

## **R&D activities at Forschungszentrum Jülich GmbH and examples of innovation uptake towards energy and environmental key technological solutions**

*Mariya IVANOVA, Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research – IEK-1: Materials Synthesis and Processing*

The global effort for reaching highly efficient CO<sub>2</sub>-neutral economy requires innovative technological solutions based on high performance materials, efficient processing routes, clever resource usage/re-usage, heat and waste management. Ceramic proton and oxide-ionic conductors with tailored properties and electrochemical devices based on them gain increasing scientific and industrial interest due to their multifaceted applications under various operating conditions. Aiming at realizing the lab-to-market transfer and increasing the technology readiness levels, large area ceramic components are required at highcost efficiency besides the high performance and durability of the key functional materials. The present talk will give an overview of the R&D activities in the field of electrochemical ceramic devices, e.g. solid oxide fuel/electrolysis cells, at IEK-1 of Forschungszentrum Jülich GmbH and will present selected examples for bridging the gap between the lab-scale generated innovations and their large scale realization through technological uptake and collaboration between research and industry.