

Program

Ultra-High Temperature Ceramics: Materials for Extreme Environment Applications VI

**April 14 – 19, 2024
Giardini Naxos, Messina
Sicily, Italy**

Conference Chairs:

Diletta Sciti
CNR-ISSMC, Italy

Laura Silvestroni
CNR-ISSMC, Italy

Frédéric Monteverde
CNR-ISSMC, Italy

Conference Co-Chairs:

Jon Binner
Birmingham University, UK

Raffaele Savino
University of Naples Federico II, Italy

Gregory Thompson
University of Alabama, USA

Eric Wuchina
Naval Surface Warfare Center, USA



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Mario de Stefano Fumo, CIRA, Italy

Luca Zoli, CNR-ISSMC (former ISTECC), Italy

Previous conferences in this series

***Ultra-High Temperature Ceramics:
Materials for Extreme Environment Applications***

August 3-8, 2008

Lake Tahoe, California

Conference Chairs:

Eric Wuchina, Naval Surface Warfare Center, USA

Alida Bellosi, Institute of Science & Technology for Ceramics, Italy

***Ultra-High Temperature Ceramics:
Materials for Extreme Environment Applications II***

May 13-18, 2012

Hernstein, Austria

Conference Chairs:

Bill Fahrenholtz, Missouri University of Science & Technology, USA

Bill Lee, Imperial College, London, UK

Eric Wuchina, Naval Surface Warfare Center, USA

Yanchun Zhou, Aerospace Research Inst. Of Materials & Processing Technology, China

***Ultra-High Temperature Ceramics:
Materials for Extreme Environment Applications III***

April 12-16, 2015

Gold Coast, Australia

Conference Chairs:

George Franks, The University of Melbourne, Australia

Carolina Tallon, The University of Melbourne, Australia

***Ultra-High Temperature Ceramics:
Materials for Extreme Environment Applications IV***

September 17 – 20, 2017

Windsor, UK

Conference Chairs:

Jon Binner, University of Birmingham, UK

Bill Lee, Imperial College, London, UK

***Ultra-High Temperature Ceramics:
Materials for Extreme Environment Applications V***

June 5-8, 2022

Snowbird, Utah

Conference Chairs:

Daniel Butts, MACH-20, LLC, USA

Carmen Carney, Air Force Research Laboratory, USA

Carolina Tallon, Virginia Tech, USA

Gregory Thompson, University of Alabama, USA

Chris Weinberger, Colorado State University, USA

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Sunday, April 14, 2024

16:00	Conference Check-in (Hotel Lobby)
18:00	Welcome reception (Bar Olympus or Garden next to Bar Olympus)
19:00 – 21:00	Dinner and Networking (Oasys Restaurant)

NOTES

- *Technical sessions will be in the Alcantara and Naxos rooms in the conference center. Poster sessions will be in the Lampedusa Room.*
- *The ECI office is in Sala Stampa C.*
- *Breakfasts and lunches will be in the Oasys Restaurant. Dinner locations are noted in the program.*
- *Coffee breaks will be on the Terrace outside the poster area.*
- *Audio, still photo and video recording by any device (e.g., cameras, cell phones, laptops, watches) is strictly prohibited during the technical sessions, unless the author and ECI have granted prior permission.*
- *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 minutes for questions.*
- *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.*

Monday, April 15, 2024

- 07:00 – 08:00 Breakfast buffet
- 08:00 – 08:15 Introduction, Conference Chairs communications
- 08:15 – 09:00 **Keynote**
The technological challenges for the preparation of the future of space transportation in Europe
Lucia Pigliaru, European Space Agency
- Session 1: Processing, synthesis of new compounds and novel methods, and scale-up issues – I**
Session Chair: M. Cinibulk
- 09:00 – 09:30 **Invited**
Synthesis of Ultrahigh Temperature materials using UHS and USP
Ji-Cheng Zhao, University of Maryland, USA
- 09:30 – 10:00 **Invited**
Fabrication and characterization of binary to quinary transition metal diborides
Roberto Orru', University of Cagliari, Italy
- 10:00 – 10:20 **Thermal and chemical stability of entropy stabilised ultra-high temperature carbides**
Christopher Butler, Imperial College London, United Kingdom
- 10:20 – 10:50 Coffee Break
- Session 2: Environmental Response I**
Session Chair: S. Mungiguerra
- 10:50 – 11:20 **Invited**
Twenty years of plasma wind tunnel testing on Ultra High Temperature Ceramics in Italy
Mario De Stefano Fumo, Italian Aerospace Research Centre, Italy
- 11:20 – 11:40 **Thermochemical instabilities at high temperature ceramic surfaces**
Francesco Panerai, University of Illinois at Urbana-Champaign, USA
- 11:40 – 12:00 **Substoichiometric zirconium carbide exposed to inductively coupled air plasma**
Matthew Konnik, University of Illinois at Urbana-Champaign, USA
- 12:00 – 12:20 Discussion (Moderator: S. Mungiguerra)
- 12:30 – 13:30 Lunch

