

Program

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***



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Sunday, May 29, 2011

17:00 – 19:00	Registration
18:30 – 19:30	Welcome Reception – Sponsored by Trelleborg
19:30 – 21:30	Opening Dinner

NOTES

- Technical Sessions will be held in the Conference Building.
- Poster Sessions will be held in Conference Building.
- Audiotaping, videotaping and photography of presentations are prohibited.
- Speakers – Please leave at least 3-5 minutes for questions and discussion.
- Please do not smoke at any conference functions.
- Turn your cellular telephones to vibrate or off during technical sessions.
- Be sure to make any corrections to your name/contact information on the Master Participant List or confirm that the listing is correct. A corrected copy will be sent to all participants after the conference.

Monday, May 30, 2011

07:30 – 08:30 Breakfast

08:30 – 08:45 Conference Welcome
Gary M. Gladysz, Chair
K.K. Chawla, Co-Chair
A.R. Boccaccini, Co-Chair
Ram Darolia, ECI Technical Liaison

SESSION I: INTERFACES, REINFORCEMENTS, AND PERFORMANCE

08:45 – 09:30 ***Invited Talk***
Foams, Syntactic Foams, and Functional Foams
K.K. Chawla
University of Alabama at Birmingham, USA;
G.M. Gladysz
Trelleborg Offshore Boston, Inc., USA

09:30 – 10:15 ***Invited Talk***
Thermal Protection of Planetary-Entry Vehicles Using Low-Mass Charring Ablators-Heating to 1000 W/cm²
Bill Congdon
ARA Ablatives Laboratory, USA

10:15 – 10:45 Coffee break

10:45 – 11:15 **Quantifying the influence of Void Type in Three-Phase Syntactic Foams**
Gary M. Gladysz and K. K. Chawla
Trellegorg Offshore, USA

11:15 – 11:45 **Fabrication of Hollow Glass Microsphere Reinforced Carbon Nanofiber Paper Using Chemical Vapor Deposition Method**
Eyassu Woldesenbet
Louisiana State University and Southern University, USA

11:45 – 12:15 **Experimental and Numerical Analysis on the Thermal Anisotropy of Syntactic Hollow Sphere Structures**
Thomas Fiedler
The University of New Castle, Australia

12:15 – 12:45 Discussion

Monday, May 30, 2011 (continued)

- 13:00 – 14:00 Lunch
- 14:10 – 17:30 *ad hoc* discussions, free time
- 17:30 – 18:00 Afternoon coffee

**SESSION II: FABRICATION/CHARACTERIZATION OF PARTICLES
AND HOLLOW SPHERES**

- 18:00 – 18:45 ***Invited Talk***
Photocatalytic Degradation of Tetracycline Using Titania-Coated Hollow Glass Microspheres; Effects of Coating Thickness and Calcination Temperature
Mark Koopman
Harvard University, USA
- 18:45 – 19:15 **Fabrication of Ceramic Microballoons from Preceramic Polymers**
Paolo Colombo
University of Padova, Italy
- 19:15 – 19:45 **Silver Coated Hollow Glass Microspheres Embedded Electrically Conducting Syntactic Foam**
Samudra Dasgupta
Aeronautical Development Establishment, DRDO, India
- 19:45 – 20:15 **Controlled Deposition of Titanium Dioxide on Hollow Glass Microspheres; Surface Coating Morphology and Its Effect On the Photocatalytic Degradation of Methylene Blue**
William Ricci
Trelleborg Offshore, Inc., USA
- 20:15 – 21:45 Dinner
- 21:45 – 22:45 Social Hour

Tuesday, May 31, 2011

07:30 – 08:30 Breakfast

SESSION III: PROCESSING AND MODELING

08:30 – 09:15 ***Invited Talk***
Inorganic composite foams and hollow microcapsules produced via in-situ hydrophobization of colloidal particles
Urs Gonzenbach
ETH Zurich, Nonmetallic Inorganic Materials Switzerland

09:15 – 09:45 **Bioactive glass containing foam scaffolds: fabrication, properties and applications**
A R Boccaccini
University of Erlangen-Nuremberg, Germany

09:45 – 10:15 Coffee break

10:15 – 10:45 **On Modeling the Long Term ThermoMechanical Behavior of Field Joint of Thermally Insulated Pipeline Coated with Glass Syntactic Foam**
Van Trung Phan
Brest Laboratory of Mechanics and Systems, ENSIETA, France

10:45 – 11:30 ***Invited Talk***
A Comparison among Different Homogenization Techniques for Estimating the Effective Elastic Moduli of Syntactic Foams
Lorenzo Bardella
University of Brescia, Italy

11:30 – 12:00 **Open Discussion - Sessions I,II and III**
Modeling, ablative materials, high strain rate testing, nano-materials, cenospheres, ceramic microballoons, titania and silver coating coatings, colloidal formation of foams and particles, thermo-mechanical behavior

12:00 – 13:00 Lunch

13:00 - Optional Excursion to Diamante (or free time)

