

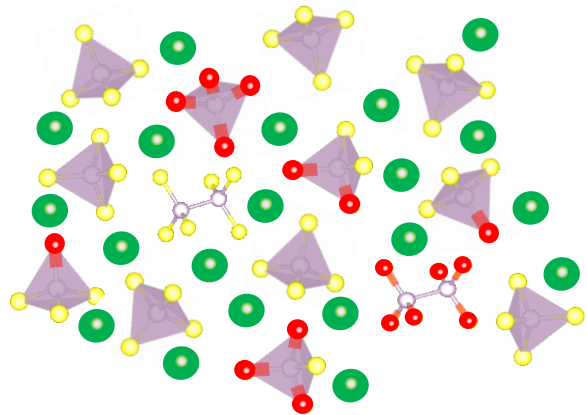
HIWI

Structural analysis of solid-state electrolytes for Li-Ion Batteries

Lithium-ion batteries have become an essential part of our everyday lives. Their importance will most likely even increase in the near future due to the transition towards renewable energy sources and electric transport.

However, commercial Li-ion batteries using a liquid electrolyte are approaching a limit for possible improvements. Additionally, they suffer from safety concerns. One way to go forward is the application of solid electrolytes for more safety and possibly higher capacities.

In order to find suitable solid electrolyte materials, we need to understand the conduction mechanisms within these materials and how they can be influenced by the crystal structure.



The work is part of a project where we analyse the influence of oxygen doping on the local structure and electrochemical properties in Li-Thiophosphates.

Task:

- Preparing samples in the glovebox
- Synthesis of Material by ball-milling,
- Characterisation with XRD and Raman (mainly)

Requirement:

- Background in chemistry, chemical engineering, material science or a related field
- Interest in batteries and/or crystallography

Location:

Campus North.

Working hours:

5-10 per week

Start time:

As soon as possible

Kontakt:

If interested, contact ramon.zimmermanns@kit.edu