EFASII, Tomar, Portugal, Mar 11-15, 2019

NOTES
• This is a preliminary cut at the program. More contributions are coming in. Please expect changes.
• The contributions below include oral and posters. They will need to be split into Oral and Posters to achieve balance in representation and topics.
• This is a Discussion Oriented meeting. The final program will reflect this goal.
• Wednesday morning is reserved for a special session to discuss futuristic topics, and ideas.

Monday (AM)
Manufacturing
Bram Martin  SPS  Jülich GmbH  Germany  Field assisted sintering of larger scaled ceramic parts using adapted tool design and hybrid heating
Grasso Salvatore  Southwest  China  Field Assisted Material Engineering (FAME)
Van der Laan Antoine  Toulouse, CNRS  France  Elaboration of complex shapes by Spark Plasma Sintering
Prette Andre L. G.  LUCIDEON  UK  Flash sintering of injection molded zirconia under AC electric field for enhancement of optical properties
Guillon Olivier  Forschungszentrum  Germany  Electrical field assisted sintering of yttrium doped ceria investigated by sinter-forging

Monday (PM)
Characterization
Biesuz Mattia  X-ray  Queen Mary  UK  Electrochemical, Optical and Thermal Effects during Flash Sintering of 8YSZ
Kok David  TEM  UC Irvine  USA  Increase in Hardness for Flash Sintered Ceramics
Ghose Sanjit  Optical  Brookhaven  USA  In-Situ X-ray Characterization of Phase Evolution during Solid-State Reactions of Multicomponent Systems
Cho Jaehun  Mechanical  Purdue  USA  Field-induced mass transport phenomena in flash sintered high temperature ceramics explored by in situ SEM and TEM

Tuesday (AM)
Computational
Yu Liping  First Principles  U Maine  USA  First-principles studies of defect effects on conductivity and polarization at oxide interfaces
Formation of defect-enriched phases far from equilibrium as a flash sintering mechanism

Pattern Formation during Current Sintering (experiments)

Pattern formation during current sintering (Simulation)

Deep Learning of CVD Growth and Phase-Transition Pathways in Layered Materials*

Tuesday (PM)

**Ionic and Glasses (Part I)**

Yttria Stabilized Zirconia Urania Ceria Liquid Phase

Kardoulaki Erofili Los Alamos USA Progress in flash sintering of UO2
Kinetics of liquid-assisted densification during flash sintering of ceramic nanoparticles
Impedance characterization of calcia-stabilised zirconia as a function of applied field

Ramírez Gon Julia Sheffield UK High Temperature Tensile Behavior of Zirconia Ceramics under dc Current Densification and grain growth kinetics of 3mol% Y2O3 stabilized zirconia during flash sintering Deformation mechanisms of flash sintered yttria stabilized zirconia via in-situ micromechanical testing

MORITA Koji NIMS Japan Dc Electric Field Assisted 3ysz Ceramic Superplastic Deformation The Onset of Flash Sintering 8YSZ

Ren Ke Northw. Poly China Enhanced ionic conductivity of 8 mol% Yttria Stabilised Zirconia by flash sintering Low temperature and high strain rate superplastic flow in structural oxide ceramics induced by flash event

Cho Jaehun Purdue USA Hybrid/FAST sintering on Glass/Alumina

Wesner Anne Fraunhofer IKTS Germany Comparison of the Electrical and Structural Properties of Flash Sintered Yttria-stabilized Zirconia Study of flash phenomena on single crystals of cubic 8 mol% yttria stabilized zirconia

Vendrell Xavier Catalunya/Sheffield Spain

Yoshida Hidehiro NIMS Japan

Liu Jinling Southwest U. China

Liu Dianguang Southwest U. China

Grimley Carolyn NC State USA

Yadav Devinder IIT Patna India

Wednesday (AM)

**Futuristic Discussion Topics**

Heating Rate Ionic/Electronic Phonons/Electrons Interfaces

Garcia Edwin Purdue USA Charged Grain Boundaries and the Microstructural Evolution of Ionic Ceramics
Shoemaker Daniel U. of Illinois USA Local structure and kinetics of defect accumulation in titania flash events
Riess ILan Technion Israel Mixed ionic electronic conductivity and flash sintering
Avila Viviana Colorado USA Flash sintering of ceramic films: the influence of surface to volume ratio
Raj Rishi Colorado USA Lattice Softening