Monday, April 15, 2024 (continued)

Session 3: Characterization and Properties I

Session Chair: J-C Zhao

14:00 – 14:30

Invited

High-fidelity 3D microstructural characterization of ZrB₂ during hot-pressing

Scott McCormack, University of California, Davis, USA

14:30 – 14:50

Multi-scale characterization and fabrication of nanocomposite ceramics with improved toughness

Marco Sebastiani, Università degli Studi Roma Tre, Italy

14:50 – 15:10

Influence of GdO coatings on the oxidation behavior of Zirconium Diboride

Jan Erik Foerster, German Aerospace Center, Germany

15:10 – 15:30

Natural advanced ceramics: shock-generated structures with superior physical properties

John Spray, University of New Brunswick, Canada

15:30 – 16:00

Afternoon Coffee Break

Session 4: Fundamental properties of UHTCs, UHTCMCs and HE ceramics I

Session Chair: G. Hilmas

16:00 – 16:40

Invited

Disordered enthalpy-entropy descriptor for high-entropy ceramics discovery (remote)

Stefano Curtarolo, Duke University, USA

16:40 – 17:00

Melting temperature and mechanical properties of tantalum carbonitrides Ta₂CxNy

Jérémie Manaud, European Commission / Joint Research Centre, Germany

17:00 – 17:20

Emissivity and melting temperature of dual-phase high-entropy boride-carbide Ultra-High Temperature Ceramics

Patrick Hopkins, University of Virginia, USA

17:20 – 17:40

Revealing Atomic Scale Structure in Chemically Complex Ceramics

Nicolas Bedford, University of New South Wales, AUS

17:40 – 18:00

Discussion (Moderator: G. Hilmas)

18:00 – 19:00

Hang posters

19:15 – 21:00

Dinner (Parco Restaurant)

21:00 – 22:00

Poster Session I (odd-numbered posters)

Tuesday, April 16, 2024

- 07:00 – 08:00 Breakfast Buffet
- 08:10 – 08:20 Introduction, communications
- Session 5: Fundamental properties of UHTCs, UHTCMCs and HE ceramics II**
Session Chair: C. Weinberger
- 08:20 – 08:50 **Invited**
Hierarchical titanium carbide fiber growth by laser chemical vapor deposition
Gregory Thompson, University of Alabama, USA
- 08:50 – 09:10 **Novel contactless measurement technique to determine the thermal conductivity and spectral emissivity of UHTCs at Ultra-High Temperatures (>2000 °C)**
Hunter Schonfeld, University of Virginia, USA
- 09:10 – 09:30 **Nanoindentation-based indicators for crystal plasticity of rock salt carbides**
Tamás Csanádi, Institute of Materials Research, Slovak Academy of Sciences, Slovakia
- 09:30 – 10:00 **Invited**
Synthesis, densification, and transition metal distribution in dual phase, compositionally complex Ultra-High Temperature Ceramics
William Fahrenholtz, Missouri University of Science and Technology, USA
- 10:00 – 10:30 **Coffee Break**
- Session 6: Processing, synthesis of new compounds and novel methods, and scale-up issues II**
Session Chair: L. Backman
- 10:30 – 11:00 **Invited**
Synthesis, constituents, and processing technologies for UHTCMCs
Michael Cinibulk, AFRL, USA
- 11:00 – 11:20 **Polymer-derived ceramics for Ultra-High Temperature aerospace applications: Are they a viable option?**
Elia Zancan, University of Birmingham, United Kingdom
- 11:20 – 11:40 **Liquid phase sintering of C fiber reinforced Ultra-High Temperature Ceramics Composites**
Luca Zoli, CNR-ISSMC, Italy
- 11:40 – 12:00 **Fabrication of Ultra-High Temperature Ceramics Matrix Composites by slip casting followed by pressure less sintering**
Matteo Mor, CNR-ISSMC, Italy
- 12:00 – 12:20 Discussion (Moderator L. Backman)
- 12:30 – 13:30 Lunch

