

EFCE Spotlight Talks

Working Party on Crystallization

29 April
2022

09:30 am • 12:30 pm

CEST

Role of crystallization in the production of battery materials and in battery recycling



The global shift to renewable energy sources, to achieve fossil fuels independence, is leading to fast electrification and energy storage. It is estimated that more than one hundred giga-size factories need to be built to keep up with demand until 2030. Ideally, the industrial manufacturing of batteries should be sustainable, with low environmental impact, stable, competitive, and "smart", heavily relying on automation, digitalization, mathematical modelling, and machine learning. Crystallization and precipitation play a crucial role in this global challenge. Precipitation is, for example, employed to produce nickel-manganese-cobalt hydroxide, precursor of the popular NMC cathode material, crystallization is the key step in traditional and innovative battery recycling processes, as well as in sustainable processes where magnesium and lithium are extracted from saltwork brines. In five presentations these issues will be discussed and critically analyzed.

PROGRAM

- 09:30 **Welcome and introduction**
Daniele Marchisio, Chair WP on Crystallization, Politecnico di Torino - Italy
Giorgio Veronesi, EFCE President
- 09:40 **Role of crystallization/precipitation in battery material precursor production**
Lukas Metzger, BASF - Germany
- 10:10 **Fractional crystallization of critical raw materials in the context of battery recycling**
Béatrice Biscans, University of Toulouse - France
- 10:40 **Sustainability assessment of future battery recycling processes**
Marja Rinne, Aalto University - Finland
- 11:10 **Use of novel process intermediates in the development of low temperature hydrometallurgical lithium battery cathode recycling/production methodologies**
Sergio Carrillo, University College Dublin - Ireland
- 11:40 **Crystallization of Lithium for saltwork brines in the SEArcularmine project**
Daniel Winter, Fraunhofer Institute ISE, Germany
Andrea Cipollina, University of Palermo - Italy
- 12:10 **Final remarks and panel discussion**
Daniele Marchisio, Chair WP on Crystallization

Registration

free of charge but mandatory

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