AKE 5: Energy Storage I

Zeit: Montag 15:45–16:15 Raum: HSZ-03

AKE 5.1 Mo 15:45 HSZ-03

Electrolyte composites in capacitors and energy storage — •Hans Lustfeld[1], Christian Pithan[2], and Martin Reissel[3] — [1]PGI-1 Forschungszentrum Jülich, D52425 Jülich, Germany — [2]PGI-7 Forschungszentrum Jülich, D52425 Jülich, Germany — [3]Fachhochschule Aachen, Abteilung Jülich, D52428 Jülich, Germany

Composites can enlarge the possibilities of tayloring materials for obtaining optimum properties. The question rises whether this is also true for electrolyte composites, used in capacitors: Are composites promising candidates for optimizing the storage of electrical energy in capacitors. We have already shown that metallic electrolyte composites are not suitable for this purpose[1]. Here we show more generally that most composites are not suitable for this purpose as well and we give criteria which directions a research should pursue for finding electrolyte composites with good energy storing properties in capacitors.

[1] H. Lustfeld, C. Pithan and M. Reißel : J Eur Ceram Soc 32, 859, 2012

AKE 5.2 Mo 16:00 HSZ-03

Analysis of the electric energy storage in different renewable energy scenarios — •Wayne Götz, Werner Aeschbach-Hertig, Ulrich Platt und Tobias Tröndle — Institute of Environmental Physics, Heidelberg, Germany

The current political targets of the European governments are aimed at a more sustainable electric energy supply. With this change of our electricity generation system several challenges become crucial, in particular the handling of the fluctuating energy production by renewable energies. One way to counter this challenge is electric energy storage, which will be analyzed in this presentation. The analysis of the annual evolution, period and magnitude of the required electric energy storage capacity is based on results of the energy supply model *MEET*, which was developed at the Institute of Environmental Physics of Heidelberg. Several energy supply scenarios will be analyzed, which vary in the energy mix and the share of renewable energies. The principle of the analysis will be the Fourier transform, which will be applied on the resulting time series of the model runs. Clear peaks for daily and seasonal periods are the results of this analysis. The data lead to different requirements on technologies to store electric energy.