S9-6 Solid-state chemistry for functional materials

SHORT DESCRIPTION:

Inorganic solid-state materials such as oxides, non-oxides, intermetallics, metal-organic frameworks, and glasses are widely studied for their diverse electronic states and functional properties. These solids take different forms: powder, thin film, nano-particles, or single-crystals, and are characterized using advanced analyses. Nevertheless, one of the key challenges for solid-state chemists remains the rational design of materials with coordination environments and periodic structures that generate specific desirable properties and new characterization methods, including computational techniques. To accelerate the development of a new class of materials, solid-state scientists have recently turned their attention to anion-directed chemistry, high-entropy materials, molecule-containing inorganic materials, and so on. In parallel, advanced computational chemistry and characterization tools have contributed to understanding the correlations between composition, structure and properties. This symposium will focus on novel synthetic approaches to solid-state materials and their magnetic, dielectric, catalytic, optical, electrical, and other functional properties. It will also highlight the latest advances and challenges of theoretical, modeling, and machine-learning approaches, as well as characterization and analytical tools using synchrotron/neutron/electron/photon beams. It will facilitate sharing new ideas and exciting research between experimental and theoretical solid-state chemists.

SESSION TOPICS:

Design and synthesis of novel functional materials
Reaction mechanism of novel functional materials
Emerging properties and characterization techniques
New ideas, simulation, and modelling of new materials
Supra-ceramics -new materials incorporating molecular units

ORGANIZERS:

Takafumi Yamamoto, Kyoto University, Japan
Raphaële Clément, University of California, Santa Barbara, USA
Kotaro Fujii, Hosei University, Japan
Susana García Martín, Complutense University of Madrid, Spain
Akira Miura, Hokkaido University, Japan
James R. Neilson, Colorado State University, USA
Cédric Tassel, ICMCB and Bodeaux-INP, France

SYMPOSIUM AWARD INFORMATION:

Our symposium offers an “Outstanding Presentation Award”. Students and researchers who have obtained their PhD within the last five years are eligible to enter this award competition. The applicants must be the first and presenting authors of the abstracts. Selection will be made by the symposium organizers from the oral and poster presentations. Up to 20% of the total applicants will receive a certificate on the final day of the symposium.

*The limitation can be modified if there is a specified reason, such as maternity leave, parental leave, or nursing care.