

## Poster-Session

### Enhancing Lithium Ion Batteries by Coating Cathode Active Materials

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Electromobility is an essential part of our future strategy. To push electromobility further, the development and production of reliable and durable batteries is essential. Beside optimization of production chains for complete battery systems, new scalable technologies for optimization of products and raw materials are also required in order to meet future requirements.

The use of a core-shell approach is expected to minimize the use of cobalt-containing cathode active materials. Therefore, NCM and LNMO are combined with suitable coating materials (applied by atomic layer deposition (ALD) or spray drying) to avoid degradation of the electrolyte and to increase the lifetime and capacity of batteries. Different coating materials (e. g.  $\text{Al}_2\text{O}_3$ ,  $\text{TiO}_2$ ,  $\text{B}_2\text{O}_3$ ,  $\text{Li}_3\text{BO}_3$ ) are investigated regarding composition and coating thickness. An optimization of the coatings is performed iteratively using electrochemical analysis including performance and durability tests as well as impedance measurements.