

Program

Syntactic and Composite Foams V

March 26-31, 2017

**Grand Hotel Minareto
Siracusa, Italy**

Conference Chair

Gary M. Gladysz
Empyreus Solutions, LLC

Conference Co-Chairs

Krishan K. Chawla
Materials Science & Engineering, University of Alabama at Birmingham, USA

Aldo R. Boccaccini
Institute of Biomaterials, University of Erlangen-Nuremberg, Germany

Manabu Fukushima
National Institute of Advanced Industrial Science and Technology (AIST), Japan



Engineering Conferences International
32 Broadway, Suite 314 - New York, NY 10004, USA
www.engconfintl.org – info@engconfintl.org

Grand Hotel Minareto

Via del Faro Massolivieri

26 96100 Siracusa

Italy

Tel. +39 0931.721222 - Fax +39 0931.721555

Engineering Conferences International (ECI) is a not-for-profit global engineering conferences program, originally established in 1962, that provides opportunities for the exploration of problems and issues of concern to engineers and scientists from many disciplines.

ECI BOARD MEMBERS

Barry C. Buckland, President
Mike Betenbaugh
Nick Clesceri
Peter Gray
Michael King
Raymond McCabe
David Robinson
Eugene Schaefer
P. Somasundaran

Chair of ECI Conferences Committee: Nick Clesceri

ECI Technical Liaison for this conference: Ram Darolia

ECI Executive Director: Barbara K. Hickernell

ECI Associate Director: Kevin M. Korpics

Organizing Committee

Lorenzo Bardella (University of Brescia)

Aldo Boccaccini (University of Erlangen-Nuremberg)

Kipp Carlisle (Trelleborg)

Krish Chawla (University of Alabama at Birmingham)

Paolo Colombo (University of Padova)

Manabu Fukushima (National Institute of Advanced Industrial Science and Technology (AIST))

Gary Gladysz (Empyreus Solutions, LLC)

Nikhil Gupta (New York University – Polytechnic)

Majdi Haddad (Cuming Corp.)

Jessica Hanley (Bluestar Silicones)

Mark Koopman (University of Utah)

Dirk Lehmus (University of Bremen)

Daniel Mendoza (Los Alamos National Laboratory)

Karana Shah (Dixie Chemical)

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

Syntactic and Composite Foams IV

November 2-7, 2014

Santa Fe, NM, 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

Conference Sponsors

Dixie Chemical

SMW Wheels

Sunday, March 26, 2017

17:30 - 18:30	Conference check-in (Hotel lobby)
18:30 - 19:30	Opening Reception
19:30 - 21:00	Dinner

NOTES

- All technical sessions will be in Archimedes Hall. Poster sessions will be in Archimedes and the foyer.
- All meals will be in the Nesos Restaurant.
- Audiotaping, videotaping and photography of presentations are prohibited.
- Speakers – Please leave at least 5 minutes for questions and discussion.
- Speakers – Please ensure your talk adheres to your given time allotment. Talks that go over their allotment reduce time for valuable discussion and can disrupt the conference program.
- Please do not smoke at any conference functions.
- Turn your cellular telephones to vibrate or off during technical sessions.
- 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.
- Please do not smoke at any conference functions.
- Please write your name in the front of this program booklet so it can be returned if misplaced.

Monday, March 27, 2017

07:30 - 09:00 Breakfast

Session 1

Chair: Nikhil Gupta, New York University, USA

09:00 - 10:00 **Keynote: Composite Foams as Tissue Scaffolds: Past, Present and Future**
Liliana Liverani, University of Erlangen-Nuremberg, Germany

10:00 - 10:30 Coffee break

10:30 - 11:00 **Controlling the kinetics of aluminium reaction to control the porosity of foam concrete**
Ailar Hajimohammadi, The University of Melbourne, Australia

11:00 - 11:30 **Processing and engineering applications of structured cellular ceramics through freezing route**
Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST), Japan

11:30 - 12:00 **Novel curative systems for high strength, low thermal conductivity epoxy-based syntactic foams**
Gary Gladysz, Dixie Chemical, USA

12:30 - 14:00 Lunch

Session 2

Chair: Kristin Hardin, University of Alabama at Birmingham, USA

14:00 - 14:30 **Beyond glass microspheres, high strength, high temperature hollow shells**
Carol Wedding, Deep Springs Technology, USA

14:30 - 15:00 **Room temperature foaming of glass powder in aqueous environment**
Doğuş Zeren, İzmir Institute of Technology, Turkey

15:00 - 15:30 **Metal coating of ceramic microspheres: A new precursor for realising metal-based syntactic foams**
Andrei Shishkin, Riga Technical University, Latvia

15:30 - 19:30 *Ad hoc sessions / Free time*

19:30 - 21:00 Dinner

21:00 - 22:00 Social Hour

Tuesday, March 28, 2017

07:30 - 09:00 Breakfast

Session 3

Chair: Carol Wedding, Deep Springs Technology, USA

09:00 - 10:00 **Keynote: Functional Foams**
Krishan Chawla, University of Alabama at Birmingham, USA

