

DRYtraec® Technology

Today's battery electrode production relies on slurry-based processes that mix active materials, binders, and conductive additives with solvents and apply them to metal foils, requiring long energy-intensive drying lines. To overcome the space and energy demands, Fraunhofer IWS developed **DRYtraec®**, a dry-coating technology where a dry powder mixture is calendered between counter-rotating rolls, forming binder fibrils that create a stable, web-like structure. The resulting dry film is continuously transferred to a conductive foil without relying on its own mechanical stability, enabling high processing speed and excellent scalability.

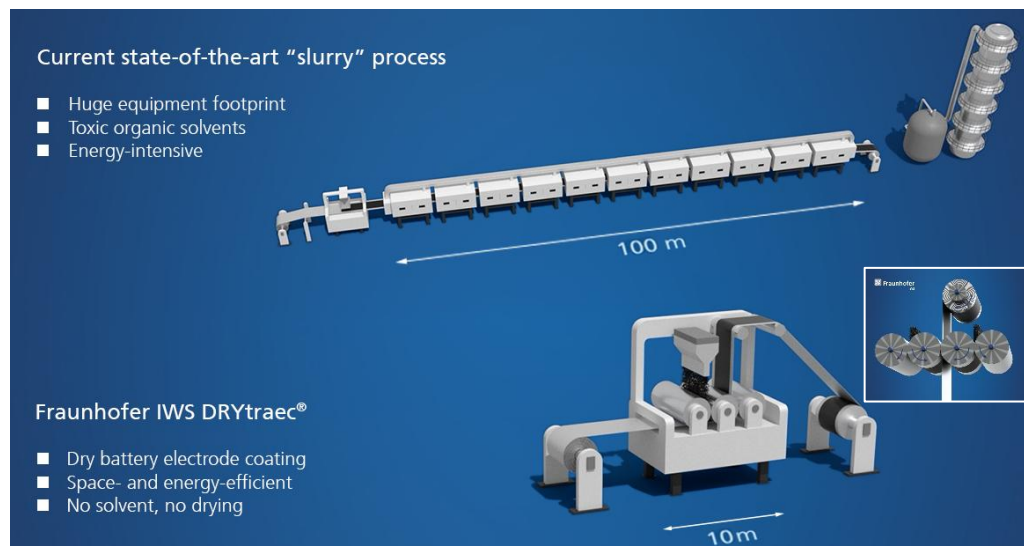


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Conventional processes for the production of battery electrodes usually work with toxic solvents and require a lot of space and energy.

This is not the case with DRYtraec® – a new dry coating process from Fraunhofer IWS. The technology is environmentally friendly, cost-efficient and applicable on a large scale. DRYtraec® thus has the potential to revolutionize the production of battery electrodes.

DRYtraec® electrodes use less than 2% binder while achieving electrochemical performance equivalent to slurry-based electrodes, and the method has already been demonstrated for lithium-ion batteries (NMC, LFP), solid-state, lithium-sulfur, and sodium-ion batteries - showing strong potential as a versatile, future-ready battery manufacturing process.

Our services:

Fraunhofer IWS "[Advanced Battery Technology Center \(ABTC\)](#)" supports the value chain for dry battery electrode production.

- **Technology Transfer and Licensing:** supporting design and delivery of prototype dry-coating systems (including handling of moisture/air-sensitive materials), custom system solutions, and consulting/training for installation, commissioning, and scale-up also training and consulting programs up to the support of acceptance and commissioning processes
- **Process Development and Feasibility Studies:** evaluating novel active materials, binders, conductive carbons, and other components for their suitability for dry coating. This includes parameter studies and scaling from sheet-level to industrial roll-to-roll processes.
- **Electrode Characterization:** including microstructure analysis (e.g., scanning electron microscopy, EDX), spectroscopy, X-ray diffraction, porosimetry - enabling in-depth assessment of DRYtraec electrodes.
- **Cell Structure and Evaluation:** Cell-level testing using automated stacking of pouch cells or button-cells, under defined external conditions (pressure, temperature, performance profiles) - to evaluate electrochemical behavior of dry-coated electrodes in realistic environments.

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Kindly get in touch with us if you are interested in this technology or require further information.

Thanks and Regards,

Ms. Anandi Iyer
Director, Fraunhofer Office India

Mr. Sanmati Naik
Sr. Manager - Energy (RE), Fraunhofer Office India
405-406, 30 MG Road, Bengaluru – 1
e-Mail: sanmati.naik@fraunhofer.in
Tel: +91 80 40965008/09, Mob: +91 7996425980
www.fraunhofer.in www.fraunhofer.de