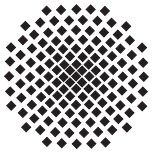
Stuttgarter Physikalisches Kolloquium

Max-Planck-Institut für Intelligente Systeme
Max-Planck-Institut für Festkörperforschung
Fachbereich Physik, Universität Stuttgart

Ansprechpartner: Dr. Michael Hirscher
E-Mail: hirscher@is.mpg.de
Telefon: 0711 - 689-1808



Dienstag, 15. Mai 2018	17.15 Uhr	Hörsaal 2 D5

Stuttgarter Max-Planck-Institute, Heisenbergstraße 1, 70569 Stuttgart-Büsnau

Gastgeber: Prof. Gisela Schütz, Max-Planck-Institut für Intelligente Systeme, Telefon: 0711 - 689-1950

Energy Storage: from hearing-aid to hydropower

Bill David
Rutherford Appleton Laboratory & University of Oxford

Abstract

Our increasing dependence on intermittent renewable energy production places a greater focus on the development of novel, affordable energy storage. The recent emphasis on electrochemical storage, and on lithium batteries in particular, addresses a significant component of our future energy storage requirements but future low-carbon energy scenarios must utilise a broad range of storage options. After a general introduction to energy storage, the talk will focus on both electrochemical and chemical energy storage options with a particular emphasis on zero carbon chemical energy carriers.

The hydrogen economy has the potential to be a significant and sustainable, green and clean alternative to fossils fuels. However, despite almost two decades of intensive research, technical challenges still remain - particularly in the area of hydrogen storage. There are three potential areas of hydrogen storage that may, in time, replace 700 bar pressurised hydrogen tanks. These are: cryogenic physisorbed systems, lightweight solid hydrides and liquid hydrogen carriers. My talk will focus on the latter two options where I will show that high wt%, highly reversible solid hydride systems do exist - but have technical complications - and highlight the opportunities afforded by ammonia.