

NECEM WEBINAR:**Wednesday 7th October 2020, 3-4pm (UK)****Via Zoom****“Going solid – A better (battery) life without liquids”****Prof Jürgen Janek**

Center for Materials Research & Institute of Physical Chemistry, Justus Liebig University Giessen & BELLA, Institute of Nanotechnology, Karlsruhe Institute of Technology, Germany

Liquid electrolytes form traditionally the basis for virtually all relevant types of batteries. Recently, solid electrolytes and solid state batteries experience fast growing interest for several reasons. I will discuss whether this strong interest and the expectations in the performance of solid state batteries is justified. After a short introductory comparison of liquid and solid electrolytes, I will present recent results of electrode kinetics and full cell properties of solid state batteries. The remaining key challenges on the route to competitive solid state batteries will be highlighted and analysed.

Biography

Jürgen Janek holds a chair for Physical Chemistry at Justus Liebig University in Giessen (JLU, Germany), is executive director of the JLU Center for Materials Research and scientific director of BELLA, a joint lab of BASF SE and KIT in Karlsruhe (Germany). Since 2018 he is scientific coordinator of the German research cluster on solid state batteries FESTBATT funded by BMBF (Federal Ministry for Education and Research). He received his doctoral degree in physical chemistry with Hermann Schmalzried at Leibniz University (Hannover) and was visiting professor at Seoul National University (Korea), Tohoku University (Japan) and Université d'Aix-Marseille (France). His research spans a wide range from transport studies in mixed conductors and at interfaces to operando studies in electrochemical cells. Current key interests include all-solid-state batteries, solid electrolytes and solid electrolyte interfaces. He is particularly interested in kinetics at interfaces. Jürgen has long-standing scientific contacts to Newcastle University, in particular to Ian Metcalfe in the School of Engineering.