

The FP7 project InFluENCE aims at improving the fundamental understanding and control of interfaces of a battery type based on Li-ion and Na-ion active materials: semi solid flow batteries (SSFB). The methods and techniques developed are however generic and could as well be implemented for conventional Li- and Na-ion systems for the techniques that do not focus on flow aspects.

A main objective is the investigation and optimization of the interfaces developing between the electrolyte and the electrochemically active material particles in fluid electrodes. The acquired knowledge would allow the chemical and morphological optimization of active materials as well as the design of optimized interfacial layers (also called artificial Solid Electrolyte Interfaces, art-SEI) capable of warrant stable interfaces.

A second main objective is the understanding and control the mechanical and conductive behaviours of the slurries. For this, it is necessary to determine the role of shape anisotropy and the overall nature (attractive or repulsive) of the short ranged interactions of the active materials besides the strength of the attractive forces for conductive nano-particles. The cross interaction should allow intimate contact between active material and the conductive particles.

More information:

November 20<sup>th</sup>, 08:30-12:30

Organizer: Karlsruhe Institute of Technology (KIT)  
Location: Helmholtz Institute Ulm, Albert Einstein Allee 11  
<http://www.hiu.kit.edu>

The workshop will focus on the interfaces of active materials in conventional lithium-ion, sodium-ion and magnesium batteries with special regards to SSFBs.

## Program

08:30 - 09:00 Welcome

09:00 – 09:30 *Stefano Passerini, KIT-HIU:*

*“From intercalation to conversion and conversion-alloying anode materials”*

09:30 - 10:00 *Roberto Marassi, University of Camerino:*

*“Solid Electrolyte Interphase”*

10:00 - 10:30 *Vito Di Noto, University of Padova:*

*“Interfaces in Magnesium batteries”*

10:30 - 11:00 Coffee Break

11:00 – 11:30 *Daniel Buchholz, KIT-HIU:*

*“Development of layered cathode materials for lithium and sodium based materials”*

11:30 - 12:00 *Cristina Flox, IREC:*

*“Redox Flow Batteries”*

12:00 - 12:30 *Remy Lacroix, 6TMIC:*

*“Electrochemical Modelling of Processes in Batteries”*

12:30 Wrap-up and final remarks. End of the workshop.