK-5 Photovoltaics, Germany

S8: 12th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT12)

Polymer-Based Processing

Room: Coquina Salon A

Session Chairs: Enrico Bernardo, University of Padova; Lisa Rueschhoff, Air Force Research Lab

8:30 AM

(ICACC-S8-008-2018) Multifunctional polymer-derived (carbo) nitride ceramics (Invited)

A. Lale¹; S. Bernard*¹

1. CNRS UMR 7315, Ceramic Research Institute, France

9:00 AM

(ICACC-S8-009-2018) Preparation of High-Pressure Phases from Polymer-Derived Amorphous Materials (Invited)

Y. Sugahara*¹

1. Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Department of Applied Chemistry, School of Advanced Science and Engineering, Japan

9:30 AM

(ICACC-S8-010-2018) Highly Porous Mullite Ceramics from Engineered Alkali Activated Suspensions

E. Bernardo*¹; A. Rincon¹; H. Elsayed¹

1. University of Padova, Dipartimento di Ingegneria Industriale, Italy

9:50 AM

Break

10:10 AM

(ICACC-S8-011-2018) Synthesis of $M_1Ti_2(PO_3)_4$ ($M_1 = Li, Na, K$), compounds by the polymeric steric entrapment method and their thermal expansion behavior

D. Ribero*¹; K. Tseng¹; K. C. Seymour²; W. M. Kriven¹

1. University of Illinois, Materials Science and Engineering, USA
2. Pratt & Whitney, Aviation & Aerospace, USA

10:30 AM

(ICACC-S8-012-2018) Effect of Atmospheric Composition on Thermal Condensation Reaction of Polysilane as Ceramic Precursor

M. Narisawa*¹; R. Hanatani¹; K. Yamada¹; H. Inoue¹

1. Osaka Prefecture University, Japan

10:50 AM

(ICACC-S8-013-2018) Processing of Organized Ceramic Thin Film Nanocomposites via Macromolecular Self-Assembly

L. M. Rueschhoff*¹; L. A. Baldwin¹; Z. D. Apostolov¹; H. Koerner¹; J. D. Berrigan¹; T. Pruy¹; M. Cinibulk¹; M. B. Dickerson¹

1. Air Force Research Laboratory, USA

11:10 AM

(ICACC-S8-014-2018) Synthesis and characterization of novel lignin based composites

K. Hall*¹; Y. Ji²; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA
2. University of North Dakota, Chemical Engineering, USA

11:30 AM

(ICACC-S8-040-2018) Compositional effect on the ionic conductivity in doped $LaAlO_3$ base ceramic system (Invited)

P. Singh*¹

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

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

New Concepts and Emerging Technologies for Enhanced Product Performance

Room: Ponce de Leon

Session Chairs: Heechae Choi, Virtual Lab Inc.; Byung-Koog Jang, National Institute for Materials Science (NIMS)

8:30 AM

(ICACC-S11-012-2018) One-step synthesizable heterostructure photocatalyst discovered by DFT thermodynamics calculations (Invited)

H. Choi*¹

1. Virtual Lab Inc., Republic of Korea

8:50 AM

(ICACC-S11-013-2018) Synthesis method of carbon fiber reinforced thermoplastic with high performance (Invited)

T. Yamamoto*¹; K. Uematsu¹; S. Yabushita¹

1. Nagoya University, Materials and Design Innovation Engineering, Japan

9:10 AM

(ICACC-S11-014-2018) Design and Process of a Ceramic and Polymer Composite with High Strength and Low Weight Using Binder-Jet 3D Printing

D. Kim*¹; J. Bae¹; S. Park¹; J. Choi¹; J. Lee¹; E. Kim¹

1. Korea Institute of Industrial Technology, Republic of Korea

9:30 AM

(ICACC-S11-015-2018) Mechanical properties of CNTs reinforced ceramics nanocomposites (Invited)

B. Jang*¹; K. Lee²; Y. Han³

1. National Institute for Materials Science, Research Center for Structural Materials, Japan
2. Kookmin University, Republic of Korea
3. Wuhan University of Technology, China

9:50 AM

Break

10:10 AM

(ICACC-S11-016-2018) Production Root Technology has Another ACE (Applicability, Cost efficiency, and Environmental friendly) (Invited)

K. Yasuda*¹

1. Tokyo Institute of Technology, Japan

10:30 AM

(ICACC-S11-017-2018) Interfacial adhesion between carbon fiber and thermoplastics effected for appropriate/sufficient mechanical properties of CFRTP (Invited)

T. Iirisawa*¹; K. Ujihara¹; S. Kobayashi¹; Y. Tanabe¹

1. Nagoya University, Japan

10:50 AM

(ICACC-S11-018-2018) Current Status of ISO/TC206 Fine Ceramics (Invited)

S. Sakaguchi*¹

1. AIST, Japan

11:10 AM

(ICACC-S11-019-2018) Innovative Technology for ⁶Li Enrichment using Electrodialysis with Lithium Ionic Superconductor (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

11:30 AM

(ICACC-S11-008-2018) Observation of internal structure of ceramic slurry, green body and sintered body by optical coherence tomography (Invited)

J. Tatami*¹; T. Takahashi²

1. Yokohama National University, Japan

2. Kanagawa Institute of Industrial Science and Technology, Japan

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

MAB Phases and Next Generation Development in Designing of MAX Phases

Room: Tomoka B

Session Chairs: Babak Anasori, Drexel University; Leszek Chlubny, AGH-University of Science and Technology

8:30 AM

(ICACC-S12-012-2018) Ti₃AuC₂, Ti₃Au₂C₂ and Ti₃IrC₂ by noble-metal substitution reaction in Ti₃SiC₂ (Invited)

P. Eklund*¹

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

9:00 AM

(ICACC-S12-013-2018) Processing and Characterization of Ti₂(Al_{1-x}Bi_x)C Solid Solutions

E. Prehn*¹; Z. Tan¹; T. Duong¹; R. Arroyave¹; M. Radovic¹

1. Texas A&M University, MSEN, USA

9:20 AM

(ICACC-S12-014-2018) Synthesis and Characterization of the Ternary, Nanolaminated Boride: Cr₂AlB₂

S. Kota*¹; W. Wang¹; J. Lu²; O. Chaix-Pluchery²; G. Ying¹; L. Hultman³; S. May¹; M. Barsoum¹

1. Drexel University, Materials Science and Engineering, USA
2. Université Grenoble-Alpes, CNRS, LMGP, France
3. Linköping University, The Department of Physics, Chemistry and Biology, Sweden

9:40 AM

(ICACC-S12-015-2018) Synthesis and Characterization of Novel Ni-MAB composites

M. Fuka*¹; M. Dey¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

10:00 AM

Break

Novel Applications and Processing Methods for Synthesizing MAX Phases III

Room: Tomoka B

Session Chairs: Babak Anasori, Drexel University; Leszek Chlubny, AGH-University of Science and Technology

10:20 AM

(ICACC-S12-017-2018) Probing the local atomic structure in MAX phases and MXenes using EELS and DFT simulations: From solid solution effects to surface functionalization (Invited)

V. Mauchamp*¹; D. Magné²; M. Nechiche³; P. Chartier¹; V. Gauthier¹; S. Celerier⁴; S. Dubois¹; T. Cabioch¹

1. Institut PPRIME, Physics and Mechanics of Materials, France
2. Groupe de physique des Matériaux, France
3. Université Mouloud Mammeri, Algeria
4. Institut de Chimie des Milieux et Matériaux de Poitiers, France

10:50 AM**(ICACC-S12-018-2018) Anisotropic properties of MAX phase single crystals**

T. Ouisse^{*}; D. Pinek¹; I. Gélard¹; L. Shi²; B. Hackens²; T. Ito³; T. Fujita⁴; f. Bourdarot⁴; P. Bourges⁵; P. Piekarczyk⁶

1. Grenoble INP, France
2. UCLouvain, Belgium
3. Nagoya University, Japan
4. CEA, INAC, France
5. CEA Saclay, LLB, France
6. Institute of Physics Polish Academy of Sciences, Poland

11:10 AM**(ICACC-S12-019-2018) Synthesis, Characterization, and Bonding of Ti₃SiC₂ through Spark Plasma Sintering, Additive Manufacturing, and Cold Spray**

E. Faierson^{*}; V. Ageh¹; T. Scharf²

1. Quad City Manufacturing Lab-Western Illinois University, USA
2. University of North Texas, USA

11:30 AM**(ICACC-S12-020-2018) Design of Novel Ni-Ti₃SiC₂ based Multilayered Composites**

Q. Tran^{*}; M. Fuka¹; M. Dey¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

S13: Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy**ATF and Radiation Effects**

Room: Coquina Salon H

Session Chairs: Yutai Katoh, Oak Ridge National Laboratory;
Peng Xu, Westinghouse Electric Company

8:30 AM**(ICACC-S13-011-2018) Improving the accident-tolerance of Zircaloy cladding by integrated gradient ceramic coatings (Invited)**

J. Zhang^{*}; Y. Lei¹; L. Chen¹; J. Wang¹

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

9:00 AM**(ICACC-S13-012-2018) Evaluation of seal-coated SiC ceramics and composites after neutron irradiation at LWR-relevant temperatures**

C. Ang^{*}; Y. Katoh¹; T. Koyanagi¹; K. Linton¹; K. Terrani¹; D. Carpenter²; G. Kohse²; L. Snead²

1. Oak Ridge National Laboratory, USA
2. Massachusetts Institute of Technology, USA

9:20 AM**(ICACC-S13-013-2018) Non-Destructive Evaluation of Sealed SiC-SiC Composite Cladding Structures using X-Ray Computed Tomography, Helium Pycnometry and Permeability Testing**

J. Sheeder^{*}; G. Jacobsen¹; H. Khalifa¹; C. P. Shih¹; E. Song¹; C. Deck¹

1. General Atomics, USA

9:40 AM**(ICACC-S13-014-2018) Performance of silicon carbide plasma facing coatings under fusion conditions in DIII-D^{*}**

S. Gonderman^{*}; H. Khalifa¹; G. Vasudevamurthy¹; J. Zhang¹; T. Abrams¹; S. Bringuier¹; D. Thomas¹; L. Holland¹; D. Rudakov²; A. Briesemeister³

1. General Atomics, USA
2. UCSD, USA
3. Oak Ridge National Lab, USA

10:00 AM**Break****10:20 AM****(ICACC-S13-015-2018) Status Update on Westinghouse EnCore™ SiC/SiC Composite Cladding Development (Invited)**

P. Xu^{*}; E. J. Lahoda¹; F. Boylan¹; R. L. Oelrich¹

1. Westinghouse Electric Company, USA

10:50 AM**(ICACC-S13-016-2018) Thermal Hydraulic and Neutronic Analysis of a SiC/SiC Channel Box (Invited)**

J. Gorton¹; N. R. Brown^{*}; G. Singh²; K. Terrani²; Y. Katoh²; B. Wirth³

1. Pennsylvania State University, Mechanical and Nuclear Engineering, USA
2. Oak Ridge National Laboratory, USA
3. University of Tennessee, Nuclear Engineering, USA

11:20 AM**(ICACC-S13-017-2018) Thermo-mechanical Parametric Evaluation of SiC/SiC Cladding with Fuel Creep**

G. Singh^{*}; R. Sweet²; B. Wirth²; K. Terrani¹; Y. Katoh¹

1. Oak Ridge National Lab, USA
2. University of Tennessee, Department of Nuclear Engineering, USA

11:40 AM**(ICACC-S13-018-2018) Fabrication and Performance of Engineered SiC-SiC Accident Tolerant Fuel Cladding**

C. Deck^{*}; H. Khalifa¹; G. Jacobsen¹; J. Sheeder¹; J. Zhang¹; C. Bacalski¹; G. Vasudevamurthy¹; C. P. Shih¹; S. Oswald¹; K. Shapovalov¹; E. Song¹; J. Stone¹; R. Haefelfinger¹; R. Jacko²; C. A. Back¹

1. General Atomics, USA
2. Westinghouse Electric Company LLC, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications**Semiconductor**

Room: Tomoka C

Session Chairs: Yoshihiko Imanaka, Fujitsu Laboratories Ltd.;
Rafael Jaramillo, Massachusetts Institute of Technology

8:30 AM**(ICACC-S14-009-2018) Development of Perovskite Solar Cells Inspired by Ceramic Processing (Invited)**

Y. Suzuki^{*}

1. University of Tsukuba, Faculty of Pure and Applied Sciences, Japan

9:00 AM**(ICACC-S14-010-2018) Plasmon sensitized silicon nanowires/titanium dioxide bulk heterojunction solar cells**

D. Banerjee^{*}; J. Benavides¹; S. G. Cloutier¹

1. École de technologie supérieure (ÉTS), Electrical Engineering, Canada

9:20 AM**(ICACC-S14-011-2018) Processing of particulate photocatalysts into sheets for efficient and scalable sunlight-driven water splitting (Invited)**

T. Hisatomi^{*}; K. Domen¹

1. The University of Tokyo, Department of Chemical System Engineering, Japan

9:50 AM**Break****10:10 AM****(ICACC-S14-012-2018) Artificial photosynthesis anode composed of nano particulate photocatalyst film using nanoparticle deposition (Invited)**

Y. Imanaka^{*}; T. Manabe¹; H. Amada¹; T. Anazawa¹

1. Fujitsu Laboratories Ltd., Japan

10:40 AM**(ICACC-S14-013-2018) Importance of thermal processing and defect engineering on the doped TiO₂ photocatalyst: Combination of DFT calculations and experiments**

H. Choi^{*}

1. Virtual Lab Inc., Republic of Korea

11:00 AM

(ICACC-S14-014-2018) Persistent photoconductivity due to hole-hole correlation in sulfide semiconductors, with applications to neuromorphic computing and chemical sensors (Invited)

R. Jaramillo*¹

1. Massachusetts Institute of Technology, USA

11:30 AM

(ICACC-S14-015-2018) GaN based Hydrogen Sensor for High Temperature and Humid Ambient Sensing

S. Jung³; H. Kim³; K. Baik¹; F. Ren²; S. Pearton²; S. Jang*³

1. Hongik University, Republic of Korea
2. University of Florida, USA
3. Dankook University, Republic of Korea

S15: Additive Manufacturing and 3-D Printing Technologies

Selective Laser Sintering

Room: Coquina Salon B

Session Chair: Jens Guenster, BAM Federal Institute for Materials Research and Testing

9:00 AM

(ICACC-S15-010-2018) Laser Shock Processing of Structural Ceramics

B. Cui*¹; F. Wang¹; X. Yan¹; S. Sun¹; L. Deng²; Y. Lu²; M. Nastasi¹

1. University of Nebraska, Lincoln, Mechanical & Materials Engineering, USA
2. University of Nebraska, Lincoln, Department of Electrical Engineering, USA

9:20 AM

(ICACC-S15-011-2018) Additive manufacturing of a metal to ceramic assembly

L. Ferrage*¹; G. Bertrand¹; P. Lenormand¹

1. CIRIMAT, France

9:40 AM

(ICACC-S15-012-2018) Stereolithographic Additive Manufacturing of Ceramic Objects with Geometric Fluctuation to Control Fluid Phenomena

H. Nozaki*¹; S. Kirihara¹

1. Osaka University, Technology, Japan

10:00 AM

Break

Powder Bed Fusion

Room: Coquina Salon B

Session Chair: Bai Cui, University of Nebraska, Lincoln

10:20 AM

(ICACC-S15-013-2018) Powder-based Additive Manufacturing at Micro-Gravity (Invited)

J. Guenster*³; A. Zocca³; P. Lima³; J. Luchtenborg³; T. Mühler¹; M. Sparrenberg²; J. Melcher²

1. Clausthal University of Technology, Germany
2. Deutsches Zentrum für Luft- und Raumfahrt (DLR) - German Aerospace Center, Germany
3. Bundesanstalt für Materialforschung und -prüfung (BAM) - Federal Institute for Materials Research and Testing, Germany

10:50 AM

(ICACC-S15-014-2018) Progress towards direct additive manufacturing of ceramics using laser beam melting

F. Petit*¹; E. Juste¹

1. Belgian Ceramic Research Centre, Belgium

11:10 AM

(ICACC-S15-015-2018) 3D Printing of Ceramics: Disruptive innovation in materials and processes

R. Lenk*¹

1. CeramTec GmbH, Germany

11:30 AM

(ICACC-S15-016-2018) Additive manufacturing of dense ceramics with Laser Induced Slip Casting (LIS)

J. Luchtenborg*¹; T. Mühler¹; A. Zocca¹; J. Guenster¹

1. BAM Federal Institute for Materials Research and Testing, Ceramic Processing and Biomaterials, Germany
2. Clausthal University of Technology, Institute of Non-Metallic Materials, Germany

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Photovoltaics

Room: Halifax A/B

Session Chairs: Mauro Epifani, CNR-IMM; Scott Mixture, Alfred University

8:30 AM

(ICACC-S17-008-2018) Silver nanoaggregates and rare-earth-ions in glasses and glass-ceramics for solar cell applications (Invited)

F. Enrichi*¹

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

9:00 AM

(ICACC-S17-009-2018) Chalcogen Polymers for Completely Solution-Processed Inorganic Photovoltaics (Invited)

C. Luscombe*¹

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

9:30 AM

(ICACC-S17-010-2018) Semiconducting metal oxides: Engineering nanostructures for energy related applications (Invited)

I. Concina*¹

1. Luleå Tekniska Universitet, Sweden

10:00 AM

Break

10:20 AM

(ICACC-S17-015-2018) Integration of Freestanding Two-dimensional Transition Metal Dichalcogenides (Invited)

H. Jeong¹; A. Gokarna¹; M. Hye²; S. Yun²; G. Han²; M. Jeong²; Y. Lee²; G. J. Lerondelet*¹

1. University of Technology of Troyes, Laboratoire de Nanotechnologie et Instrumentation Optique, Institut Charles Delaunay, CNRS UMR 6821, France
2. SungKyunKwan University, Department of Energy Science, Republic of Korea

10:50 AM

(ICACC-S17-012-2018) Halide/oxide perovskites for efficient hybrid optoelectronic devices (Invited)

R. Nechache*¹

1. Ecole de technologie Supérieure, Electrical Engineering, Canada

11:20 AM

(ICACC-S17-013-2018) Mesoporous Germanium for High-Efficiency Photovoltaic Cells (Invited)

C. Valdivia*¹; M. N. Beattie³; Y. A. Bioud²; D. G. Hobson³; A. Boucherif²; D. Drouin²; R. Ares²; K. Hinzer¹

1. University of Ottawa, School of Electrical Engineering and Computer Science (EECS), Canada
2. Université de Sherbrooke, Institut interdisciplinaire d'innovation technologique (3IT), Canada
3. University of Ottawa, Dept. of Physics, Canada

Honorary Symposium: Advancing Frontiers of Ceramics for Sustainable Society Development - International Symposium in Honor of Dr. Mrityunjay Singh

Advancing Frontiers of Ceramics II -Novel Processing 1

Room: Coquina Salon E

Session Chairs: Pavol Sajgalik, Institute of Inorganic Chemistry, Slovak Academy of Sciences; Hisayuki Suematsu, Nagaoka University of Technology

8:30 AM

(ICACC-HON-010-2018) Designing the processing of advanced ceramics and composites to yield the required properties (Invited)

J. Binner*¹

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

9:00 AM

(ICACC-HON-011-2018) SPS Sintering of near net shape ceramics (Invited)

F. J. Cambier*¹; S. Hocquet¹; M. Demuynek¹; V. Lardot¹

1. Belgian Ceramic Research Centre, R&D, Belgium

9:30 AM

(ICACC-HON-012-2018) Electrically Conductive Ceramics – Processing and Properties (Invited)

P. Sajgalik*¹

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

9:50 AM

Break

10:10 AM

(ICACC-HON-013-2018) Fabrication of Transparent Ceramics Via Novel Processing Methods (Invited)

H. Kim¹; Y. Park*¹

1. Korea Institute of Materials Science, Republic of Korea

10:30 AM

(ICACC-HON-014-2018) Ultrafast Laser for Materials Drilling and Cutting (Invited)

S. Jiang*¹

1. AdValue Photonics Inc, USA

10:50 AM

(ICACC-HON-015-2018) Smart powder processing of advanced materials for sustainable society (Invited)

M. Naito*¹; T. Kozawa¹; A. Kondo¹

1. JWRI, Osaka University, Japan

11:10 AM

(ICACC-HON-016-2018) Sol-gel synthesis and electrical properties of MgZr₄P₆O₂₄ Composite Solid Electrolyte and its application for sensing Mg in molten Al (Invited)

M. Adamu¹; G. Kale*¹

1. University of Leeds, School of Chemical and Process Engineering, United Kingdom

11:30 AM

(ICACC-HON-017-2018) Catalytic Combustion-type Carbon Monoxide Gas Sensor with Platinum-loaded Oxide Ion Conducting Solid Electrolyte Catalysts (Invited)

N. Imanaka*¹

1. Osaka University, Applied Chemistry, Japan

11:50 AM

(ICACC-HON-018-2018) Synthesis of novel materials utilizing pulsed power technologies

H. Suematsu*¹; T. Suzuki²; T. Nakayama¹; K. Niihara²

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

7th Global Young Investigator Forum

Novel Characterization Tools of Ceramics and Composites

Room: Coquina Salon G

Session Chair: Manoj Mahapatra, University of Alabama at Birmingham

8:30 AM

(ICACC-GYIF-010-2018) Phase development in sol-gel processing of nano phase ZrN and ZrC powders (Invited)

G. Westin¹; S. Naim Katea*¹

1. Uppsala University, Sweden

9:00 AM

(ICACC-GYIF-012-2018) Analyzing Damage in SiC/SiC CMCs Using In Situ Synchrotron Techniques

A. Hilmas*¹; A. Singhal²; Y. Zhou²; G. Henson²; Y. Gao²; K. M. Sevensen¹

1. University of Michigan, USA
2. GE GRC, USA

9:20 AM

(ICACC-GYIF-013-2018) Compressive response of ice-templated ceramics: Effects of solids loading, particle size, and particle morphology

M. Banda*¹; H. Kang¹; S. Akurati¹; D. Ghosh¹

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

9:40 AM

Break

Young Researchers Funding, Mobility and Networks

Room: Coquina Salon G

Session Chairs: Daniele Benetti, Institut National de la Recherche Scientifique; Giorgia Franchin, University of Padova; Manoj Mahapatra, University of Alabama at Birmingham

10:20 AM

(ICACC-GYIF-014-2018) Making the Faculty Leap: Adventure and Learning as a New Assistant Professor (Invited)

D. L. Poerschke*¹

1. University of Minnesota, Chemical Engineering and Materials Science, USA

10:50 AM

Panel Discussion

11:50 AM

Wrap-up

S1: Mechanical Behavior and Performance of Ceramics & Composites

Complex Sections, Texture, Indentation and Fatigue

Room: Coquina Salon D

Session Chairs: Jonathan Mackey, NASA Glenn Research Center; Amjad Almansour, NASA Glenn Research Center

1:30 PM

(ICACC-S1-020-2018) Constraint-induced transformation reversal during cyclic loading of Ce-TZP ceramics: A dangerous fatigue mechanism

M. Saran¹; B. Murray¹; T. Scott¹; R. I. Todd*¹

1. University of Oxford, Department of Materials, United Kingdom

1:50 PM

(ICACC-S1-021-2018) Characterization of Dynamic Indentation in Gas-turbine-grade Silicon Nitride Ceramic

N. Kadir*¹; C. D. Kirk²; Y. Nie³; N. Parab³; B. Claus³; T. Sun⁴; K. Fezzaa⁴; W. Chen³

1. Purdue University, Materials Engineering, USA
2. Purdue University, Mechanical Engineering, USA
3. Purdue University, Aerospace Engineering, USA
4. Argonne National Lab, USA

2:10 PM

(ICACC-S1-022-2018) Evaluation of New Technique to Estimate Yield Stress in Brittle Materials via Spherical Indentation Testing

B. L. Hackett*¹; A. Wereszczak²; G. M. Pharr²

1. University of Tennessee, USA
2. Texas A&M University, USA
3. Oak Ridge National Lab, USA

2:30 PM

(ICACC-S1-023-2018) Weibull Scaling Effects in Silicon Carbide Tubes Using Various Strength Testing Techniques

S. M. Chown*¹

1. Saint-Gobain, USA

2:50 PM

(ICACC-S1-024-2018) Mechanical characterization and fractography of ceramics produced by additive manufacturing

M. Schwentenwein*¹; T. Lube²; J. Schlacher²; G. Mitteramskogler¹; W. Harrer²; R. Danzer²

1. Lithoz GmbH, Austria
2. Montanuniversitaet Leoben, Institut für Struktur- und Funktionskeramik, Austria

3:10 PM

Break

3:30 PM

(ICACC-S1-025-2018) Strength Evaluation of Interconnects via Cantilever Testing

A. Wereszczak*¹; B. Chen²; O. Jadaan³; B. Oistad¹; M. Modugno⁴; J. Sharp⁵; J. Salvador⁶

1. Oak Ridge National Laboratory, USA
2. University of Delaware, USA
3. University of Mount Union, USA
4. Alfred University, USA
5. Marlow Industries, USA
6. GM Global R&D, USA

3:50 PM

(ICACC-S1-026-2018) Torsion tests on joined ceramics: How to deal with brittle or ductile joining materials?

L. Goglio*¹; M. Ferraris²; M. Salvo¹; V. Casalegno²; S. De La Pierre²

1. Politecnico di Torino, Mechanical and Aerospace Engineering Department, Italy
2. Politecnico di Torino, Applied Science and Technology Department, Italy

4:10 PM

(ICACC-S1-027-2018) Toward Standardization of Strength Testing of the Sectored Flexure Ceramic Specimen

B. Oistad*¹; A. Wereszczak¹; B. Chen¹; O. Jadaan²

1. Oak Ridge National Lab, USA
2. University of Mount Union, Department of Engineering, USA

4:30 PM

(ICACC-S1-028-2018) Ice-templated ceramics: Understanding uniaxial compressive behavior both in quasistatic and dynamic regimes of loading

D. Ghosh*¹; M. Banda¹; H. Kang¹

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

4:50 PM

(ICACC-S1-048-2018) Applicability of Rapid Prototyping for manufacturing of advanced ceramic nano-composites

D. B. Kata*¹; P. Rutkowski¹; J. Huebner¹; J. Lis¹

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

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

Innovative Multifunctional Coatings

Room: St. John

Session Chair: Eugene Medvedovski, Consultant

1:30 PM

(ICACC-S2-021-2018) Coatings Based on Thermal Diffusion Technology for Molten Salt Corrosion Environment in Pulp and Paper Processing

E. Medvedovski*¹; G. Leal Mendoza¹; A. Mahdavi²; A. McDonald²

1. Endurance Technologies Inc., Canada
2. University of Alberta, Canada

1:50 PM

(ICACC-S2-022-2018) Erosion-Corrosion Studies of the Iron Boride Coatings for Protection of Tubing Components in Oil Production

E. Medvedovski*¹; S. Hernandez²; R. Sarrafi-Nour²; H. Arabnejad³; A. Prescott³; S. A. Shirazi³

1. Endurance Technologies Inc., Canada
2. Chevron Energy, USA
3. The University of Tulsa, USA

2:10 PM

(ICACC-S2-023-2018) Influence of Carrier Gas Species on the Room Temperature Powder Aerosol Deposition Process

M. Schubert*¹; R. Wang¹; J. Kita¹; R. Moos¹

1. University of Bayreuth, Department for Functional Materials, Germany

2:30 PM

(ICACC-S2-024-2018) Annealing of conductive films formed at room temperature by powder Aerosol Deposition to improve their electrical properties

J. Exner*¹; M. Schubert¹; D. Hanft¹; J. Kita¹; R. Moos¹

1. University of Bayreuth, Department of Functional Materials, Germany

2:50 PM

Break

CMAS Degradation of T/EBC & Mitigation Strategies I

Room: St. John

Session Chair: Bryan Harder, NASA Glenn Research Center

3:30 PM

(ICACC-S2-026-2018) Determination of Crystallization Kinetic Parameters of CMAS with T/EBC Materials

J. Stokes*¹; B. J. Harder²; V. L. Wiesner²; D. E. Wolfe¹

1. Pennsylvania State University, Materials Science and Engineering, USA
2. NASA Glenn Research Center, Materials and Structures Division, USA

3:50 PM

(ICACC-S2-027-2018) Molten sand resistance of plasma-sprayed blends of rare-earth oxides with yttria-stabilized zirconiaM. J. Walock*; A. Nieto; M. Graybeal; W. R. Gamble; B. Barnett; A. Ghoshal; M. Murugan; M. S. Pepi; J. Swab²

1. US Army Research Laboratory, Vehicle Technologies Directorate, USA
2. US Army Research Laboratory, Weapons and Materials Research Directorate, USA

4:10 PM

(ICACC-S2-028-2018) Effect of Biofuel Impurities on the Hot Corrosion of Thermal Barrier CoatingsJ. H. Ramirez Velasco*; H. Kenttämää; G. Kilaz; R. Trice¹

1. Purdue University, Materials Engineering, USA
2. Purdue University, Chemistry, USA
3. Purdue University, Aviation Technology, USA

4:30 PM

(ICACC-S2-029-2018) Thermal, mechanical properties and CMAS-resistance of ordered rare earth hafnates (δ -Re₄Hf₃O₁₂ Re = Yb, Lu) EBC candidatesW. Hu*; J. Zhang; J. Wang¹

1. Institution of Metal Research, Chinese Academy of Sciences, Shenyang National Laboratory for Materials Science, China

4:50 PM

(ICACC-S2-030-2018) Evaluation of yttrium silicides to form in-situ EBCs in melt-infiltrated SiC CMCsR. A. Golden*; E. J. Opila¹

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

S3: 15th International Symposium on Solid Oxide Fuel Cells (SOFC): Materials, Science and Technology**Mechanical Stability I**

Room: Crystal

Session Chair: Dario Montinaro, SOFCpower SpA

1:30 PM

(ICACC-S3-017-2018) The Implications of Creep Deformation of Anodes on the Durability and Reliability of Solid-Oxide Fuel Cells (Invited)E. Lara-Curzio*; A. Marquez¹; A. Flores Betancourt²; E. Cakmak¹; M. Lance¹; B. L. Armstrong¹; T. Burgess²; J. R. Bultman³

1. Oak Ridge National Lab, Materials Science & Technology Division, USA
2. University of California, Berkeley, USA
3. University of Tennessee, Knoxville, USA
4. University of Alabama, Tuscaloosa, USA

2:00 PM

(ICACC-S3-018-2018) Chemo-mechanical effects influencing the mechanical integrity of SOFCs (Invited)H. L. Frandsen*; C. Chatzichristodoulou¹; B. Charlas¹; R. Kiebach¹; K. Kwok¹; P. Norby¹; P. Hendriksen¹

1. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

2:30 PM

(ICACC-S3-019-2018) Classifying Heterogeneity in Porous, Composite Electrode MicrostructuresW. K. Epting*; T. Hsu²; R. Mahbub²; P. Salvador²; P. Ohodnicki¹; H. Abernathy¹; G. Hackett¹

1. National Energy Technology Laboratory, USA
2. Carnegie Mellon University, Materials Science and Engineering, USA

2:50 PM

Break

Mechanical Stability II / Novel Processing and Design

Room: Crystal

Session Chair: Ayhan Sarikaya, Saint-Gobain

3:10 PM

(ICACC-S3-020-2018) Modeling performance degradation due to grain coarsening effects in solid oxide fuel cellsJ. H. Mason*; W. K. Epting¹; Y. Lei¹; I. Celik¹; S. Lee¹; H. Abernathy¹; G. Hackett¹

1. National Energy Technology Laboratory, US Department of Energy, USA

3:30 PM

(ICACC-S3-021-2018) Phase Field Modelling of Microstructural Changes in Ni/YSZ Solid Oxide Electrolysis Cells ElectrodesM. Trini*; S. De Angelis¹; P. S. Jørgensen¹; A. Hauch¹; M. Chen¹; P. V. Hendriksen¹

1. Technical University of Denmark, Energy Conversion and Storage, Denmark

3:50 PM

(ICACC-S3-022-2018) High Performance and Stability Based on Tri-layer Structure SOFC and SOEC (Invited)M. Han*¹

1. Tsinghua University, State Key Laboratory of Power Systems, Department of Thermal Engineering, China

4:20 PM

(ICACC-S3-023-2018) Internal Methane Reforming for Efficient, High Power Density Solid Oxide StackS. Roychoudhury*; C. Junaedi¹; S. Vilekar¹; T. LaBreche¹; R. Mastanduno¹

1. Precision Combustion, Inc., USA

4:40 PM

(ICACC-S3-024-2018) Challenges of processing and operating metal supported fuel cellsF. Thaler*; D. Udomsilp¹; A. Opitz²; V. Rojek-Wöckner³; M. Bram¹

1. Christian Doppler Laboratory for Interfaces in Metal-Supported Electrochemical Energy Converters, Forschungszentrum Juelich GmbH, IEK-1, Germany
2. Christian Doppler Laboratory for Interfaces in Metal-Supported Electrochemical Energy Converters, Vienna University of Technology, Institute of Chemical Technologies and Analytics, Austria
3. Christian Doppler Laboratory for Interfaces in Metal-Supported Electrochemical Energy Converters, Germany

5:00 PM

(ICACC-S3-025-2018) Development of Metal-Supported Proton-Conducting Solid Oxide Fuel Cells by Reactive Spray Deposition TechnologyR. Ouimet*; T. D. Myles³; L. Bonville²; R. Maric¹

1. University of Connecticut, Department of Chemical and Biomolecular Engineering, USA
2. University of Connecticut, Center for Clean Energy Engineering, USA
3. Health eSense, Inc., USA

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

Room: Coquina Salon F

Session Chair: Jerry LaSalvia, Army Research Laboratory

1:40 PM

(ICACC-S4-022-2018) Influence of Amorphization on Residual Stress Development in Boron Carbide via Quasi-static and Dynamic Vickers IndentationM. Coovert*; G. Parsard¹; G. Subhash¹

1. University of Florida, USA

2:00 PM

(ICACC-S4-023-2018) Comparison of Amorphization Behavior in Boron Carbide and Boron SuboxideG. Subhash*¹

