

Session Program

13-17 Sept 2021

**EUROPEAN CONGRESS AND EXHIBITION ON
ADVANCED MATERIALS AND PROCESSES -
EUROMAT 2021**

B4_Advanced structural ceramics

Virtual

Thursday 16 September

09:50

B4_Advanced structural ceramics: B4_1 Nacre-like alumina

Session | Location: Room 6

09:50–10:30 **Nacre-like alumina: past, present, and future (Keynote)**

Speaker

Sylvain Deville

10:30–10:50 **Describing fracture in tough ceramics inspired from nacre**

Speaker

Ms Victoria Vilchez

10:50–11:10

Texturing 3D-printed alumina ceramics through templated grain growth

Speaker

Anna-Katharina Hofer

11:10–11:30

Properties of anisotropic bio-inspired ceramic composites: a coupled experimental-numerical approach for a better understanding of fracture

Speaker

Thomas Duminy

11:30

11:50

B4_Advanced structural ceramics: B4_2_Advanced processing to enhance mechanical behaviour

Session | Location: Room 6

11:50–12:30

Printing ceramic composites reinforced by continuous metallic fibers (Highlight)

Speaker

Eduardo Saiz

12:30–12:50

Mechanical performance of Embedded 3D Printing ceramic composites

Speaker

Shitong Zhou

12:50–13:10

Enhanced mechanical strength of 3D-printed alumina through a multi-material design approach

Speaker

Josef Schlacher

13:10–13:30

Creep behaviour of alumina composites with different amounts of reduced graphene-oxide sintered by spark plasma sintering

Speaker

Dr Rafael Cano Crespo

13:30

14:40

B4_Advanced structural ceramics: B4_3_Zirconia ceeramics**Session** | **Location:** Room 6

14:40–15:20

Rare earth co-stabilizing of zirconia - an engineering toolbox for creating structural ceramics with tailored mechanical properties (Highlight)**Speaker**

Frank Kern

15:20–15:40

Processing and mechanical characterization of few layered graphene / zirconia composites**Speaker**

Ms Carmen Muñoz-Ferreiro

15:40–16:00

Mechanical properties and fracture mechanisms of graphene-based nanostructures/yttria-stabilized tetragonal zirconia (3YTZP) and their dependence on nanostructure aspect ratio and processing conditions**Speaker**

Dr Rocío Moriche

16:00–16:20

A comparison of the Ball-on-Three-Balls- and the Ring-on-Ring-Test for biaxial testing of ceramics**Speaker**

Maximilian Staudacher

16:20

16:40

B4_Advanced structural ceramics: B4_4_Composites**Session** | **Location:** Room 6

16:40–17:00

R-Curve behavior of GBN/3YTZP composites (Highlight)**Speaker**

Ms Cristina López-Pernía

17:00–17:20

Ceramic Matrix Composites reinforced with carbon allotropes: achievements and current challenges**Speaker**

Dr Víctor Morales-Florez

17:20–17:40

Electrical-discharge machinable zirconia composites with graphene nanostructures: Influence of nanostructure type and processing technique**Speaker**

Mrs Ángela Gallardo-López

17:40–18:00

Mechanical behavior of a Nextel 610/alumina-silica, oxide/oxide ceramic matrix composite**Speaker**

Florian Boutenel

18:00-18:20

Contact damage response of WC-base cemented carbides: corrosion and microstructural effects

Speaker

Prof. Luis Llanes

18:20

Friday 17 September

09:50

B4_Advanced structural ceramics: B4_5_UHTC and high entropy ceramics I

Session | Location: Room 6

09:50–10:30

Ultra-high temperature ceramic nano-composites with hierarchical structures for enhanced properties (Highlight)

Speaker

Laura Silvestroni

10:30–10:50

Elaboration by SPS and oxidation in air plasma up to 2600 K of diboride-based composites with 20 vol.% additional compounds

Speaker

Mrs Charlène Pellegrini

10:50–11:10

Effect of buffer layer composition on Mo-Diffusion in fiber reinforced ZrB₂ Ceramics

Speaker

Ms Kerstin Stricker

11:10–11:30

Investigation of the Oxidation Resistance of ZrB₂-based Monoliths Using Polymer-Derived Si(Zr,B)CN as Sintering Aid

Speaker

Mr Nils-Christian Petry

11:30

11:50

B4_Advanced structural ceramics: B4_6_UHTC and high entropy ceramics II

Session | Location: Room 6

11:50–12:10

Exploration of atomic scale additives on the formation and properties of SiAlON Ceramics

Speaker

Mr Kade McGarrity

12:10–12:30

Synthesis of Ti-, Zr- and Hf- containing MAX phases by pressureless sintering and Spark Plasma Sintering-assisted thermal treatment

Speaker

Elise Hugon

12:30–12:50

Novel Multicomponent Pyrochlore Oxides for Future Thermal Barrier Coatings

Speaker

Patrick Hutterer

12:50

14:40

B4_Advanced structural ceramics: B4_7_Modelling of ceramics behaviour**Session** | **Location:** Room 6

14:40-15:20

Multi-scale fracture modeling and identification of interface properties in Nacre-like alumina (Highlight)**Speaker**

Aurélien Doitrand

15:20-15:40

Initiation of cracks in ceramic laminates with residual stresses predicted using the finite fracture mechanics**Speaker**

Mr Roman Papšík

15:40-16:00

Studying the slow crack growth in a few layered graphene / zirconia composite**Speaker**

Ms Carmen Muñoz-Ferreiro

16:00-16:20

Fabrication of AION Transparent Ceramic and its Microstructural Evolution during Densification**Speaker**

Ying Shi

16:20