20:00 – 21:30 Dinner

21:30 – 22:30 Social Hour

Wednesday, June 1, 2011

07:30 – 08:30 Breakfast

SESSION IV: PHYSICAL PROPERTIES

- 08:30 – 09:15 ***Invited Talk***
Advances in the Development of Bioactive Composite Foams For Bone Tissue Scaffolds
Aldo R. Boccaccini and J.A. Roether
University of Erlangen-Nuremberg, Germany
- 09:15 – 09:45 **Determining Optimum Loading of Hollow Glass Microspheres In Epoxy/Anhydride Resins for Composite Shell Hollow Sphere Containing Syntactic Foam Applications**
Noel Tessier
CMT Materials, Inc., USA
- 09:45 – 10:15 **Hydrothermal Aging of Polypropylene Syntactic Foams**
Kipp B. Carlisle
Trelleborg Offshore Boson, Inc., USA
- 10:15 – 10:45 Coffee break
- 10:45 – 11:15 **Collapse Modes of Titanium Foams with Varying Pore Structure**
Nihan Tuncer
Anadolu University, Turkey
- 11:15 – 11:45 **Advances in Buoyancy Foam Using Hollow Spheres**
Todd S. Osborn
Deep Springs Technology, USA
- 11:45 – 12:15 **Development of a New Method for Production of Lead (Pb) Foams for Lead-Acid Batteries**
Umut Savaci
Izmir Institute of Technology, Turkey
- 12:15 – 13:15 Lunch
- 13:15 – 15:30 *ad hoc* discussions, free time
- 15:30 – 16:00 Afternoon coffee

Wednesday, June 1, 2011 (continued)

SESSION V: SYNTACTIC AND COMPOSITE FOAMS – CHARACTERIZATION

- 16:00 – 16:45 ***Invited Talk***
Thermosetting Syntactic Foams - An overview
S. Sankaran
DRDO Hqrs. DRDO, India
- 16:45 – 17:30 **Lightweight Composite Materials for Fire Control and Prevention in Hydrocarbon Storage Tanks**
Gary M. Gladysz
Trelleborg Offshore, USA
- 17:30 – 18:00 **Open Discussion – Session IV and V**
Bioactive glass, optimization of syntactic foams, hydrothermal aging, characterization using microtomography, water absorption, lead foams, high strain rate testing, hydrostatic testing, fire testing, future polymers matrices

SESSION VI: POSTER SESSION

- 18:00 – 20:00 **The Effect of Different Processing Routes on Lead Foam Production**
Umut Savaci
Izmir Institute of Technology, Turkey
- Flammability of flexible polyurethane foams modified with graphite and phosphorous fillers**
Anna Wolska
Warsaw University of Technology, Poland
- Solvent-Free Fabrication Of Biodegradable Ureaurethane Foam Scaffolds For Bone Tissue Engineering**
Monika Auguscik
Warsaw University of Technology, Poland
- 20:00 – 21:30 Dinner
- 21:30 – 22:30 Social Hour

Thursday, June 2, 2011

07:30 – 08:30

Breakfast

SESSION VII: COMPOSITE FOAMS

08:30 – 09:15

Invited Talk

Dynamic Mechanical Analysis of Syntactic Foams Fabricated Using Carbon Nanofiber Covered Glass Microballoons

Eyassu Woldesenbet

Louisiana State University and Southern University, USA

09:15 – 09:45

Production and Characterization of Glass Foam Using Glass Powder Waste

Yigit Attilia

Izmir Institute of Technology, Turkey

09:45 – 10:15

Coffee break

10:15 – 10:45

Novel Light Emitting Hollow Ceramic Spheres and Their Applications

Adeline Miermont-Butcher

Deep Springs Technology, USA

10:45 – 11:15

Mechanical Behavior of a Cellular Composite with Glass Foam Granules in Polymer Matrix under Quasi-Static and Cyclic Compression Loading

Sergej Diel

University of Applied Sciences Landshut, Germany

11:15 – 12:00

Novel Armor Composite with Hollow Spheres

Todd S. Osborn

Deep Springs Technology, USA

12:00 – 12:30

Open Discussion - Sessions VI and VIII

Construction and automotive applications, foams renewable/sustainable constituents, processing of metal foams, TiO₂ - biological activity, functional fillers, biodegradable foams, glass foam granules reinforcements, foams from waste streams, armor, nanofiber in syntactic foams

12:30 – 13:30

Lunch

13:30 – 17:30

ad hoc discussions, free time

Thursday, June 2, 2011 (continued)

17:30 – 18:00 Afternoon coffee

SESSION VIII: ROUND TABLE DISCUSSIONS

18:00 – 20:00 Topics:
 • Bio-Applications
 • Deep See Applications
 • Testing/Characterization
 • Processing
 • Emerging Applications
 • New Directions
 • Wrap-Up

20:00 – 22:00 Conference Banquet

22:00 – 23:00 Social Hour

Friday, June 3, 2011

07:30 – 08:30 Breakfast

09:00 Departures