SEMINAR SERIES

International Institute for Carbon-Neutral Energy Research
Kyushu University

# Title Ceramic materials and systems for energy applications


Speaker Prof. Olivier Guillon
Director
Institute of Energy and Climate Research
(IEK-1: Materials Synthesis and Processing)
Forschungszentrum Jülich GmbH
Germany


Date & Time Friday, October 9, 2015 1:30 p.m.
Place I²CNER Hall, Ito campus, Kyushu University

## Abstract


The transition of energy supply towards a sustainable energy system in terms of climate-neutrality as well as security of supply and economic competitiveness is one of the major current technological challenges. Energy technologies are dependent on suitable materials, both structural and functional. Whereas structural materials are of major importance to fossil and nuclear power plants as well as wind energy, functional materials are decisive to the fields of PV, fuel cells, batteries, production of energy carriers such as hydrogen, etc.

Functional oxide ceramics with either superior thermomechanical properties or electronic/ionic conductivity are crucial for safer and more robust energy systems converting or storing energy. For instance, solid-state Li ion conductors are promising to alleviate many problems associated with conventional organic liquid or gel electrolytes such as safety, energy density and lifetime.

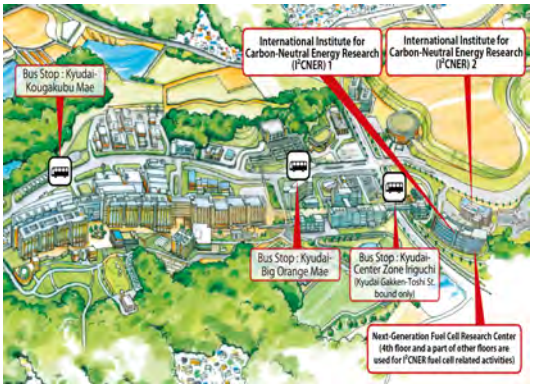
Examples developed at IEK-1 will be presented during this talk, with a special focus on thermal barrier coatings, solid oxide fuel cells, gas separation membranes and all-solid-state batteries.


## About the Speaker

After his engineering degree and PhD in France as well as a research stay at the University of Washington (USA), Dr. Oliver Guillon established an Emmy Noether Group funded by the German Research Foundation at the Technische Universität Darmstadt. After two years spent at the Friedrich Schiller University of Jena, he is now director at the Institute of Energy and Climate Research - Materials synthesis and processing (Forschungszentrum Jülich) and professor at the RWTH Aachen University. His interests encompass constrained sintering, Field Assisted Sintering Technology, phase transformation of nanoparticles, Solid Oxide Fuel/Electrolytic Cells, Thermal Barrier Coatings, gas separation membranes and batteries. His achievements have been recognized at an international level (DGM-Masing Prize, FEMS Materials Science and Technology Prize, R.L. Coble Award of the American Ceramic Society).

Host: Professor Petros Sofronis

For registration, please visit our website:
http://i2cner.kyushu-u.ac.jp/





Contact: Research Support and International Affairs division
International Institute for Carbon-Neutral Energy Research
Tel:092-802-6934 Email:wpikenkyu@jimu.kyushu-u.ac.jp