
Monday, June 3, 2013

Fundamentals Investigations in Current Assisted Densification I

1:20 PM-5:40 PM
Room: Hanover
Session Chair(s): Javier Garay, Manshi Ohyanagi

1:20 PM
(PACRIM10-S06-001-2013) Processing of Materials under the Influence of Electric Fields (Invited Speaker)
Zuhair A Munir*, University of California, USA

1:50 PM
(PACRIM10-S06-002-2013) Flash Spark-Plasma Sintering of SiC powder
Eugene Olevsky*, Steven Rolfing, Yen-Shan Lin, San Diego State University, USA; Andrey Maximenko, Moscow Engineering Physics University, Russian Federation

2:10 PM
(PACRIM10-S06-003-2013) Electric current activated/assisted sintering (ECAS): 20 years impact on science and technology
Salvatore Grasso*, Queen Mary University of London, United Kingdom; Yoshio Sakka, NIMS, Japan; Mike Reece, Nanoforce Technology Limited, United Kingdom

2:30 PM
(PACRIM10-S06-004-2013) Grain Growth during Spark Plasma Sintering of Alumina
Byungnam Kim*, Koji Morita, Hidehiro Yoshida, Yoshio Sakka, National Institute for Materials Science, Japan; Keijiro Hiraga, Kitami Institute of Technology, Japan

2:50 PM
(PACRIM10-S06-005-2013) Spark Plasma Sintering and Mechanical Behavior of Pure Tungsten with Improved Microstructures (Invited Speaker)
Lin Huang, Troy D Topping, Tao Hu, UC Davis, USA; Ryan Carpenter, Deepak Kapoor, US Army, USA; Enrique J Lavernia*, Julie M Schoenung, UC Davis, USA

3:20 PM
Break

3:40 PM
(PACRIM10-S06-006-2013) Electrical breakdown behavior of cubic zirconia single crystals and polycrystals
John Downs*, Vincenzo M Sglavo, University of Trento, Italy

4:00 PM
(PACRIM10-S06-007-2013) Localized Overheating of Tooling during Spark-Plasma Sintering
Diletta Giuntini*, Eugene Olevsky, San Diego State University, USA; Chris Haines, Darold Martin, Deepak Kapoor, US Army ARDEC, USA; Cristina Garcia, San Diego State University, USA

4:20 PM
(PACRIM10-S06-008-2013) Spark Plasma Sintering of Annular Zirconium Carbide Powder Pellets: Processing and Simulation
Xialu Wei*, Wei Li, José A Alvarado-Contreras, Eugene A Olevsky, San Diego State University, USA; Marc A Meyers, University of California, San Diego, USA
Tuesday, June 4, 2013

Fundamentals Investigations in Current Assisted Densification II

8:30 AM-10:30 AM
Room: Hanover
Session Chair(s): Takashi Goto, Eugene Olevsky

8:30 AM
(PACRIM10-S06-012-2013) SPS Fabrication of Novel Glass materials Based on Order-disorder Transition (ODT) (Invited Speaker)
Lianjun Wang*, Wan Jiang, Donghua University, China; Lidong Chen, Shanghai Institute of Ceramics, China

9:00 AM
(PACRIM10-S06-013-2013) The feasibility of flash sintering in contrasting ceramic systems
Eugenio Zapata Solvas*, CSIC, Spain; Sebastian Bonilla, University of Oxford, United Kingdom; Diego Gómez-García, Arturo Domínguez-Rodríguez, University of Seville, Spain; Peter Wilshaw, Richard I Todd, University of Oxford, United Kingdom

9:20 AM
(PACRIM10-S06-014-2013) The role of the pressure parameter in the Current Activated Pressure Assisted Densification (CAPAD) of nanocrystalline materials
A. Dupuy, J. Alaniz, C. Hardin, Y. Kodera, Javier E Garay*, University of California, USA

9:40 AM
(PACRIM10-S06-015-2013) Surface and Interface Effects during Densification of Ceramic Nanoparticles by Spark Plasma Sintering (Invited Speaker)
Rachman Chaim*, Technion-Israel Institute of Technology, Israel

