

## Symposia - D05

### Advanced Structural Ceramics and Ceramic Matrix Composites

October 15 (Sunday), 2023

Conference Room: 7110A, -1# floor

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**8:30-10:20** Session I

Chair: Yanhui Chu

**8:30-8:50** (D05-01)

**Oxidation behaviors of SiHfBCN modified SiC matrix composite prepared by CVI+PIOP method** (Keynote)

Xingang Luan, Northwestern Polytechnical University, China

**8:50-9:10** (D05-02)

**Advances of cold sintering in ceramic processing** (Keynote)

Yuchi Fan, Donghua University, China

**9:10-9:30** (D05-03)

**Design and Synthesis of Nanostructured Functional Mesoporous Powders** (Keynote)

Pengpeng Qiu, Donghua University, China

**9:30-9:50** (D05-04)

**Densification, microstructure and properties of advanced ceramics sintered under ultra-high pressure** (Keynote)

Wei Ji, Wuhan University of Technology, China

**9:50-10:05** (D05-05)

**Phase Formation Capability and Compositional Design of Multicomponent Rare-earth Disilicates** (Invited)

Luchao Sun, Institute of Metal Research, Chinese Academy of Sciences, China

**10:05-10:20** (D05-06)

**Low-temperature sintering of single-crystal-like Y<sub>2</sub>O<sub>3</sub>:Eu transparent ceramics** (Invited)

Jiguang Li, National Institute for Materials Science, Japan

**10:20-10:40** Coffee Break

**10:40-11:50** Session II

Chair: Yuchi Fan

**10:40-11:00** (D05-07)

**Theoretical Investigation of Point Defects and Surfaces of Rare-earth Zirconates** (Keynote)

Bin Liu, Shanghai University, China

**11:00-11:20** (D05-08)

**Irradiation Effect of Zirconium Compounds** (Keynote)

Weichao Bao, Shanghai Institute of Ceramics, Chinese Academic of Sciences, China

**11:20-11:35** (D05-09)

**Introducing of low strain energy GdAlO<sub>3</sub> grain boundaries into directionally solidified Al<sub>2</sub>O<sub>3</sub>/GdAlO<sub>3</sub> eutectics** (Invited)

Xu Wang, Chongqing University, China

**11:35-11:50** (D05-10)

**Preparation and properties of the ceramic shell for Nb-Si alloy turbine shroud applied in ultra-high temperature and high-pressure environment** (Invited)

Zhihui Li, Shanghai Jiao Tong University, China

**11:50-13:30** Lunch

**13:30-15:30** Session III

Chair: Wei Luo

**13:30-13:50** (D05-11)

**Formation ability descriptors for high-entropy diborides established through high-throughput experiments and machine learning** (Keynote)

Yanhui Chu, South China University of Technology, China

**13:50-14:10** (D05-12)

**Creating anisotropic properties in conductive ceramics by incorporating hBN flakes** (Keynote)

Ji Zou, Wuhan University of Technology, China

**14:10-14:30** (D05-13)

**Design and Construction of Highly Hard yet Toughened TMB<sub>2</sub> based Dual-phase Nanocomposite Thin Films** (Keynote)

Kan Zhang, Jilin University, China

**14:30-14:45** (D05-14)

**Preparation of near-zero thermal expansion C/SiC composites** (Invited)

Xiaomeng Fan, Northwestern Polytechnical University, China

**14:45-15:00** (D05-15)

**3D/4D additive-subtractive manufacturing of ceramics** (Invited)

Guo Liu, City University of Hong Kong, China

**15:00-15:15** (D05-16)

**Synthesis, luminescence properties of a novel SrLa<sub>2</sub>Al<sub>2</sub>O<sub>7</sub>:Cr<sup>3+</sup> phosphor with NIR emission** (Invited)

Zhiyuan Pan, Northeastern University, China

15:15-15:30 (D05-17)

**Physics-guided small data mining of causal regulating principle for multicomponent ultrahigh temperature ceramics** (Invited)

Zhijie Hu, Zhejiang Lab, China

15:30-15:50 Coffee Break

15:50-17:50 Session IV

Chair: Ji Zou

15:50-16:10 (D05-18)

**Multifunctional SiC Ceramic Aerogels for excellent microwave Absorption and Thermal Insulation Properties** (Keynote)

Bingbing Fan, Zhengzhou University, China

16:10-16:30 (D05-19)

**Preparation and Properties of Ceramic Skeleton-reinforced Highly Oriented Graphite Flake Composites** (Keynote)

Zhongqi Shi, Xi'an Jiaotong University, China

16:30-16:50 (D05-20)

**Laser additive manufacturing of high-strength and lightweight SiC ceramic composites** (Keynote)

Jie Yin, Shanghai Institute of Ceramics Chinese Academy of Sciences, China

16:50-17:05 (D05-21)

**Cf/ZrB<sub>2</sub>-SiC-based composites with excellent long-term ultra-high temperature ablation resistance** (Invited)

Bowen Chen, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

17:05-17:20 (D05-22)

**Enhanced water-splitting capability of transition metal phosphides via charge redistribution and surface activation** (Invited)

Mingjie Sun, Shanghai University, China

17:20-17:35 (D05-23)

**Three-Dimensional Porous Carbon-based Aerogels Reinforced SiC Ceramic Matrix Composites with Hierarchical Structure for Broadband Electromagnetic Wave Absorption** (Invited)

You Xiao, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

17:35-17:50 (D05-24)

**Study on HfB<sub>2</sub>-SiC Ablation Protective Coating for Carbon/Carbon Composites** (Invited)

Jiaping Zhang, Northwestern Polytechnical University, China