RUI: Catalytic Aerogel Materials (CAMS)

(DMR Proposal #1206631)
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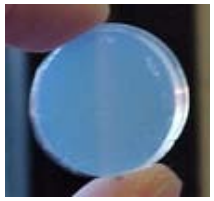
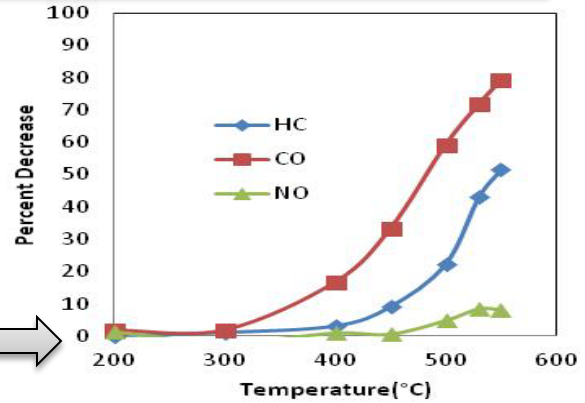
CAMs have the potential to transform automotive pollution mitigation methods by replacing rare precious metals in automotive exhaust after-treatment technologies.




1) Bulk Physical Properties: Studies of Sol-Gel Chemistry & Aerogel Processing: Density, S. Area, Porosimetry, XRD, SEM

2) Performance Characteristics: Catalytic Activity, Strength, Thermal Stability, Hydrophobicity, Flow-through Properties, Sensing

3) Ultimate Application: CAMs as 3-way Catalysts under Realistic Conditions: Casting on Support Structures, Strengthening, Catalytic activity in final forms



Percent decrease in HC, CO and NO at a space velocity ~18 s^{-1} for an un-optimized Ni-Al aerogel.

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