10:10 AM
Break

Consolidation of Nanocrystalline Materials I

10:30 AM-11:50 AM
Room: Hanover
Session Chair(s): Takashi Goto, Eugene Olevsky

10:30 AM
(PACRIM10-S06-016-2013) YAG transparent ceramics produced by SPS from nanopowders prepared by co-precipitation method
Frederic Bernard*, Universite de Bourgogne, France; Caroline Marlot, Elodie Barraud, French-German ISL, France; Sophie Le Gallet, Foad Naimi, Universite de Bourgogne, France; Marc Eichorn, French-German ISL, France
10:50 AM
(PACRIM10-S06-017-2013) Processing of light producing/controlling transparent ceramics using current activated pressure assisted densification
Yasuhiro Kodera*, Andrew T Wieg, Elias H Penilla, Jason R Morales, Javier E Garay, UC Riverside, USA

11:10 AM
(PACRIM10-S06-018-2013) Probing localized electricity in insulating/conductive ceramic nanocomposites by scanning impedance microscopy (SIM)
Ching-Huan Alex Lee*, Hao-Chih Liu, Po-Jui Su, Jow-Lay Huang, National Cheng Kung University, Taiwan

11:30 AM
(PACRIM10-S06-019-2013) Fabrication of Transparent MgAl2O4 Spinel by Optimizing Loading Schedule during Spark-Plasma-Sintering
Koji Morita*, Byung-Nam Kim, Hidehiro Yoshida, National Institute for Materials Science, Japan; Keijiro Hiraga, Kitami Institute of Technology, Japan; Yoshio Sakka, National Institute for Materials Science, Japan

Consolidation of Nanocrystalline Materials II

1:20 PM-3:40 PM
Room: Hanover
Session Chair(s): O. Graeve, Frederic Bernard

1:20 PM
(PACRIM10-S06-020-2013) Advanced usage of SPS technology for producing innovative materials (Invited Speaker)
Frederic Bernard*, Sophie Le Gallet, Universite de Bourgogne, France

1:50 PM
(PACRIM10-S06-021-2013) Kinetics of the Structural Ordering of Stacking Disordered SiC during Spark Plasma Sintering
Manshi Ohyanagi*, Tesuya Tanaka, Natsuki Yamasaki, Ryukoku University, Japan; Zuhair Munir, University of California, Davis, USA

2:10 PM
(PACRIM10-S06-022-2013) Field-assisted sintering of YSZ films on conductive substrates
Stephen Johnson*, Ganesh Venugopal, Andrew Hunt, nGimat LLC, USA

2:30 PM
(PACRIM10-S06-023-2013) CAPAD processing of Rare earth doped Zirconia for high temperature light emission applications
Corey Hardin*, Elias Penilla, Yasuhiro Kodera, Javier Garay, UC Riverside, USA

2:50 PM
(PACRIM10-S06-024-2013) Spark Plasma Sintering: from the identification of the sintering mechanisms to the industrial fabrication of thermoelectrical materials (Invited Speaker)
Guillaume Bernard-Granger*, CEA, France; Christian Guizard, Saint-Gobain CREE, France

3:20 PM
Break

Property Evaluation of Materials Processing using Electric Currents I

3:40 PM-6:00 PM
Room: Hanover
Session Chair(s): O. Graeve, Frederic Bernard

3:40 PM
(PACRIM10-S06-025-2013) Optimization of Field Assisted Sintering Technique in Fabrication of Nanostructured BaTiO3
Todd Monson*, Sandia National Labs, USA; Josh Yee, Martin Fraga, University of California, Davis, USA; Nancy Yang, Sandia National Labs, USA; Enrique Lavernia, University of California, Davis, USA
4:00 PM
(PACRIM10-S06-026-2013) Non-Equilibrium Processing of Transparent Luminescent Ceramics via Current Activated Pressure Assisted Densification (CAPAD)
Elias Penilla*, Yasuhiro Kodera, Javier Garay, University of California Riverside, USA

4:20 PM
(PACRIM10-S06-027-2013) Properties of WCCo/Diamond Composites Produced by PPS Method Intended for Drill Bits for Machining of Building Stones
Marcin Rosinski*, Warsaw University of Technology, Poland

