Program

Syntactic and Composite Foams IV

An ECI Conference Series

November 2 - 7, 2014
Santa Fe, New Mexico, USA

Conference Chair:
Gary M. Gladysz (Empyreus Solutions, USA)

Conference Co-Chairs:
Krishan K. Chawla (University of Alabama at Birmingham, USA)
Aldo R. Boccaccini (University of Erlangen-Nuremberg, Germany)
Tatsuki Ohji (AIST, Japan)

ECI

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Previous conferences in this series:

**Syntactic and Composite Foams**
Aug. 1 - 5, 2004
Banff, Alberta, Canada

*Conference Chair:*
Gary M. Gladysz, Trelleborg Emerson & Cuming, Inc., USA

*Conference Co-Chairs:*
Krishan K. Chawla, University of Alabama at Birmingham, USA
Aldo R. Boccaccini, Imperial College London, UK

**Syntactic and Composite Foams II**
Aug. 5 - 10, 2007
Davos, Switzerland

*Conference Chair:*
Gary M. Gladysz, Trelleborg Emerson & Cuming, Inc., USA

*Conference Co-Chairs:*
Krishan K. Chawla, University of Alabama at Birmingham, USA
Aldo R. Boccaccini, Imperial College London, UK

**Syntactic and Composite Foams III**
May 29 - June 3, 2011
Cetraro (Calabria), Italy

*Conference Chair:*
Gary M. Gladysz, Trelleborg Offshore Boston, Inc., USA

*Conference Co-Chairs:*
Krishan K. Chawla, University of Alabama at Birmingham, USA
Aldo R. Boccaccini, University of Erlangen-Nuremberg, Germany
Sunday, November 2, 2014

17:30 – 19:00   Conference check-in (Promenade)
19:00 – 20:30   Welcome Dinner

**Notes**

- Technical sessions will be in sections A/B of the Mesa Ballroom, except for Friday’s session which will be in The Chapel.
- Meals will be held in section C of the Mesa Ballroom.
- Audiotaping, videotaping and photography of presentations are prohibited.
- Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).
- Speakers – Please leave at least 3-5 minutes for questions and discussion.
- Please do not smoke at any conference functions.
- Turn your mobile telephones to vibrate or off during technical sessions.
- Please write your name on your program so that it can be returned to you if lost or misplaced.
- After the conference, ECI will send an updated participant list to all participants. Please check your listing now and if it needs updating, you may correct it at any time by logging into your ECI account.
Monday, November 3, 2014

07:30 – 09:00  Breakfast
09:00 – 09:15  Opening remarks
               Gary Gladysz, Conference Chair
               Ram Darolia, ECI Technical Liaison
09:15
Session I

09:15 – 10:00  Experimental study of the hydrostatic compression behavior of syntactic foams by X-ray microtomography
               Jerome Adrien, MATEIS, INmSA-Lyon, CNRS UMR5510, France
10:00 – 10:30  Dynamic compression imaging of syntactic foams using synchrotron x-ray computed tomography
               Brian M. Patterson, Los Alamos National Lab, USA
10:30 – 11:00  Coffee break
11:00 – 11:30  Multifunctionality in syntactic foams: Engineering mechanical, electrical, and thermal properties
               Nikhil Gupta, New York University, USA
11:30 – 12:00  Mullite-based thermal insulators prepared by gelation freezing method
               Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST), Japan
12:00 – 14:00 Lunch
14:00  Session II

14:00 – 14:45  Processing of titania-coated glass microballoons and syntactic foams thereof for environmental cleanup
               K. K. Chawla, University of Alabama at Birmingham, USA
14:45 – 15:15  Characterization of inclusion clusters by mechanical interactions
               Phil Daro Krummrich, University of Bremen, Germany
15:15 – 15:45  Coffee break
15:45 – 16:15  A CFD approach for simulation of the aluminum syntactic foam infiltration process
               Shizhao Li, Technical University of Denmark
16:15 – 16:45  Daily remarks and discussion of Sessions I and II
16:45 – 19:30  ad hoc discussions / free time
19:30 – 21:00  Dinner
21:00 – 22:00 Social hour
Tuesday, November 4, 2014