10:00 - 10:30 **Tailored surface porosities on ceramic foams**
Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST), Japan

10:30 - 11:00 Coffee break

11:00 - 11:30 **Failure behaviour of glass-microballoons/thermoset-matrix syntactic foams subject to hydrostatic loading**
Lorenzo Bardella, University of Brescia, Italy

11:30 - 12:00 **High density polyethylene matrix syntactic foams: Industrial scale fabrication and mechanical properties**
Nikhil Gupta, New York University, USA

12:00 - 12:30 **Characterization of interfacial strength of syntactic foam by unit cell finite element model**
W.J. Lee, Korea Institute of Industrial Technology, South Korea

12:30 - 14:00 Lunch

14:00 - 21:00 Excursion to Siracusa archeologic sites and Old Town / Dinner on own

Wednesday, March 29, 2017

07:30 - 09:00 Breakfast

Session 4

Chair: Krishnan Kanny, Durban University of Technology, South Africa

09:00 - 10:00 **Keynote: Strain rate properties of syntactic foams**
Nikhil Gupta, New York University, USA

10:00 - 10:30 **Development of Silicone Room Temperature Foams for Superior Performance Applications**
Leeanne Brown, Bluestar Silicones, USA

10:30 - 11:00 Coffee break

11:00 - 11:30 **Processing of the ultra-light syntactic foam material Eccostock® FFP using selective laser sintering**
Petra Juskova, University of Nottingham, United Kingdom

11:30 - 12:00 **Proteins as Coating Materials on Bioactive Glass-based Composite Foams**
Liliana Liverani, University of Erlangen-Nuremberg, Germany

12:30 - 14:00 Lunch

14:00 - 16:30 *Ad hoc sessions / Free time*

Session 5

Chair: Lorenzo Bardella, University of Brescia, Italy

16:30 - 17:00 **Dynamic mechanical characterization and sustainability of polyurethane foam and natural fiber laminates**
Krishnan Kanny, Durban University of Technology, South Africa

17:00 - 17:30 **Phosphate and plaster bonded syntactic foams for collapsible cores in light metal casting**
Dirk Lehmus, University of Bremen, Germany

17:30 - 18:00 **Thermoplastic syntactic foam-based composite tornado shelter: fabrication and characterization**
Brian Pillay, University of Alabama at Birmingham, USA

18:30 - 20:00 Poster Session / Social Hour

20:00 - 21:30 Dinner

Thursday, March 30, 2017

07:30 - 09:00 Breakfast

Session 6

Chair: Paolo Colombo, University of Padova, Italy

09:00 - 10:00 **Keynote: Foams in composite structures: Past, present and future**
Michael Gromacki, Dixie Chemical/ACMA Board of Directors, USA

10:00 - 10:30 **Development of a syntactic-based sandwich composite for blast-Resistance modular buildings**
Karana Shah, Dixie Chemical Co., USA

10:30 - 11:00 Coffee break

11:00 - 11:30 **Crack bridging modelling in Bioglass® based scaffolds reinforced by polyvinyl alcohol / microfibrillated cellulose composite coating**
Luca Bertolla, Institute of Physics of Materials, Czech Republic

11:30 - 12:00 **Porous Geopolymer Components**
Paolo Colombo, University of Padova, Italy

12:00 - 12:30 **Development of 3D cellular silicone structures using reactive inkjet printing approach for energy absorbing application**
Aleksandra Foerster, University of Nottingham, United Kingdom

12:30 - 14:00 Lunch

14:00 - 17:00 *Ad hoc* sessions / Free time

Session 7

Chair: Leeanne Brown, Bluestar Silicones, USA

17:00 - 17:30 **Coated glass microballoons and syntactic foams thereof for environmental cleanup**
Krishan Chawla, University of Alabama at Birmingham, USA

17:30 - 18:00 **Voids in Materials: Adding Functionality during Additive Manufacturing**
Gary Gladysz, Empyreus Solutions, LLC, USA

18:00 - 18:30 **Influence of glass hollow microsphere fillers on the Rheological behavior of Epoxy resin**
Y.J. Kang, Korea Institute of Industrial Technology, South Korea

19:30 - 21:30 Reception and Banquet

Friday, March 31, 2017

07:30 - 09:00	Breakfast
09:00 - 11:30	<u>Session 8: Round Table Discussion</u>
10:00 - 10:30	Coffee break
11:30 - 12:00	Conclusions / Next Conference
12:30 - 14:00	Lunch

Poster Presentations

1.	Antimicrobial chitosan foams with and without polyester blending as tissue engineering scaffolds Lukas Gritsch, FAU Erlangen-Nuremberg, Germany
2.	A novel high temperature and flame resistant Twaron aramid foam Ruud Heijmans, Teijin Aramid B.V., Netherlands
3.	Effects of production parameters on microstructure and densification of iron/glass syntactic foam by conventional powder metallurgy Yi Je Cho, Pusan National University, South Korea