Ceramic Matrix Composites II: Science and Technology of Materials, Design, Applications, Performance and Integration

Santa Fe, New Mexico, USA 13-18 November 2022

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Monday, November 14, 2022

| 07:00 - 08:30 | Breakfast |
|---------------|--|
| 08:30 – 08:45 | <u>Opening Remarks</u> Conference Chair and ECI Liaison: Ram Darolia |
| | Session 1: Overviews and Applications Chairs: Marc Montaudon, Eric Bouillon |
| 08:45 – 09:15 | Ceramic Matrix Composites (CMCs) at GE: From inception to 1 commercialization Krishan Luthra, GE Research, USA |
| 09:15 – 09:45 | Industrialization of ceramic matrix composites for aerospace applications Mano Manoharan, GE Aviation, USA |
| 09:45 – 10:15 | Development of ceramic matrix composites for 2500°F turbine engine applications3Olivier Sudre, Pratt & Whitney, USA3 |
| 10:15 – 10:45 | Coffee Break |
| 10:45 – 11:15 | Brief overview of CMCs engine components experiments coupled with representative sub-element tests Eric Bouillon, Safran Ceramics, France |
| 11:15 – 11:45 | Multi-scale study of ceramic composite materials for aeronauticalapplications5Sébastien Denneulin, Safran Ceramics, France |
| 11:45 – 12:15 | SiC _f /SiC ceramic matrix composite – A turbine engine perspective Thomas Nixon, Rolls-Royce Corporation, USA |
| 12:15 – 12:45 | Development of CMC for nuclear fuel components Toshiki Nishimura, Toshiba Energy Systems & Solutions Corporation, Japan |
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| | Session 1: Overviews and Applications (continued) Chairs: Yutaka Kagawa, Takeshi Nakamura |
| 14:15 – 14:45 | International reliability assessment project through standard PateranoSiC(SiC/SiC) 8 Chikara Fujiwara, Tokyo University of Technology, Japan |
| 14:45 – 15:15 | Overview of CMC activities: From high temperature characterization to 9 applications Guillaume Pujol, DGA, France |
| 15:15 – 15:45 | Industrial application of all oxide ceramic matrix composites Walter Pritzkow, Walter E.C. Pritzkow Spezialkeramik, Germany 10 |
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| 16:15 – 16:45 | Advances and technical challenges in development of CMC 11 Takeshi Nakamura, IHI Corporation, Japan | |
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| 16:45 – 17:15 | Current trends in CMC research & development across DLR's technology programs Peter Mechnich, German Aerospace Center (DLR), Germany | 12 |
| 17:15 – 18:15 | Discussion Leader: Frank Zok | |
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| 20:00 - 21:00 | Poster Session / Social Hour | |

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|---------------|--|----|
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| 09:00 – 09:30 | In-situ observation and multi-physics simulation of reactive melt Infiltration of silicon melt into SiC-C Preform Takeshi Yoshikawa, The University of Tokyo, Japan | |
| 09:30 – 10:00 | Processing and characterization of layered UHTCMCs reinforced with continuous or discontinuous carbon fibers15Antonio Vinci, National Research Council of Italy, CNR-ISTEC, Italy15 | |
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| 10:30 – 11:00 | Processing, performance and process modeling of preceramic polymers Thomas Key, Air Force Research Laboratory, USA | 16 |
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| 11:30 – 12:00 | CVI manufacturing routes of non-oxide CMCs Ryan Skillett, Archer Technicoat Ltd., United Kingdom | |
| | Session 3: Physical and Mechanical Property Testing and Characterization Chair: Ken Goto, Michael Cinibulk | |
| 12:00 – 12:30 | Small-scale testing of ceramic matrix composites Oriol Gavalda-Diaz, Imperial College London, United Kingdom ¹⁹ | |
| 12:30 – 13:00 | Simulation assisted study on structural degradation in advanced SiC/SiC CMC component during high-temperature fatigue Eiichi Sato, ISAS/JAXA, Japan | 20 |
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| 09:00 - 09:30 | Cumulative fracture behavior of short fiber type C/SiC22Ken Goto, Japan Aerospace Exploration Agency, Japan22 | |
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