Tuesday, April 16, 2024 (continued)

Session 7: Characterization and Properties II

Session Chair: W. Fahrenholtz

14:00 – 14:30

Invited

The role of carbon in oxidation of refractory metal carbides

Elizabeth Opila, University of Virginia, USA

14:30 – 14:50

Testing compositionally complex diboride ceramics up to 2500 K in dissociated air plasma

Frederic Monteverde, CNR-ISSMC, Italy

14:50 – 15:10

UHTC high temperature characterizations using CO₂ laser beam

Aurélie Julian-Jankowiak, DMAS, ONERA, Université Paris-Saclay, France

15:10 – 15:30

High Temperature oxidation of Ta and TaC in molecular and dissociated oxygen

Connor Stephens, University of Virginia, USA

15:30 – 16:00

Afternoon Coffee Break

Session 8: Environmental Response II

Session Chair: E. Opila

16:00 – 16:30

Invited

Nb-based coatings to improve the oxidation resistance of UHTCMCs at 1700°C

Antonio Vinci, ISSMC - CNR, Italy

16:30 – 16:50

Impact of arc-jet tests at 2200°C and thermal vacuum cycles on microstructure and mechanical behaviour of Cf-ZrB₂ UHTCMCs

Pietro Galizia, CNR-ISSMC, Italy

16:50 – 17:10

Modelling of residual deformations, failure and delaminations in SPS ZrB₂/SiC UHTCMC in complex stress states

Antonio Maria Caporale, Politecnico di Milano, Italy

17:10 – 17:30

Influence of diamond grinding process on material removal mechanisms and surface roughness of 2d-Carbon Fiber Reinforced ZrB₂

Ralf Goller, Technical University of Applied Sciences Augsburg, Germany

17:30 – 17:50

Discussion (Moderator E. Opila)

17:50 – 18:00

Hang even-numbered posters

18:00 – 19:30

Poster Session 2 (Even-numbered posters)

19:30 – 21:30

Dinner (Oasys Restaurant)

Wednesday, April 17, 2024

- 07:00 – 08:00 Breakfast Buffet
- Session 9: Modelling**
Session Chair: S. J. McCormack
- 08:10 – 08:20 Introduction, communications
- 08:20 – 08:50 **Invited**
Point defects and their influence on the thermodynamics and kinetics of UHTC materials
Christopher Weinberger, Colorado State University, USA
- 08:50 – 09:10 **Research on the formation law of Ultra-High Temperature High-Entropy Ceramics based on machine learning**
Lian Zhu, National University of Defense Technology, China
- 09:10 – 09:30 **Phase stability in high-entropy transition metal carbides MC_{1-x} (0.5 ≤ x ≤ 1)**
Tessa Davey, Bangor University, United Kingdom
- 09:30 – 10:00 **Invited**
Modeling oxidation kinetics of silicon carbide-containing refractory diborides
Pavel Mogilevsky, Air Force Research Laboratory, USA
- 10:00 – 10:30 Coffee Break
- Session 10: Processing, synthesis of new compounds and novel methods, and scale-up issues III**
Session Chair: J. Binner
- 10:30 – 11:00 **Invited**
Fabrication and characterization of UHTC materials
Sea Hoon Lee, Korea Institute of Materials Science, South Korea
- 11:00 – 11:20 **Analysis of mechanical properties and oxidation resistance of zirconium diboride with chopped carbon fibers made via material extrusion**
Jonathan Kaufman, UES Inc, USA
- 11:20 – 11:40 **Development of sustainable UHT Ceramic Matrix Composites**
Dietmar Koch, University of Augsburg, Germany
- 11:40 – 12:00 **Pre-ceramic polymer grafted nanoparticles as a route to Ultra-High Temperature Ceramics**
Matthew Dickerson, US Air Force Research Laboratory, USA
- 12:00 – 12:20 **ZrB₂ based UHTCMCs: Processing and Characterization**
Manish Patel, Defence Metallurgical Research Laboratory, India
- 12:30 – 14:15 Lunch
- 14:45 – 21:30 Excursion (including dinner). Meet at 14:45 at hotel reception and to board buses which will leave promptly at 15:00. Casual dress. Dinner will be at Villa Zuccaro.

