S4-1 Engineering Ceramics: Processing, Properties, Reliability and Applications

SHORT DESCRIPTION:

Engineering ceramics, including ceramic matrix composites (CMC), have been expected to find a wide range of applications such as aerospace, nuclear, fusion, energy, environment and automotive industries. To apply these ceramics as the structural parts, their reliability becomes a key issue that can be specifically considered in places that need safety and security. Hence, it is necessary to develop ceramics with controlled microstructure and this improves the properties which eventually enhance their durability and reliability. In recent years, there has been also development of engineering ceramics combined with computational methods of modeling and simulation in addition to the outstanding studies on innovative processing routes and synthesis methods, novel sintering technologies. This symposium opens space for the scientists and engineers to present and discuss recent studies on engineering ceramics and CMC including processing, synthesis, sintering, coatings, properties, computational design, modeling, simulation, applications, testing, evaluation methods, etc. This symposium also focuses on discussion about the future researches and development of engineering ceramics.

SESSION TOPICS:

Innovative Processing Routes and Synthesis Methods
Novel Sintering Technologies
Microstructure Control
Mechanical Properties
Thermal Properties
Corrosion and Oxidation Behavior
Reliability and lifetime prediction and modelling
Computational Modeling, Simulation and Design
Testing and Evaluation
Oxides and Non-oxides (Nitrides, Carbides and others)
Ceramic Matrix Composites (CMC)
Coatings
Applications

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