

HITEC Methods Day

Title: Materials: Ageing and degradation processes

Date: 21.06.2012

Time: 9:00 – 16:30 o'clock
afterwards **get together** with snacks and drinks

Location: Forschungszentrum ► Jülich, Build. 14.6., R 241

Energy conversion technologies are expected to generate electrical energy with high efficiency over a long period of operation which is typically several decades. However, in real systems often aging and degradation processes take place, which lead to a efficiency loss or even failure of the systems.

The seminar will explain this topic describing relevant processes in power plants, solid oxide fuel cells, photo voltaic, and fusion technology.

You will learn:

- A basic understanding of the multiple degradation mechanisms in energy conversion systems
- the relation between degradation and efficiency
- the impact of long time stability on commercialization

Contents:

- 1) Degradation of single crystal alloys, Prof. G. Eggeler, Uni Bochum
- 2) Ageing and degradation of divertor and 1. wall materials in future fusion reactors, Dr. J. Linke, Forschungszentrum Jülich, IEK-2
- 3) Longtime stability of photovoltaic cells, Prof. U. Rau, Forschungszentrum Jülich, IEK-5, and RWTH Aachen University
- 4) Degradation mechanisms of thermal barrier coating systems, Prof. R. Vaßen, Forschungszentrum Jülich, IEK-1, and Uni Bochum
- 5) Ageing and degradation of solid oxide fuel cells, L.G.J. de Haart, IEK-9, Forschungszentrum Jülich
- 6) Long time stability aspects of membranes for CO₂ separation, PD Dr.-Ing. T. Markus, IEK-2
- 7) Lab Tour: Institute of Energy and Climate, Microstructure and Properties of Materials, IEK-2

Who should attend:

HITEC Ph.D.-fellows;
Postgraduate-, Ph.D.- and postdoctoral fellows from the fields of energy and climate research

HITEC Days

HITEC Days are an inherent part of the graduate school Helmholtz Interdisciplinary Doctoral Training in Energy and Climate Research (HITEC). They devote a whole day to a method or a scientific topic with lectures and discussions. The methodological days serve to encourage scientific interdisciplinarity and will enable the PhD students to extend their range of methods with respect to their own scientific work. HITEC Days always end with a 'Get together', some snacks and drinks. HITEC Days are open for HITEC Ph.D. students and other interested young scientists.