Thursday, April 18, 2024

- 07:00 – 08:00 Breakfast Buffet
- Session 11: Characterization and Properties III**
Session Chair: L. Silvestroni
- 08:00 – 08:10 Introduction, communications
- 08:10 – 08:40 **Invited**
Short and long-range order in compositionally complex transition metal diborides
Mattia Gaboardi, Materials Physics Center, Spain
- 08:40 – 09:00 **Microstructural evaluation and mechanical properties of high-entropy (TiZrHfNbTa)C carbides reinforced with SiC whiskers**
Alexandra Kovalčíková, Institute of Materials Research Slovak Academy of Sciences, Slovakia
- 09:00 – 09:20 **Environmental conical nozzle levitator equipped with dual lasers**
Fox Thorpe, University of California, Davis, USA
- 09:20 – 09:40 **Near-net shape manufacturing of UHTCMCs via water-based slurry impregnation and polymer infiltration and pyrolysis**
Francesca Servadei, CNR-ISSMC, Italy
- 09:40 – 10:00 **Breaking the brittleness barrier: Advancements in tough and versatile polymer-derived ceramic structures through Lcd 3d printing and pyrolysis**
Hamidreza Yazdani Sarvestani, National Research Council Canada, Canada
- 10:00 – 10:30 Coffee Break
- Session 12: Characterization and Properties IV**
Session Chair: F. Monteverde
- 10:30 – 11:00 **Invited**
Oxidation behavior of high entropy carbides and carbonitrides
Lavina Backman, US Naval Research Laboratory, USA
- 11:00 – 11:20 **Thermomechanical and electrical characterization of high-energy-milled TiB₂ pressure-less sintered**
Simone Taraborelli, Industrie Bitossi, Italy
- 11:20 – 11:40 **Multi-phase solid solutions: Microstructure, mechanical properties and oxidation behavior**
Laura Silvestroni, National Research Council of Italy, Italy
- 11:40 – 12:00 **Mechanical and oxidation behaviour of multi-component dual-phase (Ti,Zr,Ta) boride-carbide based Ultra High Temperature Ceramic**
Kunwar Yadav, Indian Institute of Technology Kanpur, India
- 12:00 – 12:20 Discussion (Moderator: F. Monteverde)
- 12:30 – 13:30 Lunch

Thursday, April 18, 2024 (continued)

Session 13: Environmental response III

Session Chair: R. Savino

14:00 – 14:30

Invited

Aerothermodynamic testing of Multi-Phase Ultra-High-Temperature Ceramics in a super/hypersonic plasma wind tunnel

Stefano Mungiguerra, University of Naples Federico II, Italy

14:30 – 14:50

Performance selection of (Hf, Zr) B₂-based Ultra-High Temperature Ceramic Matrix Composites

Vinothini Venkatachalam, University of Birmingham, United Kingdom

14:50 – 15:10

Plasma wind tunnel test of UHTCMC leading edge prototypes in hypersonic conditions

Diletta Sciti, CNR-ISSMC, Italy

15:10 – 15:30

Metal-ceramic composites for extreme high temperature applications: Ir/HfO₂ thermal protection coating

Fayuan Li, National University of Defense Technology, China

15:30 – 16:00

Afternoon Coffee Break

Session 14: Environmental response IV

Session Chair: D. Butts

16:00 – 16:30

Invited

Oxidation of composites at around 2000°C under an oxyacetylene torch environment inside a X-ray tomography equipment

Laurence Maillé, LCTS, France

16:30 – 16:50

Oxidation kinetics and in-situ emittance measurements to 2200°C of ZrB₂ solid-solution-based ceramics

Mark Opeka, Kratos SRE, USA

16:50 – 17:10

Ablation behavior of C/SiC composites in plasma wind tunnel

Yiguang Wang, Beijing Institute of Technology, China

17:10 – 17:30

Behavior of borides and carbides obtained by plasma spraying under simulated atmospheric re-entry condition

Arthur Charrue, CEA-DAM, France

17:30 – 17:50

A Tekna Plasmasonic High Enthalpy Wind Tunnel to reproduce hypersonic flight and spacecraft re-entry conditions ablation behavior of C/SiC composites in plasma wind tunnel

Romain Vert, Tekna, France

17:50 – 18:10

Discussion (Moderator: D. Butts)