Wednesday (PM)
Free

Thursday (AM)
SPS and Microwave

Raethel Jan Fraunhofer IKTS Germany Reproducibility of Fast/sps Experiments
Rybakov Kirill I. Russian Acad Sci Russia Ultra-rapid microwave sintering of ceramics and powder metals
Suzuki Tohru S. NIMS Japan Effective colloidal processing for densification before SPS
Nakamura Nathan J. Carnegie Mellon USA The Role of Defects in Microwave-Assisted Synthesis of Cubic ZrO2
Mishra Tarini Prasad Jülich Germany Electric field assisted densification of 10 mol. % Gadolinium Doped Ceria (GDC 10)
Elissalde Catherine ICMCB/CNRS France Evidence for microstructure-dependent hysteresis in SCO molecular ceramics prepared by Cool-SPS
El Khoury Liza ICMCB/Bordeaux France Cool-SPS: pulling down the temperature, pushing up the reactivity
Josse Michaël ICMCB/Bordeaux France Grain growth behavior during spark plasma sintering of ceramics

Thursday (PM)
Metallic. Conductive and Non-Oxides

Leich Lennart Ruhr-Universität Germany Densification of NdFeB Magnets by Electro-Discharge Sintering - Microstructure, Mechanical and Magnetic Properties
Murray Shannon U. of Illinois USA Study of the phase transformation induced by flash sintering in Mn2O3 and the investigation of the role of defects in flash sintering using in-situ Raman spectroscopy
Wang Yiguang Beijing I. Tech. China Electrical-field assisted flash joining of ceramic oxide-ceramic oxide and ceramic oxide-metal
Rosenberger Andrew Army Research Lab USA Flash Sintering of Armor Materials: Challenges and Opportunities
Mégret Alexandre University of Mons Belgium Effect of the addition of doped-cobalt on the properties of recycled tungsten carbide powder sintered by SPS
de Knoop Ludvig Chalmers University Sweden Electric field-induced surface roughening of gold observed in situ at atomic resolution using transmission electron microscopy

Common Themes Linkage to Flash

Semi-Metallic Carbon
Densification of NdFeB Magnets by Electro-Discharge Sintering - Microstructure, Mechanical and Magnetic Properties
Study of the phase transformation induced by flash sintering in Mn2O3 and the investigation of the role of defects in flash sintering using in-situ Raman spectroscopy
Electrical-field assisted flash joining of ceramic oxide-ceramic oxide and ceramic oxide-metal
Flash Sintering of Armor Materials: Challenges and Opportunities
Effect of the addition of doped-cobalt on the properties of recycled tungsten carbide powder sintered by SPS
Electric field-induced surface roughening of gold observed in situ at atomic resolution using transmission electron microscopy
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<tr>
<th>Name</th>
<th>Institution</th>
<th>Country</th>
<th>Title</th>
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<tbody>
<tr>
<td>Maccari Fernando</td>
<td>Darmstadt</td>
<td>Germany</td>
<td>Effect of electric current annealing in phase transition of Mn-Al alloy</td>
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<tr>
<td>Ingraci Neto Rubens Rober</td>
<td>Colorado</td>
<td>USA</td>
<td>Flash induced graphitization on amorphous carbon fibers</td>
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<tr>
<td>Vilémová Monika</td>
<td>I. Plasma Physics</td>
<td>Czech Rep.</td>
<td>W-Cr solid solution: Comparison of alloying in SPS and by ball milling</td>
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**Friday (AM)**

**Complex Ceramics**

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<th>Name</th>
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<tbody>
<tr>
<td>Perez-Maque Luis A. Sevilla (CSIC-US)</td>
<td>Spain</td>
<td>Reaction flash sintering for producing high quality functional ceramics within seconds</td>
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<td>Andriamady Niraina</td>
<td>Colorado</td>
<td>USA</td>
<td>Solid State Lithium Batteries: a Potential Application of Flash Sintering</td>
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<tr>
<td>HU YU Ionotec Ltd</td>
<td>UK</td>
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<td>Flash sintering of beta&quot;-alumina solid electrolytes for sodium battery applications</td>
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<tr>
<td>Mascotto Simone Hamburg</td>
<td>Germany</td>
<td>Triggering the catalytic activity of SrTiO3-based ceramics by flash sintering</td>
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<tr>
<td>Molinari Flora ICMCB-Bordeaux</td>
<td>France</td>
<td>Densification of classic and fragile ferroelectrics by Cool-SPS</td>
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<tr>
<td>Yoon Bola Colorado</td>
<td>USA</td>
<td></td>
<td>Insights into reactive flash sintering of MgO-Al2O3-(8YSZ) by in-situ synchrotron X-ray diffraction</td>
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<tr>
<td>Avila Viviana Colorado</td>
<td>USA</td>
<td></td>
<td>Powders of four elemental oxides transformed and sintered by reactive flash</td>
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