

How Large Research Facilities Can Contribute in Solving Challenges in Energy Research

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Strong efforts in both industry and academia are directed towards energy research, i.e. the generation of energy from new and clean sources as well as generally working towards more sustainable and environmentally friendly processes, in a wide range of applications. New and more knowledge is required on all levels, i.e. fundamental insights in materials and mechanisms as well as societal impact issues.

In this lecture we will look at a few different challenges in energy related research at a fundamental level; understanding and improving catalytic processes, new renewable energy processes and battery research. The use of large scale facilities in this field of research can provide unique insights compared to lab-based facilities, e.g. fast detailed structural and electronic information on materials and reactions, while they are functioning. The additional insights obtained using novel technique developments like increased temporal, spatial and energy resolution will be emphasised.

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