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

2:20 PM**(ICACC-S4-024-2018) Evaluation of carbon additive on silicon carbide- boron carbide composites sintered by spark plasma sintering method**Z. Ayguzer Yasar*¹

1. Rutgers University, Material Science and Engineering, USA

2:40 PM**(ICACC-S4-025-2018) Synthesis and Characterization of Dense Aluminum Dodecaboride - Based Ceramics with Enhanced Properties**T. Prikhna*¹; R. A. Haber²; V. Domnich²; P. Barvitskiy¹; S. Dub¹; M. Karpets³; V. Muratov³

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

3:00 PM**Break****Synthesis and Processing I**

Room: Coquina Salon F

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

3:20 PM**(ICACC-S4-026-2018) Routes to formation of silicon doped boron carbide powder (Invited)**C. Besnard¹; A. Bhowmik¹; L. J. Vandeperre¹; F. Giuliani*¹

1. Imperial College London, Department of Materials, United Kingdom

3:50 PM**(ICACC-S4-027-2018) Si-doping of Boron Carbide via Arc Melting**Q. Yang*¹; A. U. Khan¹; C. Hwang¹; V. Domnich¹; R. A. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

4:10 PM**(ICACC-S4-028-2018) Effect of sintering parameters on densification and properties of B₄C-TiB₂ composites densified via Spark Plasma Sintering**A. M. Celik*¹; C. Hwang¹; R. A. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

4:30 PM**(ICACC-S4-029-2018) Industrial applications of Direct Current Based Spark Plasma/Field Assisted Sintering; Large Ceramic and Composite Parts for Armor Based Applications**L. S. Walker*¹

1. Thermal Technology, USA

4:50 PM**(ICACC-S4-030-2018) Production of Functionally Graded Silicon Carbide-Titanium Diboride-Aluminium Composites by Spark Plasma Sintering Technique**M. Taner*¹; G. Arslan¹

1. Anadolu University, Material Science and Engineering, Turkey

S6: Advanced Materials and Technologies for Direct Thermal Energy Conversion and Rechargeable Energy Storage**Sodium Battery I**

Room: Tomoka A

Session Chair: Palani Balaya, National University of Singapore

1:30 PM**(ICACC-S6-017-2018) New structures and new compositions of electrochemically active vanadium-based phosphates for Na batteries (Invited)**J. Chotard*¹; C. Masquelier¹; E. Boivin¹; V. Kovrugin¹; F. Chen¹; T. Broux²; L. Nguyen²; F. Lalère¹; V. Seznec¹; O. Mentré¹; F. Fauth¹; R. David¹; L. Croguennec²

1. University de Picardie Jules Verne, LRCS, France
2. ICMCB-CNRS, France
3. UCCS, France
4. CELLS-ALBA Synchrotron, Spain

2:00 PM**(ICACC-S6-018-2018) Efficient Binders for Rechargeable Li/Na Batteries**N. Yabuuchi*¹; S. Tanaka²; T. Narutomi²; S. Suzuki³

1. Tokyo Denki University and Kyoto University, Japan
2. Tokyo Denki University, Japan
3. Denka Company Ltd., Japan

2:20 PM**(ICACC-S6-019-2018) Na₂Mn₃O₇: A suitable electrode material for Na-ion batteries?**E. Adamczyk*¹; V. Pralong¹

1. CNRS CRISMAT, France

2:40 PM**(ICACC-S6-020-2018) 100 Ah Sodium Nickel Chloride Cells for Efficient Energy Storage**M. Schulz*¹; R. Weidl¹; M. Hofacker¹; B. Schüßler¹; L. Kiesel¹; M. Stelter²

1. Fraunhofer IKTS, System Integration and Technology Transfer, Germany
2. Fraunhofer IKTS, Germany

3:00 PM**Break****Sodium Battery II / Materials Characterization**

Room: Tomoka A

Session Chair: Fei Chen, Wuhan University of Technology

3:20 PM**(ICACC-S6-021-2018) One Dimensional Nanomaterials for Emerging Energy Storage (Invited)**L. Mai*¹

1. Wuhan University of Technology, State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, China

3:50 PM**(ICACC-S6-022-2018) In Situ study of electrochemical processes at electrode/electrolyte interfaces (Invited)**T. Masuda*¹

1. National Institute for Materials Science (NIMS), Research Center for Advanced Measurement and Characterization, Japan

4:20 PM**(ICACC-S6-023-2018) Analysing operando spectroscopy data in battery studies: A chemometric approach (Invited)**L. Stievano*¹

1. Université de Montpellier, ICGM - UMR 5253, France

S7: 12th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications

Synthesis, Functionalization and Assembly of 1D, 2D and 3D Nanostructures I

Room: Coquina Salon C

Session Chair: Scott Barnett, Northwestern Univ

1:30 PM

(ICACC-S7-017-2018) Science and Engineering of Nanodiamond Particles (Invited)

O. Shenderova*¹; N. Nunn¹; M. Torelli¹; G. McGuire¹

1. Adámas Nanotechnologies, USA

2:00 PM

(ICACC-S7-018-2018) Integrating energy storage and light harvesting: a melanin photocapacitor (Invited)

C. Santato*¹

1. Ecole Polytechnique de Montreal, Canada

2:20 PM

(ICACC-S7-019-2018) Novel carbon-based catalyst for clean energy applications, specifically hydrogen generation (Invited)

D. Chua*¹

1. National University of Singapore, Materials Science & Engineering, Singapore

2:40 PM

(ICACC-S7-020-2018) Effect of Reactive Additives on Polysiloxane Derived SiOC Porous Ceramics (Invited)

K. Lu*¹; D. Erb¹

1. Virginia Tech, USA

3:00 PM

Break

Functional Nanostructures for Energy Conversion and Storage and Catalysis II

Room: Coquina Salon C

Session Chairs: Olga Shenderova, Adámas Nanotechnologies; Clara Santato, Ecole Polytechnique de Montreal

3:20 PM

(ICACC-S7-021-2018) Green chemistry strategies for sustainable functional materials (Invited)

I. Concina*¹

1. Luleå Tekniska Universitet, Sweden

3:50 PM

(ICACC-S7-022-2018) Electrochemical Conversion of CO₂ In Solid Oxide Cells Utilizing Nano-Scale Electrodes (Invited)

S. Barnett*¹

1. Northwestern Univ, USA

4:20 PM

(ICACC-S7-023-2018) Perovskite Solar Cells with Structure Engineering (Invited)

Q. Dai*¹

1. Jackson State University, Physics, USA

4:40 PM

(ICACC-S7-024-2018) Synthesis and Characterization of Ni/GDC Nanostructured Cermet Catalysts for Hydrogen Production

A. Caravaca¹; S. Picart¹; B. Arab-Chapelet¹; P. Vernoux²; T. Delahaye*¹

1. CEA, DMRC, France
2. IRCE Lyon, France

5:00 PM

(ICACC-S7-025-2018) Au@Cd_{1-x}ZnxSe Volk@Shell Nanocrystals with Tunable Compositions for Photocatalytic Hydrogen Production

J. Wu*¹

1. National Chiao Tung University, Taiwan

S8: 12th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT12)

Unique Processing I

Room: Coquina Salon A

Session Chairs: Tohru Suzuki, National Institute for Materials Science; Satoshi Tanaka, Nagaoka University of Technology

1:30 PM

(ICACC-S8-015-2018) Electrospinning as manufacturing technology for bioactive calcium phosphate layer deposition from biogenic raw materials (Invited)

K. Balazsi*¹; C. Balazsi¹

1. Centre for Energy Research HAS, Hungary

2:00 PM

(ICACC-S8-016-2018) Mechanical properties of alumina with crystalline orientation controlled by a magnetic field

T. S. Suzuki*¹; T. Uchikoshi¹; B. Kim¹; K. Morita¹; Y. Sakka¹

1. National Institute for Materials Science (NIMS), Japan

2:20 PM

(ICACC-S8-017-2018) Magnetic freeze casting inspired by nature

J. McKittrick*¹; M. B. Frank²; M. Porter²; M. Meyers¹

1. UC San Diego, USA
2. Clemson University, Mechanical Engineering, USA
3. nanoComposix, USA

2:40 PM

(ICACC-S8-018-2018) Grain-oriented polycrystalline transparent alumina ceramics prepared by colloidal processing

S. Tanaka*¹

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

3:00 PM

Break

3:20 PM

(ICACC-S8-019-2018) The Effect of Tape Casting Parameters on TGG Texture Alignment

R. L. Walton*¹; M. D. Vaudin²; A. Hofer³; E. R. Kupp¹; G. L. Messing¹

1. Pennsylvania State University, Materials Science and Engineering, USA
2. National Institute of Standards and Technology, USA
3. Montanuniversität Leoben, Austria

3:40 PM

(ICACC-S8-020-2018) Robocasting of solid state sintered SiC

J. Teo*¹; L. J. Vandeperre¹; E. Saiz¹

1. Imperial College, Materials, United Kingdom

4:00 PM

(ICACC-S8-021-2018) Low temperature synthesis and electrochemical characterization of LiMn₂O₄ prepared by a polymeric steric entrapment precursor route

D. Ribero*¹; K. Tseng¹; W. Luo¹; S. J. Dillon¹; W. M. Kriven¹

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

4:20 PM

(ICACC-S8-022-2018) Low-temperature synthesis of micron-sized LiNi_{0.5}Mn_{1.5}O₄ particles by solid-state reaction in water vapor

D. Hirobe*¹; T. Kozawa¹; M. Naito¹

1. Osaka University, Joining and Welding Research Institute, Japan

4:40 PM**(ICACC-S8-023-2018) Study of the tape casting-calendaring process for fabricating ceramic substrate**S. Wang^{*}; H. Lan¹; W. Wang¹; Y. Huang¹

1. Shantou University, Department of Mechatronics Engineering, China

S12: Advanced MAX/mxene Phases and UHTC Materials for Extreme and High Temperature Environment**Different Perspectives on Designing of MXenes**

Room: Tomoka B

Session Chair: Surojit Gupta, University of North Dakota

1:30 PM**(ICACC-S12-021-2018) MXene: What we know and do not know about their surface terminations (Invited)**M. Barsoum^{*}

1. Drexel University, Materials Science and Engineering, USA

2:00 PM**(ICACC-S12-022-2018) Prediction and synthesis of a family of MAX phases and MXenes with in-plane chemical ordering (Invited)**J. Rosen^{*}

1. Department of Physics, Chemistry and Biology, Sweden

2:30 PM**(ICACC-S12-023-2018) MXenes as Host Materials for Ions (Invited)**M. Naguib^{*}

1. Tulane University, Physics and Engineering Physics, USA

3:00 PM**Break****Novel Synthesis Paradigm and Unique Properties of Mxenes-I**

Room: Tomoka B

Session Chairs: Michael Naguib, Oak Ridge National Laboratory; Konstantina Lambrinou, SCK-CEN

3:20 PM**(ICACC-S12-024-2018) Ordered quaternary MAX phases and their 2D ordered double-transition metal carbide MXenes (Invited)**B. Anasori^{*}; Y. Gogotsi¹

1. Drexel University, Materials Science and Engineering, USA

3:50 PM**(ICACC-S12-025-2018) Thermal Transport Properties of Functionalized MXene monolayers (Invited)**D. Cakir^{*}; S. Sarikurt²; C. Sevik³; M. Kececi⁴

1. University of North Dakota, Physics and Astrophysics, USA
2. Dokuz Eylul University, Turkey
3. Anadolu University, Turkey
4. Argonne National Lab, USA

4:20 PM**(ICACC-S12-026-2018) Thermodynamic Studies of MAX and MXene Phases (Invited)**G. Sharma^{*}; M. Naguib²; E. Muthuswamy¹; D. Wu³; Y. Gogotsi⁴; A. Navrotsky¹

1. University of California Davis, Peter A. Rock Thermochemistry Laboratory and NEAT-ORU, USA
2. Oak Ridge National Laboratory, Materials Science and Technology Division, USA
3. Washington State University, Pullman, The Gene and Linda Voiland School of Chemical Engineering and Bioengineering, USA
4. Drexel University Philadelphia, Department of Materials Science and Engineering, USA

4:50 PM**(ICACC-S12-027-2018) Chemical Origin of Termination-Functionalized MXenes: Ti₃C₂T₂ as a Case Study**T. Hu^{*}; Z. Li¹; M. Hu¹; J. Wang¹; Q. Hu¹; Q. Li²; X. Wang¹

1. Institute of Metal Research, Chinese Academy of Sciences, China
2. Yantai University, The Laboratory of Theoretical and Computational Chemistry, School of Chemistry and Chemical Engineering, China

S13: Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy**Novel Ceramics for Nuclear Energy**

Room: Coquina Salon H

Session Chairs: Takaaki Koyanagi, Oak Ridge National Laboratory; Sosuke Kondo, Kyoto University

1:30 PM**(ICACC-S13-019-2018) ATF material development of SiC with enhanced safety LWR core (Invited)**K. Kakiuchi^{*}; M. Akimoto¹; S. Suyama¹; M. Ukai¹; H. Heki¹; A. Kawaguchi²; T. Takagi²; Y. Sato³; Y. Taniguchi²; T. Goto⁴; Y. Kagawa⁵; S. Yamashita⁶

1. Toshiba Corporation, Japan
2. IBIDEN Co., LTD., Japan
3. Nuclear Fuel Industries Ltd., Japan
4. IMR Tohoku University, Japan
5. Tokyo University of Technology, Japan
6. Japan Atomic Energy Agency, Japan

2:00 PM**(ICACC-S13-020-2018) Radiation damage behavior in a multiphase ceramic (YSZ, Al₂O₃ and MgAl₂O₄) irradiated with 946 MeV Au ions**K. Ohtaki^{*}; K. K. Karandikar²; O. Graeve²; C. Trautmann³; M. Tomut³; M. Patel⁴; M. Mecartney¹

1. University of California, Irvine, Chemical Engineering and Materials Science, USA
2. University of California, San Diego, Department of Mechanical and Aerospace Engineering, USA
3. GSI Helmholtzzentrum für Schwerionenforschung GmbH, Secretariat of Materials Research Department, Germany
4. University of Liverpool, Department of Mechanical, Materials and Aerospace Engineering, United Kingdom

2:20 PM**(ICACC-S13-021-2018) High dose neutron irradiation response of nuclear grade SiC/SiC composites**Y. Katoh^{*}; T. Koyanagi¹; T. Nozawa²; L. Snead³

1. Oak Ridge National Laboratory, USA
2. QST, Japan
3. Stony Brook University, USA

2:40 PM**(ICACC-S13-022-2018) Swelling and Creep of SiC Irradiated to 0.1 dpa at 300°C**K. Terrani^{*}; T. Koyanagi¹; T. Karlsen²; Y. Katoh¹

1. Oak Ridge National Lab, USA
2. Institute for Energy Technology, Norway

3:00 PM**Break****3:20 PM****(ICACC-S13-023-2018) Post-irradiation examination of SiC tubes neutron irradiated under a radial high heat flux (Invited)**T. Koyanagi^{*}; Y. Katoh¹; G. Singh¹; C. Petrie¹; C. Deck¹; K. Terrani¹

1. Oak Ridge National Laboratory, USA
2. General Atomics, USA

3:50 PM**(ICACC-S13-024-2018) Swelling and Wigner Energy Release in Neutron Irradiated Silicon Carbide (Invited)**L. Snead^{*}; Y. Katoh¹; K. Terrani¹; T. Koyanagi¹

1. ORNL, USA
2. MIT, USA

4:20 PM**(ICACC-S13-025-2018) Radiation effects on SiC/SiC composites for advanced accident tolerant fuel cladding tubes**S. Agarwal^{*}; W. J. Weber¹

1. University of Tennessee, Material Science and Engineering, USA

4:40 PM**(ICACC-S13-026-2018) Irradiation Testing of a SiC/SiC Channel Box and SiC Joints in the High Flux Isotope Reactor**C. Petrie^{*}; C. Deck²; K. Terrani³; Y. Katoh⁴

1. Oak Ridge National Lab, Reactor and Nuclear Systems Division, USA
2. General Atomics, USA
3. Oak Ridge National Lab, Fusion and Materials for Nuclear Systems Division, USA
4. Oak Ridge National Lab, Materials Science and Technology Division, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications**Optical Material I**

Room: Tomoka C

Session Chairs: Victoria Blair, US Army Research Laboratory; Luiz Jacobsohn, Clemson University

1:30 PM**(ICACC-S14-016-2018) Luminescence of activators in glass depending on the preparation process (Invited)**H. Masai^{*}

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

2:00 PM**(ICACC-S14-017-2018) Sol-gel synthesis and down-conversion photoluminescence properties of Tb³⁺/Yb³⁺ co-doped ZrO₂-SiO₂ nano-crystallized glasses**M. Isogai^{*}; T. Hayakawa¹; J. Duclere²; P. Thomas²

1. Nagoya Institute of Technology, Japan
2. Limoges University, France

2:20 PM**(ICACC-S14-018-2018) Balancing microstructure and spectroscopic behavior of nanocomposites for mid-infrared solid-state lasers (Invited)**V. L. Blair^{*}; N. Ku²; Z. D. Fleischman²

1. US Army Research Laboratory, Weapons and Materials Research Directorate, USA
2. US Army Research Laboratory, Sensors and Electronic Devices Directorate, USA
3. US Army Research Laboratory, ORISE, USA

2:50 PM**Break****3:10 PM****(ICACC-S14-019-2018) Silicon content in transparent YAG ceramics, analysis of the production process (Invited)**J. Hostasa^{*}; R. M. Gaume²; A. Piancastelli¹; S. J. Pandey³; M. Martinez⁴; M. Baudelet⁵; T. Epicier⁵; V. Biasini¹; L. Esposito¹

1. National Research Council of Italy, ISTECCNR, Institute of Science and Technology for Ceramics, Italy
2. CREOL – The College of Optics and Photonics, University of Central Florida, USA
3. University of Central Florida, Physics Department, USA
4. University of Central Florida, National Center for Forensic Science, USA
5. INSA of Lyon, F-69621 Villeurbanne Cedex, MATEIS, France

3:40 PM**(ICACC-S14-020-2018) Effects of Polishing Tool Characteristics on the Material Removal Mechanisms of Polycrystalline YAG Ceramics**D. M. Ross^{*}; H. Yamaguchi¹; J. Long¹; M. Parker¹

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

4:00 PM**(ICACC-S14-021-2018) Production of sinterable YAG Powder for the applications as laser host materials**J. Sharma^{*}; H. Singh¹

1. PEC University of Technology, India

4:20 PM**(ICACC-S14-022-2018) Causes for the lower performance of polycrystalline ceramic scintillators: The case study of LuAG:Ce (Invited)**L. G. Jacobsohn^{*}; A. A. Trofimov¹

1. Clemson University, Materials Science and Engineering, USA

S15: Additive Manufacturing and 3-D Printing Technologies**Direct Writing Technologies I**

Room: Coquina Salon B

Session Chair: Paolo Colombo, University of Padova

1:30 PM**(ICACC-S15-017-2018) Innovative Electric Motor Designs Enabled by Additive Manufacturing (Invited)**M. C. Halbig^{*}

1. NASA Glenn Research Center, USA

2:00 PM**(ICACC-S15-018-2018) 2D colloids of graphene oxide for materials manufacturing**E. Garcia-Tunon^{*}; E. Feilden²; E. D'Elia²; E. Saiz²

1. University of Liverpool, Materials Innovation Factory & School of Engineering, United Kingdom
2. Imperial College, Materials, United Kingdom

2:20 PM**(ICACC-S15-019-2018) Direct Writing and Characterization of Silver Pastes with Advanced Carbon Additions for Electric Motor Applications**A. Salem^{*}; J. Zhou⁴; V. L. Wiesner¹; M. C. Halbig¹; M. Singh²

1. NASA Glenn Research Center, USA
2. Ohio Aerospace Institute, USA
3. Washington University in St. Louis, USA
4. Case Western Reserve University, USA

2:40 PM**(ICACC-S15-020-2018) Graphene Modified Silver Pastes for Additive Manufacturing of Electric Motors**J. Zhou^{*}; A. Salem³; M. C. Halbig¹; M. Singh²

1. NASA Glenn Research Center, USA
2. Case Western Reserve University, USA
3. Washington University in St. Louis, USA
4. Ohio Aerospace Institute, USA

3:00 PM**Break****Direct Writing Technologies II**

Room: Coquina Salon B

Session Chair: Elizabeth Kupp, The Pennsylvania State University

3:20 PM**(ICACC-S15-021-2018) Direct ink-writing of ceramic matrix composite structures**G. Franchin^{*}; P. Colombo¹; L. Wahl¹; H. S. Maden¹

1. University of Padova, Industrial Engineering, Italy

3:40 PM**(ICACC-S15-022-2018) 3D-Printing of hierarchical porous ceramic materials for catalysis**J. Lefevre^{*}; L. Protasova¹; S. Mullens¹; V. Meynen²

1. VITO, Sustainable Materials Management, Belgium
2. University of Antwerp, Belgium

4:00 PM**(ICACC-S15-023-2018) Complex Shaped Boron Carbides**R. Lu*¹; S. Chandrasekaran¹; W. L. Du Frane¹; M. A. Worsley¹; J. D. Kuntz¹

1. Lawrence Livermore National Laboratory, Materials Science Division, USA

4:20 PM**(ICACC-S15-024-2018) Direct Ink Writing of Boehmite: From Microstructural Control to Mechanical Properties**A. M'Barki*¹; A. Stevenson¹; L. Bocquet²

1. Saint-Gobain CREE, LSFC, France
2. Ecole Normale Supérieure, France

Direct Writing Technologies III

Room: Coquina Salon B

Session Chair: Michael Halbig, NASA Glenn Research Center

4:40 PM**(ICACC-S15-025-2018) Direct-Writing of Flexible Barium Titanate/PDMS 3D Photonic Crystals with Mechanically-Tunable Terahertz Properties**P. Zhu¹; W. Yang¹; R. Wang¹; S. Gao²; B. Li²; Q. Li*¹

1. Institute of Metal Research, Chinese Academy of Sciences, Shenyang National Laboratory for Materials Science, China
2. Graduate School at Shenzhen, Tsinghua University, Division of Energy and Environment, China

5:00 PM**(ICACC-S15-026-2018) Direct ink writing of cementitious materials**J. P. Youngblood*¹; M. Moini²; J. Olek²; P. Zavattieri²

1. Purdue University, School of Materials Engineering, USA
2. Purdue University, School of Civil Engineering, USA

5:20 PM**(ICACC-S15-035-2018) Direct write and 3d printing of pre-ceramics polymers: Materials, approaches and applications**J. M. Lavin*¹; D. M. Keicher¹; L. R. Evans¹; L. Tsui¹; S. S. Mani¹

1. Sandia National Laboratories, USA

S17: Advanced Ceramic Materials and Processing for Photonics and Energy**Multifunctional I**

Room: Halifax A/B

Session Chairs: Rafik Naccache, Concordia University; Alessandro Martucci, University of Padova

1:30 PM**(ICACC-S17-014-2018) Transparent and Flexible Tin Oxide Electrolyte-Gated Transistors (Invited)**I. Valitova¹; A. Subramanian¹; I. Ruggeri²; F. Soavi²; C. Santato³; F. Ciccoira*¹

1. Polytechnique Montreal, Chemical Engineering, Canada
2. Università di Bologna, Chemistry, Italy
3. Polytechnique Montreal, Engineering Physics, Canada

2:00 PM**(ICACC-S17-011-2018) Photoluminescent Properties and Hyperspectral Imaging of Eu³⁺ Complexes (Invited)**D. Errulat¹; M. Murugesu¹; E. Hemmer*¹

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

2:30 PM**(ICACC-S17-016-2018) Ceramic Materials for Energy Applications (Invited)**D. Xue*¹

1. Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, China

3:00 PM**Break****3:20 PM****(ICACC-S17-017-2018) Carbon-based composite materials with applications in Supercapacitors and fuel cells (Invited)**D. Chua*¹

1. National University of Singapore, Materials Science & Engineering, Singapore

3:50 PM**(ICACC-S17-018-2018) Metal-organic Frameworks at the Biointerface (Invited)**C. J. Doonan*¹

1. The University of Adelaide, Chemistry, Australia

4:20 PM**(ICACC-S17-019-2018) Charge transfers and ionic diffusion at amorphous-crystal interface and related electrochemistry of TiO₂**H. Choi*¹

1. Virtual Lab Inc., Republic of Korea

4:40 PM**(ICACC-S17-020-2018) Electrochemical Study of MgAl and MgAlTi Hydroxalcite**E. d. Magdaluyo*¹; R. Bonifacio¹; G. Magayanes¹

1. University of the Philippines, Dept of Mining, Metallurgical and Materials Engineering, Philippines

Honorary Symposium: Advancing Frontiers of Ceramics for Sustainable Society Development - International Symposium in Honor of Dr. Mrityunjay Singh**Advancing Frontiers of Ceramics III -Composite Materials 1**

Room: Coquina Salon E

Session Chairs: Csaba Balazsi, HAS Centre for Energy Research; Zhengyi Fu, Wuhan University of Technology

1:30 PM**(ICACC-HON-019-2018) Advances in Ceramic Composites for Fission and Fusion Energy Applications (Invited)**S. J. Zinkle*¹; Y. Katoh²

1. University of Tennessee, USA
2. Oak Ridge National Lab, USA

2:00 PM**(ICACC-HON-020-2018) Designing Ceramic Composites for use at High Temperatures: Current Trends and Future Prospects (Invited)**R. N. Singh*¹

1. Oklahoma State University, School of Materials Science and Engineering, USA

2:30 PM**(ICACC-HON-021-2018) "Tough Behavior" of Short Carbon Fiber-dispersed SiC Matrix Composites Fabricated by Melt Infiltration Process (Invited)**Y. Kagawa*¹; Y. Atsumi¹; Y. Arai¹; H. Hatta¹

1. Tokyo University of Technology, The Center for Ceramic Matrix Composites, Japan

3:00 PM**Break****3:20 PM****(ICACC-HON-072-2018) Advanced Environmental Barrier Coating and SA Tyranohex SiC Composites Integration for Improved Thermomechanical and Environmental Durability (Invited)**D. Zhu*¹; M. C. Halbig¹; M. Singh¹

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

3:40 PM**(ICACC-HON-022-2018) Properties of SiC/SiC composites with BN interphase (Invited)**S. Dong^{*}; J. Hu¹; X. Zhang¹

1. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

4:00 PM**(ICACC-HON-023-2018) Performance of New Catalyst Carriers Made from Conducting Ceramics for PEM Fuel Cell (Invited)**Z. Fu^{*}

1. Wuhan University of Technology, State Key Lab of Advanced Technology for Materials Synthesis and Processing, China

4:20 PM**(ICACC-HON-024-2018) Silicon-based ceramic nanocomposites for environmental applications (Invited)**Z. Yu^{*}

1. Xiamen University, College of Materials, China

4:40 PM**(ICACC-HON-025-2018) Structure and properties of Si₃N₄/graphene nanocomposites (Invited)**C. Balazsi^{*}; K. Balazsi¹

1. HAS Centre for Energy Research, Hungary

5:00 PM**(ICACC-HON-026-2018) Heat Resistant Liquid-Phase Sintered Silicon Carbide Ceramics (Invited)**Y. Kim^{*}; T. Nishimura²

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea
2. National Institute for Materials Science (NIMS), Japan

7th Global Young Investigator Forum**Novel Ceramic Processing Methods and Synthesis Routes**

Room: Coquina Salon G

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

1:30 PM**(ICACC-GYIF-015-2018) Towards the colonization of Mars by means of in-situ resource utilization: Slip cast ceramics from Martian soil simulant (Invited)**D. Karl^{*}; F. Kamutzki¹; A. Zocca²; O. Goerke¹; J. Guenster²; A. Gurlo¹

1. Technical University of Berlin, Chair of Advanced Ceramic Materials, Germany
2. Federal Institute for Materials Research and Testing (BAM), Ceramic Processing and Biomaterials, Germany

2:00 PM**(ICACC-GYIF-016-2018) Pre-ceramic Polymer Routes to Advanced Ceramics (Invited)**E. Ionescu^{*}

1. Technical University Darmstadt, Materials Science, Germany

2:30 PM**(ICACC-GYIF-017-2018) Investigation of porous alumina derived from a slurry including aluminum powder and polysiloxane**K. Kita^{*}; N. Kondo¹

1. AIST, National Institute of Advanced Industrial Science and Technology, Structural Materials Research Institute, Japan

2:50 PM**Break****3:10 PM****(ICACC-GYIF-018-2018) Novel Low-temperature Process for the Synthesis of Perovskite-type Oxide Fine Powders (Invited)**Y. Yamaguchi^{*}; H. Shimada¹; H. Sumi¹; T. Yamaguchi¹; K. Hamamoto¹; K. Nomura¹; Y. Fujishiro¹

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

3:40 PM**(ICACC-GYIF-019-2018) Complex colloidal approaches for direct ink writing of ceramic suspensions (Invited)**E. Garcia-Tunon^{*}

1. University of Liverpool, Materials Innovation Factory & School of Engineering, United Kingdom

4:10 PM**(ICACC-GYIF-020-2018) Young modulus and electrical conductivity of GNP/3YTZP composites prepared by PLS**C. Lopez Pernia^{*}; R. Poyato Galán¹; A. Gallardo López¹; A. Morales Rodríguez¹

1. Universidad de Sevilla, Física de la Materia Condensada, Spain
2. Instituto de Ciencia de Materiales de Sevilla, Spain

4:30 PM**(ICACC-GYIF-021-2018) Investigation of the diffusion path for the nitridation of TiSi₂ powder with nickel addition and nitride ceramic synthesis**L. Nouvian^{*}

1. LCTS - CNRS, France

Poster Session A

Room: Ocean Center Arena

5:00 PM**(ICACC-S2-P002-2018) YOF Coatings Prepared by Suspension Plasma Spray**S. Lee^{*}; Y. Oh¹

1. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

(ICACC-S2-P003-2018) High Temperature Insulating Properties of Aerosol Deposited Alumina FilmsM. Schubert^{*}; N. Leupold¹; J. Kita¹; R. Moos¹

1. University of Bayreuth, Department for Functional Materials, Germany

(ICACC-S2-P004-2018) Effect of difference in thickness of coating and type of substrate on aerosol deposited mullite coating under heat exposureT. Shibuya^{*}; A. Iuchi¹; T. Kayama¹; M. Hasegawa¹

1. Yokohama National University, Japan

(ICACC-S2-P005-2018) Evaluation of Ti₂AlC as Environmental Barrier Coating for Ti AlloysY. Chen^{*}; A. Pilchak¹; R. John²; I. Karaman¹; M. Radovic¹

1. Texas A&M University, Materials Science & Engineering, USA
2. Air Force Research Laboratory, USA

(ICACC-S2-P006-2018) Texture Development of Aerosol Deposited Alumina Coating for Advanced Environmental Barrier CoatingsK. Kimura^{*}; M. Komuro¹; M. Hasegawa¹; M. Tanaka²; S. Kitaoka³; Y. Kagawa³

1. Yokohama National University, Solid State Materials and Engineering, Japan
2. Japan Fine Ceramics Center, Japan
3. Tokyo University of Science, Japan

(ICACC-S2-P007-2018) Oxidation Study of Ultra High Temperature Ceramic Coatings Based on HfSiCND. Sacksteder¹; D. Waters¹; D. Zhu^{*}

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

(ICACC-S3-P009-2018) Cation Interdiffusion between Lanthanum Strontium Manganite and Yttria-Stabilized ZirconiaY. Yu^{*}; J. Liu¹; Y. Jee¹; P. Ohodnicki¹; H. Abernathy¹; T. Kalapos¹; G. Hackett¹

1. National Energy Technology Laboratory, USA

(ICACC-S3-P010-2018) Relationship between LSM/CeO₂ nanocomposite composition and cathode propertiesH. Sakuma^{*}; S. Suda¹; J. Wiff²

1. Shizuoka University, Japan
2. FCO Power Inc., Japan

(ICACC-S3-P011-2018) Preparation and Characterization of BaY_{0.2}Ce_{0.7}Zr_{0.1}O_{3-δ} Ceramic Powder by Glycine Nitrate Combustion (GNC) Process for Proton Solid Oxide Fuel CellW. Kao¹; T. Lin^{*1}; M. Liao¹; H. Kuo¹; C. Yeh¹; Y. Chen¹; R. Lee¹

1. Institute of Nuclear Energy Research, Nuclear Fuels and Materials Division, Taiwan

(ICACC-S3-P012-2018) Ionic Conductivity and Phase Stabilization in Zirconia-Scandia-EuropiaJ. P. Souza^{*}; E. N. Muccillo^{*}

1. Energy and Nuclear Research Institute, Brazil

(ICACC-S3-P013-2018) Influence of Calcium Addition on the Electrical Conductivity of Samarium Doped CeriaS. L. Reis^{*}; E. N. Muccillo^{*}

1. Institute of Nuclear Energy Research, Brazil

(ICACC-S3-P014-2018) Aerosol Deposition of barium-based perovskites as solid electrolyte film for fuel cellsJ. Exner^{*}; T. Nazareus^{*}; H. Pöpke^{*}; F. Fuchs^{*}; J. Kita^{*}; R. Moos^{*}

1. University of Bayreuth, Department of Functional Materials, Germany
2. Kerafol Keramische Folien GmbH, SOFC Department, Germany

(ICACC-S3-P015-2018) Residual Stress Measurement of 8 mol % YSZ Coating for SOFC ApplicationZ. Ruhma^{*}; K. Yashiro^{*}; F. Iguchi^{*}; T. Kawada^{*}

1. Tohoku University, Graduate School of Environmental Studies, Japan
2. Tohoku University, Graduate School of Engineering, Japan

(ICACC-S3-P016-2018) Reactive Spray Deposition Technology (RSDT): A flame-based process for SOFC diffusion blocking layer and cathodeT. Ebaugh^{*}; L. Bonville^{*}; R. Maric^{*}

1. University of Connecticut, Chemical Engineering, USA
2. Center for Clean Energy Engineering, USA

(ICACC-S3-P017-2018) Development of Fe/Cr Alloy-Supported Solid Oxide Fuel Cell by Plasma TechniqueS. Yang^{*}; C. Tsai^{*}; C. Chang^{*}; C. Fu^{*}; R. Lee^{*}; H. Lee^{*}