20:00 – 22:30

Gala Dinner (Parco Restaurant)

Friday, April 19, 2024

07:00 – 08:00	Breakfast
08:00 – 08:10	Introduction, communications
	Session 15: Applications Session Chair: D. Sciti
08:10 – 08:40	<u>Invited</u> Ultra-high Temperature fuel forms for nuclear thermal propulsion Gregory Hilmas, Missouri University of Science and Technology, USA
08:40 – 09:10	<u>Invited</u> High-temperature absorbers of concentrated solar radiation: A new application for Ultra-High Temperature Ceramics Elisa Sani, National Institute of Optics, CNR-INO, Italy
09:10 – 09:30	Irradiation resistance of thermo-optical properties of Zirconium Diboride by 3MeV electrons Yinglu Tang, Delft University of Technology, Netherlands
09:30 – 09:50	Design of transforming UHTC metal ceramic multilayer composites John Stotts, Colorado State University, USA
09:50 – 10:10	FAST/SPS: NEW industrial post-process for full densification of 3D UHTC from additive manufacturing Arnaud Fregeac, NORIMAT, France
10:10 – 10:40	Coffee Break
10:40 – 11:00	Special Session I: European Ceramic Society Presentation Jon Binner, Birmingham University, United Kingdom
11:00 – 11:45	Special Session II (led by the Conference Chairs) Poster winner awards Best oral winner awards Conference summary ECI UHTC VII planning
12:00	Lunch and Departure

Poster Presentations (odd numbered)

- 1 **Synthesis and physical properties of super hard high entropy boride ceramics**
Suzana Filipovic, ITN SANU, USA
- 3 **Characterization of (Zr,Ti)B₂-SiC composites obtained by hot press sintering of ZrB₂-SiC-TiO₂ powder mixtures**
Rosa Maria da Rocha, Institute of Aeronautics and Space, Brazil
- 5 **Improvement of prepreg fabrication process for UHTCMCs**
Kiichi Nishiguchi, Mitsubishi Heavy Industries, Ltd., Japan
- 7 **Influence of metal type on the hardness of transition metal carbide films**
Gregory Thompson, University of Alabama, USA
- 9 **Development of processable polymer derived Ultra-High Temperature Ceramics and composites**
Timothy Pruyn, US Air Force Research Laboratory, USA
- 11 **Synthesis of HfZrTi(OCN) entropically stabilized UHTCs**
Evan Schwind, Naval Surface Warfare Center, Carderock Division, USA
- 13 **Ablation resistance of titanium diborate based composites derived from Ti-Si or Ti-Al intermetallic systems**
Zbigniew Pedzich, AGH University of Krakow, Poland
- 15 **MXene high-temperature phase behavior and application as additives in Ultra-High Temperature Ceramics (UHTCs)**
Laura Silvestroni, CNR-ISSMC, Italy
- 17 **Phase equilibrium investigations and thermodynamic modelling of the Y₂O₃ Ta₂O₅ system**
Manuel Löffler, TU Bergakademie Freiberg, Germany
- 19 **Advancing fusion energy: Exploring IV-B group transition metals Borides as promising plasma-facing materials**
Pietro Galizia, CNR-ISSMC, Italy
- 21 **Spark Plasma Sintering and Characterization of (Zr_{0.5}Ta_{0.5})B₂ and (Zr_{0.5}Hf_{0.5})B₂ Ultra High Temperature Ceramics**
Mariano Casu, University of Cagliari, Italy
- 23 **Vulcain set-up: assessment of material behavior under plasma jet**
Aurélie Quet, CEA-DAM, France

Poster Presentations (even numbered)

