

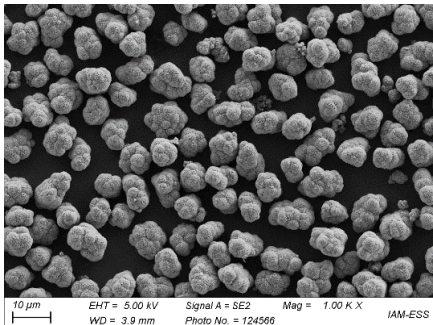
Master Thesis

„Parameter Study on the Synthesis of NMC Cathode Material Obtained by Co-Precipitation“

In lithium-ion batteries (LIB), which are the current top choice in industrial applications, the properties (like the morphology and structure) of the cathode active material (CAM) play a crucial role. These parameters are strongly dependent of the synthesis method, especially in the case of the precursor (pCAM) of the so-called NMC materials.

Our synthesis method is the co-precipitation, where metal salts of Ni, Mn and Co are precipitated together in a tank reactor. Any parameter of the co-precipitation must be precisely tuned to control the size and form of the material particles. Thus, the parameter study you could step in, to master the interactions between the process conditions and the material properties.

We can offer a nice working atmosphere in a dynamic and international team, with state-of-the-art devices on a very current and trendy topic, with good connections to applied and industrial research. And if everything is going well, you will have the unique chance to transfer your results to our pilot plant for scale-up tests!

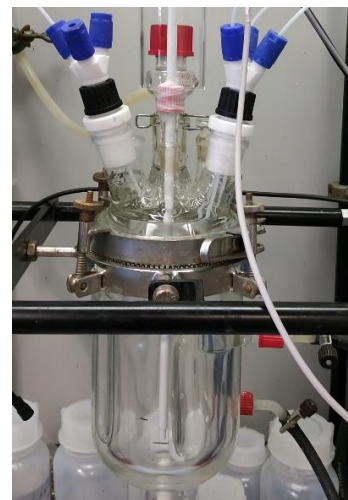


Your Tasks:

- Synthesis of battery materials
- Synthesis parameters optimization
- Materials characterization (XRD, SEM, Laser diffraction)

Your Profile:

- Student in the field of Chemistry or of Materials Science
- Strong taste for an autonomous lab work
- Good knowledge in inorganic chemistry, materials synthesis and characterization
- Already one working experience in research
- Organized in data collection and treatment



Start: 01.07.2024 or later

Working place: KIT Campus Nord

If you are interested and have some questions, you can contact me per e-mail: johann.chable2@kit.edu. If you want to apply, please send a short motivation letter, your CV, and your mark sheet.