1. Institute of Nuclear Energy Research Atomic Energy Council, Taiwan
2. Porite Taiwan Co., Ltd., Taiwan

(ICACC-S3-P018-2018) Effects of composite ratio of vermiculite/talc seal material on gas leak propertiesJ. Xu^{*}; S. Suda^{*}

1. Shizuoka University, Electronics and Materials Science, Japan

(ICACC-S3-P019-2018) Computational Phase Studies in the La-Sr-Ga-Ni-O SystemG. Soydan^{*}; E. Kondakci^{*}; N. Solak^{*}

1. Istanbul Technical University, Metallurgical and Materials Eng, Turkey

(ICACC-S4-P020-2018) DFT Study of Yttrium Adsorption on Boron suboxide (0001) SurfaceJ. S. Dunn^{*}; K. D. Behler^{*}; J. LaSalvia^{*}; M. P. Harmer^{*}; C. J. Marvel^{*}

1. U.S. Army Research Laboratory, USA
2. Lehigh University, Materials Science and Engineering, USA

(ICACC-S4-P021-2018) The Effect of Heating on Indented Boron Carbides of Varying StoichiometryM. C. Schaefer^{*}; V. Domnich^{*}; R. A. Haber^{*}

1. Rutgers University, Materials Science and Engineering, USA

(ICACC-S4-P022-2018) Optimization of Consolidation Parameters and the Resulting Mechanical Properties of Bulk Silicon Doped Boron CarbidesM. Gagnepain^{*}; A. M. Etzold^{*}; A. U. Khan^{*}; V. Domnich^{*}; C. Hwang^{*}; K. D. Behler^{*}; J. LaSalvia^{*}; R. A. Haber^{*}

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

(ICACC-S4-P023-2018) Reactive Hot-Pressing of B₆O: Effect of Excess B₂O₃ on Phases, Microstructure, and PropertiesH. E. Payne^{*}; K. D. Behler^{*}; T. Shoulders^{*}; L. R. Vargas-Gonzalez^{*}; J. LaSalvia^{*}

1. U.S. Army Research Lab, College Qualified Leaders (CQL) and The Pennsylvania State University, Ceramics and Transparent Materials Branch, USA
2. U.S. Army Research Lab and SURVICE Engineering, Ceramics and Transparent Materials Branch, USA
3. U.S. Army Research Lab and ORISE, Ceramics and Transparent Materials Branch, USA
4. U.S. Army Research Lab, Ceramics and Transparent Materials Branch, USA

(ICACC-S4-P024-2018) Computer modeling of projectile's penetration into discrete armor panelE. Kartuzov^{*}; V. Kartuzov^{*}; O. Mikhaylov^{*}

1. Frantsevich Institute for Problems in Materials Science NAS of Ukraine, Ukraine

(ICACC-S4-P026-2018) Molecular-dynamic simulation of shock wave propagation in B13-C2 ceramicsE. Kartuzov^{*}; V. Kartuzov^{*}

1. Frantsevich Institute for Problems in Materials Science NAS of Ukraine, Ukraine

(ICACC-S4-P027-2018) Observations of metastable explosion and wurtzite phases of boron nitride formed by emulsion detonation synthesisM. Ornek^{*}; C. Hwang^{*}; K. Xie^{*}; S. Da Silva^{*}; J. Calado^{*}; M. K. Reddy^{*}; A. Burgess^{*}; V. Domnich^{*}; S. Miller^{*}; K. Hemker^{*}; R. A. Haber^{*}

1. Rutgers University, Material Science and Engineering, USA
2. Innovnano, Materiais Avançados, Portugal
3. Johns Hopkins University, Mechanical Engineering, USA
4. SprayWerks Technologies Inc., Canada
5. H&M Analytical Services, Inc., USA

(ICACC-S4-P028-2018) A 1-D Analytical Model for Hypervelocity Penetration of Thick Ceramic TargetsS. Bavdekar^{*}; G. Subhash^{*}

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

(ICACC-S4-P132-2018) Reliable Measurement of Fracture Toughness of Armour Ceramics at the Microstructural ScaleJ. Jiang^{*}; S. Falco^{*}; N. Petrinic^{*}; R. I. Todd^{*}

1. University of Oxford, United Kingdom

(ICACC-S6-P030-2018) A two-step synthesis process of thermoelectric alloys for the separate control of carrier density and mobilityS. Lim^{*}; S. Baek^{*}; C. Park^{*}; Y. Lee^{*}; J. Kim^{*}

1. Korea Institute of Science and Technology, Republic of Korea
2. Seoul National University, Republic of Korea
3. Korea Research Institute of Chemical Technology, Thin Film Materials Research Group, Republic of Korea

(ICACC-S6-P031-2018) Fabrication and thermoelectric characterization of Bi₂Te₃ and Sb₂Te₃ films grown on graphene substrate by plasma-enhanced chemical vapor depositionY. Lee^{*}; J. Kim^{*}

1. Korea Research Institute of Chemical Technology, Advanced Materials Division, Republic of Korea
2. Korea Institute of Science and Technology, Republic of Korea

(ICACC-S6-P133-2018) Sb nano particles in Silicon Oxycarbide matrix as an Anode materials for Sodium-ion BatteriesW. Choi^{*}; Y. Lee^{*}; H. Kim^{*}; H. Lim^{*}; J. Park^{*}; Y. Kwon^{*}; K. Lee^{*}; D. Byun^{*}

1. Korea Institute of Science and Technology, Center for Energy Convergence, Republic of Korea
2. Korea University, Republic of Korea

(ICACC-S8-P032-2018) Complex shaped SiC-diamond components for thermal management, high energy lasers, and solar thermal applicationsA. McCormick^{*}; P. Karandikar^{*}; M. Aghajanian^{*}

1. M Cubed Technology, Inc., R&D, USA

(ICACC-S8-P033-2018) Boron – challenges to a fascinating elementT. Schmidt^{*}; S. E. Vogel^{*}

1. H.C. Starck Surface Technology and Ceramic Powders GmbH, Application Engineering, Germany
2. H.C. Starck North American Trading LLC, USA

(ICACC-S8-P034-2018) Consolidation in micro-nano technologies modeled by difference-differential transformation methodV. Mitic^{*}; Z. Vosika^{*}; L. Kocić^{*}; G. Lazović^{*}; V. Paunović^{*}

1. Serbian Academy of Sciences, Institute of Technical Sciences, Serbia
2. Faculty of Electronic Engineering, Serbia
3. Faculty of Mechanical Engineering, Serbia

(ICACC-S8-P035-2018) Thermal expansion coefficient controlled Cu-ZrW_{2-x}Mo_xO₈ cermet material prepared using spark plasma sintering methodH. Wei^{*}; R. Inoue^{*}; A. Aimi^{*}; K. Fujimoto^{*}; K. Nishio^{*}

1. Tokyo University of Science, Department of Materials Science and Technology, Japan
2. Tokyo University of Science, Department of Pure and Applied Chemistry, Japan

(ICACC-S8-P036-2018) New Damage Sensing Method of CNT Coated Glass Fiber or Carbon Fiber/PP-PA Composites via 2D and 3D Electrical Resistance MappingJ. Park*¹; J. Kim¹; P. Shin¹; Y. Baek¹; H. Park¹; L. K. DeVries²

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

(ICACC-S8-P037-2018) Forming limit diagram of vinyl coated metalJ. Yoon*¹

1. Hanyang University, Department of Mechanical Engineering, Republic of Korea

(ICACC-S8-P038-2018) Preparation of polyborosilazane-derived SiBNC ceramic fibers by electron beam irradiation curingJ. Wang*¹

1. National University of Defense Technology, China

(ICACC-S8-P039-2018) Si-O-C compact with reduced carbon content obtained by Spark Plasma SinteringR. Hanatani*¹; M. Narisawa¹; H. Inoue¹; H. Segawa²; T. Nishimura²

1. Osaka Prefecture University College, Japan
2. National Institute for Materials Science (NIMS), Japan

(ICACC-S11-P040-2018) Development of geopolymer composites reinforced with fiber feltsA. Conte*¹; G. Passante²; P. Colombo¹

1. University of Padova, Industrial Engineering, Italy
2. Trucker Subforniture s.r.l., Italy

(ICACC-S11-P041-2018) Morphology control of hydrothermally-grown zinc oxide nanowires on aramid fabricsH. Hwang*¹

1. University of Michigan, Aerospace Engineering Department, USA

(ICACC-S11-P042-2018) The properties of nanocomposite Ti-Al-V-N coating synthesized by magnetron sputtering process with single composite targetH. Lee*¹; H. Yoon¹; G. Bang¹; K. Moon¹

1. Korea Institute of Industrial Technology, Republic of Korea

(ICACC-S11-P043-2018) Zr-base amorphous alloys Correlation between grain size and mechanical, Electrochemical propertyH. Lee*¹; H. Yoon¹; G. Bang¹; K. Moon¹

1. Korea Institute of Industrial Technology, Republic of Korea

(ICACC-S11-P044-2018) Effect of load and sliding speed on tribological behavior of a semi-carbonized Cu/phenolic-derived semi-metallic friction materialC. Ju*¹; C. Lee²; H. Lin¹; K. Lee²; J. Chern Lin¹

1. National Cheng-Kung University, Materials Science and Engineering, Taiwan
2. I-Shou University, Materials Science and Engineering, Taiwan

(ICACC-S11-P045-2018) Osteoporotic goat spine implantation study with a newly-developed calcium phosphate/calcium sulfate-based bone void fillerJ. Chern Lin*¹; B. Yang¹; S. Lan²; C. Lin³; C. Ju¹

1. National Cheng Kung University, Materials Science and Engineering, Taiwan
2. National Cheng-Kung University Hospital Dou-Liou Branch, Department of Orthopedics, Taiwan
3. Joy Medical Devices Corp., Taiwan

(ICACC-S11-P046-2018) Stretchable electrodes based on the carbon/polymer/metal composite for wearable devicesS. Mhin*¹

1. Korea Institute of Industrial Technology, Heat treatment R&D group, Republic of Korea

(ICACC-S14-P047-2018) Photoluminescence of Activator-Doped Glass-CeramicsH. Masai*¹; 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-P048-2018) Luminescence properties of BaO-TiO₂-SiO₂ glass-ceramicsH. Masai*¹; 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-P049-2018) Crystal growth of Sr₃Zr₂O₇ by TSFZ methodI. Fukasawa*¹; M. Nagao¹; S. Watauchi¹; I. Tanaka¹

1. University of Yamanashi, Center for Crystal Science and Technology, Japan

(ICACC-S14-P050-2018) Investigating the Mechanical and Piezoelectric Properties of Combinatorially Deposited Al_{1-x}Sc_xB₂N Thin FilmsY. Chen*¹; K. Talley¹; S. Manna¹; C. Ciobanu¹; C. Packard¹; G. L. Brennecke¹

1. Colorado School of Mines, USA

(ICACC-S14-P051-2018) Scintillation detector properties of undoped and Eu-doped Srl₂ crystalsT. Yanagida*¹; M. Koshimizu²; G. Okada¹; T. Kojima³; J. Osada³; N. Kawano¹; N. Kawaguchi¹

1. Nara Institute of Science and Technology, Japan
2. Tohoku University, Japan
3. Oxide Corp., Japan

(ICACC-S14-P052-2018) Growth and scintillation responses of EuAlO₃ crystalT. Yanagida*¹; D. Nakauchi¹; G. Okada¹; N. Kawano¹; N. Kawaguchi¹

1. Nara Institute of Science and Technology, Japan

(ICACC-S14-P053-2018) Synthesis of Transition Metal Doped Alumina and Dopant Impact on Phase TransformationA. L. Fry*¹; N. Ku²; C. A. Moorehead³; V. L. Blair¹; R. E. Brennan¹

1. U.S. Army Research Laboratory, USA
2. U.S. Army Research Laboratory, ORISE, USA
3. University of Washington, USA

(ICACC-S14-P054-2018) The role of microstructure in dichroic properties of the Lycurgus cup glassA. Drozdov*¹; M. Andreev¹

1. Lomonosov Moscow State University, Chemistry, Russian Federation

(ICACC-S14-P055-2018) Development of Yttria Nanopowders for the Photoluminescence Applications as PTC materialS. Kumar*¹; U. Batra¹; J. Sharma¹

1. PEC University of Technology, Materials & Metallurgical Engineering, India

(ICACC-S15-P056-2018) Polymer-derived ceramic/graphene oxide 3D structuresJ. Moyano-Subires*¹; M. I. Osendi¹; P. Miranzo¹; M. Belmonte¹

1. Institute of Ceramics and Glass, CSIC, Ceramics, Spain

(ICACC-S17-P057-2018) Melting gel for encapsulation applications towards high UV and thermal-stable with low processing temperatureJ. Wang*¹

1. NSYSU, Taiwan

(ICACC-GYIF-P058-2018) ZrO₂-Y₂O₃ Phase Diagram and Properties Relevant to Ceramic Dental CrownS. Uwanyuze*¹; M. K. King¹; M. Mahapatra¹

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

(ICACC-GYIF-P059-2018) Investigations of matrix-platelets interactions during sintering of ice-templated ceramics and relation to macroscopic compressive responseM. Banda*¹; H. Kang¹; D. Ghosh¹

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

(ICACC-GYIF-P060-2018) On the design of novel engineered composites for multifunctional applicationsA. Bosco¹; A. Holland¹; C. Borillo¹; S. Abualdam*¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

(ICACC-GYIF-P061-2018) Design of Novel Multifunctional Materials for Sustainable ApplicationsM. Ahmann*¹; M. Kringstad¹; M. Platt¹; A. Miles¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

(ICACC-GYIF-P062-2018) Effect of ball milling on microstructure of pressureless sintered GNP/3YTZP compositeC. Lopez Pernia*¹; A. Morales Rodríguez¹; Á. Gallardo López¹; R. Poyato Galán²

1. Universidad de Sevilla, Física de la Materia Condensada, Spain
2. Instituto de Ciencia de Materiales de Sevilla, Spain

(ICACC-WW-P064-2018) Effects of Alkaline Earth Metal Substitution on the Surface Acoustic Wave Properties of Fresnoite Glass-CeramicsF. Dupla*¹; M. Renoir¹; M. Gonon¹; N. Smagin²; M. Duquennoy²; G. Martic³

1. University of Mons, Department of Materials Science, Belgium
2. University of Valenciennes and Hainaut-Cambrésis, IEMN-DOAE, France
3. INISMA, CRIBC, Belgium

(ICACC-WW-P065-2018) Improvement of Piezoelectric Properties of Sr-Fresnoite Glass-CeramicsM. Renoir*¹; F. Dupla¹; M. Gonon¹; N. Smagin²; M. Duquennoy²; G. Martic³

1. University of Mons, Department of Materials Science, Belgium
2. University of Valenciennes and Hainaut-Cambrésis, IEMN-DOAE, France
3. CRIBC, INISMA, Belgium

(ICACC-WW-P066-2018) Optimisation of SiCp/SiCf preforms prior to matrix formation using microwave enhance chemical vapour infiltrationM. Porter*¹; A. D'Angio¹; J. Binner¹; M. Cinibulk²; B. Garcias Banos³; A. Aktas⁴

1. University of Birmingham, Metallurgy and Materials, United Kingdom
2. Air Force Research Lab, USA
3. Universidad Politecnica de Valencia, DIMAS - ITACA Institute, Spain
4. National Physical Laboratory, United Kingdom

(ICACC-WW-P067-2018) Extending the lifetime of T-EBC coatings during thermal cycling above 2400°FJ. Deijkers*¹; H. Wadley¹

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

(ICACC-WW-P068-2018) Bulk Nanoporous Silicon Carbide: A Study of Processing Temperature's Effects on Microstructure and Mechanical Properties.C. Kassner*¹; H. Wadley¹

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

Wednesday, January 24, 2018**S1: Mechanical Behavior and Performance of Ceramics & Composites****Oxidation and Fatigue of CMCs**

Room: Coquina Salon D

Session Chairs: Marina Ruggles-Wrenn, Air Force Institute of Technology; Brian Donegan, Air Force Institute of Technology; Dietmar Koch, Institute of Structures and Design

8:30 AM**(ICACC-S1-029-2018) Fatigue of Advanced SiC/SiC Ceramic Matrix Composites at Elevated Temperature in Air and in Steam**M. Ruggles-Wrenn*¹; N. Boucher¹; C. P. Przybyla²

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

8:50 AM**(ICACC-S1-030-2018) Mechanical Characterization of SiC/SiC Ceramic Matrix Composites Under a Unique Combustion Facility**R. Panakarajupally*¹; M. Kannan¹; G. N. Morscher¹

1. University of Akron, Mechanical Engineering, USA

9:10 AM**(ICACC-S1-031-2018) Oxidative Degradation of SiC/SiC Composites**K. Kawanishi*¹; S. Muto²; E. B. Callaway³; F. W. Zok³

1. IHI Inc., USA, Aero Material Technology Department, USA
2. IHI Corporation, Materials Technology Department, Japan
3. University of California, Santa Barbara, USA

9:30 AM**(ICACC-S1-032-2018) Strength degradation model of an orthogonal 3-D woven SiC fiber/SiC matrix composite under constant and cyclic tensile loads at elevated temperatures**Y. Ikarashi*¹; T. Ogasawara¹; T. Aoki²

1. Tokyo University of Agriculture and Technology, Japan

2. Japan Aerospace Exploration Agency, Japan

9:50 AM**Break****10:10 AM****(ICACC-S1-033-2018) Evaluation of CMC Failure Mechanisms in Rotating Detonation Engines**D. King*¹; G. Wilks²; T. A. Parthasarathy¹; M. Cinibulk²; R. Rao¹; B. Maruyama²; C. Stevens³

1. UES, Inc., USA
2. Air Force Research Lab, USA
3. ISSI, Inc., USA

10:30 AM**(ICACC-S1-034-2018) Temperature Dependence of Modulus and Creep Behavior of SiC/SiC Ceramic Matrix Composite Constituents**V. Christensen*¹; M. Schuster²; G. Henson²; J. Gao²

1. The Pennsylvania State University, Materials Science and Engineering, USA
2. GE Global Research, USA

10:50 AM**(ICACC-S1-035-2018) Damage Evaluation of Ceramic Matrix Composites during Tension-tension Fatigue Loading using Non-destructive Health Monitoring Tools**Y. P. Singh¹; M. Kannan*¹; M. J. Presby¹; G. N. Morscher¹

1. University of Akron, Mechanical Engineering, USA

11:10 AM**(ICACC-S1-036-2018) Influence of Thermal Cycles, Creep and Fiber Volume Fraction on Electrical Resistivity of SiC/SiC Minicomposites**A. S. Almansour*¹; G. N. Morscher²

1. NASA Glenn Research Center, Ceramic & Polymer Composites Branch/LMC, USA
2. University of Akron, Department of Mechanical Engineering, USA

11:30 AM**(ICACC-S1-037-2018) Effect of Porosity on Crack Propagation in SiC/SiC Ceramic Matrix Composites**M. J. Lancaster*¹; A. L. Chamberlain²; R. Trice¹; M. D. Sangid¹

1. Purdue University, Materials Science and Engineering, USA
2. Rolls-Royce Corp, USA

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications**CMAS Degradation of T/EBC & Mitigation Strategies II**

Room: St. John

Session Chairs: Peter Mechnich, DLR - German Aerospace Center; Douglas Wolfe, Pennsylvania State University

8:30 AM**(ICACC-S2-031-2018) Effect of Porosity on Synthetic Sand Infiltration within Yttria-Stabilized Zirconia Pellets**A. Wright¹; M. J. Wallock*²; A. Ghoshal²; J. Luo¹; A. Nieto²; M. Murugan²

1. University of California, San Diego, Nanoengineering, USA
2. US Army Research Laboratory, Vehicle Technology Directorate, USA

8:50 AM**(ICACC-S2-032-2018) Development of an Integrated Framework to Design Thermal and Environmental Barrier Coatings Resistant to Molten Silicate Degradation**D. L. Poerschke*¹

1. University of Minnesota, Chemical Engineering and Materials Science, USA

9:10 AM**(ICACC-S2-033-2018) Calcium-Magnesium-Alumino-Silicate (CMAS) viscosity effects on the lifetime of thermal barrier coatings**B. Jun*¹; E. H. Jordan²; N. Jonsson¹

1. University of Connecticut, Materials Science Engineering, USA
2. University of Connecticut, Mechanical Engineering, USA

9:30 AM**(ICACC-S2-034-2018) Thermo-Corrosive Properties by CMAS and Volcanic Ash of RE-doped Silicate Environmental Barrier Coatings (Invited)**B. Jang*¹; S. Ueno²; K. Lee³; S. Kim⁴; Y. Oh⁴; H. Kim⁴

1. National Institute for Materials Science, Research Center for Structural Materials, Japan
2. Nihon University, College of Engineering, Japan
3. Kookmin University, School of Mechanical Systems Engineering, Japan
4. Korea Institute of Ceramic Engineering and Technology, Republic of Korea

10:00 AM**Break****10:20 AM****(ICACC-S2-035-2018) Environmental Barrier Coating Ceramics and their High-Temperature Interactions with Calcium-Magnesium-Aluminosilicate (CMAS) Glass**L. R. Turcer*¹; A. Krause¹; H. Garces¹; N. Padture¹

1. Brown University, Engineering, USA

10:40 AM**(ICACC-S2-036-2018) Examining the Role of Process Induced Porosity Differences on CMAS Interactions in Plasma Sprayed Thermal Barrier Coatings**E. J. Gildersleeve*¹; S. Sampath¹

1. Stony Brook University, Materials Science, USA

11:00 AM**(ICACC-S2-037-2018) Characterization of a Volcanic Ash Glass Related to Particulate Degradation of Protective Barrier Coatings**R. Webster*¹; V. L. Wiesner²; J. Salem²; N. P. Bansal²; E. J. Opila¹

1. University of Virginia, Materials Science & Engineering, USA
2. NASA Glenn Research Center, USA

11:20 AM**(ICACC-S2-038-2018) Resistance of APS Y₂O₃ EBC against two artificial volcanic ash variants**P. Mechnich*¹

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

11:40 AM**(ICACC-S2-039-2018) Lifetime evaluation of EB-PVD 7YSZ coatings in thermal gradient rig tests under the influence of CMAS and VA attack (Invited)**R. Naraparaju*¹; U. Schulz¹; L. Hochstein¹

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

S3: 15th International Symposium on Solid Oxide Fuel Cells (SOFC): Materials, Science and Technology**Coatings I**

Room: Crystal

Session Chair: Kevin Huang, University of South Carolina

8:30 AM**(ICACC-S3-026-2018) Electrodeposition of Mn-Co alloys for SOFC Interconnect application (Invited)**J. Wu¹; X. Liu*¹

1. West Virginia University, Mechanical & Aerospace Engineering, USA

9:00 AM**(ICACC-S3-027-2018) Protective Coatings for SOFC Metallic Interconnects**M. K. King*¹; M. Mahapatra¹

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

9:20 AM**(ICACC-S3-028-2018) Evaluation of Fe-doped (CuMn)₃O₄ Coatings on Metallic Interconnects as a Protective Barrier to Prevent Cr-poisoning in Solid Oxide Fuel Cells**Z. Sun*¹; R. Wang¹; Y. Gong¹; S. Gopalan¹; U. Pal¹; S. Basu¹

1. Boston University, MS&E, USA

9:40 AM**(ICACC-S3-029-2018) Microstructural and electrical characterization of Cu and Fe-doped Mn-Co spinel protective coatings for solid oxide cell interconnects**F. Smeacetto*¹; A. Sabato¹; H. Javed¹; B. Talic²; S. Molin²

1. Politecnico di Torino, Applied Science and Technology, Italy
2. DTU, Energy Conversion and Storage, Denmark

10:00 AM**Break****Coatings II / Contacting**

Room: Crystal

Session Chair: Joseph Barton, University of Utah

10:20 AM**(ICACC-S3-030-2018) Aluminized stainless steel as a corrosion-resistant material for application in high-temperature fuel cells**M. Kusnezoff¹; E. Medvedovski*²; M. Vinnichenko¹; C. Folgner¹; V. Sauchuk¹

1. Fraunhofer IKTS, Germany
2. Endurance Technologies Inc., Canada

10:40 AM**(ICACC-S3-031-2018) Development of Cathode Contacting for SOFC Stacks**K. Sick (Schönauer)*¹; N. Grigorev¹; N. H. Menzler¹; O. Guillon¹

1. Forschungszentrum Juelich, Institute for Energy and Climate Research (IEK-1), Germany

11:00 AM**(ICACC-S3-032-2018) Investigation of zirconia fiber felt and cloth as cathode contact material**Y. Chou*¹; J. F. Bonnett¹; J. W. Stevenson¹

1. Pacific Northwest National Lab, Materials, USA

11:20 AM**(ICACC-S3-033-2018) Quantitative Defect Chemistry and Electronic Conductivity Analysis of (La_{1-x}Ca_x)FeO_{3±δ} and (La_{1-x}Sr_x)MnO_{3±δ} Perovskite**S. Darvish*¹; Y. Zhong²

1. Florida International University, Mechanical and Materials Engineering, USA
2. Worcester Polytechnic Institute, Mechanical Engineering Department, USA

11:40 AM**(ICACC-S3-054-2018) Investigation of (La_{1-x}Ca_x)(Ni_{0.25}Fe_{0.25}Cr_{0.25}Co_{0.25})O₃ for SOFC Cathode Materials**S. Gajjala*¹

1. Southern Illinois University Carbondale, Mechanical Engineering and Energy Processes, USA

S4: Armor Ceramics - Challenges and New Developments**Synthesis and Processing II**

Room: Coquina Salon F

Session Chair: Steve Kilczewski, Army Research Laboratory

8:30 AM**(ICACC-S4-031-2018) Slip casting of submicron SiC powder**V. Johannessen¹; B. Watremetz*¹; C. Bousquet¹

1. Saint-Gobain Ceramic Materials, R&D, Norway

8:50 AM**(ICACC-S4-032-2018) Single-mode microwave sintering of traditionally resistant materials**V. L. Blair^{*}; M. Kornecki²; S. Raju³; R. E. Brennan¹

1. US Army Research Laboratory, Weapons and Materials Research Directorate, USA
2. SURVICE Engineering, USA
3. ORAU, USA

9:10 AM**(ICACC-S4-033-2018) Machineable Graphene Incorporated Ceramic (MaGIC) for Light Armour Applications**J. Kenny^{*}; J. Binner¹; I. Chang²; S. Marinel³; N. McDonald¹

1. University of Birmingham, Materials & Metallurgy, United Kingdom
2. Brunel University London, Institute of Materials and Manufacturing, United Kingdom
3. ENSICAEN, CRISMAT, France

9:30 AM**(ICACC-S4-034-2018) Microstructural study in B₄C-SiC ceramic-ceramic composites**T. Shoulders^{*}¹; K. D. Behler¹; J. LaSalvia¹; L. Vargas¹

1. US Army Research Laboratory, USA

9:50 AM**(ICACC-S4-035-2018) Synthesis, sintering and mechanical properties of Boron suboxide (B₂O₃)**A. U. Khan^{*}¹

1. Rutgers University, Materials Science and Engineering, USA

10:10 AM**(ICACC-S4-036-2018) Processing, Microstructure, and Properties of Pressure-Assisted Sintered Boron Suboxide with Oxide Additives**K. D. Behler^{*}¹; C. J. Marvel²; T. Shoulders³; J. LaSalvia⁴; L. R. Vargas-Gonzalez²; M. P. Harmer²

1. SURVICE Engineering and U.S. Army Research Lab, Ceramics and Transparent Materials Branch, USA
2. Lehigh University, Materials Science and Engineering, USA
3. U.S. Army Research Lab and ORISE, Ceramics and Transparent Materials Branch, USA
4. U.S. Army Research Lab, Ceramics and Transparent Materials Branch, USA

10:30 AM**(ICACC-S4-037-2018) Incorporation of TiB₂ as Intergranular Phase in Boron Carbide**C. Hwang^{*}¹; S. DiPietro²; K. Xie³; Q. Yang¹; A. U. Khan¹; V. Domnich¹; K. Hemker³; R. A. Haber¹

1. Rutgers University, Dept. of Materials Science and Engineering, USA
2. Exothermics, Inc., USA
3. Johns Hopkins University, Department of Mechanical Engineering, USA

10:50 AM**(ICACC-S4-038-2018) Forming Transparent Alumina by Hot-Pressing Aligned Platelet-Grain α -Al₂O₃: Processing and Preliminary Results**A. Schlup^{*}¹; R. Trice¹; J. P. Youngblood¹

1. Purdue University, Materials Engineering, USA

Terminal Ballistics

Room: Coquina Salon F

Session Chair: Brady Aydelotte, US Army Research Laboratory

11:10 AM**(ICACC-S4-039-2018) Cone fragment formation in ceramics by steel sphere impact: Experiments and simulations**E. Carton^{*}¹; G. Roebroeks¹; E. Simons²; B. Sluys²; J. Weerheijm¹

1. TNO, Netherlands
2. Delft University of Technology, Civil Engineering, Netherlands

11:30 AM**(ICACC-S4-040-2018) Influence of Hardness and Toughness of Ceramic on Ballistic Performance of Ceramic Armour**W. Goh^{*}²; B. Luo¹; Z. Zeng¹; J. Yuan¹; K. Ng²

1. Nanyang Technological University, Temasek Laboratories, Singapore
2. Nanyang Technological University, School of Materials Science and Engineering, Singapore

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

Room: Tomoka A

Session Chair: Michihiro Ohta, National Institute of Advanced Industrial Science and Technology (AIST)

8:30 AM**(ICACC-S6-024-2018) Continuous efforts towards high performance half-Heusler thermoelectric materials (Invited)**T. Zhu^{*}¹

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

9:00 AM**(ICACC-S6-025-2018) Application of Ab initio Methods in the Development of Advanced Technical Ceramics (Invited)**J. Goldsby^{*}¹

1. NASA Glenn Research Center, Chemistry and Physics, USA

9:30 AM**(ICACC-S6-026-2018) Advances in Thermoelectric Complex Sulphides (Invited)**E. Guilmeau^{*}¹; C. Bourges¹; V. Kumar¹; L. Paradis-Fortin¹; P. Lemoine²; O. Lebedev¹; T. Barbier¹; B. Raveau¹; B. Malaman¹; G. Le Caer²; M. Ohta³; K. Suekuni⁴; A. Supka⁵; M. Fornari⁶; R. A. Al Orabi⁷

1. CNRS CRISMAT, France
2. Institut des Sciences Chimiques de Rennes (ISCR), France
3. Institut Jean Lamour, France
4. Institut de Physique de Rennes (IPR), France
5. National Institute of Advanced Industrial Science and Technology (AIST), Research Institute for Energy Conservation, Japan
6. Kyushu University, Department of Applied Science for Electronics and Materials, Interdisciplinary Graduate School of Engineering Sciences, Japan
7. Central Michigan University, Department of Physics and Science of Advanced Materials Program, USA

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

Room: Tomoka A

Session Chair: Anthony Powell, University of Reading

10:20 AM**(ICACC-S6-027-2018) Effect of cell size and basis set on the simulation of atomic dynamics in tetrahedrite thermoelectrics**J. Li¹; W. Lai^{*}¹

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

10:40 AM**(ICACC-S6-028-2018) Praseodymium Telluride: A new high ZT, high temperature material**S. Bux^{*}¹; D. A. Cheikh²; B. E. Hogan¹; B. Dunn²; T. Vo¹; J. Fleurial¹

1. Jet Propulsion Laboratory/California Institute of Technology, USA
2. University of California, Los Angeles, Materials Science, USA

11:00 AM**(ICACC-S6-029-2018) Correlating the process, structure and thermoelectric properties of thermal spray synthesized sub-stoichiometric TiO_{2-x} deposits**H. Lee^{*}¹; R. Chidambaram Seshadri¹; S. Sampath¹

1. Stony Brook University, Materials Science and Engineering, USA

S7: 12th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications

Integration of Functional Metal Oxide Nanostructures in Devices

Room: Coquina Salon C

Session Chairs: Yoon-Bong Hahn, Chonbuk National University; Mauro Epifani, CNR-IMM

8:30 AM

(ICACC-S7-026-2018) Thin Films of Carbides and Carbon-based Nanocomposites (Invited)

W. Gulbinski*¹

1. Koszalin University of Technology, Department of Technical Physics and Nanotechnology, Poland

9:00 AM

(ICACC-S7-027-2018) Electrochemical fabrication of nanostructured thin-film for renewable energy applications (Invited)

Y. Yang*¹

1. University of Central Florida, NanoScience Technology Center, USA

9:30 AM

(ICACC-S7-028-2018) Sr doping in perovskite oxides LaCrO₃ and LaFeO₃ for controlled functionalities (Invited)

Y. Du*¹; S. Spurgeon¹; L. Wang¹; H. Zhang²; D. Wu³; M. Bowden¹; K. Stoerzinger¹; P. Sushko¹; S. Chambers¹

1. PNNL, USA
2. Xiamen University, China
3. Nanjing University, China

10:00 AM

Break

Metal Oxide Nanostructures for Chemical and Biological Sensors

Room: Coquina Salon C

Session Chairs: Witold Gulbinski, Koszalin University of Technology; Yang Yang, University of Central Florida

10:20 AM

(ICACC-S7-029-2018) Metal-oxide Nanostructures Based Chemical and Biological Sensors for Environmental and Biomedical Applications (Invited)

Y. Hahn*¹

1. Chonbuk National University, School of Chemical Engineering, Republic of Korea

10:50 AM

(ICACC-S7-030-2018) Controlled Processing of Sol-Gel Precursors for the Synthesis of W and Mo Oxides and their Combination with Titania Nanocrystals (Invited)

M. Epifani*¹

1. CNR-IMM, Italy

11:20 AM

(ICACC-S7-031-2018) Surface modification of magnetic nanoparticles for enhanced hyperthermia cancer therapy (Invited)

H. Srikanth*¹

1. University of South Florida, Physics, USA

11:40 AM

(ICACC-S7-032-2018) Controlling texture in lead-free KNN ferroelectric thin films by aqueous chemical solution deposition