- 2 **Processing and properties of boride-silicon carbide-boron carbide ceramics**
Steven Smith, Missouri University of Science and Technology, USA
- 4 **Spark plasma sintered zirconium carbide oxidation mechanisms under different temperatures and oxygen partial pressures**
Yun-Ching Lin, Delft University of Technology, Netherlands
- 6 **Synthesis of Ultra High Temperature Ceramics by Spark Plasma Sintering: Non-reactive and reactive routes**
Laurence Maillé, LCTS, France
- 8 **Sustainable additive manufacturing of ZrB₂ with recycled carbon fiber**
Jyoti Jyoti, CNR-ISSMC, Italy
- 10 **Densification and mechanical property evaluation of TiB₂-B₄C ceramic composites using various sintering techniques**
Simone Failla, CNR-ISSMC, Italy
- 12 **Aqueous tape casting of ZrB₂-SiC and ZrB₂-MoSi₂ laminates produced with low binder concentration**
Rosa Maria Rocha, Institute of Aeronautics and Space, Brazil
- 14 **Synthesis of titanium carbide nanofibers**
Ivan Shepa, Institute of Materials Research, Slovak Academy of Sciences, Slovakia
- 16 **Thermal erosion test of ZrB₂-based ceramics**
Dariia Chernomorets, CNR-ISSMC, Italy
- 18 **Reactive sintering of dense borides-based composites derived from boron carbide and Ti-Si intermetallic system**
Dawid Kozien, AGH University of Krakow, Poland
- 20 **Microstructures, phase and mechanical characterization of Al₂O₃-ZrO₂-TiO₂ coating produced by atmospheric plasma spray**
Cynthia Sin Ting Chang, ANAXAM, Switzerland
- 22 **Synthesis and Calorimetry of High-Purity Multicomponent Carbides**
William Rosenberg, UC Davis, USA
- 24 **ZrB₂-SiC ceramics toughened with paper-derived graphite for a sustainable approach**
Luca Zoli, CNR-ISSMC, Italy



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2024

January 7-13	23AI	INNOVATIVE MATERIALS & METHODS FOR ADDITIVE MANUFACTURING II (IM2AM) (Tomar Portugal) D. Schmidt (Luxembourg Institute of Science and Technology (LIST); N. Gupta, New York University; E. Eastwood, KCNSC/Honeywell FM&T; B.G. Compton; University of Tennessee, Knoxville; G.M. Gladysz, Los Alamos National Laboratory
February 4-8	24AT	ADVANCING MANUFACTURE OF CELL AND GENE THERAPIES VIII (Coronado, CA) F. Masri, Cell & Gene Therapy Catapult; C. Yeager, Georgia Institute of Technology; G. Maheshwari, BMS; J. Moscariello, BMS
April 4-8	24AC	DELIVERY OF NUCLEIC ACID THERAPEUTICS II: BIOLOGY, ENGINEERING AND DEVELOPMENT (Siracusa, Sicily) L. Sepp-Lorenzino, Intellia Therapeutics; S. F. Dowdy, University of California San Diego School of Medicine; M. Stanton, Generational Bio
April 14-19	24AI	ULTRA-HIGH TEMPERATURE CERAMICS: MATERIALS FOR EXTREME ENVIRONMENT APPLICATIONS V (Sicily, Italy) D. Sciti, Institute for Science and Technology of Ceramics, CNR; L. Silvestroni and F. Monteverde, ISSMC-CNR; J. Binner, Univ. of Birmingham; R. Savino, Univ. of Naples; G. Thompson, Univ. of Alabama; E. Wuchina, Naval Surface Warfare Center
April 28-May 2	24AP	CHEMREC I: THERMOCHEMICAL RECYCLING OF PLASTICS (Malaga, Spain) S. Kersten, University of Twente; M. Pilar Ruiz, Maastricht University; E. Heeres, University of Groningen
May 5-10	20AF	SYNTACTIC AND COMPOSITE FOAMS (Riga, Latvia) G.M. Gladysz and K.K. Chawla, University of Alabama at Birmingham; A. R. Boccaccini, University of Erlangen- Nuremberg; M. Fukushima, National Institute of Advanced Industrial Science and Technology
May 12-16	24AH	NANOTECHNOLOGY IN MEDICINE IV: PHYSICAL TRIGGERS AND ADVANCED MATERIALS (Tomar, Portugal) K. Rege, Arizona State University; S. De Smedt, Ghent University S. Varghese, Duke University
May 19-24	24AA	VACCINE TECHNOLOGY IX (Los Cabos, Mexico) C. Lutsch, Sanofi Pasteur; L. Lua, University of Queensland; F. Godia, Universitat Autònoma de Barcelona; T. Tagmyer, Merck
July 14-18	24AE	NANOTECHNOLOGY CONVERGENCE FOR SUSTAINABLE ENERGY, ENVIRONMENT, CLIMATE CHANGE AND HEALTH: A US-AFRICA CONFERENCE (Casablanca, Morocco) I.C. Escobar, University of Kentucky; A. El-Gendy, University of Texas-El Paso
July 21-25	24AM	BIOCHEMICAL AND MOLECULAR ENGINEERING XXIII: ACCELERATING BIOTECH SOLUTIONS TO AID A CHANGING WORLD (Dublin, Ireland) M. O'Malley, University of California at Santa Barbara; B. Pflieger, University of Wisconsin; V. Roy, GSK
Oct 6-11	24AN	NANOMECHANICAL TESTING IN MATERIALS RESEARCH AND DEVELOPMENT IX (Sicily, Italy) M. Sebastiani, Rome TRE University
Oct 20-24	24AB	INTEGRATED CONTINUOUS BIOMANUFACTURING VI (Leesburg, VA, USA) A. Azevedo, Instituto Superior Técnico; A. Noyes, Apogee Therapeutics;; K. Brower, Sanofi
Nov 3-7	24AO	MIXED CONDUCTING AND NONSTOICHIOMETRIC COMPOUNDS VII (Tainan, Taiwan) W. Chueh, Stanford University; K.-Z. Fung, National Cheng Kung University; R. Waser, RWTH Aachen; H. Takamura, Tohoku University

