



CASE STUDY

# Lyten develops breakthrough lithium-sulfur EV battery technology

Developing the next generation of battery cells with Dürr's LabCoater

SITUATION

Lyten is a Silicon Valley-based pioneer of tunable 3D graphene, which has demonstrated significant reductions in greenhouse gas emissions and will advance the transition to sustainable mobility. Lithium-sulfur batteries have the potential to deliver more than twice the energy density of lithium-ion and represent an alternative to expensive and foreign-sourced nickel-manganese-cobalt (NMC) cathode.

The company is an early-stage advanced materials and battery developer focused on the development and commercialization of lithium-sulfur batteries. To speed up the development process, Lyten invested in a cell pilot line to accelerate development work and build battery cells for several customers based on both cylindrical cells and pouch cell form factors.

LABCOATER HIGHLIGHTS



- [Modular and compact](#)
- [Reverse comma and slot die coaters](#)
- [Continuous, lane and intermittent patterns](#)
- [Scalable roll-to-roll process](#)
- [In situ measurement/prompt display for process feedback](#)
- [Customizable options](#)

# Lithium-sulfur EV battery technology

## Developing the next generation of battery cells with Dürr's LabCoater

### SOLUTION

Dürr proposed a LabCoater, which provides a reverse comma coating method for R&D recipe development and a slot die coating method for longer coating length. This helps to support pilot line battery cell production. Based on initial work at the Battery Innovation Center in Indiana, Lyten had experience with and confidence in Dürr's LabCoater, enabling Lyten's 3D graphene-based cathode coating with their unique slurry chemistry for lithium-sulfur batteries.

### CHOOSING A PARTNER

Beyond Dürr's LabCoater capabilities, their production coater portfolio could support Lyten's growth plans for mass production. Finally, Dürr's process development support ensures that Lyten's material development can be scaled up from the lab since Dürr offers both onsite support and process work at their development center in De Pere, Wisconsin.

### RESULT

Lyten successfully opened its first automated battery pilot line in the U.S. to produce lithium-sulfur batteries to meet evolving needs and challenging customer demands for battery cells. Using Lyten's decarbonization supermaterials tunable for a wide range of applications in automotive, aerospace, defense, and other markets, Lyten is progressing engagements across multiple U.S. states to expand 3D graphene production capacity and build its first lithium-sulfur cell gigafactory.



LabCoater.



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