N. H. Gaukås*¹; S. M. Dale¹; J. Glaum¹; M. Einarsrud¹; T. Grande¹

1. Norwegian University of Science and Technology, Department of Materials Science and Engineering, Norway

S8: 12th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT12)

Unique Processing II

Room: Coquina Salon A

Session Chairs: Eugene Medvedovski, Consultant; Vojislav Mitic, Serbian Academy of Sciences

8:30 AM

(ICACC-S8-024-2018) Boron Nitride-Based Coatings Obtained through Thermal Diffusion Process for Friction and Corrosion Applications (Invited)

E. Medvedovski*¹

1. Endurance Technologies Inc., Canada

9:00 AM

(ICACC-S8-025-2018) Improvement of high-temperature characteristics in WC-FeAl hard materials

R. Furushima*¹; K. Shimojima¹; H. Hyuga¹

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

9:20 AM

(ICACC-S8-026-2018) Fabrication and Optical Properties of Highly Transparent MgO Ceramics

X. Chen*¹; Y. Wu¹

1. New York State College of Ceramics at Alfred University, Department of Materials Science and Engineering, Kazuo Inamori School of Engineering, USA

9:40 AM

(ICACC-S8-027-2018) Combustion synthesis of boron nitride via magnesium reduction using additives

S. Chung*¹

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

10:00 AM

Break

10:20 AM

(ICACC-S8-028-2018) Advanced Powder Processing for High-Performance Thermoelectric Materials (Invited)

J. Li*¹

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

10:50 AM

(ICACC-S8-029-2018) Water vapor-assisted solid-state synthesis and particle shape evolution of ceramic powders

T. Kozawa*¹; K. Yanagisawa²

1. Osaka University, Joining and Welding Research Institute, Japan
2. Kochi University, Japan

11:10 AM

(ICACC-S8-030-2018) Facile one-step high-temperature spray pyrolysis route toward ultrafine metal carbide nanocrystalline powders

J. Xing*¹; P. Foroughi¹; A. E. Behrens¹; Z. Cheng¹

1. Florida International University, Mechanical and Materials Engineering, USA

11:30 AM

(ICACC-S8-031-2018) Fractals Nature and Nano-micro Structure within the Energy Frontiers

V. Mitic*¹; L. Kocic²; V. Paunovic³; B. Vlahovic⁴; S. Tidrow²; H. Fecht⁵

1. Serbian Academy of Sciences, Institute of Technical Sciences, Serbia
2. Alfred University, USA
3. University of Nis, Serbia
4. North Carolina Central University, USA
5. University of Ulm, Germany

S9: Porous Ceramics: Novel Developments and Applications

Innovations in Processing Methods and Synthesis of Porous Ceramics I

Room: Coquina Salon G

Session Chairs: Paolo Colombo, University of Padova; Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST)

8:30 AM

(ICACC-S9-001-2018) How to engineer porous non-oxide ceramics at various length scales via precursor chemistry? (Invited)

S. Bernard*¹

1. CNRS, Ceramic Research Institute, France

9:00 AM

(ICACC-S9-002-2018) Synthesis and properties of multiscale porous TiC/SiC ceramics

A. J. Baux*¹; L. Nouvian¹; S. Jacques¹; T. Piquero²; D. Rochais²; G. Chollon¹

1. LCTS - CNRS, France
2. CEA, Ripault, France

9:20 AM

(ICACC-S9-003-2018) Effect of thermal conductivity of powder compacts on porous structure in direct-foaming method

A. Shimamura*¹; M. Hotta¹; N. Kondo¹

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

9:40 AM

(ICACC-S9-004-2018) Processing of Electrospun Ceramic Nanofiber Mats

O. Elishav¹; V. Beilin¹; G. S. Shter¹; G. Grader*¹

1. Technion - Israel Institute of Technology, Israel

10:00 AM

Break

Innovations in Processing Methods and Synthesis of Porous Ceramics II

Room: Coquina Salon G

Session Chair: Samuel Bernard, CNRS

10:40 AM

(ICACC-S9-005-2018) Processing and performance evaluation of porous carbon material (Invited)

R. Inoue*¹; Y. Kogo¹

1. Tokyo University of Science, Japan

11:10 AM

(ICACC-S9-006-2018) Aligned Continuous Cylindrical Pores Derived from Electrospun Polymer Fibers in Titanium Diboride

D. C. Hicks*¹; Z. Zhou²; G. Liu²; C. Tallon¹

1. Virginia Tech, Materials Science and Engineering, USA
2. Virginia Tech, Chemistry, USA

11:30 AM

(ICACC-S9-007-2018) Controllable Morphology of Multi-Scale Porous Titanium Dioxide

N. Zahed*¹; J. Foster¹; C. Tallon¹

1. Virginia Polytechnic Institute and State University, Materials Science and Engineering, USA

11:50 AM

(ICACC-S9-008-2018) Design of Superhydrophobic Conductive Ceramic Fibers

P. Taheri*¹

1. University of Texas Arlington, Chemistry, USA

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

Novel Synthesis Paradigm and Unique Properties of Mxenes-II

Room: Tomoka B

Session Chairs: Geetu Sharma, University of California, Davis; Deniz Cakir, University of North Dakota

8:30 AM

(ICACC-S12-028-2018) Highly Stretchable and Bendable Conductive MXene Multilayers

H. An*²; T. Habib²; S. Shah²; H. Gao¹; M. Radovic³; M. Green²; J. Lutkenhaus²

1. Texas A&M University, Department of Mechanical Engineering, USA
2. Texas A&M University, Artie McFerrin Department of Chemical Engineering, USA
3. Texas A&M University, Department of Materials Science and Engineering, USA

8:50 AM

(ICACC-S12-029-2018) Multiscale Damping Properties and Mechanisms of 2D Layered MXene

A. Loganathan*¹; P. Nautiyal¹; B. Boesl¹; A. Agarwal¹

1. Florida International University, Materials Engineering, USA

9:10 AM

(ICACC-S12-030-2018) Transparent, conductive solution-processed 2D MXene films

G. Ying*¹; A. D. Dillon²; D. Zhao¹; S. Mei¹; S. Kota¹; G. Michael¹; C. Li¹; A. T. Fafarman¹; M. Barsoum¹

1. Drexel University, Department of Materials Science and Engineering, USA
2. Drexel University, Department of Chemical and Biological Engineering, USA

9:30 AM

(ICACC-S12-031-2018) Theoretical investigations on the physical properties and fabrication mechanisms of MXenes

X. Zha*¹; J. Zhou¹; L. Feng¹; P. Eklund²; J. Francisco²; Q. Huang¹; S. Du¹

1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China
2. Purdue University, USA
3. Linköping University, Sweden

9:50 AM

Break

UHTC Ceramic Matrix Composites

Room: Tomoka B

Session Chair: William Fahrenholtz, Missouri University of Science & Technology

10:20 AM

(ICACC-S12-032-2018) Ultra-high temperature ceramic matrix composites (UHTCMCs) (Invited)

J. Binner*¹

1. University of Birmingham, United Kingdom

10:50 AM

(ICACC-S12-033-2018) Tough salami-inspired UHTCMCs produced by electrophoretic deposition

P. Galizia*¹; S. Failla¹; L. Zoli¹; D. Sciti¹

1. ISTECCNR, Italy

11:10 AM

(ICACC-S12-034-2018) Thermo-mechanical behavior of novel UHTCMCs with a carbide matrix at temperatures above 1800°C

A. Vinci*¹; L. Zoli²; D. Sciti²; W. Fahrenholtz²; J. Watts²; G. Hilmis¹

1. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
2. CNR ISTECC, Dip. di Scienze Chimiche e Tecnologie dei Materiali, Italy

11:30 AM

(ICACC-S12-035-2018) New Avenues for Near-Net-Shaping of UHTCsC. Tallon*¹; S. Leo²; G. Franks²

1. Virginia Tech, Materials Science and Engineering, USA
2. The University of Melbourne, Department of Chemical and Biomolecular Engineering, Australia

S13: Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy**Novel Ceramics, Radiation Effects II**

Room: Coquina Salon H

Session Chair: Lance Snead, ORNL

8:30 AM

(ICACC-S13-027-2018) Neutron Irradiation of Ti_3SiC_2 and Ti_3AlC_2 (Invited)M. Barsoum*¹

1. Drexel University, Materials Science and Engineering, USA

9:00 AM

(ICACC-S13-028-2018) Low-Temperature Processing and Consolidation of HydroxyapatiteM. ul Hassan*¹; H. Ryu¹

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

9:20 AM

(ICACC-S13-029-2018) Saturation of radiation damage in A-atom layers of Ti_3AlC_2 - $Ti_5Al_2C_3$ and Ti_3SiC_2 C. Ang*¹; P. Edmondson²; C. Parish²; Y. Katoh²

1. University of Tennessee, Nuclear Engineering, USA
2. Oak Ridge National Lab, USA

9:40 AM

(ICACC-S13-030-2018) Effect of neutron irradiation on microstructure evolution of isotopically-controlled titanium diboride ($Ti^{11}B_2$)A. Bhattacharya*¹; T. Koyanagi¹; C. Parish¹; Y. Katoh¹; D. King²; G. Hilmas²

1. Oak Ridge National Lab, Materials Science and Technology Division, USA
2. University of Missouri-Rolla, Materials Science & Engineering Department, USA

10:00 AM

Break

10:20 AM

(ICACC-S13-031-2018) Advanced manufacturing of ceramics for nuclear fission systems (Invited)K. Terrani*¹; M. Trammell¹; S. C. Finkeldei¹; J. Kiggans¹

1. Oak Ridge National Lab, USA

10:50 AM

(ICACC-S13-033-2018) Developing Radiation Resistant Ceramics through Microstructural EngineeringN. J. Madden*¹; K. Hattar²; J. A. Krogstad¹

1. University of Illinois at Urbana-Champaign, Material Science and Engineering, USA
2. Sandia National Laboratories, USA

11:10 AM

(ICACC-S13-034-2018) Microstructural characterization of nuclear graphite: From the microscale to the nanoscaleJ. D. Arregui-Mena*¹; P. D. Edmondson¹; G. W. Helmreich¹; A. Campbell¹; Y. Katoh¹

1. Oak Ridge National Lab, Nuclear Materials Science & Technology Group, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications**Piezoelectric Material**

Room: Tomoka C

Session Chairs: Elizabeth Kupp, The Pennsylvania State University; Danilo Suvorov, Jozef Stefan Institute

8:30 AM

(ICACC-S14-023-2018) Synthesis of nano $KNbO_3$ perovskite at room temperature (Invited)K. Toda*¹

1. Niigata University, Japan

9:00 AM

(ICACC-S14-024-2018) Formation of secondary phases in lead-free $(Na_{1-x}K_x)_{0.5}Bi_{0.5}TiO_3$ -based piezoceramics (Invited)D. Suvorov*¹; J. Konig¹; M. Spreitzer¹

1. Jozef Stefan Institute, Advanced Materials, Slovenia

9:30 AM

(ICACC-S14-025-2018) Structure-Property Relationships in Texture-Engineered Ceramics (Invited)G. L. Messing¹; S. Poterala¹; Y. Chang¹; E. R. Kupp*¹; T. Frueh¹; B. Watson¹; R. Walton¹; M. Brova¹; A. Hofer¹; R. Bermejo²; R. Meyer³

1. The Pennsylvania State University, Materials Science and Engineering, USA
2. Montanuniversität Leoben, Austria
3. Pennsylvania State University, Applied Research Laboratory, USA

10:00 AM

Break

10:20 AM

(ICACC-S14-026-2018) Field induced phase transition in PMN-xPT single crystal near MPBQ. Li*¹; C. Xu¹; Q. Yan¹; Y. Zhou¹

1. Tsinghua University, Department of Chemistry, China

10:40 AM

(ICACC-S14-027-2018) Texture control of ceramics with electric field orientation (Invited)T. Nakayama*¹; M. Kanno¹; H. Cho²; S. T. Nguyen¹; T. Suzuki¹; H. Suematsu¹; K. Niihara¹

1. Nagaoka Univ of Tech, Japan
2. Hanyang University, Republic of Korea

11:10 AM

(ICACC-S14-028-2018) Surface electric fields of bioceramic electrets promote cell adhesion (Invited)M. Nakamura*¹; K. Yamashita¹

1. Tokyo Medical and Dental University, Institute of Biomaterials and Bioengineering, Japan

11:40 AM

(ICACC-S14-029-2018) Reduced Graphene Oxide-Nanoparticles Nanocomposite "Synthesis and Characterization"A. Nemati*¹

1. Sharif University of Technology, Materials Science & Eng., Islamic Republic of Iran

S15: Additive Manufacturing and 3-D Printing Technologies**Slurry & Ink Jet Printing**

Room: Coquina Salon B

Session Chair: Tyrone Jones, US Army Research Laboratory

8:30 AM

(ICACC-S15-027-2018) Challenges and Issues in Additive Manufacturing of Ceramic Products (Invited)T. Ohji*¹; N. Kondo¹

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

9:00 AM

(ICACC-S15-028-2018) LSD- 3D printing: Powder based Additive Manufacturing, from porcelain to technical ceramics

A. Zocca*¹; P. Lima¹; T. Mühler²; J. Lüchtenborg¹; J. Guenster¹

1. BAM Federal Institute for Materials Research and Testing, Ceramic Processing and Biomaterials, Germany
2. TU Clausthal, LaserAnwendungsCentrum, Germany

9:20 AM

(ICACC-S15-029-2018) Three Dimensional Ceramics Printed via Ink Jet Methods

D. Crenshaw¹; X. Wang*¹

1. Alfred University, School of Engineering, USA

9:40 AM

(ICACC-S15-030-2018) 3D Printing of thermal insulating zirconia structures

A. Chrystel¹; S. Beaudet Savignat*¹

1. CEA, France

10:00 AM

Break

Emerging Technologies

Room: Coquina Salon B

Session Chair: Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST)

10:20 AM

(ICACC-S15-031-2018) Additive Manufacturing of Ceramics for Protection Systems: Technical Challenges and Opportunities (Invited)

T. Jones*¹

1. US Army Research Laboratory, USA

10:50 AM

(ICACC-S15-032-2018) Quality Aspects of Additively Manufactured Medical Implants

J. Wilbig¹; F. Leonard¹; G. Bruno¹; J. Guenster*¹

1. BAM Federal Institute for Materials Research and Testing, Germany

11:10 AM

(ICACC-S15-033-2018) A novel Approach to Facilitate Densification and Strength of 3D Printed SiC Articles

A. El-Ghannam*¹; T. Schmitz¹; D. Beasock¹

1. University of North Carolina at Charlotte, USA

11:30 AM

(ICACC-S15-034-2018) Considerations on 3D printing of refractories

S. Shi*¹

1. Materials Technology Innovation, LLC, USA

S16: Geopolymers, Inorganic Polymers and Sustainable Materials

Synthesis, Processing and Microstructure I

Room: Ponce de Leon

Session Chair: Waltraud Kriven, University of Illinois at Urbana-Champaign

8:30 AM

(ICACC-S16-001-2018) Examination of Structural Properties and Thermal Stabilities of Geopolymer Nanomaterials (Invited)

D. Seo*¹; S. Chen¹

1. Arizona State University, School of Molecular Sciences, USA

9:00 AM

(ICACC-S16-002-2018) Additive Manufacturing of Ceramics with Geopolymers (Invited)

P. Colombo*¹; G. Franchin¹; P. Scanferla¹

1. University of Padova, Industrial engineering, Italy

9:30 AM

(ICACC-S16-003-2018) Additive Manufacturing of Geopolymers by Local Laser Drying (Invited)

T. Mühler*¹; J. Lüchtenborg¹; J. Guenster²; P. Hlavacek²; P. Sturm²; G. J. Gluth²

1. Clausthal University of Technology, Institute of Non-Metallic Materials, Germany
2. Bundesanstalt für Materialforschung und -prüfung, Germany

10:00 AM

Break

Synthesis, Processing and Microstructure II

Room: Ponce de Leon

Session Chair: Paolo Colombo, University of Padova

10:20 AM

(ICACC-S16-004-2018) 3D Printing of Alumina-Platelet – Reinforced Geopolymer Composites (Invited)

B. Munoz¹; P. F. Keane¹; W. M. Kriven*¹

1. University of Illinois at Urbana-Champaign, USA

10:40 AM

(ICACC-S16-005-2018) Basalt Chopped Fiber Reinforced, Amorphous Self-Sealed Geopolymers (ASS-G) and Amorphous Self-Sealed Ceramics (ASS-C) (Invited)

P. F. Keane*²; C. P. Marsh²; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, USA
2. ERDC, Construction Engineering Research Laboratory, USA

11:00 AM

(ICACC-S16-006-2018) One-part geopolymers and geopolymer-zeolite composites based on silica: Factors influencing microstructure and engineering properties (Invited)

G. J. Gluth*¹; P. Sturm¹; S. Greiser¹; C. Jäger¹; H. Kühne¹

1. Bundesanstalt für Materialforschung und -prüfung (BAM), Germany

11:30 AM

(ICACC-S16-007-2018) Geopolymerization Process and Mechanism of the Lithium-substituted Cesium-based Geopolymers (Invited)

J. Yuan*¹; P. He¹; D. Jia¹

1. Harbin Institute of Technology, School of Materials Science and Engineering, China

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Photonics I

Room: Halifax A/B

Session Chairs: Fabio Cicoira, Polytechnique Montreal; Gilles Lerondel, University of Technology of Troyes

8:30 AM

(ICACC-S17-021-2018) Fluorescent Carbon Dots in Sensing and Imaging Applications (Invited)

J. Manioudakis¹; J. Macairan¹; F. Noun¹; F. Victoria¹; R. Naccache*¹

1. Concordia University, Chemistry and Biochemistry, Canada

9:00 AM

(ICACC-S17-022-2018) Light Emitting Nanoplatfoms Based on Rare Earth Doped Nanoparticles (Invited)

F. Vetrone*¹

1. Institut National de la Recherche Scientifique, Centre Énergie, Matériaux et Télécommunications, Canada

9:30 AM

(ICACC-S17-023-2018) Degenerately doped zinc oxide nanocrystals as plasmonic and chemoresistive gas sensors (Invited)

M. Sturaro¹; E. Della Gaspera²; C. Cantalini³; M. Guglielmi¹; A. Martucci^{*1}

1. University of Padova, Industrial Engineering, Italy
2. RMIT University, Australia
3. University of L'Aquila, Italy

10:00 AM

Break

10:20 AM

(ICACC-S17-024-2018) Energy-Related and Optical Phenomena in Hybrid Nanostructures and Bio-assemblies (Invited)

A. Govorov^{*1}

1. Ohio University, Physics, USA

10:50 AM

(ICACC-S17-025-2018) Silicon Carbonitride Nanostructured Thin Films for Photonic Applications (Invited)

Z. Khatami¹; J. Wojcik¹; P. Mascher^{*1}

1. McMaster University, Engineering Physics and CEDT, Canada

11:20 AM

(ICACC-S17-026-2018) Optical Properties of 3D CsPbBr₃, 2D CsPb₂Br₅ and 0D Cs₂PbBr₆ (Invited)

J. Bao^{*1}

1. University of Houston, USA

11:50 AM

(ICACC-S17-027-2018) Low temperature process glass for lighting packaging

C. Chan^{*1}; F. Wu¹

1. National United University, Materials Science and Engineering, Taiwan

Honorary Symposium: Advancing Frontiers of Ceramics for Sustainable Society Development - International Symposium in Honor of Dr. Mrityunjay Singh

Advancing Frontiers of Ceramics IV -Energy Technologies

Room: Coquina Salon E

Session Chairs: Palani Balaya, National University of Singapore; Hua-Tay Lin, Guangdong University of Technology

8:30 AM

(ICACC-HON-027-2018) Can we Use Silicon as Stable and High Capacity Anode Material in Lithium Ion Batteries? Yes we can! (Invited)

R. Riedel^{*1}; M. Graczyk-Zajac¹; D. Vrankovic¹

1. TU Darmstadt, Materials Science, Germany

9:00 AM

(ICACC-HON-028-2018) Non-flammable Sodium-ion Batteries for Large Scale Storage Systems (Invited)

P. Balaya^{*1}

1. National University of Singapore, Department of Mechanical Engineering, Singapore

9:20 AM

(ICACC-HON-029-2018) Materials for Energy Storage – Key Enabler for Low Carbon Energy Future (Invited)

R. Bordia^{*1}; J. Nanda²

1. Clemson University, Materials Science and Engineering, USA
2. Oak Ridge National Lab, Materials Science and Technology Division, USA

9:40 AM

(ICACC-HON-030-2018) Development of Oxide Ceramics for Thermoelectric Power Generation Applications (Invited)

M. Ohtaki^{*1}

1. Kyushu University, Interdisciplinary Graduate School of Engineering Sciences, Japan

10:00 AM

Break

10:20 AM

(ICACC-HON-031-2018) Electroceramics for High Temperature Energy Systems (Invited)

P. Singh^{*1}

1. University of Connecticut, MSE, USA

10:50 AM

(ICACC-HON-032-2018) Glass Sealing of Solid Oxide Fuel Cells: Processing and Mechanical Characterization (Invited)

M. J. Hoffmann^{*1}; E. Reitz¹; B. Ehreiser¹; G. Schell¹; E. C. Bucharsky¹

1. Karlsruhe Institute of Technology, Institute for Applied Materials (IAM-KWT), Germany

11:20 AM

(ICACC-HON-033-2018) Silicon-based Ceramics for Sustainable Clean and Efficient Energy Technologies (Invited)

H. Lin^{*1}

1. Guangdong University of Technology, School of Electronic and Mechanical Engineering, China

11:40 AM

(ICACC-HON-034-2018) Challenges and Opportunities in Energy and Environmental Remediation, including Hybrid Microwave Technology (Invited)

G. Wicks^{*1}

1. Applied Research Center, USA

S1: Mechanical Behavior and Performance of Ceramics & Composites

Interlamainar and Interfacial Properties

Room: Coquina Salon D

Session Chairs: Rabih Mansour, Teledyne Scientific Company; Emmanuel Maillet, GE Global Research

1:30 PM

(ICACC-S1-038-2018) Microstructure-based modeling of the interlaminar tensile strength of ceramic matrix composites

M. Moscinski^{*1}; A. Cerrone¹; P. Meyer¹; E. Maillet¹; D. Dunn¹

1. GE Global Research, USA

1:50 PM

(ICACC-S1-039-2018) A Scaled Four Point Flexure Test Method for Interlaminar Tensile Strength Measurement in Ceramic Matrix Composites

S. C. Zunjarrao²; N. Janakiraman²; D. Patro²; M. Mathivanan²; S. Subramanian^{*1}; D. Dunn¹; Y. Zhou¹; D. Carper²

1. GE Global Research, USA
2. GE JFWTC, India
3. GE Aviation, USA

2:10 PM

(ICACC-S1-040-2018) Interlaminar Fracture Properties of 2D Woven Ceramic Matrix Composites at Room and Elevated Temperatures

R. Mansour^{*1}; Y. P. Singh²; G. N. Morscher²

1. Teledyne Scientific Company, Composite Materials, USA
2. University of Akron, Mechanical Engineering, USA

2:30 PM**(ICACC-S1-041-2018) Asymmetric Four Point Bending Test Method for Interlaminar Shear Strength in Ceramic Matrix Composites**S. C. Zunjarrao¹; M. Kashfuddoja¹; D. Patro¹; S. Subramanian*³; Y. Zhou²; D. Carper²

1. GE JFWTC, India
2. GE Aviation, USA
3. GE GRC, USA

2:50 PM**(ICACC-S1-042-2018) In-situ study on SiC/Si interfacial strength of reaction bonded SiC/Si composites**C. Hsu*¹; Y. Zhang¹; P. Karandikar¹; F. Deng¹; C. Ni¹

1. University of Delaware, USA

3:10 PM**Break****3:30 PM****(ICACC-S1-043-2018) Microcrack evaluation of an orthogonal 3-D woven SiC/SiC composite using a digital image correlation method with microscopic speckle patterns**M. Sato*¹; T. Ogasawara¹; T. Aoki²

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

3:50 PM**(ICACC-S1-044-2018) Combining in-situ synchrotron X-ray microtomography and acoustic emission to characterize damage evolution in ceramic matrix composites**E. Mailliet*¹; A. Singhal¹; A. Hillmas²; Y. Gao¹; Y. Zhou¹; G. Henson¹

1. GE Global Research, USA
2. University of Michigan, Department of Materials Science & Engineering, USA

4:10 PM**(ICACC-S1-045-2018) Evaluation of SiC/SiC CMCs with yttrium disilicate fiber coatings**E. E. Boakye*¹; P. Mogilevsky¹; T. Key¹; T. A. Parthasarathy¹; R. Hay²; M. Cinibulk²; S. S. Opeka¹

1. UES Inc., Materials Science, USA
2. AFRL, Materials and Manufacturing Directorate, USA

4:30 PM**(ICACC-S1-046-2018) Hardness and stiffness of long fiber reinforced C/C-SiC composites**D. Koch*¹; Y. Shi¹

1. Institute of Structures and Design, Ceramic Composites and Structures, Germany

S3: 15th International Symposium on Solid Oxide Fuel Cells (SOFC): Materials, Science and Technology**Cathode Materials I**

Room: Crystal

Session Chair: Xingbo Liu, West Virginia University

1:30 PM**(ICACC-S3-034-2018) The Effects of Composition and Operating Conditions on the Microstructure and Performance of LSM-Based SOFC Cathodes (Invited)**M. R. De Guire*¹

1. Case Western Reserve University, Materials Science and Engineering, USA

2:00 PM**(ICACC-S3-035-2018) Microstructure modification in the interfaces between electrode / electrolyte to enhance performance of the anode-supported solid oxide fuel cell**M. Liao¹; T. Lin*¹; C. Yeh¹; H. Kuo¹; Y. Chen¹; W. Kao¹; R. Lee¹; S. Lee²

1. Institute of Nuclear Energy Research, Nuclear Fuels and Materials Division, Taiwan
2. National Central University, Institute of Materials Science & Engineering, Taiwan

2:20 PM**(ICACC-S3-036-2018) Effect of Temperature and Overpotential on Degradation of LSM-YSZ and LSCF Electrodes during Reversing Current Operation**M. Y. Lu*¹; J. G. Railsback¹; S. Barnett¹

1. Northwestern University, Materials Science and Engineering, USA

2:40 PM**Break****Cathode Materials II**

Room: Crystal

Session Chair: Minfang Han, Tsinghua University

3:20 PM**(ICACC-S3-037-2018) Microstructure Degradation of LSCF Cathodes for Solid Oxide Fuel Cells**A. Zekri*²; G. Sourkouni¹; N. Klaassen²; C. Gutsche²; P. Michalowski²; C. Argiris¹; J. Parisi²; T. Plaggenborg²; M. Knipper²

1. Clausthal Centre for Materials Technology, Germany
2. Institute of Physics, Department of Energy and Semiconductor Research, Germany

3:40 PM**(ICACC-S3-038-2018) The use of thermodynamic modelling for tuning microstructure and composition of $(La_{0.8}Sr_{0.2})_{0.98}Cr_xFe_{1-x}O_{3±δ}$** H. Sabarou*¹; Y. Zhong¹

1. Florida International University, Mechanical & Materials Engineering, USA

4:00 PM**(ICACC-S3-039-2018) Evaluation of Cathode Materials for Proton Conducting Intermediate Temperature Solid Oxide Fuel Cells**S. Sun*¹; Z. Cheng¹

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: Fiorenzo Vetrone, Institut National de la Recherche Scientifique; Alberto Vomiero, Lulea University of Technology

1:30 PM**(ICACC-S5-004-2018) Tuning light emission properties in composite ceramics for advanced applications (Invited)**A. Vomiero*¹

1. Lulea University of Technology, Engineering Sciences & Mathematics, Sweden

1:50 PM**(ICACC-S5-002-2018) Ceramic Nanosensors and Single Exhale Breathalyzers for Asthma and Flu Monitoring (Invited)**P. Gouma*¹

1. University of Texas, Arlington, MSE, USA

2:10 PM**(ICACC-S5-003-2018) Hybrid Nanoparticles as New Theranostics for Cancer Detection and Therapy (Invited)**M. Wang*¹

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

2:30 PM**(ICACC-S5-001-2018) NIR Emitting Nanoplatfoms: Harnessing Light for Applications in Biology and Nanomedicine (Invited)**F. Vetrone*¹

1. Institut National de la Recherche Scientifique, Cente Énergie, Matériaux et Télécommunications, Canada

2:50 PM**Break**

3:10 PM**(ICACC-S5-005-2018) Controlled Release of Growth Factor from Bijels-derived Hybrid Hydrogel Membranes**M. Wang*; H. Sun¹

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

3:30 PM**(ICACC-S5-006-2018) Magneto-Plasmonic nanoplatform in photothermal therapy**C. Multari*; M. Miola¹; F. Laviano¹; R. Gerbaldo¹; G. Pezzotti²; D. Debellis³; E. Verne⁴

1. Politecnico di Torino, DISAT, Italy
2. Kyoto Institute of Technology, Japan
3. Italian Institute of Technology, Electron Microscopy Facility, Italy

3:50 PM**(ICACC-S5-007-2018) Composite nanostructures as a means for bioimaging, nanothermometry, photothermal therapy and controlled magnetic heating (Invited)**D. H. Ortgies*; U. Rocha³; L. de la Cueva⁴; D. Cabrera⁵; G. Salas⁵; F. J. Teran⁴; A. S. Vanetsev⁵; M. Rähn⁵; V. Sammelselg⁵; Y. V. Orlovskii⁵; D. Jaque¹

1. Universidad Autonoma de Madrid, Física de Materiales, Spain
2. Instituto Ramón y Cajal de Investigación Sanitaria IRYCIS, Spain
3. Universidade Federal de Alagoas, Instituto de Física, Brazil
4. iMdea Nanociencia, Spain
5. University of Tartu, Institute of Physics, Estonia

4:10 PM**(ICACC-S5-008-2018) Antifogging Diamond-like Carbon Coatings for Laparoscope Lenses (Invited)**A. Evans¹; R. L. Leonard*; J. A. Johnson¹

1. University of Tennessee Space Institute, Mechanical, Aerospace, and Biomedical Engineering, USA

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

Room: Tomoka A

Session Chair: Xiangxin Guo, Shanghai Institute of Ceramics, Chinese Academy of Sciences

1:30 PM**(ICACC-S6-031-2018) Amorphous Li₂O₂: Chemical Synthesis and Charge Transport Properties (Invited)**Z. Peng*¹

1. Changchun Institute of Applied Chemistry, China

2:00 PM**(ICACC-S6-032-2018) Towards better Na-O₂ batteries: Factors controlling the electrochemical behavior (Invited)**A. Grimaud*¹

1. College de France - CNRS, France

2:30 PM**(ICACC-S6-033-2018) Functional and smart electrolytes for rechargeable Zn batteries (Invited)**G. Cui*¹; J. Zhao¹

1. Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, China

3:00 PM**Break****Beyond Lithium Batteries II / Solid Electrolytes and All-solid-state-batteries III**

Room: Tomoka A

Session Chair: Naoaki Yabuuchi, Tokyo Denki University

3:20 PM**(ICACC-S6-034-2018) NASICO-typed Na₃V₂(PO₄)₂F₃ as a Promising Cathode for Aqueous Zinc Ions Batteries (Invited)**W. Li¹; K. Wang¹; K. Jiang*¹

1. Huazhong University of Science and Technology, China

3:50 PM**(ICACC-S6-035-2018) Garnet Electrolytes for Rechargeable Solid State Lithium Batteries**X. Guo*¹

1. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

4:10 PM**(ICACC-S6-036-2018) Electrode Fabrication for All-solid-state Rechargeable Lithium Batteries using Li_{6.25}Al_{0.25}La₃Zr₂O₁₂ Solid Electrolyte (Invited)**H. Munakata*¹; J. Wakasugi¹; K. Kozuka¹; T. Kimura¹; M. Shoji¹; K. Kanamura¹

1. Tokyo Metropolitan University, Japan

4:40 PM**(ICACC-S6-037-2018) Field Assisted Sintering of Garnet-type Li₇La₃Zr₂O₁₂ Solid Electrolytes with Enhanced Ionic Conductivity for All-solid-state Batteries (Invited)**F. Chen*¹; J. Li¹; X. Xiang¹; W. Zha¹; D. Yang¹; Y. Zhang¹; Q. Shen¹; L. Zhang¹

1. Wuhan University of Technology, China

S7: 12th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications**Inorganic Materials and Composites for Energy Harvesting and CO₂ Conversion**

Room: Coquina Salon C

Session Chairs: Qi Li, Institute of Metal Research, Chinese Academy of Sciences; Yujie Xiong, University of Science and Technology of China

1:30 PM**(ICACC-S7-033-2018) Tailoring Bimetallic Nanocatalysts toward Solar-Chemical Energy Conversion (Invited)**C. Kuo*¹; Y. Chuang²; D. Cullen³; B. Sneed⁴

1. Academia Sinica, Institute of Chemistry, Taiwan
2. National Synchrotron Radiation Research Center, Taiwan
3. Oak Ridge National Laboratory, Materials Science and Technology Division, USA
4. Oak Ridge National Laboratory, Center for Nanophase Materials Sciences, USA

2:00 PM**(ICACC-S7-034-2018) Photo-driven activation of CO₂ molecule**R. Solarska*¹; K. Bienkowski¹; M. Arasimowicz¹

1. University of Warsaw, Centre of New Technologies, Poland

2:20 PM**(ICACC-S7-036-2018) Manipulating hematite nanostructure design for efficient water oxidation reaction under sunlight irradiation (Invited)**F. L. de Souza*¹; W. M. Carvalho-Jr¹; D. Ferreira Muche²; R. Castro²

1. Federal University of ABC, Center of Natural Science and Humanity, Brazil
2. University of California, Davis, USA

2:40 PM**Break**

Nanomaterials for Photocatalysis, Solar Hydrogen and Thermoelectrics III

Room: Coquina Salon C

Session Chairs: Renata Solarska, University of Warsaw;
Chun-Hong Kuo, Acadmeia Sinica

3:20 PM

(ICACC-S7-037-2018) Highly Efficient, Visible-Light-Activated Photocatalysts with Post-illumination "Memory" Effect (Invited)