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2025

March 30-April 3	25AM	MICROBIAL ENGINEERING III (Porto, Portugal) E. Keshavarz-Moore, University College London; T. Sauer, Sanofi
Late Spring	25AU	SINGLE USE TECHNOLOGIES VII (Europe) N. Montenay, Sartorius; A. Rayat, University College London; A. DiBenedetto, Roche Genentech
April 27 – May 2	25AC	CELL CULTURE ENGINEERING XIX (Tucson, AZ) A. Khetan, BMS; M. Yu, Sutro Biopharma; M. Betenbaugh, Johns Hopkins University
Late Spring	25AG	ALKALI ACTIVATED MATERIALS AND GEOPOLYMERS: SUSTAINABLE CONSTRUCTION MATERIALS AND CERAMICS MADE UNDER AMBIENT CONDITIONS (Finland) C. Leonelli, Università degli Studi di Modena e Reggio Emilia; J. Yliniemi, University of Oulu; W.M. Kriven, University of Illinois at Urbana-Champaign; J.L. Provis, University of Sheffield; A.R. Boccaccini, University of Erlangen-Nuremberg
May 18-23	25AB	BIO-CHAR IV (Santa Marta, Colombia) F. Berruti, Western University, Canada; F.C. Janna, The National University of Colombia
May 18-22	25AO	ADVANCES IN OPTICS FOR BIOTECHNOLOGY, MEDICINE AND SURGERY XVIII (Cork, Ireland) S. Gibbs, M. Skala and S. Andersson-Engels
June 1-6	25AP	POLYMER REACTION ENGINEERING XII (Clearwater, Florida) I. Konstantinov, The Dow Chemical Company; P. Iedema, University of Amsterdam; M. Grady, Axalta
June 22-27	25AT	THERMAL AND ENVIRONMENTAL BARRIER COATINGS VII (Irsee, Germany) B. Pint, Oak Ridge National Laboratory; E. Opila, University of Virginia; B. Hazel, Pratt & Whitney; Uwe Schulz, German Aerospace Center; Ram Darolia, GE Aviation (retired); B. Harder, NASA
July 2025	25AW	MICRO- AND NANOPLASTICS IN WATER: CHARACTERIZATION, CURE AND PREVENTION (Switzerland) D. Hunkeler, Aqua+Tech
Oct 12-16	25AD	ELECTROPHORETIC DEPOSITION VIII: FUNDAMENTALS AND APPLICATIONS (Calabria, Italy) B. Ferrari, Institute for Ceramic and Glass, Spanish Research Council; A.R. Boccaccini, University of Erlangen-Nuremberg
October 19-24	25AE	ENZYM ENGINEERING XXVIII (Helsingør, Denmark) J. Woodley, DTU; D. Heddam-Welner, DTU
October 26-31	25AS	CERAMIC MATRIX COMPOSITES III (Yamanashi, Japan) R. Darolia, GE Aerospace; K. Goto, JAXA; T. Akatsu, Tokyo University of Technology; S. Kitaoka, Japan Fire Ceramics Center; G. Vignoles, University of Bordeaux
November TBA	25AI	BENEFICIATION OF PHOSPHATES X (Hanoi, Vietnam) Chair: Patrick Zhang, Florida Industrial and Phosphate Research Institute, USA; Co-Chairs: Phong Vo, Ardaman & Associates Inc, USA; Erika Rova, Yara Suomi Oy, Finland; André Carlos Silva, Federal University of Goiás, Brazil; Ewan Wingate, Bechtel Australia, Australia
TBA	25AF	CIRCULAR ECONOMY FOR ORGANIC WASTES AND NUTRIENT MANAGEMENT (Cartagena, Colombia) Gerardo Ruiz-Mercado, EPA; Karina Angelica Ojeda Delgado, University of Cartagena; Eduardo Luis Sanchez Tuiran, University of Cartagena