07:30 – 09:00  Breakfast

09:15  

**Session III**

09:15 – 10:00  Analysis of microballoon failure in syntactic foams  
Maurizio Porfiri, New York University, USA

10:00 – 10:30  Development, characterization and in vitro bioactivity study of 45S5 Bioglass® scaffolds with fibrous morphology for bone tissue engineering applications  
Preethi Balasubramanian, University of Erlangen-Nuremberg, Germany

10:30 – 11:00  Coffee break

11:00 – 11:30  Three-dimensional Bioglass®-based scaffolds developed via replication of natural marine sponges with drug delivery capability for Tissue Engineering  
Elena Boccardi, University of Erlangen-Nuremberg, Germany

11:30 – 11:45  Session III discussions

11:45  Pick up boxed lunch

12:00  Departure for excursion to Bandelier National Monument  
Free time for those remaining in Santa Fe

18:00  Return to Santa Fe

19:00 – 20:30  Dinner

20:30 – 21:30  Social hour
**Wednesday, November 5, 2014**

07:30 – 09:00  Breakfast

09:15  **Session IV**

09:15 – 10:00  Microstructural characterization and simulation of cellular ceramics materials  
Tobias Fey, University of Erlangen-Nuremberg, Germany

10:00 – 10:30  Rapid prototyping of syntactic foams: Powder preparation, characterization, and laser sintering  
Thomas Robison, Honeywell FM&T, USA

10:30 – 11:00  Bioglass®-based scaffolds reinforced by composite coating: preparation and response to mechanical loading  
Ivo Dlouhy, Institute of Physics of Materials, Academy of Sciences of the Czech Republic

11:00 – 11:30  Coffee break

11:30 – 12:00  Microstructures and properties of macroporous ceramics by gelation freezing method  
Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST), Japan

12:00 – 12:30  Development of coated microballoons for additive manufacturing of syntactic foam  
Anna Walmsley, AWE, UK

12:30 – 13:00  Silicon carbide hollow particles and composite structures  
Carol Wedding, Deep Springs Technology, USA

13:00 – 14:30  Lunch

14:30 – 16:30  *ad hoc* discussions/free time

16:30 – 17:00  Coffee break

17:00  **Session V**

17:00 – 17:45  A virtual lab for understanding and designing mechanical performance of metal matrix syntactic foams: Concept and first results  
Dirk Lehmhus, University of Bremen, Germany

17:45 – 18:15  Innovative low density silicone RT-foams  
Jessica Hanley, Bluestar Silicones, USA

18:15 – 19:15  Social Hour

Free evening / Dinner on your own
Thursday, November 6, 2014

07:30 – 09:00  Breakfast

09:00  Session VI

09:15 – 10:00  Measurement and uncertainty quantification of elastic tensor properties of nearly-singular anisotropic metamaterials
Jeffrey Cipolla, Weidlinger Associates, USA

10:00 – 10:30  High strength specialty designed Wollastonite fibers for reinforced polymers
Gary C. Phillips, NYCO Minerals Inc., USA

10:30 – 11:00  Coffee break

11:00 – 11:30  A continuum damage mechanics model for the lifetime prediction of cellular composites under static and cyclic loading
Sergej Diel, University of Applied Sciences Landshut, Germany

11:30 – 12:00  Tailored porosity in fiber and particles: A review of fabrication techniques, structure/property relationships and applications
Gary M. Gladysz, Empyreus Solutions, USA

12:00 – 12:30  Sessions V discussion

12:30 – 19:30  Lunch on your own / ad hoc discussions / free time

19:30  Conference Banquet
Friday, November 7, 2014

07:30 – 09:00  Breakfast

09:00  Conference Wrap-up - All sessions
       (This session will be held in The Chapel)

1. Conference Summary
2. Syntactic and Composite Foams V: Discussion and planning
   A. Timing
   B. Scope
   C. Format
   D. Venue
3. Adjourn and departures – 11AM