Q. Li*¹

1. Institute of Metal Research, Chinese Academy of Sciences, Shenyang National Laboratory for Materials Science, China

3:50 PM

(ICACC-S7-038-2018) Interface Engineering in Inorganic Hybrid Structures towards Improved Photocatalysis (Invited)

Y. Xiong*¹

1. University of Science and Technology of China, Department of Chemistry, China

4:20 PM

(ICACC-S7-039-2018) Flame Inspired Nanostructuring: Flexible Ceramics to Advanced Biomaterials (Invited)

J. Gröttrup¹; F. Schütt¹; D. Smazna¹; S. Shree¹; I. Paulowicz¹; F. Ceynowa¹; L. Siebert¹; S. Kaps¹; O. Lupan¹; R. Adelung¹; Y. K. Mishra*¹

1. Kiel University, Institute for Materials Science, Germany

4:40 PM

(ICACC-S7-040-2018) Citrate Precursor Synthesis, Structural Characterization and Dielectric Properties of Ba_{1-x}Ca_xZrO₃ (0.05 ≤ x ≤ 0.20) Nanoparticles

M. Ubaidullah*¹

1. The Glocal University, Natural and Applied Science, India

5:00 PM

(ICACC-S7-041-2018) Efficiency Enhancement of Low-Cost Upgraded Metallurgical-Grade Si Solar cells

D. Lee*¹; H. Kim¹; E. Kim²

1. Korea Institute of Industrial Technology, Green Materials & Processes Group, Republic of Korea
2. Korea Institute of Industrial Technology, Ulsan Regional Division, Republic of Korea

S8: 12th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT12)

Advanced Composite Manufacturing

Room: Coquina Salon A

Session Chairs: Young-Wook Kim, University of Seoul;
Hisashi Serizawa, Osaka University

1:30 PM

(ICACC-S8-032-2018) Continuous Carbon Nanotube Yarn Reinforced Ceramic Nanocomposites by PIP Process (Invited)

Y. Li*¹

1. Tianjin University, China

2:00 PM

(ICACC-S8-033-2018) Carbon Nano-Phase Directionally Reinforced Alumina-Zirconia (ZTA) Composites with superior dispersion and increased mechanical properties

C. L. Falticeanu*¹

1. McGeoch Technology-Precision Ceramics, Ceramic Materials, United Kingdom

2:20 PM

(ICACC-S8-034-2018) High-Temperature Ceramic Matrix Composites using Microwave Enhanced Chemical Vapour Infiltration

M. Porter*¹; A. D'Angio¹; J. Binner¹; P. Mogilevsky²; M. Cinibulk²

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

2:40 PM

(ICACC-S8-035-2018) Influences of Laser Condition and Slit Shape on Joinability of Zircaloy-SiC/SiC Composite Tube Joint

H. Serizawa*¹; H. Motoki²; Y. Asakura³; Y. Sato³; N. Nakazato⁴; M. Tsukamoto¹; J. Park³; H. Kishimoto³; A. Kohyama³

1. Osaka University, Joining and Welding Research Institute, Japan
2. Osaka University, Graduate School of Engineering, Japan
3. Murooran Institute of Technology, OASIS, Japan
4. Murooran Institute of Technology, Japan

3:00 PM

Break

3:20 PM

(ICACC-S8-036-2018) Effect of Additive Composition on Mechanical and Thermal Properties of Pressureless Sintered Silicon Carbide Ceramics

Y. Kim*¹; Y. Seo¹; J. Eom²

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

3:40 PM

(ICACC-S8-037-2018) Effect of Alloy Composition on Reactive Melt Infiltration for the Production of SiC/SiC Composites

R. B. Reitz*¹; F. W. Zok¹; C. G. Levi¹

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

4:00 PM

(ICACC-S8-038-2018) Electroconductive oxide ceramics with graphene-encapsulated fillers

I. Hussainova*¹; I. Jasiuk²; M. Drozdova¹; S. Kale²

1. Tallinn University of Technology, Estonia
2. University of Illinois at Urbana-Champaign, USA

4:20 PM

(ICACC-S8-039-2018) TEM Analysis of Interfaces in Diffusion-Bonded SiC Fiber-Bonded Ceramics Using Ti/Cu 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, Graduate School of Engineering, Japan
3. NASA Glenn Research Center, USA
4. University of Wisconsin-Stout, USA
5. Ohio Aerospace Institute, USA

S9: Porous Ceramics: Novel Developments and Applications

Innovations in Processing Methods and Synthesis of Porous Ceramics III

Room: Coquina Salon G

Session Chair: Gideon Grader, Technion - Israel Institute of Technology

1:30 PM

(ICACC-S9-009-2018) Additive manufacturing of periodic ceramic substrates for catalyst supports

A. Ortona*¹

1. SUPSI, MEMTi, Switzerland

1:50 PM

(ICACC-S9-010-2018) Low Density Reticulated Polymer Derived SiC, SiCN and SiOC foams

P. Jana¹; E. Zera¹; B. Santhosh¹; G. D. Soraru*¹

1. University of Trento, Industrial Engineering, Italy

2:10 PM**(ICACC-S9-011-2018) Ceria coating of carbide macroporous supports by electrophoretic deposition**A. Ortona^{*2}; Y. Dang-Hyok¹

1. Yeungnam University, Republic of Korea
2. SUPSI, MEMTI, Switzerland

2:30 PM**(ICACC-S9-012-2018) Chemistry of Functional Boron-Modified Silicon Carbide Precursors behind the design of 3D Porous Si-B-C Ceramics**M. Schmidt²; C. Durif²; P. Colombo³; S. Bernard^{*1}

1. CNRS, Ceramic Research Institute, France
2. European Membrane Institute, France
3. Università di Padova, Dipartimento di Ingegneria Industriale, Italy

2:50 PM**(ICACC-S9-013-2018) Tailoring Pore Structure and Properties of Yttria-Stabilized Zirconia Aerogels for High Temperature Applications**F. Hurwitz^{*1}; H. Guo²; N. Olson¹; R. B. Rogers¹

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

3:10 PM**Break****Structure and Modeling of Porous Ceramics**

Room: Coquina Salon G

Session Chair: Sawao Honda, Nagoya Institute of Technology

3:30 PM**(ICACC-S9-014-2018) Three-dimensional microstructural modeling and homogenization analysis of highly porous ceramics prepared by gelation freezing route**M. Fukushima^{*1}; H. Hyuga¹; C. Matsunaga¹; T. Ohji¹; Y. Yoshizawa¹

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

3:50 PM**(ICACC-S9-015-2018) Towards development of a robust 3D numerical method to interpret thermograms of cellular ceramics acquired by the Laser Flash method**S. Lal¹; M. Badri¹; Y. Favennec¹; B. Rousseau^{*1}

1. LTeN UMR CNRS 6607, France

4:10 PM**(ICACC-S9-016-2018) Microstructural Variations and Compaction Characteristics of Spray-Dried Alumina**I. Maher^{*1}; R. A. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

4:30 PM**(ICACC-S9-017-2018) Effect of sintering temperature on porosification behavior of fired LTCC substrates**A. Hajian^{*1}; M. Stöger-Pollach²; M. Schneider¹; H. Homolka¹; D. Müftüoğlu¹; U. Schmid¹

1. Vienna University of Technology, Institute of Sensor and Actuator Systems, Austria
2. Vienna University of Technology, University Service Centre for Transmission Electron Microscopy, Austria

4:50 PM**(ICACC-S9-018-2018) Characterization of Catalyst Support Porosity Using a Visualization and Segmentation Approach**M. K. Alazzawi^{*1}; R. A. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

S10: Virtual Materials (Computational) Design and Ceramic Genome**Modeling of Structure and Property I**

Room: Coquina Salon F

Session Chair: Wai-Yim Ching, University of Missouri-Kansas City

1:30 PM**(ICACC-S10-001-2018) Computing Grain Boundary 'Phase' Diagrams: Recent Progresses and Future Directions (Invited)**J. Luo^{*1}

1. University of California, San Diego, USA

2:00 PM**(ICACC-S10-002-2018) Classical potentials from ab initio molecular dynamics via force matching: Application to amorphous and disordered materials modeling (Invited)**P. Rulis^{*1}; P. Khanal¹; N. Dari¹

1. University of Missouri - Kansas City, Physics and Astronomy, USA

2:30 PM**(ICACC-S10-003-2018) Theoretical Investigation of mechanical and Thermal Properties of ABO₃ (A=Sr, Ba; B= Ti, Zr, Hf) perovskites (Invited)**B. Liu^{*1}

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

3:00 PM**Break****Modeling of Structure and Property II**

Room: Coquina Salon F

Session Chair: Paul Rulis, University of Missouri - Kansas City

3:20 PM**(ICACC-S10-004-2018) First-principles calculation of the electronic structure and bonding in an inter-granular glassy film model of silicon nitride (Invited)**W. Ching^{*1}; P. Adhikari¹; P. Rulis¹

1. University of Missouri-Kansas City, USA, USA

3:50 PM**(ICACC-S10-005-2018) Atomistic modeling of thermal transport in cations doped CeO₂ (Invited)**X. Bai^{*1}

1. Virginia Tech, Materials Science and Engineering, USA

4:20 PM**(ICACC-S10-006-2018) Virtual Characterization of Ceramic Defects and Interfaces**S. P. Coleman^{*1}

1. US Army Research Laboratory, USA

4:40 PM**(ICACC-S10-007-2018) Theoretical Prediction of Composition-Dependent Structure and Properties of Alumina-Rich Spinel**B. Tu^{*1}; H. Wang¹

1. Wuhan University of Technology, State Key Lab of Advanced Technology for Materials Synthesis and Processing, China

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

Synthesis, Processing, and Densification

Room: Tomoka B

Session Chair: Bai Cui, University of Nebraska, Lincoln

1:30 PM

(ICACC-S12-036-2018) Phase Control during Synthesis of Nanocrystalline Ultrahigh Temperature Ta_xHf_{1-x}B₂ Solution Powders

P. Foroughi^{*}; Z. Cheng¹

1. Florida International University, Mechanical & Materials Engineering, USA

1:50 PM

(ICACC-S12-037-2018) Microstructures and Properties of Spark Plasma Sintered MoAlB Ceramics

B. Cui^{*}; T. Lou¹; X. Yan¹

1. University of Nebraska, Lincoln, Mechanical & Materials Engineering, USA

2:10 PM

(ICACC-S12-038-2018) High entropy transition metal carbides: Uncovering a vast new compositional space to explore in the development of new UHTCs

E. Castle^{*}; T. Csanadi²; S. Grasso¹; J. Dusza²; M. Reece¹

1. Queen Mary University of London, School of Engineering and Materials Science, United Kingdom
2. Slovak Academy of Sciences, Institute of Materials Research, Slovakia

2:30 PM

(ICACC-S12-039-2018) Densification and Oxidation Behaviors of Hafnium Diboride-Hafnium Carbide Composite System

C. M. Young^{*}; C. Zhang¹; A. Loganathan¹; B. Boesl¹; A. Agarwal¹

1. Florida International University, Mechanical and Materials Engineering, USA

2:50 PM

Break

Properties, Oxidation, and Tribology I

Room: Tomoka B

Session Chairs: Jon Binner, Loughborough University; Anneliese Brenner, Purdue University

3:30 PM

(ICACC-S12-041-2018) A single, meltable precursor for zirconium carbide ceramics and composites

H. Hu^{*}; K. Xie¹

1. National University of Defense Technology, College of Aerospace Science and Technology, China

3:50 PM

(ICACC-S12-042-2018) Effect of surface roughness on ablation performance of Sm-Doped ZrB₂/SiC Systems

A. Brenner^{*}; R. Trice¹; C. Petorak²; B. Thompson²

1. Purdue University, Materials Engineering, USA
2. Praxair Surface Technologies, USA

4:10 PM

(ICACC-S12-043-2018) Oxidation Resistance of High Entropy Carbide and Boride UHTCs

L. Backman^{*}; E. J. Opila¹; T. Harrington²; J. Gild³; K. Vecchio²; J. Luo³

1. University of Virginia, Materials Science and Engineering, USA
2. University of California, San Diego, Department of NanoEngineering, USA
3. University of California, San Diego, Program of Materials Science and Engineering, USA

4:30 PM

(ICACC-S12-044-2018) Effect of rare-earth co-dopant (Sm and Er) concentration on total hemispherical emissivity and ablation resistance of ZrB₂/SiC coatings

A. A. Pena^{*}; R. Trice¹; J. Vernon²; C. Petorak³; B. Thompson³

1. Purdue University, Materials Science and Engineering, USA
2. AFRL, USA
3. Praxair, USA

4:50 PM

(ICACC-S12-045-2018) Electrical conductivities of ceria-based electrodes for use in MHD generators

M. Johnson²; D. Cann^{*}; B. Wright²; K. Kwong²; C. R. Woodside²

1. Oregon State Univ, Materials Science, School of Mechanical, Industrial, and Manufacturing Engineering, USA
2. U.S. Department of Energy, National Energy Technology Laboratory, USA

5:10 PM

(ICACC-S12-046-2018) First Principles Investigation on the Mechanical and Thermal Properties of α - and β -YAIB₄

F. Dai^{*}; Y. Zhou¹

1. Aerospace Research Institute of Materials and Processing Technology, Science and Technology of Advanced Functional Composite Laboratory, China

S13: Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy

Corrosion and Compatibility

Room: Coquina Salon H

Session Chair: Christian Deck, General Atomics

1:30 PM

(ICACC-S13-035-2018) Effect of irradiation defects on SiC dissolution in aqueous solution (Invited)

S. Kondo^{*}; Y. Maeda²; K. Fukami²; S. Mouri²; T. Hinoki¹

1. Kyoto University, Institute of Advanced Energy, Japan
2. Kyoto University, Department of Materials Science and Engineering, Guyana
3. Ritsumeikan University, Japan

2:00 PM

(ICACC-S13-036-2018) Evaluation of Environmental Barrier Coatings on SiC materials in Simulated Boiling Water Reactor (BWR) Environments

S. S. Raiman^{*}; P. J. Doyle²; C. Ang³

1. Oak Ridge National Lab, Corrosion Science, USA
2. University of Tennessee, USA
3. Oak Ridge National Lab, USA

2:20 PM

(ICACC-S13-037-2018) Silicon carbide volatilization in ultra-high temperature hydrogen environments

K. M. Benensky^{*}; K. Terrani²; S. J. Zinkle¹

1. University of Tennessee, Nuclear Engineering, USA
2. Oak Ridge National Lab, USA

2:40 PM

(ICACC-S13-038-2018) Characteristics of the Hydrothermal Corrosion SiC Under Normal Light Water Nuclear Reactor Conditions

P. J. Doyle^{*}; S. S. Raiman²; K. Terrani²

1. University of Tennessee, Nuclear Engineering, USA
2. Oak Ridge National Lab, USA

3:00 PM

Break

3:20 PM**(ICACC-S13-039-2018) Hydrothermal corrosion behavior of ZrC-SiC composite matrix for SiC composites tube**H. Lee*¹; S. Lee¹; J. Han²; D. Kim¹; J. Park¹; W. Kim¹

1. Korea Atomic Energy Research Institute, Republic of Korea
2. Seoul National University, Republic of Korea

3:40 PM**(ICACC-S13-040-2018) Improvement to hydrothermal corrosion resistance of SiC fibers for SiC/SiC composites**S. Suyama*¹; M. Ukai¹; M. Akimoto¹; K. Kakiuchi¹; H. Heki¹

1. Toshiba Corporation, Japan

4:00 PM**(ICACC-S13-041-2018) Tribological and oxidation behaviour of nitride coatings for protection of zirconium alloy cladding**Z. Gao*¹; J. Kulczyk-Malecka²; Y. Chen¹; P. Kelly¹; P. Xiao¹

1. University of Manchester, School of Materials, United Kingdom
2. Manchester Metropolitan University, United Kingdom

4:20 PM**(ICACC-S13-042-2018) High-temperature High-pressure Steam Oxidation of SiC**P. Mouche*²; K. Terrani¹

1. Oak Ridge National Lab, USA
2. University of Illinois at Urbana-Champaign, Nuclear, Plasma, and Radiological Engineering, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications**Optical Material II**

Room: Tomoka C

Session Chairs: Romain Gaume, University of Central Florida; Yuntao Wu, University of Tennessee

1:30 PM**(ICACC-S14-030-2018) Defect engineering by codoping in KCal₃:Eu²⁺ single-crystalline scintillators (Invited)**Y. Wu*¹; Q. Li²; M. Zhuravleva¹; C. Melcher¹

1. University of Tennessee, Materials Science and Engineering, USA
2. Physical Science Division, IBM Thomas J Watson Research Center, USA

2:00 PM**(ICACC-S14-031-2018) Observation of positive hysteresis in scintillators (Invited)**T. Yanagida*¹; G. Okada¹; N. Kawano¹; N. Kawaguchi¹

1. Nara Institute of Science and Technology, Japan

2:30 PM**(ICACC-S14-032-2018) Non-hygroscopic scintillators for thermal neutron detection (Invited)**N. Kawaguchi*¹; N. Kawano¹; G. Okada¹; T. Yanagida¹

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

3:00 PM**Break****3:20 PM****(ICACC-S14-033-2018) Scintillation Properties of Organic-Inorganic Layered Perovskite-type Compounds under Gamma-ray Radiation (Invited)**N. Kawano*²; M. Koshimizu¹; G. Okada²; Y. Fujimoto¹; N. Kawaguchi²; T. Yanagida²; K. Asai¹

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

3:50 PM**(ICACC-S14-034-2018) Field-Assisted Sintering and Phase Transition of ZnS-CaLa₂S₄ Composite Ceramics (Invited)**Y. Li*¹; L. Zhang²; K. Kisslinger²; Y. Wu¹

1. Alfred University, Kazuo Inamori School of Engineering, New York State College of Ceramics, USA
2. Center for Functional Nanomaterials, Brookhaven National Laboratory, USA

4:20 PM**(ICACC-S14-035-2018) Monitoring the Fabrication of Optical Ceramics by LIBS (Invited)**R. M. Gaume*¹; S. J. Pandey¹; M. Julian¹; M. Martinez²; J. Hostasa²; M. Baudelet³

1. University of Central Florida, CREOL, USA
2. CNR ISTECC, Italy
3. University of Central Florida, National Center for Forensic Science, USA

S16: Geopolymers, Inorganic Polymers and Sustainable Materials**Processing, Microstructure and Properties**

Room: Ponce de Leon

Session Chair: Dong-Kyun Seo, Arizona State University

1:30 PM**(ICACC-S16-008-2018) Understanding the Relationship Between Micro and Macro-Scale Properties in Sodium Silicate Activated Slag-Fly-ash Binders (Invited)**K. Sankar*¹; X. Chen²; G. Al-Chaar²; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, Material Science and Engineering, USA
2. Construction Engineering Research Laboratory, USA
3. University of Illinois at Urbana-Champaign, Department of Civil and Environmental Engineering, USA

2:00 PM**(ICACC-S16-009-2018) Zeolite-based ceramic components through hydrothermal dry synthesis (Invited)**A. Conte*¹; P. Colombo¹

1. University of Padova, Industrial Engineering, Italy

2:30 PM**(ICACC-S16-010-2018) Use of Geopolymeric Leucite as a Feldspathic Replacement in Dental Ceramics (Invited)**C. Bagci*¹; S. Yildirim¹; K. Sevinc¹; W. M. Kriven²

1. Hitit University, Department of Metallurgical and Materials Engineering, Turkey
2. University of Illinois at Urbana-Champaign, Department of Material Science and Engineering, USA

3:00 PM**Break****Mechanical Properties**

Room: Ponce de Leon

Session Chair: Flavio Silva, Pontificia Universidade Católica do Rio de Janeiro (PUC-Rio)

3:20 PM**(ICACC-S16-011-2018) Thermal resistant alkali-activated materials based on the COx argillite**C. Dupuy*²; M. Elie¹; A. Gharzouni¹; N. Texier-Mandoki²; X. Bourbon²; S. Rossignol¹

1. SPCTS, France
2. Andra, France

3:40 PM**(ICACC-S16-012-2018) Effects of Applied Electric Potential on the Adhesion of Geopolymer to Steel**T. A. Carlson*¹; D. Hernandez¹; M. Ziemann¹; P. Stynoski¹; C. P. Marsh¹; G. Kutyla²; W. M. Kriven²

1. USACE, USA
2. University of Illinois at Urbana-Champaign, USA

4:00 PM**(ICACC-S16-013-2018) Influence of Nanoporosity on Strength of Inorganic Polysialates: A Molecular Dynamics Study (Invited)**Y. Cui¹; E. Guleryuz²; S. Koric²; W. M. Kriven²; A. Akono*¹

1. University of Illinois at Urbana-Champaign, Civil and Environmental Engineering, USA
2. National Center for Supercomputing Applications, USA
3. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

4:30 PM**(ICACC-S16-014-2018) Strength Properties of Geopolymer Composites Using a Theoretical and Numerical Approach (Invited)**A. Kataruka¹; E. Guleryuz²; S. Koric²; W. M. Kriven²; A. Akono*¹

1. University of Illinois at Urbana-Champaign, Civil and Environmental Engineering, USA
2. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
3. National Center For Supercomputing Applications, USA

S17: Advanced Ceramic Materials and Processing for Photonics and Energy**Multifunctional II**

Room: Halifax A/B

Session Chairs: Emanuele Orgiu, Institut National de la Recherche Scientifique; Giovanni Fanchini, University of Western Ontario

1:30 PM**(ICACC-S17-028-2018) Heterojunctions of Abundant Materials for Solar Fuel Generation (Invited)**O. K. Varghese*¹; R. Neupane¹; M. Paulose¹

1. University of Houston, Department of Physics, USA

2:00 PM**(ICACC-S17-029-2018) Processing and Properties of Hierarchical Porous Ceramics for Clean Energy (Invited)**F. Akhtar*¹

1. Division of Materials Science, Department of Engineering Sciences and Mathematics, Sweden

2:30 PM**(ICACC-S17-030-2018) Design of Materials for Advanced Energy Storage (Invited)**C. S. Ozkan*¹

1. University of California Riverside, Mechanical Engineering, USA

3:00 PM**Break****3:20 PM****(ICACC-S17-031-2018) Sulfur Cathode Materials for Lithium-sulfur Batteries (Invited)**M. Ozkan*¹

1. University of California Riverside, Electrical and Computer Engineering Department, USA

3:50 PM**(ICACC-S17-032-2018) Surfaces in graphene-ceramic nanoparticle composites: Examples from Li ion battery anodes and photocatalysts (Invited)**M. Cerruti*¹

1. McGill University, Canada

4:20 PM**(ICACC-S17-033-2018) Leveraging heterostructural alloying to design metastable nitrides with improved piezoelectric properties**S. Millican*¹; K. Talley²; A. W. Weimer¹; A. Zakutayev³; C. B. Musgrave¹; G. L. Brennecke²; A. Holder¹

1. University of Colorado, Department of Chemical and Biological Engineering, USA
2. Colorado School of Mines, Department of Metallurgical and Materials Engineering, USA
3. National Renewable Energy Laboratory, USA

4:40 PM**(ICACC-S17-034-2018) Critical issues and future prospects of particulate magnetoelectric composites**P. Galizia*¹; C. Capiani¹; C. Galassi¹

1. CNR-ISTEC, Italy

Honorary Symoisum: Advancing Frontiers of Ceramics for Sustainable Society Development - International Symposium in Honor of Dr. Mrityunjay Singh**Advancing Frontiers of Ceramics V -Characterization**

Room: Coquina Salon E

Session Chairs: Junichi Tatami, Yokohama National University; Yanchun Zhou, Aerospace Research Institute of Materials & Processing Technology

1:30 PM**(ICACC-HON-035-2018) Role of Defect Chemistry on Phase Transformation Kinetics, Phase Stability and Phase Diagram Determination in Oxide Ceramics (Invited)**A. V. Virkar*¹

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

2:00 PM**(ICACC-HON-036-2018) Evaluation of crystallographic matching in ZrO₂-CeO₂ shape-memory ceramics (Invited)**E. L. Peng¹; A. Lai¹; S. Patala²; C. A. Schuh*¹

1. Massachusetts Institute of Technology, Department of Materials Science and Engineering, USA
2. North Carolina State University, Materials Science and Engineering, USA

2:30 PM**(ICACC-HON-073-2018) Advanced Characterizations of Ceramic and Composite Materials Using High-Energy X-Rays (Invited)**D. Singh*¹

1. Argonne National Lab, USA

2:50 PM**(ICACC-HON-009-2018) Current Progress in Advanced Materials Research**S. Gupta*¹

1. University of North Dakota, Mechanical Engineering, USA

3:10 PM**Break****3:30 PM****(ICACC-HON-038-2018) In-Situ Nanomechanics of One-Dimensional Ceramic Structures: Challenges, Progress and Prospects (Invited)**S. Bhowmick*¹; B. Ozdol²; S. Asif¹; O. L. Warren¹; T. Wyrobek¹

1. Bruker Nano Surfaces (Hysitron), USA
2. Lawrence Berkeley National Laboratory, USA

3:50 PM**(ICACC-HON-039-2018) Effect of in-situ ZrB₂ on the mechanical properties and ablation resistance of SiBCN ceramics (Invited)**D. Jia*¹; Y. Miao¹; Z. Yang¹; Y. Cheng²; Y. Zhou¹

1. Harbin Institute of Technology, China
2. Monash University, Australia

4:10 PM**(ICACC-HON-040-2018) Turning the properties of ultrahigh temperature ceramics through doping strategies (Invited)**Y. Zhou*¹; F. Dai¹

1. Aerospace Research Institute of Materials & Processing Technology, China

4:30 PM**(ICACC-HON-041-2018) Measurement of grain boundary strength of the neck in porous SiC ceramics using microcantilever beam specimens**J. Tatami^{*2}; Y. Imoto²; M. Iijima²; T. Yahagi¹; T. Takahashi¹

1. Kanagawa Institute of Industrial Science and Technology, Japan
2. Yokohama National University, Graduate School of Environment and Information Sciences, Japan

4:50 PM**(ICACC-HON-042-2018) Critical Role of Interfacial Characterization in Integration of Silicon Carbide Ceramics for Advanced Energy and Aerospace Systems (Invited)**H. Tsuda^{*1}; T. Ozaki²; Y. Hasegawa²; S. Mori¹; M. C. Halbig³; R. Asthana⁴; M. Singh⁵

1. Osaka Prefecture University, Graduate School of Engineering, Japan
2. Osaka Research Institute of Industrial Science and Technology, Japan
3. NASA Glenn Research Center, USA
4. University of Wisconsin-Stout, USA
5. Ohio Aerospace Institute, USA

5:10 PM**(ICACC-HON-043-2018) Minkowski Hull and Ceramics Intergranular Phenomena**V. Mitic^{*1}; L. Kocić²; V. Paunović²; S. Tidrow³; B. Vlahović⁴; H. Fecht⁵

1. Serbian Academy of Sciences, Institute of Technical Sciences, Serbia
2. University of Nis, Serbia
3. Alfred University, USA
4. North Carolina Central University, USA
5. University of Ulm, Germany

FS1: Bio-inspired Processing of Advanced Materials**Bio-inspired Processing I**

Room: St. John

Session Chair: Zhengyi Fu, Wuhan University of Technology

1:30 PM**(ICACC-FS1-001-2018) Current Research on Bioinspired Materials in State Key Lab of Metal Matrix Composite (Invited)**D. Zhang^{*1}; J. Gu¹; Z. Li¹; W. Zhang¹; Q. Liu¹; Y. Li¹

1. Shanghai Jiao Tong University, China

1:50 PM**(ICACC-FS1-002-2018) Construction of photonic crystals with opal and inverse opal structures and their applications (Invited)**J. Zhao^{*1}

1. Harbin Institute of Technology, School of Chemistry and Chemical Engineering, China

2:10 PM**(ICACC-FS1-003-2018) Advanced processing of ceramics: Taking cues from natural materials (Invited)**F. Bouville^{*1}; H. Le Ferrand¹; T. Niebel¹; A. Studart¹

1. ETH Zürich, Complex Materials, Switzerland

2:30 PM**(ICACC-FS1-004-2018) Architecture and Interface Design for Highly Conductive Graphene/Copper Composite (Invited)**D. Xiong^{*1}; M. Cao¹; D. Zhang¹; Z. Li¹

1. Shanghai Jiao Tong University, China

2:50 PM**(ICACC-FS1-005-2018) Bio-inspired chromic composite Materials (Invited)**Y. Li^{*1}

1. Harbin Institute of Technology, China

3:10 PM**Break****3:30 PM****(ICACC-FS1-006-2018) Transparent Anti-fogging Nanocomposite Films with Multi-functionalities (Invited)**A. Hozumi^{*1}; T. Sato¹; C. Urata¹; N. Shing¹

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

3:50 PM**(ICACC-FS1-007-2018) Confined-space synthesis of nanostructured anatase, directed by modified living organisms for energy storage**H. Ping^{*1}; H. Xie¹; Z. Fu¹

1. Wuhan University of Technology, China

4:10 PM**(ICACC-FS1-008-2018) A Phrynocephalus helioscopusP-inspired flexible electrochromic skin with variable color and infrared emissivity based on conducting polymer**L. Zhang^{*1}; Y. Li¹; S. Dou¹

1. Harbin Institute of Technology, School of Aeronautics, China

4:30 PM**(ICACC-FS1-009-2018) In-situ controllable synthesis of continuous three-dimensional graphene network reinforced copper matrix composites**X. Zhang^{*1}; C. He¹; N. Zhao¹

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

Poster Session B

Room: Ocean Center Arena

5:00 PM**(ICACC-S1-P069-2018) The Microstructure, Mechanical Properties and Ablative Mechanism of the SiBN ceramics by Mechanical Alloying and Hot Pressing**Z. Yang^{*1}; X. Liao¹; D. Jia¹; Y. Zhou¹

1. Harbin Institute of Technology, China

(ICACC-S1-P070-2018) Damage Accumulation Behavior of C/SiC Under CompressionY. Tobata^{*1}; K. Goto²

1. Graduate University for Advanced Studies, Space and Astronautical Science, Japan
2. Japan Aerospace Exploration Agency, Institute of Space and Astronautical Science, Japan

(ICACC-S1-P071-2018) Fiber/matrix interface characterization of SiC/SiC fiber bundle compositeY. Matsumura^{*1}; K. Goto²; Y. Kogo¹; R. Inoue¹; T. Matsuda³; S. Takahashi²; S. Kitaoka³; A. Ito⁴

1. Tokyo University of Science, Department of Materials Science and Technology, Japan
2. Japan Aerospace Exploration Agency, Japan
3. Japan Fine Ceramics Center, Japan
4. Yokohama National University, Japan

(ICACC-S1-P072-2018) Fabrication and properties of functionally graded materials obtained by centrifugal slip casting using a magnetic field methodJ. M. Zygmuntowicz^{*1}; K. Konopka¹

1. Warsaw University of Technology, Faculty of Materials Science and Engineering, Poland

(ICACC-S1-P073-2018) International Standards for Properties and Performance of Advanced Ceramics – Entering a Fourth Decade of High-Quality, Rigorous ASTM StandardsM. G. Jenkins^{*1}; J. Salem²; G. D. Quinn³; J. Helfinstine⁴; S. T. Gonczy⁵

1. Bothell Engineering and Science Technologies, USA
2. NASA Glenn Research Center, USA
3. NIST, USA
4. Corning Incorporated, USA
5. Gateway Materials Technology, USA

(ICACC-S1-P074-2018) HfB₂, ZrB₂ and Hf_{0.5}Zr_{0.5}B₂ Solid Solution UTHC Ceramics: Processing by SPS and Mechanical PropertiesA. Carrasco-Pena^{*1}

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

(ICACC-S1-P075-2018) Effect of carbon nanotubes as fillers on the interfacial bonding in kenaf-polypropylene CompositesR. Paskaramoorthy*¹

1. University of the Witwatersrand, Mechanical Engineering, South Africa

(ICACC-S1-P076-2018) Effect of melt temperature and addition time on the mechanical properties of in-situ Al/TiB₂ compositesR. Paskaramoorthy*¹; B. Prabu²; A. Vivekananda²

1. University of the Witwatersrand, Mechanical Engineering, South Africa
2. Anna University, Mechanical Engineering, India

(ICACC-S1-P077-2018) Manufacturing of Structural Regolith Parts for Lunar ColoniesK. D. Grossman*¹; T. C. Sakhivel¹; S. Seal¹

1. University of Central Florida, Materials Science and Engineering, USA

(ICACC-S1-P078-2018) Synthesis and characterization of Al₂O₃-ZrO₂-TiC composite by spark plasma sinteringY. Zhu*¹

1. Institute of Modern Physics, Chinese Academy of Sciences, China

(ICACC-S1-P079-2018) Antibacterial PMMA Bone Cement Composites Reinforced by Silver(Ag)-doped Hydroxyapatite Nanobelts and TiO₂ nanotubes with enhanced mechanical propertyM. Qi*¹; M. Rezaezadeh Shirdar²; A. Phakatkar²; R. Shahbazian-Yassar³; Y. Lu¹; T. Shokuhfar²

1. Shandong University, School of Materials Science and Engineering, China
2. University of Illinois at Chicago, Bioengineering Department, USA
3. University of Illinois at Chicago, Department of Mechanical & Industrial Engineering, USA

(ICACC-S1-P080-2018) Joining of oxide/oxide (Nextel™ 610/alumina-zirconia) ceramic compositesM. Akram*¹; V. Casalegno¹; M. Ferraris¹; G. Puchas²; S. Knohl²; W. Krenkel²

1. Politecnico di Torino, Department of Applied Science and Technology, Italy
2. University of Bayreuth, Department of Ceramic Materials Engineering, Germany

(ICACC-S1-P081-2018) Determination of elastic modulus of different joining materials using micro/nano-indentation directly in the jointsS. De La Pierre*¹; C. Balagna¹; P. Tatarko²; M. Fides³; D. Nemeth³; M. Ferraris¹

1. Politecnico di Torino, DISAT, Italy
2. Institute of Inorganic Chemistry, Slovak Academy of Sciences, Slovakia
3. Institute of Materials Research, Slovak Academy of Sciences, Slovakia