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February TBA	26AT	ADVANCING MANUFACTURE OF CELL AND GENE THERAPIES IX (TBA) J. Moscariello, BMS
May/June	26-AP	PYROLIQ II – 2023: Pyrolysis and Liquefaction of Biomass and Wastes (TBA) F. Berruti, ICFAR & Western University; A. Dufour, CNRS, ENSIC; M. Garcia-Perez, Washington State University; W. Prins, University of Ghent
June 7-12	26AW	WASTELCA 5: LIFE CYCLE SUSTAINABILITY ASSESSMENT FOR WASTE MANAGEMENT AND RESOURCE OPTIMIZATION V (Cetraro (Calabria), Italy) U. Arena, University of Campania "Luigi Vanvitelli"

2027

TBA Autumn	27-AH	INTERNATIONAL HYDROGEN CONFERENCE: UNDERSTANDING HYDROGEN-MATERIALS INTERACTIONS (Park City, Utah) M. Martin, NIST; J. Burns, University of Virginia
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Engineering Conferences International

Engineering Conferences International (ECI) is a not-for-profit global engineering conferences program that has served the engineering/scientific community since 1962 as successor program to Engineering Foundation Conferences. ECI has received recognition as a 501(c)3 organization by the U.S. Internal Revenue Service and is incorporated in the State of New York as a not-for-profit corporation.

The program has been developed and is overseen by volunteers both on the international Board of Directors and international Conferences Committee. More than 1,900 conferences have taken place to date. The conferences program is administered by a professional staff and the conferences are designed to be self-supporting.

ECI Mission

To serve the engineering/scientific community with international, interdisciplinary, leading edge engineering research conferences

ECI Purposes

The advancement of engineering arts and sciences by providing a forum for the discussion of advances in the field of science and engineering for the good of mankind by identification and administration of international interdisciplinary conferences

To work with engineering, scientific and social science societies and the interested general public to jointly sponsor conferences and to take other actions that will foster complementary programming.

To initiate conferences that will have a significant impact on engineering education, research practice and/or development.

ECI Encouragement of New Conference Topics

The ECI Conferences Committee invites you to suggest topics and leaders for additional conferences and encourages you to submit a proposal for an ECI conference.

Ideally, proposals should be submitted from 18 to 24 months in advance of the conference although the staff can work on a shorter timeline.

The traditional format for an ECI conference is registration Sunday afternoon with technical sessions held each morning and evening through Thursday or Friday noon. Afternoons are used for informal gatherings, poster sessions, field trips, subgroup meetings and relaxation. This format has served well to build important professional networks in many areas.

ECI welcomes proposals for shorter conferences and for conferences which span weekends in order to reduce the number of working days participants are away from their offices.

ECI Works With You

ECI works with conference chairs in two complementary ways. First, an experienced member of the Conferences Committee acts as your technical liaison from the proposal stage through the conference itself. He or she is always available to consult with you on any conference issue.

Second, after your proposal has been approved by the Conferences Committee, the ECI staff will assume responsibility for the administration of the conference.

Your primary responsibilities will be recruiting the organizing committee, developing the technical program and securing third-party funding necessary to support the travel of key speakers.

The responsibilities of ECI's "full service" staff include -- but are not limited to -- the following:

- Recommend, negotiate, contract and make substantial deposits for housing, meals, meeting space, A/V equipment and tours.
- Maintain web sites for the conference and for submission of abstracts.
- Publicize via electronic and print media.
- Administer all finances including grants, contributions and purchase orders. (ECI makes grant funds available as soon as a grant is approved.) There is no need for chairs to set up a conference bank account or file tax returns for their conference.
- Process all applications and registrations.
- Produce bound program/abstracts book.
- Contract for the publication of print or electronic proceedings, if any.
- Provide on-site staff during the conference.

For more information, please contact the ECI Director at Barbara@engconfintl.org