

Symposium 35: Virtual Materials Design and Ceramic Genome

Recent progress in high-throughput materials design and ceramic genome have significantly enhanced the efficiency with which the the improvement of materials performance, the optimization of processing, the discovery of new materials, and the design of structural components can be achieved. This symposium focuses on the design, modeling and simulation of ceramics and composites with different approaches in both computational research and experimental measurements across the length and time scales so as to further optimize their behavior and facilitate the design of new ceramics and composites with tailored properties. A broader perspective is desired including the interest related to ceramic genome, virtual materials design for new innovative materials and thermo-structure, integrated materials computational engineering, prediction of the structure and properties of crystals, glasses and defects, modeling materials behavior under extreme/harsh environments, application of novel simulation methods for materials processing and performance, and simulation of novel ceramics for functional applications.

<PROPOSED SESSION TOPICS>

- Ceramic genome
- Novel simulation methods for materials processing and performance
- Multi-scale modeling approaches
- Modeling materials behavior under extreme/harsh environments (ultrahigh temperature, radiation, environmental damages and severe mechanical load and stresses)
- Model-aided design of thermal insulating and thermo-structural materials
- Modeling and design of new innovative ceramics for functional applications
- Prediction of the crystal structure and properties of new ceramics
- Prediction of the structure and properties of glass materials and defects
- Role of big data and informatics in accelerated ceramic technology development and applications

<ORGANIZERS>

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<INVITED LECTURES>

Tentative invited lecture information is posted in the following URL;

http://www.ceramic.or.jp/pacrim13/list_of_invited_speakers.html#35