(ICACC-S1-P082-2018) "Re-wrap" method (Refractory metals Re=Mo, Nb Ta) for joining of ceramics and CMCP. Gianchandani*¹; V. Casalegno¹; M. Salvo¹; M. Ferraris¹

1. Politecnico di Torino, DISAT-Department of Applied Science and Technology, Italy

(ICACC-S1-P083-2018) Thermal shock performance of Sandwich structures obtained by "Mo-Wrap"P. Gianchandani*¹; V. Casalegno¹; M. Salvo¹; M. Ferraris¹; G. Bianchi²; A. Ortona²

1. Politecnico di Torino, DISAT-Department of Applied Science and Technology, Italy
2. MEMTi Institute, The University of Applied Sciences and Arts of Southern Switzerland, Switzerland

(ICACC-S1-P084-2018) Joint Strength Improvement of C_r-SiC/Ti6Al4V System by Surface ModificationM. Bangash*¹; A. Das²; V. Casalegno¹; M. Ferraris¹

1. Politecnico di Torino, DISAT-Department of Applied Science and Technology, Italy
2. Indian Institute of Technology (ISM), Department of Mechanical Engineering, India

(ICACC-S1-P134-2018) Grain Growth Control of Centrifugally Spun Alumina Fibers by Magnesia and Zirconia AdditionsT. Natarajan*¹; P. Bhargava¹

1. Indian Institute of Technology Bombay, Metallurgical Engineering and Materials Science, India

(ICACC-S5-P086-2018) Analytical evaluation of orientation behavior of β-tricalcium phosphate / poly(lactic acid) composite billets in extrusion drawingM. Sakaguchi*¹; S. Kobayashi²

1. Salesian Polytechnic, Mechanical and Electronic Engineering, Japan
2. Tokyo Metropolitan University, Japan

(ICACC-S5-P087-2018) Characterization and synthesis of silver contain silica nanocomposites particles via a facile impregnation method as an antibacterial agents against Escherichia coli and Bacillus subtilis bacteriaD. Bae*¹

1. Changwon National University, Republic of Korea

(ICACC-S7-P088-2018) Fabrication and Characterization of Potassium Titanate Whiskers by a Hydrothermal ProcessingD. Bae*¹

1. Changwon National University, Republic of Korea

(ICACC-S7-P089-2018) Size Control of Magnesium Submicron Particles Prepared by Pulsed Wire DischargeH. D. Nguyen*¹; Y. Tokoi²; K. Tanaka¹; T. Sasaki²; T. Suzuki¹; T. Nakayama¹; H. Suematsu¹; K. Niihara³

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
2. Nagaoka National College of Technology, Department of Electrical and Electronics Systems Engineering, Japan
3. Nagaoka University of Technology, Nagaoka, Department of Electrical, Electronics and Information Engineering, Japan
4. Nagaoka University of Technology, Nagaoka, Department of Nuclear System Safety Engineering, Japan

(ICACC-S7-P090-2018) Simple preparation method of Mg-Al and Mg-Al-Ti hydroxalicates as base catalystE. d. Magdalujo*¹; G. Magayanes¹

1. University of the Philippines, Philippines

(ICACC-S7-P091-2018) A Highly Sensitive Nonenzymatic Sensor Based on Fe₂O₃ Nanoparticles Coated ZnO Nanorods for Electrochemical Detection of NitriteR. Ahmad*¹; M. Ahn¹; Y. Hahn¹

1. Chonbuk National University, School of Semiconductor & Chemical Engineering, Republic of Korea

(ICACC-S7-P092-2018) Synthesis of Manganese Oxide Nanostructure and Its Application for Potassium Ion Sensing in WaterM. Ahn*¹; R. Ahmad¹; Y. Hahn¹

1. Chonbuk National University, School of Semiconductor & Chemical Engineering, Republic of Korea

(ICACC-S7-P093-2018) Adsorption and photocatalytic removal of MB dyes by WO₃ nanorodsS. Ryu¹; C. Nam*¹

1. Hannam University, Photonics and Sensors, Republic of Korea

(ICACC-S7-P094-2018) Silicon Nanostructures for Hydrogen Evolution Electrode of Photoelectrochemical CellsD. Lee*¹

1. Korea Institute of Industrial Technology, Green Materials & Processes Group, Republic of Korea

(ICACC-S7-P095-2018) Mixed-Ligand Metal Arylalkenolates as New Family of Air Stable Molecular Precursors for the Atomic Layer Deposition of Iridium-based Catalytic CoatingsL. Jürgensen*¹; M. Frank¹; T. Fischer¹; S. Mathur¹

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

(ICACC-S7-P096-2018) Hollowed-out SiC nanofibers supported Pt nanoparticles as high-temperature NH₃ sensorY. Wang*¹

1. National University of Defense Technology, China

(ICACC-S7-P097-2018) Fabrication of hybrid carbon film and their application for the oxygen reduction electrode of PEMFCD. Lee*¹

1. Korea Institute of Industrial Technology, Green Materials & Processes Group, Republic of Korea

(ICACC-S8-P098-2018) Effect of Fabrication Condition on Mechanical Properties of HydroxyapatiteS. Kobayashi*¹; T. Izawa¹

1. Tokyo Metropolitan University, Mechanical Engineering, Japan

(ICACC-S9-P099-2018) Development of fabrication procedure of porous carbon material with three dimensionally networked structureY. Kaneda*¹; R. Inoue¹; Y. Kogo¹

1. Tokyo University of Science, Materials Science & Technology, Japan

(ICACC-S9-P100-2018) Novel polymer derived silicon nitride nanofibers feltE. Zera*¹; P. Jana¹; G. D. Soraru¹

1. University of Trento, Industrial Engineering, Italy

(ICACC-S9-P101-2018) Fabrication and strengthening of porous Si₃N₄ ceramics by replacement of oxide phase with Si₃N₄ at grain boundary through carbothermal nitridationJ. Yang*¹; Z. Xu¹; Q. Zhi¹

1. Xi'an Jiaotong University, China

(ICACC-S9-P102-2018) Study on microstructures and properties of porous titanium carbide ceramics fabricated by reaction sintering processY. Ma*¹

1. Xi'an Jiaotong University, Materials Science and Engineering, China

(ICACC-S10-P103-2018) Numerical modeling of the 2D crack propagation in carbon-carbon compositesR. Piat*¹

1. Darmstadt University of Applied Science, Germany

(ICACC-S10-P104-2018) Atomic-Scale Structure of Sliding Interface of Diamond-Like Carbon Coating Including a Friction Modifier: A Molecular Dynamics AnalysisM. Saito*¹; J. Xu¹; Y. Ootani¹; N. Ozawa¹; M. Kubo¹

1. Tohoku University, Japan

(ICACC-S12-P105-2018) Investigation of microstructural evolution and He aggregation behavior in V₂AlC thin films under He ions irradiationJ. Wang*¹; R. Shu¹; Y. Dong¹; T. Shao¹; Q. Deng¹; X. Zhou¹; F. Huang¹; S. Du¹; Z. Wang¹; J. Xue¹; Y. Wang¹; Q. Huang¹

1. Ningbo Institute of Industrial Technology, Chinese Academy of Sciences, China

(ICACC-S12-P106-2018) Microstructure, Characterization, Thermal and Mechanical Properties of a High Entropy Diboride CeramicJ. A. Scott*¹; A. Stanfield¹; G. Hilmas¹; W. Fahrenholtz¹

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

(ICACC-S12-P107-2018) Densification Kinetics and Phase Evolution of Zeta Phase Tantulum CarbideE. C. Schwind*¹; G. Hilmas¹; W. Fahrenholtz¹

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

(ICACC-S12-P108-2018) Layer-by-layer flash pyrolysis of polysilazane based polymers into a green UHTCMC and ablation resistance of the final dense compositesP. Galizia*¹; L. Zoli¹; R. Raj²; D. Sciti¹

1. CNR-ISTEC, Italy
2. University of Colorado Boulder, USA

(ICACC-S12-P109-2018) Particle refinement of ZrB₂ by the combination of borothermal reduction and solid solutionW. Guo*¹; H. Lin¹

1. Guangdong University of Technology, China

(ICACC-S12-P110-2018) The influence of parameters of Self-propagating High-temperature synthesis on the structure and properties of the MAX phases in Ti-Al-C systemA. Pazniak*²; P. Bazhin¹; A. Stolin¹; D. Kuznetsov²

1. Merzhanov Institute of Structural Macrokinetics and Materials Science Russian Academy of Sciences, Russian Federation
2. National University of Science and Technology "MISIS", Russian Federation

(ICACC-S13-P111-2018) Fabrication of Gadolinia-containing UO₂ fuel pelletJ. Oh¹; Q. Mistarihi²; H. Ryu*²; D. Kim¹

1. Korea Atomic Energy Research Institute, Republic of Korea
2. Korea Advanced Institute of Science and Engineering (KAIST), Republic of Korea

(ICACC-S13-P112-2018) Study on the cold sintering process of 8 mol% Y₂O₃-doped ZrO₂ by using a novel techniqueD. C. Tanase*¹

1. Korea Advanced Institute of Science and Engineering (KAIST), NQE, Romania

(ICACC-S13-P113-2018) New Ceramic Coatings for Small Modular Reactors: Applications in Hard Wearing Components and Accident Tolerant FuelE. Williamson*¹; M. Whiting¹; D. Robertson²; J. Yeomans¹

1. University of Surrey, MiNMaT, United Kingdom
2. Rolls-Royce, Civil Nuclear, United Kingdom

(ICACC-S13-P114-2018) Coatings on SiC-based components for Light Water ReactorsP. Gianchandani¹; V. Casalegno¹; T. Hinoki²; L. Manna¹; M. Ferraris*¹

1. Politecnico di Torino, Department of Applied Science and Technology, Italy
2. Kyoto University, IAE, Japan

(ICACC-S13-P115-2018) Fabrication of SiC/SiC cladding tube with CVI-SiC processN. Tomatsu*¹; A. Kawaguchi¹; T. Ito¹

1. IBIDEN Co., Ltd., Japan

(ICACC-S13-P116-2018) Thermal and Mechanic Testing of ATF Fuel U₃Si₂L. Cai*¹; F. Boylan¹; E. J. Lahoda¹; H. Shah¹; A. Atwood¹

1. Westinghouse, USA

(ICACC-S13-P117-2018) Raman spectroscopy experiments to characterize radiation induced defects in SiC/SiC compositesS. Agarwal¹; Y. Zhao*²; S. J. Zinkle¹; W. J. Weber²

1. University of Tennessee, Nuclear Engineering, USA
2. University of Tennessee, Material Science and Engineering, USA

(ICACC-S13-P118-2018) Metal silicide reaction-bonded silicon carbide for nuclear fusion applicationsA. J. Leide*¹; R. I. Todd¹; S. G. Roberts¹; K. Yoshida²; T. Yano²; M. Gorley³; D. E. Armstrong¹

1. University of Oxford, Department of Materials, United Kingdom
2. Tokyo Institute of Technology, Laboratory for Advanced Nuclear Energy, Institute of Innovative Research, Japan
3. Culham Centre for Fusion Energy, United Kingdom

(ICACC-S13-P119-2018) Calculation of Hot Cell Subcritical Limits at Oak Ridge National LaboratoryS. Stanfill*¹

1. University of Florida, USA

(ICACC-S16-P120-2018) Textile Reinforced Cementitious Composites based on Phosphate Cements for Construction PurposesA. Katsiki*¹; Y. Pontikes²; H. Rahier¹

1. Vrije Universiteit Brussel, Department of Materials and Chemistry, Belgium
2. KULeuven, Belgium

(ICACC-S16-P121-2018) Geopolymers as Heterogeneous Catalysts in the Production of BiodieselR. Botti¹; M. Innocentini²; P. Pastore³; L. San Gregorio²; P. Colombo*¹

1. University of Padova, Industrial Engineering, Italy
2. UNAERP, Brazil
3. University of Padova, Chemical Sciences, Italy

(ICACC-FS1-P122-2018) Imprinting Biomimetic Antireflective Structures on Polymer SurfaceH. Xu*¹

1. Harbin Institute of Technology, Chemical Process, China

(ICACC-FS1-P123-2018) Detection of Homologues and Isomers Based on Hollow Mesoporous Silica Sphere Photonic CrystalsC. Xiong*¹; B. H. Geng¹; Y. Li¹

1. Harbin Institute of Technology, China

(ICACC-FS1-P124-2018) Transparent Superhydrophobic coating from silica spheresZ. Li*¹; N. Li²; L. Pan²; H. Xu²

1. High School Attached to Harbin Normal University, China
2. Harbin Institute of Technology, China

(ICACC-FS1-P125-2018) Surface analysis and mimicked surface preparation of a firebrat, Thermobia domesticaY. Hirai^{*1}; S. Uemura¹; N. Okuda¹; M. Shimomura¹

1. Chitose Institute of Science and Technology, Department of Applied Chemistry and Bioscience, Japan

(ICACC-FS3-P126-2018) PEALD-TiN based Thin Films for High Performance Metallic Bipolar Plates of PEMFCsC. Kim^{*1}; E. Yun¹; S. Park¹; J. Anh²; S. Kwon¹

1. Pusan National University, School of Materials Science and Engineering, Republic of Korea
2. Korea Maritime and Ocean University, Department of Electronic Materials Engineering, Republic of Korea

(ICACC-FS3-P127-2018) Block copolymer-templated hollow n-ZnO/p-Si nanodiode arrays using atomic layer depositionD. Kim^{*1}; H. Lee¹; C. Kim¹; W. Lee¹; S. Kwon¹

1. Pusan National University, School of Materials Science and Engineering, Republic of Korea

(ICACC-FS3-P128-2018) Preparation of Perovskite-Structured Gadoliniumorthoferrite (GdFeO₃) Nanocrystals by Hydrolysis of a Novel Heterobimetallic PrecursorC. Bohr^{*1}; C. Hegemann¹; L. Wortmann¹; J. Schläfer¹; S. Mathur¹

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

(ICACC-HON-P129-2018) Sialon-based materials prepared from the aluminium oxynitride SHS-derived powdersA. D. Wilmanski¹; M. M. Bucko^{*1}

1. AGH University of Science and Technology, Poland

(ICACC-HON-P130-2018) Crack-Healing Ability and Strength Recovery of Ytterbium Disilicate Ceramic Reinforced with Silicon Carbide NanofillersS. T. Nguyen^{*1}; H. Iwasawa¹; H. Suematsu¹; L. He²; T. Suzuki¹; K. Niihara¹; T. Nakayama¹

1. Nagaoka University of Technology, Japan
2. Idaho National Lab, USA

(ICACC-HON-P131-2018) Study on shielding method for reducing the leakage magnetic field from magnetically shielded room openingH. Sugiyama^{*1}; K. Kamata²; T. Nakayama²; T. Suzuki²; H. Suematsu²; T. Tokuda³

1. Nagaoka University of Technology, Department of Science of Technology Innovation, Japan
2. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
3. National Institute of Technology, Kagoshima College, Department of Electronic Control Engineering, Japan

Thursday, January 25, 2018

S1: Mechanical Behavior and Performance of Ceramics & Composites**Processing-Microstructure-Properties**

Room: Coquina Salon D

Session Chairs: Emmanuel Boakye, UES Inc.; Rajiv Asthana, University of Wisconsin-Stout

8:30 AM**(ICACC-S1-047-2018) Dual Function Polymer-Derived Non-Oxide/Oxide Matrix Prepared by Additive Manufacturing**R. Raj^{*1}

1. University of Colorado Boulder, USA

8:50 AM**(ICACC-S1-066-2018) Evaluation of boron nitride materials for electric propulsion components**J. Mackey^{*1}; B. Mcenerney²; J. Salem¹; P. Peterson¹; H. Kamhawi¹; R. Hofer²

1. NASA Glenn Research Center, USA
2. NASA Jet Propulsion Laboratory, USA

9:10 AM**(ICACC-S1-049-2018) Deposition temperature effects on microstructure and lifetime of the thermal barrier coating produced with axial suspension plasma spraying**D. Zhou^{*1}; R. Vassen¹

1. Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Materials Synthesis and Processing (IEK-1), Germany

9:30 AM**(ICACC-S1-050-2018) Microstructure and properties of B₄C-SiC composites by hot pressing pyrolyzed mixtures of B₄C and polycarbosilane**W. Wang^{*1}; Z. Fu¹; H. Wang¹

1. Wuhan University of Technology, China

9:50 AM**Break****10:10 AM****(ICACC-S1-051-2018) Insights into Transparent MgAlON Solid Solution Spinel Ceramics through Theoretical and Experimental Studies**H. Wang^{*1}; B. Tu¹; X. Liu¹; L. Ren¹; X. Zong¹; W. Wang¹; Z. Fu¹

1. Wuhan University of Technology, China

10:30 AM**(ICACC-S1-052-2018) Development of 'Age-hardened/toughened' Bulk Polycrystalline 'Ceramic Alloys'**L. Gurnani^{*1}; M. K. Singh¹; R. Kathuria¹; P. Bhargava¹; A. Mukhopadhyay¹

1. Indian Institute of Technology (IIT) Bombay, Powai, Metallurgical Engineering and Materials Science, India

10:50 AM**(ICACC-S1-053-2018) Mechanical properties and lifetime predictions of SrTi_{1-x}Fe_xO_{3-δ} (x = 0.25, 0.35, 0.5)**R. Oliveira Silva^{*1}; F. Schulze-Kupfers²; S. Baumann¹; J. Malzbender¹; O. Guillon²

1. Forschungszentrum Juelich, Institute for Energy and Climate Research (IEK-2), Germany
2. Forschungszentrum Juelich, Institute for Energy and Climate Research (IEK-1), Germany

11:10 AM**(ICACC-S1-054-2018) Development of SiC-coated carbon nanotubes with improved oxidation resistance as stand-alone and as reinforcement in bulk polycrystalline Al₂O₃**S. Galaveen^{*1}; M. K. Satam¹; L. Gurnani¹; V. Thiruvengadam²; A. Mukhopadhyay¹

1. IIT Bombay, Metallurgical Engineering & Materials Science, India
2. Vikram Sarabhai Space Centre, ISRO, Materials and Mechanical Entity, India

11:30 AM**(ICACC-S1-055-2018) Kinetic and Properties of Boron Nitride coating via Chemical Vapor Deposition**M. Wang¹; Y. Peng^{*1}; L. Jia¹; A. Li¹

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

S3: 15th International Symposium on Solid Oxide Fuel Cells (SOFC): Materials, Science and Technology**Interfacial Reactions**

Room: Crystal

Session Chair: Tatsumi Ishihara, Kyushu University

8:30 AM**(ICACC-S3-040-2018) Probing Interfacial Properties of Heterostructures in Solid Oxide Fuel Cells (Invited)**K. Develos-Bagarinao^{*1}; H. Kishimoto¹; T. Ishiyama¹; T. Horita¹; K. Yamaji¹; H. Yokokawa²

1. National Institute of Advanced Industrial Science and Technology (AIST), Research Institute for Energy Conservation, Japan
2. The University of Tokyo, Institute of Industrial Science, Japan

9:00 AM**(ICACC-S3-041-2018) Effect of Cr Concentration in Cathode Air on Performance Degradation of SOFCs with LSM/YSZ Cathodes (Invited)**J. S. Hardy*¹; C. A. Coyle¹; J. Neeway¹; D. J. Edwards¹; A. Devaraj¹; J. W. Stevenson¹

1. Pacific Northwest National Laboratory, Materials Science, USA

9:30 AM**(ICACC-S3-042-2018) Effect of composition of LSCF thin films on SrSO₄ formation**J. C. De Vero*¹; K. Develos-Bagarinao¹; S. Liu¹; T. Ishiyama¹; H. Kishimoto¹; K. Yamaji¹; T. Horita¹; H. Yokokawa²

1. National Institute of Advanced Industrial Science and Technology (AIST), Research Institute of Energy Conservation, Japan
2. Tokyo University, Japan

10:00 AM**Breal****Contaminants**

Room: Crystal

Session Chair: Henrik Frandsen, Technical University of Denmark

10:20 AM**(ICACC-S3-043-2018) Role of Select Minor Airborne Impurities on SOFC Cathode Degradation: Computational Simulation and Experimental Studies**A. Aphale*¹; A. Uddin³; B. Hu¹; J. Webster³; S. Belko⁴; S. Heo²; J. Hong²; P. Singh²

1. University of Connecticut, Center for Clean Energy Engineering, USA
2. University of Connecticut, Materials Science and Engineering, USA
3. University of Connecticut, Mechanical Engineering, USA
4. University of Connecticut, Chemical Engineering, USA

10:40 AM**(ICACC-S3-044-2018) Correlating Oxygen Electrode Degradation to Cr Vaporization from Metallic Interconnects in Solid Oxide Cell Stacks**B. Talic*¹; P. Hendriksen¹

1. Technical University of Denmark, Energy Conversion and Storage, Denmark

11:00 AM**(ICACC-S3-045-2018) Study of Cr-Gettering material with LSM-based cell: Solid state reaction and validation in stack fixture test**Y. Chou*¹; J. Choi¹; J. W. Stevenson¹; C. Liang²; B. Hu²; W. Rodriguez²; A. Aphale²; P. Singh²

1. Pacific Northwest National Lab, Materials, USA
2. University of Connecticut, Center for Clean Energy, USA

S5: Next Generation Bioceramics and Biocomposites**Bioceramics and Biocomposites II**

Room: Coquina Salon B

Session Chairs: Leif Hermansson, Doxa AB; Enrico Bernardo, University of Padova

8:30 AM**(ICACC-S5-009-2018) Highly Porous Hardystonite-based Bioceramics from Preceramic Polymers and Reactive Fillers (Invited)**E. Bernardo*¹; H. Elsayed¹

1. University of Padova, Dipartimento di Ingegneria Industriale, Italy

8:50 AM**(ICACC-S5-010-2018) Advanced Tissue Engineering Scaffolds Incorporated with Theranostics for Cancer Cell Targeting and Photothermal Therapy**M. Wang*¹; L. Guo¹

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

9:10 AM**(ICACC-S5-011-2018) Additive Manufacturing and Restoration Possibilities within the Dental area Using Chemically Bonded Ceramics (Invited)**L. Hermansson*¹

1. Applied Research Sweden AB, Sweden

9:30 AM**(ICACC-S5-012-2018) Structure / property relationships in Biomaterials at the nanoscale (Invited)**F. Rosei*¹

1. INRS, Canada

9:50 AM**Break****10:10 AM****(ICACC-S5-013-2018) Cancer Cell Targeting and Ablation by Surface-Electrically-Charged Superparamagnetic Fe₃O₄ Composite Nanoparticles (Invited)**D. Shi*¹

1. University of Cincinnati, Mechanical and Materials Engineering, USA

10:30 AM**(ICACC-S5-014-2018) How does nanoporosity affect cell response of bioactive glass? (Invited)**U. Thamma¹; T. Kowal³; M. Falk²; H. Jain*²

1. Lehigh University, International Materials Institute for New Functionality in Glass, USA
2. Lehigh University, Materials Science and Engineering, USA
3. Lehigh University, Biological Sciences, USA

10:50 AM**(ICACC-S5-015-2018) Preparation and characterization of bio-inspired hybrid containing calcium phosphate for the environmental applications (Invited)**M. Tafu*¹; T. Toshima¹

1. National Institute of Technology, Toyama College, Japan

11:10 AM**(ICACC-S5-016-2018) Biocompatible magnetic hydroxyapatite nanoceramics for hyperthermia treatment: Fabrication and characterization**S. Iqbal*¹; T. Jamil¹; A. Sabir¹; A. Islam¹; S. Maqsood Khan¹

1. University of the Punjab, Lahore, Pakistan, department of Polymer Engineering & Technology, Pakistan

S6: Advanced Materials and Technologies for Direct Thermal Energy Conversion and Rechargeable Energy Storage**Thermoelectrics III**

Room: Tomoka A

Session Chair: Jon Goldsby, NASA Glenn Research Center

8:30 AM**(ICACC-S6-038-2018) Defect-Induced Thermoelectricity and Phonon Scattering in Oxides (Invited)**S. Lee*¹; J. U. Rahman¹; W. Seo¹; M. Kim²

1. Korea Institute of Ceramic Engineering and Technology (KICET), Energy & Environmental Materials Division, Republic of Korea
2. Changwon National University, School of Advanced Materials Engineering, Republic of Korea

9:00 AM**(ICACC-S6-039-2018) Mixed-Metal Sulphides for Thermoelectric Energy Conversion (Invited)**A. V. Powell*¹; P. Mangelis¹; S. Long¹; P. Vaqueiro¹

1. University of Reading, Chemistry, United Kingdom

9:30 AM**(ICACC-S6-040-2018) Rapid Synthesis and Processing of Tetrahedrite-Based Thermoelectrics for Large-Scale Power Generation Applications (Invited)**D. T. Morelli^{*1}; D. Weller¹; W. Lai¹; J. Li¹; M. E. Anderson²; G. E. Kunkel²; A. Ochs²

1. Michigan State University, Chemical Engineering & Materials Science, USA
2. Hope College, Chemistry, USA

10:00 AM**Break****Thermoelectrics IV / Materials for Solar-thermal Applications**

Room: Tomoka A

Session Chair: Emmanuel Guilmeau, CNRS CRISMAT

10:20 AM**(ICACC-S6-041-2018) Skutterudite-Based Thermoelectric Technology for Integration into a Potential eMMRTG for Space Power Applications (Invited)**T. Caillat^{*1}; I. Chi¹; S. Firdosy¹; C. K. Huang¹; K. Smith¹; J. Paik¹; P. Gogna¹; K. Yu¹; J. Fleurial¹; R. Bennett²; S. Keyser²

1. NASA Jet Propulsion Laboratory, USA
2. Teledyne Energy Systems, Inc., USA

10:50 AM**(ICACC-S6-042-2018) Material design and module construction in nanostructured PbTe- and Colusite-based thermoelectrics (Invited)**M. Ohta^{*1}; P. Jood¹; K. Suekuni¹; T. Takabatake²; M. G. Kanatzidis³; A. Yamamoto¹

1. National Institute of Advanced Industrial Science & Technology, Japan
2. Kyushu University, Department of Applied Science for Electronics and Materials, Interdisciplinary Graduate School of Engineering Sciences, Japan
3. Hiroshima University, Department of Quantum Matter, ADSM, Japan
4. Department of Chemistry, Northwestern University, Evanston, IL, United States and Materials Science Division, Argonne National Laboratory, USA

11:20 AM**(ICACC-S6-044-2018) Design and Discovery of Mixed Metal Oxides for Solar Thermochemical Water Splitting**S. Millican^{*1}; I. Androschuk¹; C. B. Musgrave¹; A. W. Weimer¹

1. University of Colorado, Department of Chemical and Biological Engineering, USA

11:40 AM**(ICACC-S6-045-2018) On-Sun Demonstration of Solar Thermal Water Splitting for H₂ Production**A. Hoskins^{*1}; S. Millican¹; C. Czernik¹; I. Alshankiti¹; J. Netter²; C. B. Musgrave¹; A. W. Weimer¹

1. University of Colorado Boulder, Chemical Engineering, USA
2. National Renewable Energy Laboratory, USA

S7: 12th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications**Synthesis, Functionalization and Assembly of 1D, 2D and 3D Nanostructures II**

Room: Coquina Salon C

Session Chairs: Monica Ferraris, Politecnico di Torino; Yung-Jung Hsu, National Chiao Tung University

8:30 AM**(ICACC-S7-042-2018) Energetics and Structure Relations of Low-k Amorphous SiOCH Dielectric Films (Invited)**J. Chen^{*1}; S. King²; J. Calvin³; B. Woodfield³; A. Navrotsky¹

1. University of California, Davis, Department of Materials Science, Peter A. Rock Thermochemistry Laboratory and NEAT ORU, USA
2. Intel Corporation, Logic Technology Development, USA
3. Brigham Young University, Department of Chemistry, USA

9:00 AM**(ICACC-S7-043-2018) Charge storage in 2-D oxide nanosheet assemblies: 3-D assembly and conversion to tunnel structures**S. T. Mixture^{*1}; T. Hey¹; P. Metz¹

1. Alfred University, MSE, USA

9:20 AM**(ICACC-S7-044-2018) 3D piezoelectric nanocrystals structure for detection of ultra-small mechanical pressure**H. Bishara^{*1}; S. Berger¹

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

9:40 AM**(ICACC-S7-045-2018) Serial Z-scheme Heterostructures for Photoelectrochemical Water Reduction**c. Tsao^{*1}

1. Material Science and Engineering of National Chiao Tung University, Taiwan

10:00 AM**Break****Nanomaterials for Photocatalysis, Solar Hydrogen and Thermoelectrics IV**

Room: Coquina Salon C

Session Chairs: Scott Mixture, Alfred University; Jiewei Chen, University of California, Davis

10:20 AM**(ICACC-S7-046-2018) Nanostructured antibacterial coatings obtained by co-sputtering of silver and silica (Invited)**M. Ferraris^{*1}; F. Baino¹; C. Balagna¹; S. Ferraris¹; M. Irfan¹; M. Miola¹; S. Perero¹; E. Verme¹; S. Spriano¹

1. Politecnico di Torino, Department of Applied Science and Technology, Italy

10:50 AM**(ICACC-S7-047-2018) Is TiO₂ brookite a good photocatalyst for degradation of pollutants in water and in air?**S. Cassaignon^{*1}; O. Durupthy¹; C. Guillard³; C. Colbeau-Justin²

1. Sorbonne University, UPMC LCMCP, France
2. Université Paris-Sud - Université Paris-Saclay, LCP, France
3. Université Lyon 1, IRCELYON, France

S9: Porous Ceramics: Novel Developments and Applications**High SSA Ceramics and Membranes**

Room: Coquina Salon G

Session Chair: Gian-Domenico Soraru, University of Trento

8:30 AM**(ICACC-S9-019-2018) Rational design of sol-gel derived multifunctional ceramic membranes (Invited)**A. Ayrat^{*1}

1. University of Montpellier, European Institute of Membranes, France

9:00 AM**(ICACC-S9-020-2018) Facile Fabrication of Metal-organic Frameworks (MOFs) Membranes on Ni Foam Substrates for Gas Separation (Invited)**Z. Nie^{*1}

1. Beijing University of Technology, College of Materials Science and Engineering, China

9:30 AM**(ICACC-S9-021-2018) Structuring of Microporous Ceramics at Various Length Scales (Invited)**F. Akhtar^{*1}

1. Division of Materials Science, Department of Engineering Sciences and Mathematics, Sweden

10:00 AM**Break**

Properties of Porous Ceramics

Room: Coquina Salon G

Session Chair: Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST)

10:20 AM**(ICACC-S9-022-2018) Optical properties of mesoporous silica layer on periodic array of plasmonic nanocylinders (Invited)**S. Murai*; H. Sakamoto; K. Fujita; K. Tanaka¹

1. Kyoto University, Japan

10:50 AM**(ICACC-S9-023-2018) An advanced method to measure the gas permeability in porous ceramics**J. Kadok*; E. de Bilbao; S. Brassamin; J. Poirier¹

1. CNRS, Conditions Extrêmes et Matériaux : Hautes Températures et Irradiation, France

11:10 AM**(ICACC-S9-024-2018) Property – porosity relations of cellular biogenic and bioinspired ceramics**K. G. Nickel; K. Klang*; G. Buck; M. Loeber; C. Lauer; C. Berthold¹

1. University Tuebingen, Applied Mineralogy, Germany

11:30 AM**(ICACC-S9-025-2018) Preliminary studies on adsorption of hydrogen in polymer derived mesoporous Si-O-C ceramics**S. Ravindran*; P. K. Chauhan; P. Rajagopalan¹

1. Birla Institute of Technology & Science Pilani, Hyderabad Campus, Mechanical Engineering, India

S10: Virtual Materials (Computational) Design and Ceramic Genome**Modeling of Structure and Property III**

Room: Coquina Salon F

Session Chair: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences

8:30 AM**(ICACC-S10-008-2018) A multiscale numerical software for designing cellular ceramics with prescribed thermal radiative properties up to very high temperatures (Invited)**B. Rousseau*; A. Biallais; J. Vicente³1. SATT Ouest Valorisation, France
2. LTeN UMR CNRS 6607, France
3. IUSTI UMR CNRS 7343, France**9:00 AM****(ICACC-S10-009-2018) Effect of Transition Metal Impurities on Electronic Structure of Zirconium Carbide**Y. Zhou*¹

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

9:20 AM**(ICACC-S10-010-2018) Influence of Random Packing Density on Sintering Kinetics**E. Hernandez*; M. C. Golt; B. McWilliams²1. ORISE @ ARL, USA
2. US Army Research Laboratory, USA**9:40 AM****(ICACC-S10-011-2018) Theoretical explanation of the ultralow and anisotropic thermal expansion of Mg₂Al₄Si₅O₁₈**Y. Li*; J. Wang¹

1. Institute of Metal Research, High-performance Ceramics Division, China

10:00 AM

Break

Modeling of Performances I

Room: Coquina Salon F

Session Chair: Bin Liu, Shanghai University

10:20 AM**(ICACC-S10-012-2018) Grain Boundary Resistance for Phonon Thermal Conduction: A Perturbed Molecular Dynamics Study (Invited)**M. Yoshiya*; K. Funai; S. Fujii; T. Yokoi¹

1. Osaka University, Department of Adaptive Machine Systems, Japan

10:50 AM**(ICACC-S10-013-2018) Tailoring thermal expansion of RE-silicate EBC candidates: challenges and opportunities (Invited)**J. Wang*¹

1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, High-performance Ceramics Division, China

11:20 AM**(ICACC-S10-014-2018) Predicting the Fracture of ZrB₂-Carbon Based Composites using the Extended Finite Element Method**L. Jarvis*; M. A. Zaeem; G. Hilmas; W. Fahrenholtz; J. Watts¹

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

11:40 AM**(ICACC-S10-015-2018) Effects of Nanobubble Collapse on Precision Polishing : Molecular Dynamics Study**Y. Aoyama*¹

1. IMR Tohoku University, Japan

S12: Advanced MAX/mxene Phases and UHTC Materials for Extreme and High Temperature Environment**Properties, Oxidation, and Tribology II**

Room: Tomoka B

Session Chair: Surojit Gupta, University of North Dakota

8:30 AM**(ICACC-S12-047-2018) Structure-property relations in zirconium diboride based ultra-high temperature ceramic composites**S. K. Kashyap*; R. Mitra¹

