

## Workshop »Coatings for Energy Technologies«

### Vacuum coating for lithium-ion batteries: The route to commercial production on the example of metal-polymer current collectors

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Due to the massive increase of electromobility lithium-ion batteries became a mega trend with a huge and rapidly growing market volume. To fulfill the strong requests in capacity increase, charging time, charging cycles and safety, the integration of new technologies is needed. Therefore, also vacuum coating as became the interest for several specific applications in lithium-ion batteries. But the hurdles are high – especially for new technologies which vacuum coating is for this industry.

Within this talk different applications of vacuum coating for lithium-ion batteries are highlight. Especially technical and economical requirements, market volumes and technical approaches to enable the business opportunity in commercial lithium-ion battery production will be presented from a viewpoint of the manufacturer of vacuum coating equipment. Metal coated polymer films, which might be able to substitute the currently used metal foils as current collector, will be used as example. This material recently attracted interest due to it's potential to increase the safety of lithium-ion batteries. It is currently the focus of the BMBF project PolySafe with several industrial and academic partners from polymer film production to battery cell manufacturing. VON ARDENNE is working together with the Fraunhofer FEP on the vacuum coating of metal to polymer films for this application and will share some thoughts on building equipment for scaling up to commercial production.

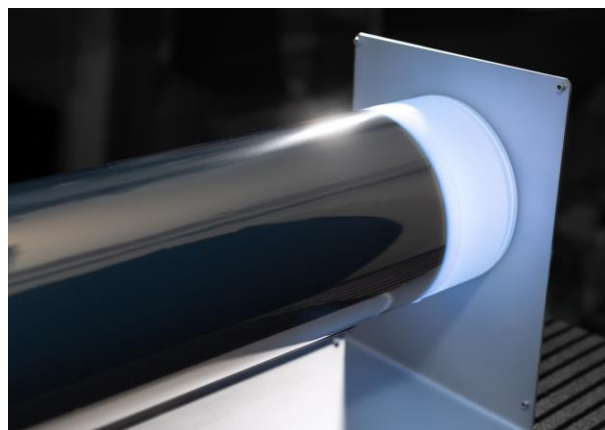


Figure 1: a) Aluminum-coated polymer film current collector.