4:40 PM
(PACRIM10-S06-028-2013) AFM based studies of current path during spark plasma sintering with local impedance measurement on Si3N4 and Al2O3 nanocomposites microstructure
Wei-Lun Ho*, Bernard, Haochih Liu, Ching-Huan Lee, Jow-Lay Huang, National Cheng Kung University, Taiwan

5:00 PM
(PACRIM10-S06-029-2013) Spark Plasma Sintering: an effective tool for rapid development of thermal barriers
Claude Estournès*, Mathieu Boidot, Serge Selezneff, Djar Oquab, CIRIMAT, France; Jean-Yves Guedou, SNECMA, France; Daniel Monceau, CIRIMAT, France

5:20 PM
(PACRIM10-S06-030-2013) Microstructure design by Spark Plasma Sintering for tailored properties in ferroelectric multi-materials
Catherine Elissalde*, U-Chan Chung, CNRS-Univ. Bordeaux-ICMCB, France; Claude Estournès, CIRIMAT-PNF2-Univ.Paul Sabatier, France; Dominique Bernard, Julien Lesseur, Dominique Michau, Mario Maglione, CNRS-Univ. Bordeaux-ICMCB, France

5:40 PM
(PACRIM10-S06-031-2013) Barium Strontium Titanate Ceramics with High Energy Storage Density Prepared by Spark Plasma Sintering
Yong Jun Wu*, Yu Hui Huang, Nan Wang, Xiang Ming Chen, Zhejiang University, China

Wednesday, June 5, 2013
Property Evaluation of Materials Processing using Electric Currents II

8:30 AM-11:50 AM
Room: Hanover
Session Chair(s): Yasuhiro Kodera, Rachman Chaim

8:30 AM
(PACRIM10-S06-032-2013) Phase stability and boundary structure of unique iron-based amorphous metal composites: processing and modeling (Invited Speaker)
O. A. Graeve*, University of California, USA; M. S Saterlie, P. J Colmenares, H. Fathi, L. E Jones, Alfred University, USA

9:00 AM
(PACRIM10-S06-033-2013) The role of processing parameters on the microstructure and properties of Mg-based thermoelectric materials
Anthony Fong*, Yasuhiro Kodera, Javier Garay, University of California, Riverside, USA

9:20 AM
(PACRIM10-S06-034-2013) Probing conductance heterogeneity of insulating/conductive ceramic nanocomposites at the nanoscale by scanning impedance microscopy
Ching-Huan Alex Lee*, Haochih B Liu, Po-Jui Su, National Cheng Kung University, Taiwan; Hua-Tay Lin, Oak Ridge National Laboratory, USA; Jow-Lay Huang, National Cheng Kung University, Taiwan
9:40 AM
(PACRIM10-S06-035-2013) Rare earth doped polycrystalline nitrides for photoluminescent applications
Andrew T Wieg*, Yasuhiro Kodera, Javier E Garay, University of California Riverside, USA

10:00 AM
Break

10:20 AM
(PACRIM10-S06-036-2013) Synthesis of transparent Lu-based oxides by SPS and their optical properties (Invited Speaker)
Takashi Goto*, Liqiong An, Akihiko Ito, IMR Tohoku University, Japan

10:50 AM
(PACRIM10-S06-037-2013) Enhanced Non-Linear Optical Properties of Transparent Oxide Ceramics Produced by Current Activated Pressure Assisted Densification (CAPAD)
Elias Penilla*, Pablo Martinez-Torres, University of California Riverside, USA; Gabriel R Castillo-Vega, Santiago Camacho-Lopez, CICESE, Mexico; Guillermo Aguilar, Javier Garay, University of California Riverside, USA

11:10 AM
(PACRIM10-S06-038-2013) Enhanced in-situ functionally graded Si3N4-based materials
Manuel Belmonte*, Pilar Miranzo, Isabel Osendi, Institute of Ceramics and Glass (ICV-CSIC), Spain

11:30 AM
(PACRIM10-S06-039-2013) Densification and mechanical property of TiN-TiB2-cBN composite prepared by spark plasma sintering using SiO2-coated cBN powder
Mettaya Kitiwan*, Akihiko Ito, Takashi Goto, Tohoku University, Japan