1. Indian Institute of Technology, Kharagpur, Metallurgical and Materials Engineering, India

8:50 AM**(ICACC-S12-048-2018) Tribological and Wear Properties of Nanolaminated MoAlB**A. Benamor*; S. Kota; M. Barsoum; M. Hadji¹1. University Of Blida 1, Mechanical Department, Algeria
2. Drexel University, USA**9:10 AM****(ICACC-S12-049-2018) Influence of SiC_w content on densification, microstructure, mechanical properties and abrasive wear behaviour of spark plasma sintered ZrB₂-MoSi₂-SiC_w composites**T. R. Paul*; M. K. Mondal; M. Mallik¹

1. National Institute of Technology, Durgapur, Metallurgical and Materials Engineering, India

S13: Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy

Design and Test Technologies

Room: Coquina Salon H

Session Chairs: George Jacobsen, General Atomics; Michael Jenkins, Bothell Engineering and Science Technologies

8:30 AM

(ICACC-S13-043-2018) SIC-SIC CMCS for Nuclear Applications: Update on Progress of Working Group for Graphite and Composites in the ASME BPV Code Section III, Division 5 for High Temperature Reactors (Invited)

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

9:00 AM

(ICACC-S13-044-2018) Transient Mechanical Testing of SiC/SiC Composite Tubes to Simulate Pellet-Cladding Mechanical Interaction During Reactivity Insertion Accidents

M. N. Cinbiz²; N. R. Brown^{*}; K. Terrani²; K. Linton²

1. Pennsylvania State University, Mechanical and Nuclear Engineering, USA
2. Oak Ridge National Laboratory, USA

9:20 AM

(ICACC-S13-045-2018) Micro-Mechanical Characterization of the PyC Interphase in SiC/SiC composites

J. Kabel^{*}; P. Hosemann¹; C. Deck²; T. Koyanagi³; Y. Katoh³; I. Love⁴

1. University of California Berkeley, Nuclear Engineering, USA
2. General Atomics, USA
3. Oak Ridge National Lab, USA
4. Oregon State University, USA

9:40 AM

(ICACC-S13-046-2018) Flexural Strength of Ceramic Matrix Composite Tubes: Draft ASTM Standard Test Method

M. G. Jenkins^{*}; J. E. Gallego¹

1. Bothell Engineering and Science Technologies, USA

10:00 AM

Break

10:20 AM

(ICACC-S13-047-2018) Development of the underwater acoustic emission technique for composite damage characterization (Invited)

T. Nozawa^{*}; H. Tanigawa¹

1. National Institutes for Quantum and Radiological Science and Technology, Japan

10:50 AM

(ICACC-S13-048-2018) Mechanical and Thermo-Mechanical Property Measurement for Silicon Carbide Based Accident Tolerant Fuel Cladding (Invited)

G. Jacobsen^{*}; K. Shapovalov¹; X. Huang²; C. Deck¹

1. General Atomics, Nuclear Technologies and Materials, USA
2. University of South Carolina, Mechanical Engineering, USA

11:20 AM

(ICACC-S13-049-2018) SiC-SiC ATF Cladding Development: Hermeticity Test Method with High Pressure Helium Internal Gas Pressurization

C. P. Shih^{*}; G. Vasudevamurthy¹; A. S. Blacklock¹; G. Jacobsen¹

1. General Atomics, USA

11:40 AM

(ICACC-S13-050-2018) Evaluation of Elastic Properties of SiC/SiC Tubular Specimens using Resonant Ultrasound Spectroscopy

G. Singh^{*}; T. Koyanagi¹; C. Petrie¹; K. Terrani¹; Y. Katoh¹

1. Oak Ridge National Lab, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications

Optical Material III

Room: Tomoka C

Session Chairs: Luisa Bausa, Universidad Autonoma de Madrid; Jean-Rene Duclere, Laboratoire SPCTS

9:00 AM

(ICACC-S14-036-2018) Transparent polycrystalline ceramics with crystalline orientation controlled by a magnetic field (Invited)

T. S. Suzuki^{*}; T. Ashikaga²; B. Kim¹; K. Morita¹; H. Kiyono²

1. National Institute for Materials Science (NIMS), Japan
2. Shibaura Institute of Technology, Japan

9:30 AM

(ICACC-S14-037-2018) Increasing the absorption efficiency of Yb³⁺ doped anisotropic crystals by means of disordered plasmonic networks (Invited)

L. Sanchez-García¹; M. Ramirez²; J. Carvajal²; R. Sole²; M. Aguilo²; F. Diaz²; L. E. Bausa^{*}

1. Universidad Autonoma de Madrid, Fisica de Materiales, Spain
2. Universitat Rovira i Virgili, Fisica i Cristallografia de Materials, Spain

10:00 AM

Break

10:20 AM

(ICACC-S14-038-2018) Effect of transition metal dopant valencies on stability within the alumina lattice

N. Ku^{*}; V. L. Blair¹; A. L. Fry¹; M. Kornecki¹; S. Raju¹; R. E. Brennan¹

1. U.S. Army Research Laboratory, USA

10:40 AM

(ICACC-S14-039-2018) Association of metallic nanostructures with periodically poled LiNbO₃ crystals for enhanced nonlinear processes at nanometric dimensions (Invited)

A. Gómez-Tornero¹; D. Hernandez-Pinilla¹; P. Molina¹; C. Tserkezis²; L. E. Bausa¹; M. Ramirez^{*}

1. Universidad Autonoma de Madrid, Spain
2. Technical University of Denmark, Department of Photonics Engineering, Denmark

11:10 AM

(ICACC-S14-041-2018) Elaboration of new tellurium oxide based glasses, glass-ceramics, ceramics and their associated nonlinear optical and lasing properties (Invited)

J. Duclere^{*}; M. Dolhen¹; S. Chenu¹; G. Delaizir¹; A. Bertrand¹; M. Dutreilh-Colas¹; J. Cornette¹; J. De-Clermont-Gallerande¹; T. Hayakawa²; N. Ghribi¹; V. Couderc³; M. Allix²; O. Masson¹; P. Thomas¹

1. Laboratoire SPCTS, Chimie, France
2. Nagoya Institute of Technology, Japan
3. CEMHTI, France
4. XLIM, France

S16: Geopolymers, Inorganic Polymers and Sustainable Materials

Mechanical Properties, Infrastructure, and Sustainable Materials

Room: Ponce de Leon

Session Chair: Ange Therese Akono, University of Illinois at Urbana-Champaign

8:30 AM

(ICACC-S16-015-2018) Adhesion of Unreinforced Metakaolin Geopolymer to Common Metal Substrates (Invited)

T. A. Carlson^{*}; M. Ziemann¹; D. Hernandez¹; P. Stynoski¹; C. P. Marsh¹; G. Kutyla²; W. M. Kriven²

1. USACE, USA
2. University of Illinois at Urbana-Champaign, USA

9:00 AM**(ICACC-S16-016-2018) Characterization of Metakaolinite Phosphate Cementitious matrix suitable for Textile Reinforced Composites (Invited)**A. Katsiki*¹; Y. Pontikes²; H. Rahier¹

1. Vrije Universiteit Brussel, Department of Materials and Chemistry, Belgium
2. KULeuven, Belgium

9:30 AM**(ICACC-S16-017-2018) Geopolymer Roof Tile (Invited)**A. Reggiani*¹

1. GeoMITS srl, Italy

10:00 AM**Break****Sustainable Materials**

Room: Ponce de Leon

Session Chair: Gregor Gluth, Bundesanstalt für Materialforschung und -prüfung (BAM)

10:20 AM**(ICACC-S16-018-2018) Porous glass-ceramics from alkali activation and sinter-crystallization of waste glass mixtures**P. Rabelo Monich¹; A. Rincon¹; D. Hoellen²; E. Bernardo*¹

1. University of Padova, Dipartimento di Ingegneria Industriale, Italy
2. Montanuniversität Leoben, Department of Environmental and Energy Process Engineering, Austria

10:40 AM**(ICACC-S16-019-2018) Bone Ash Reinforced Geopolymer using Metamax, Mymenshingh Clay and Synthetic Mymenshingh Clay-derived Metakaolin (Invited)**A. W. Bhuiya¹; D. Ribero¹; M. Hu¹; W. M. Kriven*¹

1. University of Illinois at Urbana-Champaign, USA

11:00 AM**(ICACC-S16-020-2018) The material properties of cellulose nanofiber (CNF) reinforced metakaolin based geopolymer composites (Invited)**S. Cho*¹

1. Hyundai Motor Company, Republic of Korea

11:30 AM**(ICACC-S16-021-2018) Preliminary Results on the Performance-Based Specification for Amazonian Geopolymer Composites (Invited)**R. A. Sa Ribeiro*¹; M. G. Sa Ribeiro¹; M. G. Sa Ribeiro²; M. R. Sardela³; W. M. Kriven⁴

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, Frederick Seitz Materials Research Laboratory, USA
4. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

S17: Advanced Ceramic Materials and Processing for Photonics and Energy**Photonics II**

Room: Halifax A/B

Session Chairs: Farid Akhtar, Stockholm University; Marta Cerruti, McGill University

8:30 AM**(ICACC-S17-035-2018) Mixed Quantum Dot Organic Antennas for Light Harvesting (Invited)**J. R. Caram*¹

1. University of California, Los Angeles, Chemistry, USA

9:00 AM**(ICACC-S17-036-2018) Optical characterization of sub-wavelength photonic structures (Invited)**J. A. Zapfen*¹; Y. Foo¹

1. City University of Hong Kong, Department of Materials Science and Engineering, Hong Kong

9:30 AM**(ICACC-S17-037-2018) A Close Look at Various Types of Light-Matter Interaction in Organic Semiconductors: From Molecular to Device Physics. (Invited)**E. Orgiu*¹

1. Institut National de la Recherche Scientifique, Energy Materials Telecommunications, Canada

10:00 AM**Break****10:20 AM****(ICACC-S17-038-2018) Imaging the thermal properties of two-dimensional thermoelectric materials for direct energy conversion (Invited)**G. Fanchini*¹

1. University of Western Ontario, Physics and Astronomy, Canada

10:50 AM**(ICACC-S17-039-2018) An Overview of the Potential Energy-Related Applications of the Emerging Wide Bandgap Semiconductor Material: b-Ga₂O₃ (Invited)**D. J. Rogers*¹

1. Nanovation, France

11:20 AM**(ICACC-S17-040-2018) Environmental friendly Carbon Dots: characterization and application in energy devices**D. Benetti*¹; Y. Zhou¹; H. Zhao¹; A. Vomiero²; F. Rosei¹

1. Institut National de la Recherche Scientifique, Énergie Matériaux Télécommunications, Canada
2. Lulea University of Technology, Engineering Sciences & Mathematics, Sweden

Honorary Symposium: Advancing Frontiers of Ceramics for Sustainable Society Development - International Symposium in Honor of Dr. Mrityunjay Singh**Advancing Frontiers of Ceramics VI -Composite Materials 2**

Room: Coquina Salon E

Session Chairs: Michael Halbig, NASA Glenn Research Center; Hagen Klemm, FhG IKTS Dresden

8:30 AM**(ICACC-HON-044-2018) A Brief History of Thermal Protection Systems (Invited)**S. M. Johnson*¹

1. Johnson Consulting, USA

9:00 AM**(ICACC-HON-045-2018) Progress and Plans for CMC Research at NASA Glenn in 2018 (Invited)**J. E. Grady*¹

1. NASA Glenn Research Center, Ceramic & Polymer Composites Branch, USA

9:20 AM**(ICACC-HON-046-2018) Layerwise Fabrication and Manufacturing of Complex Materials and Structures for Propulsion Applications**M. C. Halbig*¹; M. Singh²

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

9:40 AM**(ICACC-HON-047-2018) Effects and uses of electrical resistivity in fiber reinforced composites containing SiC, Si and C (Invited)**G. N. Morscher*¹

1. University of Akron, Mechanical Engineering Dept., USA

10:00 AM**Break****10:20 AM****(ICACC-HON-048-2018) Residual and Creep Stresses in Ceramic Composites (Invited)**R. J. Kerans*¹

1. University of Dayton, USA

10:50 AM**(ICACC-HON-049-2018) Fundamental research on advanced ceramics boosted by next-generation aerospace and energy developments (Invited)**G. L. Vignoles*¹; E. Bouillon²; P. David³

1. University of Bordeaux, LCTS - Lab for ThermoStructural Composites, France
 2. Safran Ceramics, R & T Department, France
 3. CEA, Materials R & D Dept., France

11:10 AM**(ICACC-HON-050-2018) Progress in polymer-derived SiC-based fibers (Invited)**T. Ishikawa*¹; R. Usukawa¹

1. Tokyo University of Science, Yamaguchi, Applied Chemistry, Japan

11:30 AM**(ICACC-HON-051-2018) Short fiber ceramic matrix composites fabricated by Fused Filament Fabrication (FFF) (Invited)**H. Klemm*¹; J. Abel¹; A. Michaelis¹; M. Singh²

1. FhG IKTS Dresden, Germany
 2. Ohio Aerospace Institute, USA

11:50 AM**(ICACC-HON-072-2018) Sustainability Science in a Global Landscape: implications for the field of Ceramics research (Invited)**L. Birla*¹

1. Elsevier B.V., Netherlands

FS1: Bio-inspired Processing of Advanced Materials**Bio-inspired Processing II**

Room: St. John

Session Chair: Di Zhang, Shanghai Jiao Tong University

8:30 AM**(ICACC-FS1-010-2018) Bio-process Inspired Synthesis of Nitrogen-Doped Anatase TiO₂ (Invited)**Z. Fu*¹

1. Wuhan University of Technology, State Key Lab of Advanced Technology for Materials Synthesis and Processing, China

8:50 AM**(ICACC-FS1-011-2018) Metal butterfly wing scales and their plasmonic applications (Invited)**J. Gu*¹; W. Zhang¹; Q. Liu¹; D. Zhang¹

1. Shanghai Jiao Tong University, State Key Lab of Metal Matrix Composites, China

9:10 AM**(ICACC-FS1-012-2018) Ceria-based catalytic regeneration of wall-flow Diesel Particulate Filters made of biomorphic Silicon Carbide (Invited)**J. Ramirez-Rico*¹; J. M. Fernandez¹; A. Gómez Martín¹; P. Orihuela Espina¹; R. C. Martín¹; J. Becerra-Villanueva¹

1. Universidad de Sevilla, Spain

9:30 AM**(ICACC-FS1-013-2018) Bioinspired functionally graded alumina**I. Hussainova*¹; M. Drozdova¹; R. Ivanov¹

1. Tallinn University of Technology, Estonia

9:50 AM**(ICACC-FS1-014-2018) Graphene Nanowires Anchored to 3D Graphene Foam via Self-assembly for High Performance Li and Na Ion Storage**X. Liu*¹

1. Heilongjiang University of Science and Technology, China

10:10 AM**Break****10:30 AM****(ICACC-FS1-015-2018) Bioinspired Design and Fabrication of Nano-Carbon Reinforced Bulk Aluminum Composites (Invited)**Z. Li*¹; Z. Tan¹; G. Fan¹; D. Xiong¹; Q. Guo¹; Y. Su¹; D. Zhang¹

1. Shanghai Jiao Tong University, China

10:50 AM**(ICACC-FS1-016-2018) Bioinspired approach of a Fe₂O₃/carbon composite for use in a high-performance lithium ion battery**Y. Li*¹; D. Zhang¹; Q. Liu¹; J. Gu¹; W. Zhang¹; S. Zhu¹

1. Shanghai Jiaotong University, School of Material Science and Technology, China

11:10 AM**(ICACC-FS1-017-2018) Bioinspired Layered Composites Based on Inorganic Nanosheets and Their Application in Flexible Energy Devices**Y. Zheng*¹; Y. Wang¹; J. Zhao¹; Y. Li¹

1. Harbin Institute of Technology, China

11:30 AM**(ICACC-FS1-018-2018) Graphitized carbon materials from biomass resources as electrodes for energy storage systems**J. Ramirez-Rico*¹; A. Gómez Martín¹; J. M. Fernandez¹; M. Ruttert²; T. Placke²

1. Universidad de Sevilla, Spain
 2. University of Münster, Germany

FS3: Chemical Processing of Functional Materials: Understanding the Conversion of Molecular Structures to Solid-State Compounds**Single Source Precursors I**

Room: Coquina Salon A

Session Chairs: Sanjay Mathur, University of Cologne; Thomas Fischer, University of Cologne

8:30 AM**(ICACC-FS3-001-2018) Solution based synthesis of advanced materials; from molecules to advanced materials (Invited)**G. Westin*¹

1. Uppsala University, Sweden

9:00 AM**(ICACC-FS3-002-2018) Synthesis of nanocrystalline Gd₂O₂NCN from a versatile single-source precursor (Invited)**E. Ionescu*¹

1. Technical University Darmstadt, Materials Science, Germany

9:30 AM**(ICACC-FS3-003-2018) Chemical formation and PL properties of β-SiAlON:Eu²⁺ phosphors derived from single source precursors (Invited)**Y. Iwamoto*¹

1. Nagoya Institute of Technology, Japan

10:00 AM**(ICACC-FS3-004-2018) In-situ toolbox for studying nucleation and growth in oxide thin films and hierarchical structures prepared from aqueous solutions (Invited)**A. B. Blichfeld*¹; T. D. Vu¹; T. Grande¹; M. Einarsrud¹

1. Norges Teknisk-naturvitenskapelige Universitet, Department of Materials Science and Engineering, Norway

10:30 AM**Break****Single Source Precursors II**

Room: Coquina Salon A

Session Chairs: Yuji Iwamoto, Nagoya Institute of Technology; Ralf Riedel, TU Darmstadt

10:50 AM**(ICACC-FS3-005-2018) Atomic/molecular layer engineering of novel inorganic-organic thin-film materials**M. Karppinen*¹

1. Aalto University, Department of Chemistry and Materials Science, Finland

11:10 AM**(ICACC-FS3-006-2018) Subvalent Iridium Precursors for Atom-Efficient Chemical Vapor Deposition of Ir and IrO₂ Thin Films**L. Jürgensen*¹; M. Frank¹; M. Pyeon¹; L. Czypiel¹; S. Mathur¹

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

11:30 AM**(ICACC-FS3-007-2018) In-situ Analysis of Precursor Decomposition Patterns in Chemical Vapor Deposition Reactions**T. Fischer*¹; M. Grosch¹; S. Mathur¹

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

S1: Mechanical Behavior and Performance of Ceramics & Composites**Development, Testing and Modeling of Ceramic and Metal-Ceramic Systems**

Room: Coquina Salon D

Session Chairs: Charles Lewinsohn, CoorsTek, Inc.; Michael Jenkins, Bothell Engineering and Science Technologies

1:30 PM**(ICACC-S1-057-2018) Microstructure-based modeling of the ultimate tensile strength of ceramic matrix composites**E. Maillat*¹; D. Dunn¹

1. GE Global Research, USA

1:50 PM**(ICACC-S1-058-2018) High temperature bending behavior of SiC/Si-binary eutectic alloys**T. Tsunoura*¹; 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

2:10 PM**(ICACC-S1-059-2018) Effects of Cooling Hole Arrays in SiC/SiC Composites**G. C. Ostidiek*¹

1. US Air Force, AFRL/RQTI, USA

2:30 PM**(ICACC-S1-060-2018) Novel manufacturing process for short fiber reinforced oxide/oxide CMCs**G. Puchas*¹; S. Knohl¹; W. Krenkel¹

1. University of Bayreuth, Ceramic Materials Engineering, Germany

2:50 PM**(ICACC-S1-061-2018) Ba_{1-x}Sr_xTiO₃ Reinforced Cu Matrix Composite for Electronic Packaging Applications**S. Kumar¹; A. Dwivedi¹; M. Ahmad*¹

1. Indian Institute of Technology, Ceramic Engineering, India

3:10 PM**Break****3:30 PM****(ICACC-S1-062-2018) Out-of-plane electrical transport properties in conducting ceramic matrix composites**Y. P. Singh*¹; R. Mansour²; G. N. Morscher¹

1. University of Akron, Mechanical Engineering, USA
2. Teledyne Scientific Company, Composite Materials, USA

3:50 PM**(ICACC-S1-063-2018) Development of an Advanced Composite Consisting of Iron Matrix Reinforced with Ultra High Temperature Ceramic Particulate (TiB₂) with Optimum Properties**B. Jahani*¹; M. Salimjazi¹; F. Azarmi¹; A. Croll²

1. North Dakota State University, Mechanical Engineering, USA
2. North Dakota State University, Physics, USA

4:10 PM**(ICACC-S1-064-2018) Commercial Development of C/SiC and SiC/SiC Composites Using Melt-Infiltration**K. Machida¹; E. Ness¹; S. Aonuma²; C. Lewinsohn*¹; H. Nakanishi²

1. CoorsTek, Inc., USA
2. CoorsTek K.K., Japan

4:30 PM**(ICACC-S1-065-2018) The effects of Y₂O₃ addition on mechanical and electrical properties of Al₂O₃/Ti composites**S. Shi*¹; T. Sekino¹; T. Goto¹; S. Chou¹

1. Osaka University, Japan

S3: 15th International Symposium on Solid Oxide Fuel Cells (SOFC): Materials, Science and Technology**Anode I**

Room: Crystal

Session Chair: Tai-Nan Lin, Institute of Nuclear Energy Research

1:30 PM**(ICACC-S3-046-2018) Perovskite Oxide Materials for Solid Oxide Fuel Cell Anodes (Invited)**S. Barnett*¹

1. Northwestern University, USA

2:00 PM**(ICACC-S3-047-2018) Composite Oxide containing La_{0.5}Sr_{0.5}Mn_{0.9}Al_{0.1}O₃ for Active Anode for Dry Hydrocarbon type Solid Oxide Fuel Cells (Invited)**T. Ishihara*¹; A. M. Bahrain²

1. Kyushu University, International Institute for Carbon-Neutral Energy Research, Japan
2. Kyushu University, Department of Applied Chemistry, Japan

2:30 PM**(ICACC-S3-048-2018) Enhanced Stability of Infiltrated Nickel Catalyst Particles in Ni-YSZ Anodes**Y. Lu*¹; P. J. Gasper¹; B. Mo¹; S. Gopalan¹; U. Pal¹; S. Basu¹

1. Boston University, Material Science Engineering, USA

2:50 PM**Break**

Anode II

Room: Crystal

Session Chair: Mihails Kusnezoff, Fraunhofer IKTS

3:10 PM**(ICACC-S3-050-2018) Degradation of solid oxide cells: CO₂ electrolysis and carbon formation (Invited)**T. L. Skaftelund*; C. Graves¹

1. Technical University of Denmark, Energy, Denmark

3:40 PM**(ICACC-S3-051-2018) Modification of Electrodes in Solid Oxide Electrochemical Cells for Electricity Storage with Syngas Production**Y. Zhang*; M. Han¹

1. Tsinghua University, State Key Laboratory of Power Systems, Department of Thermal Engineering, China

4:00 PM**(ICACC-S3-052-2018) Nanostructured ceria as an exceptionally active and stable mixed-conducting electrocatalyst**

C. Graves*

1. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

4:20 PM**(ICACC-S3-053-2018) In-depth study of the poisoning effects for H₂S and CO₂ on the Hydrogen Electrode for Proton Conducting SOFC**S. Sun*; Z. Cheng¹

1. Florida International University, Mechanical and Materials Engineering, USA

S5: Next Generation Bioceramics and Biocomposites**Bioceramics and Biocomposites III**

Room: Coquina Salon B

Session Chairs: Akiyoshi Osaka, Okayama University; Chloe Goldbach, NovaBone Products; Priscila Melo, Newcastle University

1:30 PM**(ICACC-S5-017-2018) Cube honeycomb models for porous bone architecture: FEM simulation (Invited)**A. Osaka*; C. Xuewen²; G. Wang²; M. Todo³; S. Guo²; J. Wang²

1. Okayama University and Henan University of Science & Technology, Faculty of Engineering, Japan
2. Henan University of Science and Technology, Sch Mat Sci & Eng, China
3. Kyushu University, Dept Molecular & Material Sciences, Japan

1:50 PM**(ICACC-S5-018-2018) An Injectable Glass Polyalkenoate Cement Engineered for Fracture Fixation and Stabilization**B. A. Khader*; S. A. Peel²; M. Towler¹

1. Ryerson University, Mechanical and Industrial Engineering, Canada
2. University of Toronto, Division of Oral & Maxillofacial Surgery & Anaesthesia, Faculty of Dentistry, Canada

2:10 PM**(ICACC-S5-019-2018) Processing of a fibre reinforced composite using PLLA and Phosphate glass fibres for medical applications**P. Melo*; M. Dalmina²; A. Ferreira-Duarte¹; P. Gentile¹; M. German³; M. Marshal⁴; K. Dalgarno¹

1. Newcastle University, School of Engineering, United Kingdom
2. Newcastle University, School of Chemistry, United Kingdom
3. Newcastle University, Dental School, United Kingdom
4. Glass Technology Services, United Kingdom

2:30 PM**(ICACC-S5-020-2018) A Closer Look at Binary Boron-Rubidium Glasses**K. O'Connell*; U. Werner-Zwanziger²; D. Boyd¹

1. Dalhousie University, Allied Oral Sciences, Canada
2. Dalhousie University, Department of Chemistry and Institute for Research in Materials, Canada

2:50 PM**(ICACC-S5-021-2018) Characterization of Spray Dried, Sol-Gel Derived Bioactive Glasses for Hemostatic Applications**C. M. Goldbach*; M. Demir¹; D. Rodriguez¹; L. Howell²

1. NovaBone Products, Research & Development, USA
2. Particle Solutions, USA

3:10 PM**Break****3:30 PM****(ICACC-S5-022-2018) Bone Reconstruction in the Extraction Sockets of Diabetic Patients Grafted with SCPC Bioactive Ceramic**A. El-Ghannam*; H. ElShamy²; K. Allam²

1. University of North Carolina at Charlotte, USA
2. Cairo University, Oral Surgery, Egypt

3:50 PM**(ICACC-S5-023-2018) Systematic Study on Solid-State Synthesis of Monticellite (CaMgSiO₄) Based Bioactive Ceramic Powders Obtained from Boron Derivative Waste**L. Koroglu*; E. Ayas¹

1. Anadolu University, Materials Science and Engineering, Turkey

4:10 PM**(ICACC-S5-024-2018) In vitro Behavior of CaSiO₃-CaCO₃-SiO₂ Composites**B. Beyoglu*; R. Riman¹

1. Rutgers University, Material Science and Engineering, USA

4:30 PM**(ICACC-S5-025-2018) The complex geometry of ceramics based on Ca_(3-x)(K_yNa_(1-y))_{2x}(PO₄)₂ for better permeability of bone grafts**P. Evdokimov*; V. Putlayev¹; N. Orlov²; A. Tikhonov²; E. Klimashina¹; T. Safronova¹; A. Garshev¹; Y. Filippov²

1. Lomonosov Moscow State University, Chemistry Department, Russian Federation
2. Lomonosov Moscow State University, Materials Science Department, Russian Federation
3. Lomonosov Moscow State University, Institute for Mechanics, Russian Federation

4:50 PM**(ICACC-S5-026-2018) Antibacterial and cytotoxic activities of novel tantalum-containing glass polyalkenoate cements**A. Alhalawani*; M. Towler¹

1. Ryerson University, Mechanical & Industrial Engineering, Canada

S7: 12th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications**Synthesis, Functionalization and Assembly of 1D, 2D and 3D Nanostructures III**

Room: Coquina Salon C

Session Chair: Yogendra Mishra, Kiel University

1:30 PM**(ICACC-S7-048-2018) Photonic Crystal Enhanced Fluorescence and Its Applications (Invited)**

M. Li*

1. Institute of Chemistry, Chinese Academy of Sciences, Key Lab of Green Printing, China

2:00 PM**(ICACC-S7-049-2018) Au@Cu₂O Core@Shell Nanocrystals as Peroxidase Mimics for Efficient E. coli Disinfection**

M. Kuo*

1. National Chiao Tung University, Taiwan

S9: Porous Ceramics: Novel Developments and Applications

Applications of Porous Ceramics

Room: Coquina Salon G

Session Chair: Alberto Ortona, SUPSI

1:30 PM

(ICACC-S9-026-2018) Production and Emerging Applications of Porous Aluminosilicates from Low-Temperature Geopolymer Processes (Invited)

D. Seo^{*1}; S. Chen¹

1. Arizona State University, School of Molecular Sciences, USA

2:00 PM

(ICACC-S9-027-2018) Ag nanoparticle-deposited anodized titania nanotube arrays for electrodes of dye-sensitized solar cells

G. Kawamura^{*1}; T. Wai Kian¹; Z. Lockman²; H. Muto¹; A. Matsuda¹

1. Toyohashi University of Technology, Japan
2. Universiti Sains Malaysia, Malaysia

2:20 PM

(ICACC-S9-028-2018) Novel Developments of Cellular Ceramics for Energy- and Environmental Applications (Invited)

U. F. Vogt^{*1}; B. Fumey²; A. Bonk³; M. Gorbar⁴; G. Plesch⁵

1. Empa, Swiss Federal Laboratories for Materials Science and Technology, Materials for Energy Conversion, Switzerland
2. Empa, Swiss Federal Laboratories for Materials Science and Technology, Urban Energy Systems, Switzerland
3. Deutsches Zentrum für Luft- und Raumfahrt e.V, Institut für Technische Thermodynamik, Germany
4. ZHAW School of Engineering, IMPE, Switzerland
5. Comenius University, Department of Inorganic Chemistry, Slovakia

2:50 PM

(ICACC-S9-029-2018) Environmental Remediation using Silicon Oxycarbide (SiCO) Porous Materials

S. I. Aguirre-Medel^{*1}; P. Kroll¹

1. University of Texas, Arlington, USA

3:10 PM

Break

Mechanical Properties of Porous Ceramics

Room: Coquina Salon G

Session Chair: Ulrich Vogt, Empa, Swiss Federal Laboratories for Materials Science and Technology

3:30 PM

(ICACC-S9-030-2018) Weibull Statistics for Strength Data of Porous Ceramics - ISO Proposal (Invited)

K. Yasuda^{*1}; N. Okabe²; M. Takahashi²; S. Honda³; H. Kita⁴; S. Tanaka⁵; T. Akatsu⁶; S. Taruta⁷; H. Muto⁸; H. Miyazaki⁹; N. Shinohara¹⁰; S. Yamamoto¹¹; T. Ono¹²; H. Ohnishi¹³; Y. Takahashi¹⁴; T. Mitsuoka¹⁵; M. Takanashi¹⁶; I. Kawashima¹⁷; A. Sugai¹⁹; M. Asayama¹⁸

1. Tokyo Institute of Technology, Japan
2. Ehime University, Japan
3. Nagoya Institute of Technology, Japan
4. Nagoya University, Japan
5. Nagaoka University of Technology, Japan
6. Saga University, Japan
7. Shinshu University, Japan
8. Toyohashi University of Technology, Japan
9. The National Institute of Advanced Industrial Science and Technology, Japan
10. AGC Asahi Glass, India
11. ASUZUC INC., Japan
12. Kyocera Corp., Japan
13. NIKKATO Corporation, Japan
14. Noritake Co., Limited, Japan
15. NGK Spark Plug Co., Ltd, Japan
16. IHI Corp., Japan
17. Kobe Steel, Ltd., Japan
18. Toshiba Corp., Japan
19. KUBOTA Corporation, Japan

4:00 PM

(ICACC-S9-031-2018) Bending Strength Test for Porous Ceramics with Various Pore Structure

S. Honda^{*1}; H. Ohnishi⁴; T. Ono³; H. Kita²; M. Takahashi²; Y. Takahashi⁶; S. Tanaka⁷; S. Taruta⁸; T. Mitsuoka⁹; H. Muto¹⁰; K. Yasuda¹¹; S. Yamamoto¹²; Y. Yoshizawa¹³

1. Nagoya Institute of Technology, Japan
2. Nagoya University, Japan
3. Kyocera Corporation, Japan
4. Nikkato Co. Ltd., Japan
5. Ehime University, Japan
6. Noritake Co., Limited, Japan
7. Nagaoka University of Technology, Japan
8. Shinshu University, Japan
9. NGK Spark Plug Co., Ltd, Japan
10. Toyohashi University of Technology, Japan
11. Tokyo Institute of Technology, Japan
12. ASUZUC INC., Japan
13. The National Institute of Advanced Industrial Science and Technology, Japan

4:20 PM

(ICACC-S9-032-2018) Compressive Strength and Permeability of Porous SiOC via Two-Stage Freeze Casting

N. Arai^{*1}; K. Faber¹

1. California Institute of Technology, Materials Science, USA

4:40 PM

(ICACC-S9-033-2018) Multiwall Carbon Nanotube-Silicon Oxycarbide Composite via Freeze-Casting with Pre-ceramic Polymers

C. Kuo^{*1}; K. Faber¹

1. California Institute of Technology, Material Science, USA

S10: Virtual Materials (Computational) Design and Ceramic Genome

Modeling of Performances II

Room: Coquina Salon F

Session Chair: William Weber, University of Tennessee

1:30 PM

(ICACC-S10-016-2018) Image-based modeling – A series of useful tools for designing advanced ceramics (Invited)

G. L. Vignoles^{*1}; G. Couegnat¹; O. Caty¹; V. Mazars¹; M. Charron¹

1. University Bordeaux, LCTS - Lab for ThermStructural Composites, France

2:00 PM

(ICACC-S10-017-2018) Metal-ceramic composites: Aspects of the numerical material and damage modeling (Invited)

R. Piat^{*1}; M. Kashtalyan²

1. Darmstadt University of Applied Science, Germany
2. School of Engineering, University of Aberdeen, Centre for Micro- and Nanomechanics, United Kingdom

2:30 PM

(ICACC-S10-018-2018) Electronic Origin of Slip Deformation Ability in Ductile Ionic Crystals (Invited)

K. Matsunaga^{*1}

1. Nagoya University, Materials Physics, Japan

3:00 PM

Break

Modeling of Performances III

Room: Coquina Salon F

Session Chair: Gerard Vignoles, University Bordeaux

3:20 PM

(ICACC-S10-019-2018) Effects of the electronic and nuclear energy loss in molecular dynamics simulations of irradiation (Invited)

E. Zarkadoula^{*1}; Y. Zhang¹; W. J. Weber²

1. Oak Ridge National Lab, Materials Science and Technology, USA
2. University of Tennessee, Materials Science and Engineering, USA

3:50 PM**(ICACC-S10-020-2018) Ab initio Molecular Dynamics Simulations of Irradiation Response in Ceramics (Invited)**W. J. Weber*¹; B. Liu²; J. Xi¹; J. Wang³

1. University of Tennessee, Materials Science & Engineering, USA
2. Shanghai University, China
3. Shenyang National Laboratory for Materials Research, China

4:20 PM**(ICACC-S10-021-2018) Multi-Phase-Field Modeling of Crack Propagation in Polycrystalline ZrB₂-Based Ceramics**A. Emdadi¹; M. A. Zaeem¹; W. Fahrenholtz*¹; G. Hilmas¹

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

4:40 PM**(ICACC-S10-022-2018) Structure and Properties of Pyrophosphate Crystals**P. Adhikari*¹; W. Ching¹

1. University of Missouri, Kansas City, Department of Physics and Astronomy, USA

5:00 PM**(ICACC-S10-023-2018) All Atom Molecular Dynamics Simulation Study; Effects of Functional Group on Polymer Brush Friction**S. Uehara*¹

1. IMR Tohoku University, Japan

5:20 PM**(ICACC-S10-024-2018) Phase Field Simulations of Elastically Anisotropic Heterogeneous Polycrystals**J. Allen*¹

1. ERDC, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications**New Direction**

Room: Tomoka C

Session Chairs: Martin Magnuson, IFM; Mariola Ramirez, Universidad Autonoma de Madrid

1:30 PM**(ICACC-S14-042-2018) Advanced oxide thin films prepared by ultraviolet laser-assisted chemical solution processing for electrical and optical applications (Invited)**T. Tsuchiya*¹; Y. Uzawa¹; T. Nakajima¹; I. Yamaguchi¹

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

2:00 PM**(ICACC-S14-043-2018) A Self-Compensating Strain Gage for Use at Elevated Temperatures**M. Ricci*¹; K. Rivera¹; C. Dudinski¹; J. Weigler¹; O. Gregory¹

1. University of Rhode Island, Dept. of Chemical Engineering, USA

2:20 PM**(ICACC-S14-044-2018) Advanced Sensors for CMC Gas Turbine Engine Components**K. Rivera*¹; O. Gregory¹; M. Ricci¹

1. University of Rhode Island, Chemical Engineering, USA

2:40 PM**(ICACC-S14-045-2018) Temperature dependent thermal properties of reaction bonded silicon carbide (RBSC) composites**Y. Zhang*¹; C. Hsu¹; P. Karandikar²; S. Aubuchon³; C. Ni¹

1. University of Delaware, Material Science and Engineering, USA
2. M Cubed Technology, Inc., USA
3. TA Instruments, USA

3:00 PM**Break****3:20 PM****(ICACC-S14-046-2018) Electronic Properties and Bonding in Zirconium Hydride Thin Films Investigated by X-ray Spectroscopy (Invited)**M. Magnuson*¹

1. Thin Film Physics Division, Linköping University, Department of Physics, Chemistry and Biology, (IFM), Sweden

3:50 PM**(ICACC-S14-047-2018) Role of interparticle space in hollow silica-alumina composite spheres on their acidic properties and activity for hydrolysis of ammonia borane (Invited)**T. Umegaki*¹; N. Toyama¹; R. Ogawa¹; S. Ohki²; M. Tansho²; T. Shimizu²; Y. Kojima¹

1. College of Science & Technology, Nihon University, Department of Materials and Applied Chemistry, Japan
2. National Institute for Materials Science (NIMS), Japan

S16: Geopolymers, Inorganic Polymers and Sustainable Materials**Sustainable Materials and Composites**

Room: Ponce de Leon

Session Chair: Ruy Sa Ribeiro, INPA-National Institute for Amazonian Research

1:30 PM**(ICACC-S16-022-2018) On the Mechanical Behavior of Natural Fibers Reinforced Geopolymers (Invited)**A. C. Trindade¹; F. d. Silva*¹

1. Pontificia Universidade Católica do Rio de Janeiro (PUC-Rio), Civil Engineering, Brazil

2:00 PM**(ICACC-S16-023-2018) Functional Glass-ceramic Foams from 'Inorganic Gel Casting' and Sintering of Glass/Slag Mixtures (Invited)**A. Rincon*¹; D. Desideri¹; E. Bernardo¹

1. University of Padova, Dipartimento di Ingegneria Industriale, Italy

2:30 PM**(ICACC-S16-024-2018) The effect of partial metakaolin replacement by industrial waste products on geopolymer cements intended for the creation of structural insulated panels (SIPs) (Invited)**L. Oakes*¹; B. Magee¹; A. Wilkinson¹

1. Ulster University, Built environment, United Kingdom

3:00 PM**Break****3:20 PM****(ICACC-S16-025-2018) Development of alkali activated cement panels using different industrial byproducts as raw materials (Invited)**L. Lima Junior*¹; S. Pianaro¹

1. State University of Ponta Grossa, Materials Engineering Department, Brazil

3:40 PM**(ICACC-S16-026-2018) Bone ash, Glass Frit and Saffil Reinforced Geopolymer using MetaMax, Mymensingh Clay and Synthetic Mymensingh Clay**A. W. Bhuiya¹; M. Hu¹; D. Ribero¹; W. M. Kriven*¹

1. University of Illinois at Urbana-Champaign, USA

4:00 PM**(ICACC-S16-027-2018) Low temperature geopolymeric setting for the stabilization of earthen masonry units**E. B. Ojo*¹; A. I. Katagum²; R. S. Teixeira²; D. S. Matawal²; H. Savastano³

1. African University of Science and Technology, Materials Science & Engineering, Nigeria
2. Nigerian Building and Road Research Institute, Nigeria
3. University of Sao Paulo, Brazil

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Multifunctional III

Room: Halifax A/B

Session Chairs: Justin Caram, University of California, Los Angeles; J Zapfen, The Pennsylvania State University

1:30 PM

(ICACC-S17-041-2018) Promising Nanostructured Cu₂Se Thermoelectrics via High Throughput and Rapid Chemical Synthesis (Invited)

M. S. Toprak^{*}; M. Saleemi¹; M. Tafti¹; S. Ballikaya²

1. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden
2. Istanbul University, Department of Physics, Turkey

2:00 PM

(ICACC-S17-042-2018) Emerging Applications of Metal Organic Framework Composites (Invited)

R. Riccò^{*}1

1. Graz University of Technology, Austria

2:30 PM

(ICACC-S17-043-2018) Advances Ceramics for Aerospace Applications: Current Issues and Future Trends (Invited)

V. M. Castano^{*}1

1. Universidad Nacional Autonoma de Mexico, Mexico

3:00 PM

Break

3:20 PM

(ICACC-S17-044-2018) Electrolyte-gating meets light harvesting: the case of phototransistors working in organic and aqueous media (Invited)

C. Santato^{*}1

1. Ecole Polytechnique de Montreal, Canada

3:50 PM

(ICACC-S17-045-2018) Soft Processing (= Green Processing) for 2D Inks: Direct Fabrication of Inks of Graphenes, Their Hybrids, MXene, MoS₂ under Ambient Conditions (Invited)

M. Yoshimura^{*}1

1. National Cheng Kung Univ., PCGMR/ME&E, Taiwan

4:20 PM

(ICACC-S17-046-2018) In situ electron beam driven reactions as a nanotechnology tool (Invited)

M. Rummeli^{*}1

1. Soochow University, School of Energy/SIEMIS, China

Honorary Sympoisum: Advancing Frontiers of Ceramics for Sustainable Society Development - International Symposium in Honor of Dr. Mrityunjay Singh

Advancing Frontiers of Ceramics VII -Materials Integration

Room: Coquina Salon E

Session Chairs: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences; Monica Ferraris, Politecnico di Torino

1:30 PM

(ICACC-HON-052-2018) Polymer-derived ceramic coatings for metallic substrates (Invited)

W. Krenkel^{*}1

1. University of Bayreuth, Germany

2:00 PM

(ICACC-HON-053-2018) CMAS attack – a serious challenge for environmental barrier coatings (Invited)

P. Mechnich^{*}1

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

2:20 PM

(ICACC-HON-054-2018) Rare Earth Silicates as Advanced Environmental/Thermal Barrier Coating Candidates for SiC_f/SiC CMCs in Extreme Combustion Environment (Invited)

J. Wang^{*}1

1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, High-performance Ceramics Division, China

2:40 PM

(ICACC-HON-055-2018) Advanced Ceramics Coating as the Strategic Technologies for Future Innovation (Invited)

J. Akedo^{*}1

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

3:00 PM

Break

3:20 PM

(ICACC-HON-056-2018) Ceramic-metal/CNT/G-GO oxide composite coatings with tailored properties (Invited)

S. Seal^{*}1

1. University of Central Florida, Mat. Sci. Eng, USA

3:40 PM

(ICACC-HON-057-2018) Interfacial Issues in Brazing of Advanced Ceramics for Structural and Multifunctional Applications (Invited)

R. Asthana^{*}; N. Sobczak²; J. J. Sobczak²; M. Singh⁴

1. University of Wisconsin-Stout, Engineering and Technology, USA
2. Foundry Research Institute, Poland
3. Ohio Aerospace Institute, USA
4. Ohio Aerospace Institute, USA

4:00 PM

(ICACC-HON-058-2018) Research on joining at Politecnico di Torino: Everything started more than 20 years ago (Invited)

M. Ferraris^{*}1

1. Politecnico di Torino, Department of Applied Science and Technology, Italy

4:20 PM

(ICACC-HON-059-2018) Non-conventional joining of a ceramic solid oxide fuel cell to a metallic interconnect (Invited)

R. Muccillo^{*}; E. N. Muccillo¹

1. IPEN, Brazil
2. IPEN-UFABC, Brazil

4:40 PM

(ICACC-HON-060-2018) Novel single crystals for electro-optical applications (Invited)

K. Shimamura^{*}; V. Garcia¹

1. National Institute for Materials Science, Japan

5:00 PM

(ICACC-HON-061-2018) Challenges and prospects for advanced laser ceramic processing

Y. Wu^{*}1

1. New York State College of Ceramics, Alfred University, Department of Materials Science and Engineering, Kazuo Inamori School of Engineering, USA

5:20 PM

(ICACC-HON-062-2018) Advanced Ceramics, Today and Tomorrow in Japan (Invited)

T. B. Yano^{*}; H. Sato^{*}1

1. Japan Fine Ceramics Association, Japan

FS1: Bio-inspired Processing of Advanced Materials

Bio-inspired Processing III

Room: St. John

Session Chair: Joaquin Ramirez-Rico, Universidad de Sevilla

1:30 PM

(ICACC-FS1-019-2018) Composite Structural Modeling and Mechanical Behavior of Nanocarbon-based Composites with Nacre-like Structures (Invited)

Y. Su^{*1}; Z. Li¹; Q. Guo¹; D. Xiong¹; D. Zhang¹

1. Shanghai Jiao Tong University, Materials Science and Engineering, China

1:50 PM

(ICACC-FS1-020-2018) Bio-inspired graphene-based nanocomposites (Invited)

Q. Cheng^{*1}

1. Beihang University, School of Chemistry, China

2:10 PM

(ICACC-FS1-021-2018) Achieving High Strength and High Ductility in Metal Matrix Composites Reinforced with Discontinuous Three-Dimensional Graphene-Like Network (Invited)

C. He^{*1}; X. Zhang¹

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

2:30 PM

(ICACC-FS1-022-2018) Bio-inspired Ultra-black Coating with Hollow Carbon Microspheres

L. Pan^{*1}

1. Harbin Institute of Technology, China

2:50 PM

Break

3:10 PM

(ICACC-FS1-023-2018) Bioinspired optical structure for enhancement infrared absorption (Invited)

W. Zhang^{*1}; D. Zhang¹

1. Shanghai Jiao Tong University, State Key Lab of Metal Matrix Composites, China

3:30 PM

(ICACC-FS1-024-2018) Electrochemical Fabrication of "Anole Skin"

N. Li^{*1}; Y. Li²; J. Zhao¹; H. Xu¹; L. Pan¹

1. Harbin Institute of Technology, School of Chemistry and Chemical Engineering, China
2. Harbin Institute of Technology, Center for Composite Materials and Structure, China

3:50 PM

(ICACC-FS1-025-2018) Tunable color of VO₂ films by a bionic micro-structure

S. Dou^{*1}; Y. Li¹

1. Harbin Institute of Technology, School of Astronautics, China

4:10 PM

(ICACC-FS1-026-2018) Bio-inspired Bragg reflector made of silk-titanates nanocomposite as platform for humidity sensing

E. Colusso¹; F. Omenetto²; A. Martucci^{*1}

1. University of Padova, Industrial Engineering, Italy
2. Tufts University, USA

FS2: Tomography and Microscopy based Modeling of Ceramics

Strain Characterization by Digital Image Correlation Technique

Room: Coquina Salon H

Session Chairs: Benoit Rousseau, LTN UMR CNRS 6607; Tobias Fey, Friedrich-Alexander University Erlangen-Nürnberg

1:30 PM

(ICACC-FS2-001-2018) In-situ bending behavior and failure characterization of 3D needle-punched C/SiC composite (Invited)

Y. Dong^{*1}; X. Shi²; Z. Zhang¹; B. Pan¹

1. Beihang University, China
2. Institute of Metal Research, Chinese Academy of Sciences, China

2:00 PM

(ICACC-FS2-002-2018) Advanced digital volume correlation for large non-uniform deformation measurement of high-resolution volume images (Invited)

B. Pan^{*1}; B. Wang¹

1. Beihang University, China

2:30 PM

(ICACC-FS2-003-2018) In-situ observation and strain measurement at high temperature by cutting off thermal radiation (Invited)

H. Kakisawa^{*1}

1. National Institute for Materials Science (NIMS), Japan

3:00 PM

Break

Characterization Technologies

Room: Coquina Salon H

Session Chairs: Ulf Betke, OvGU Magdeburg; Tobias Fey, Friedrich-Alexander University Erlangen-Nürnberg

3:20 PM

(ICACC-FS2-004-2018) Fabrication and characterization of carbon monolith

R. Inoue^{*1}; Y. Kaneda¹; Y. Kogo¹

1. Tokyo University of Science, Japan

3:40 PM

(ICACC-FS2-005-2018) Assessment of Thermal Fatigue Behavior of Active Metal Brazing Substrates during Temperature Cycling (Invited)

Y. Zhou^{*1}; H. Miyazaki¹; H. Hyuga¹; S. Fukuda¹; K. Hirao¹

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

Analysis of Sintering and Solidification

Room: Coquina Salon H

Session Chairs: Hideki Kakisawa, National Institute for Materials Science (NIMS); Satoshi Tanaka, Nagaoka University of Technology

4:10 PM

(ICACC-FS2-006-2018) Micro CT observation of macroscopic pore evolution in alumina ceramics during sintering (Invited)

S. Tanaka^{*1}

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

4:40 PM

(ICACC-FS2-007-2018) Distinction of stages of sintering from 3D visualization of microstructure in sinteting by using X-ray microtomography (Invited)

G. Okuma^{*1}; S. Tanaka²; F. Wakai¹

1. Tokyo Institute of Technology, School of Material and Chemical Technology, Japan
2. Nagaoka University of Technology, Materials Science and Technology, Japan

5:10 PM**(ICACC-FS2-008-2018) Analysis of Densification Behavior Depending on Grain Growth for Zirconia**B. Kim^{*1}; K. Morita; H. Yoshida¹; J. Li¹; H. Matsubara²

1. National Institute for Materials Science (NIMS), Japan
2. Tohoku University, Japan

5:30 PM**(ICACC-FS2-009-2018) Non-destructive analysis and strength prediction of ceramics using optical coherence tomography (Invited)**J. Tatami^{*1}; F. Sakamoto¹; T. Takahashi²; M. Iijima¹

1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

FS3: Chemical Processing of Functional Materials: Understanding the Conversion of Molecular Structures to Solid-State Compounds

Materials Processing I

Room: Coquina Salon A

Session Chairs: Philippe Miele, Ecole Nationale Supérieure de Chimie de Montpellier; Zhaoju Yu, Xiamen University

1:30 PM**(ICACC-FS3-009-2018) Nanostructured Ceramic Coatings Synthesized by Metal-Organic Chemical Vapor Deposition (Invited)**A. Ito^{*1}

1. Yokohama National University, Japan

2:00 PM**(ICACC-FS3-010-2018) Smarts molecular precursors for chemical processing of functional nanomaterials (Invited)**S. Daniele¹; S. Mishra^{*1}

1. IRCELYON, University Lyon 1, France

2:30 PM**(ICACC-FS3-011-2018) "Free" Carbon in Silicon Oxycarbide Ceramics: Multiple Stages of Structure Formation**P. Kroll^{*1}

1. UT Arlington, USA

2:50 PM**Break****Materials Processing II**

Room: Coquina Salon A

Session Chairs: Maarit Karppinen, Aalto University; Shashank Mishra, University of Lyon 1

3:10 PM**(ICACC-FS3-012-2018) Functional Nanoscaled Silicon-Based Ceramics and Ceramic Composites via Molecular Design (Invited)**R. Riedel^{*1}

1. TU Darmstadt, Materials Science, Germany

3:40 PM**(ICACC-FS3-013-2018) Design of Metal Oxide Nanoparticles: Toward the Control of the Electrochemical Properties**S. Cassaignon^{*1}; O. Durupthy¹; D. Portehault¹

1. Sorbonne University, UPMC, LCMCP, France

4:00 PM**(ICACC-FS3-014-2018) Developments of nanostructured metal oxide thin films for photoelectrochemical water splitting**S. Bera^{*1}; S. Kwon¹

1. Pusan National University, School of Materials Science and Engineering, Republic of Korea

4:20 PM**(ICACC-FS3-015-2018) Synthesis, microstructure and advanced functional properties of SiCN-based nanocomposites (Invited)**Z. Yu^{*1}

1. Xiamen University, College of Materials, China

4:50 PM**(ICACC-FS3-016-2018) Probing local environments in PDCs with solid-state NMR combined with ab-initio calculations**C. Gervais^{*1}; C. Salameh¹; M. Schmidt²; A. Viard²; S. Bernard²; F. Babonneau¹; P. Miele²

1. UPMC, LCMCP, France
2. IEM, France

5:10 PM**(ICACC-FS3-018-2018) Low Temperature Joining of Borosilicate Glass**E. Muskovin^{*1}; W. Fahrenholtz¹; R. Brow¹; J. Buckner²

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

Friday, January 26, 2018

S10: Virtual Materials (Computational) Design and Ceramic Genome

Modeling of Functional Ceramics I

Room: Coquina Salon F

Session Chair: Per Eklund, Linköping University

8:30 AM**(ICACC-S10-025-2018) Functional electronic ceramics material research combining atomic level structure analysis and theoretical calculations (Invited)**H. Moriwake^{*1}

1. JFCC, Japan

9:00 AM**(ICACC-S10-026-2018) Electronic Structure and Chemical Bonding in MXenes and MAX phases Investigated by Density Functional Theory and X-ray Spectroscopy (Invited)**M. Magnuson^{*1}

1. Thin Film Physics Division, Linköping University, Department of Physics, Chemistry and Biology, (IFM), Sweden

9:30 AM**(ICACC-S10-027-2018) Li storage in SiCO anode materials (Invited)**P. Kroll^{*1}

1. University of Texas, Arlington, USA

10:00 AM**Break****Modeling of Functional Ceramics II**

Room: Coquina Salon F

Session Chair: Peter Kroll, UT Arlington

10:20 AM**(ICACC-S10-028-2018) Visualization of Energy-Structure Relationships of Mn⁴⁺ in Oxides with Local Symmetries Specified by Three or Four Structural Parameters (Invited)**K. Ogasawara^{*1}

1. Kwansei Gakuin University, Department of Chemistry, Japan

10:50 AM**(ICACC-S10-029-2018) Novel layered thin-film materials for contacts and thermoelectrics by integrated theoretical-experimental studies (Invited)**P. Eklund*¹

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

11:20 AM**(ICACC-S10-030-2018) High-throughput dopant screening for low power-consuming and fast phase change memory material**H. Choi*²; M. Choi¹

1. Hanyang University, Republic of Korea
2. Virtual Lab Inc., Republic of Korea

11:40 AM**(ICACC-S10-031-2018) First-Principles Calculations on Impurity Poisoning of Pt Alloy Anode Catalyst in PEFC**K. Kuranari*¹; J. Xu¹; Y. Ootani¹; N. Ozawa¹; M. Kubo¹

1. Institute for Materials Research, Tohoku University, Japan

Honorary Symposium: Advancing Frontiers of Ceramics for Sustainable Society Development - International Symposium in Honor of Dr. Mrityunjay Singh

Advancing Frontiers of Ceramics VIII - Novel Processing 2

Room: Coquina Salon E

Session Chairs: Roger Narayan, NC State University; Richard Sisson, Worcester Polytechnic Institute

8:30 AM**(ICACC-HON-063-2018) Bioceramic Substrates for Engineering Applications: Particles Filtration in Diesel Engines (Invited)**P. Orihuela Espina²; A. Gómez Martín¹; J. Ramírez-Rico¹; J. M. Fernandez*¹; R. Chacartegui Ramirez²; M. Singh³

1. UNIVERSIDAD DE SEVILLA, FÍSICA MATERIA CONDENSADA, Spain
2. UNIVERSIDAD DE SEVILLA, INGENIERÍA ENERGÉTICA, Spain
3. Ohio Aerospace Institute, USA

9:00 AM**(ICACC-HON-064-2018) High-porosity geopolymer components by direct foaming and direct ink writing (Invited)**P. Colombo*¹; C. Bai¹; G. Franchin¹; A. Conte¹; A. Milan¹; P. Scanferla¹

1. University of Padova, Industrial Engineering, Italy

9:20 AM**(ICACC-HON-065-2018) Biohybrid Sol-Gel Materials for Renewable Fuel Production (Invited)**K. Johnson*¹; M. Longo¹; S. H. Risbud¹

1. University of California, Davis, Chemical Engineering and Materials Science, USA

9:40 AM**(ICACC-HON-066-2018) Hydrogen absorption properties of amorphous Al(Si)CN derived from Al carbodiimide-based polymeric precursors (Invited)**Y. Iwamoto*¹; K. Mizutani¹; S. Tada¹; S. Bernard²; E. Ionescu³; G. Mera³; Y. Daiko¹; S. Honda¹; R. Riedel³

1. Nagoya Institute of Technology, Japan
2. CNRS, Research Institute on Ceramics (IRCER), European Ceramic Center, France
3. Technische Universität Darmstadt, Germany

10:00 AM**Break****10:20 AM****(ICACC-HON-067-2018) Additive Manufacturing of Ceramics for Structural and Functional Applications (Invited)**J. Liang¹; A. M. Peterson²; R. D. Sisson*¹

1. Worcester Polytechnic Institute, Materials Science and Engineering, USA
2. Worcester Polytechnic Institute, Chemical Engineering, USA

10:40 AM**(ICACC-HON-068-2018) Additive Manufacturing of Medical Devices (Invited)**R. Narayan*¹

1. NC State University, USA

11:00 AM**(ICACC-HON-069-2018) Engineered strategy for pore configurations in cellular ceramics**M. Fukushima*¹; H. Hyuga¹; T. Ohji¹; Y. Yoshizawa¹

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

11:20 AM**(ICACC-HON-070-2018) New development of ceramics process by fusion of nanosecond technology and nanotechnology**T. Nakayama*¹; K. Niihara¹; H. Suematsu¹; T. Suzuki¹

1. Nagaoka Univ of Tech, Japan

11:40 AM**(ICACC-HON-071-2018) Development of Ultra Low Density Refractory Granules(ULDRG) for Kilns (Invited)**L. K. Sharma*¹; D. P. Karmakar¹

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

FS2: Tomography and Microscopy based Modeling of Ceramics

Influence of Inhomogeneity on Physical Properties

Room: Coquina Salon H

Session Chairs: Ryo Inoue, Tokyo University of Science; You Zhou, National Institute of Advanced Industrial Science and Technology (AIST)

8:30 AM**(ICACC-FS2-010-2018) Micro CT structure analysis and process design of organic and inorganic hybrid materials (Invited)**T. Nakayama*¹; H. Cho²; S. Tanaka¹; T. Fujihara³; H. Triet¹; S. T. Nguyen¹; H. Suematsu¹; T. Suzuki¹; K. Niihara¹

1. Nagaoka Univ of Tech, Japan
2. Hanyang University, Republic of Korea
3. National Institute of Technology, Anan College, Japan

9:00 AM**(ICACC-FS2-011-2018) X-ray μ -tomography: Actual and new developments for the characterization of the radiative properties of cellular ceramics up to very high temperatures**B. Rousseau*¹

1. Laboratoire Thermique et Energies de Nantes, France

9:20 AM**(ICACC-FS2-012-2018) A New Differential Thresholding-Based Binarization Approach for the Tomographic Characterization of Cellular Ceramics (Invited)**U. Betke*¹; S. Dalicho¹; S. Rannabauer¹; A. Lieb¹; M. Scheffler¹

1. OvGU Magdeburg, Nachwuchsforschergruppe NEOTHERM, Germany

9:50 AM**(ICACC-FS2-013-2018) Simulation and Permeability and tortuosity of ceramics foams based on μ CT**T. Fey*¹

1. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany

10:10 AM**(ICACC-FS2-014-2018) Microstructure characterisation and FEM-simulation of porous ceramic structures**T. Fey*¹

1. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany

FS3: Chemical Processing of Functional Materials: Understanding the Conversion of Molecular Structures to Solid-State Compounds

Nanostructured Materials

Room: Coquina Salon A

Session Chairs: Emanuel Ionescu, Technical University Darmstadt;
Gunnar Westin, Uppsala University

8:30 AM

(ICACC-FS3-019-2018) Polymer-derived ceramic nanocomposites for electrochemical energy storage (Invited)

G. Singh*¹

1. Kansas State University, Mechanical and Nuclear Engineering Dept., USA

9:00 AM

(ICACC-FS3-020-2018) Disclosing the role of mixed Si-O-C units on the high Li-reversible capacity of silicon oxycarbide glasses

G. Soraru*¹; M. Graczyk-Zajac²; D. Vrankovic²; V. Pradeep²; P. Waleska²; C. Hess²; H. Kleebe²

1. University of Trento, Industrial Engineering, Italy
2. Technical University Darmstadt, Germany

9:20 AM

(ICACC-FS3-021-2018) Atomic/Molecular Layer Deposition of Inorganic-Organic Carboxylate Network Thin Films for the Application in Microelectronics

J. P. Penttinen*¹; M. Nisula¹; M. Karppinen¹

1. Aalto University, Department of Chemistry and Materials Science, Finland

9:40 AM

(ICACC-FS3-022-2018) Surface Modification of Oxide Nanomaterials and Application of Modified Nanomaterials to Polymer-Based Hybrids (Invited)

Y. Sugahara*¹

1. Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Department of Applied Chemistry, School of Advanced Science and Engineering, Japan

10:10 AM

(ICACC-FS3-023-2018) From colloidal solutions to superconducting nanocomposite epitaxial ceramic layers of HTSC-YBCO (Invited)

S. Ricart*¹

1. Institut de Ciencia de Materials de Barcelona (CSIC), Spain

Precursor Chemistry

Room: Coquina Salon A

Session Chair: Thomas Fischer, University of Cologne

10:40 AM

(ICACC-FS3-024-2018) A new chemical approach to transform natural wood into bone scaffolds with superior mechanic and biologic performance

S. Sprio*¹; A. Ruffini¹; A. Ballardini¹; M. Montesi¹; S. Panseri¹; A. Tampieri¹

1. National Research Council of Italy, Institute of Science and Technology for Ceramics, Italy

11:00 AM

(ICACC-FS3-025-2018) SiAlON coating by laser chemical vapor deposition using polymeric and metal-organic precursors

H. Katsui*¹; T. Nakano¹; T. Goto¹

1. Institute for Materials Research, Tohoku University, Japan

11:20 AM

(ICACC-FS3-026-2018) Flexible organic-inorganic hybrid aerogels and xerogels from organoalkoxysilane precursors (Invited)

K. Kanamori*¹

1. Kyoto University, Department of Chemistry, Graduate School of Science, Japan

11:50 AM

(ICACC-FS3-027-2018) One-pot synthesis of a C/SiFeN(O)-based ceramic paper with in-situ generated hierarchical micro/nano-morphology (Invited)

E. Ionescu*¹; H. Kleebe¹; R. Riedel¹

1. Technical University Darmstadt, Materials and Earth Sciences, Germany

12:10 PM

(ICACC-FS3-028-2018) Synthesis, chemical and structural characterization of polymer driven SiAlCN ceramics

C. Salameh*¹; C. Gervais²; F. Babonneau²; P. Miele¹

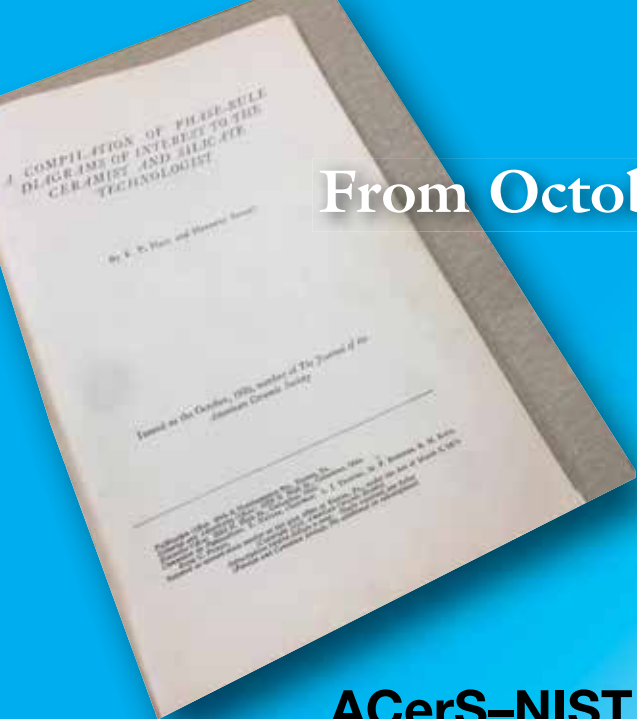
1. Ecole Nationale Supérieure de Chimie de Montpellier, France
2. LCMCP, Université Pierre et Marie Curie, France

12:30 PM

(ICACC-FS3-029-2018) Synthesis and comparison of electrochemical properties of lithium organic thin films

J. Heiska*¹; M. Nisula¹; M. Karppinen¹

1. Aalto University, Chemistry and Materials Science, Finland



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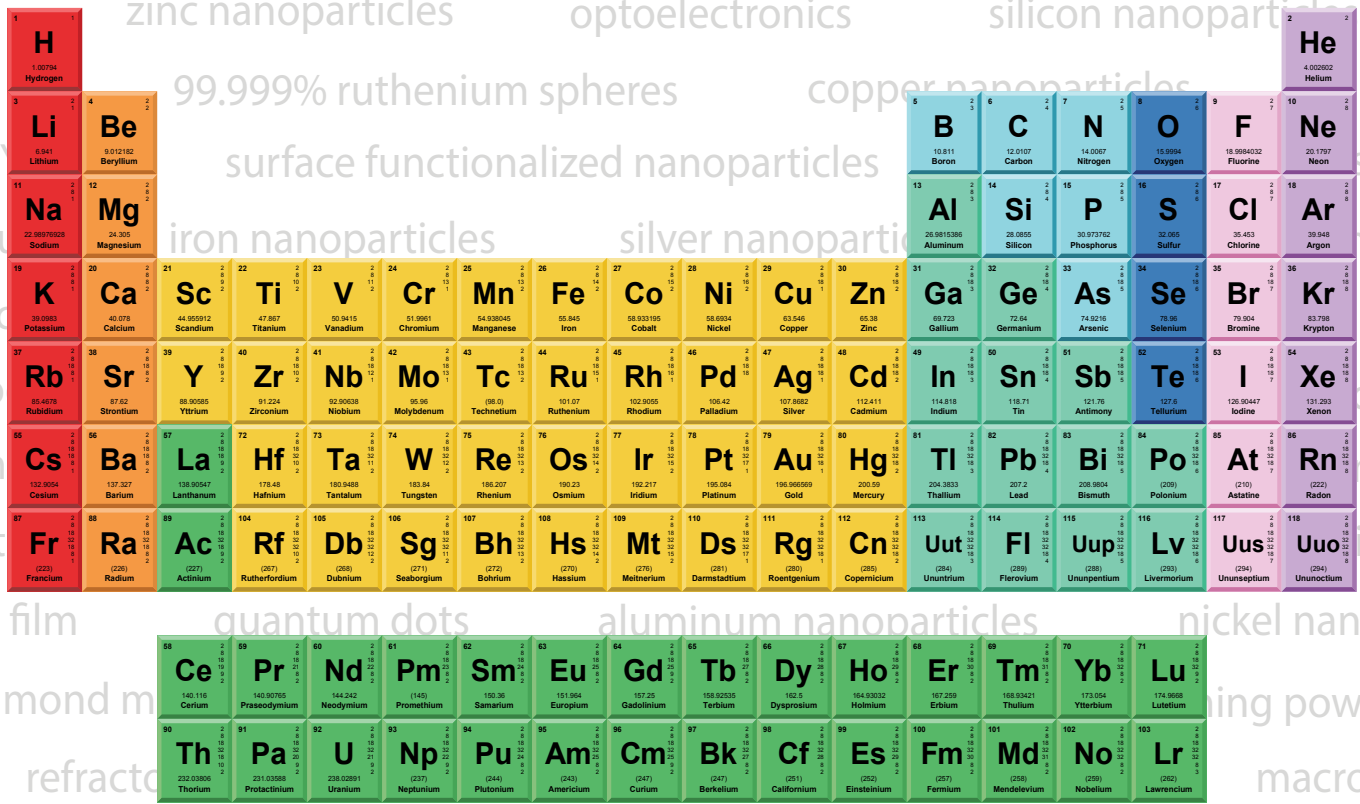
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