

Tracking China Innovations and Tech Trends at The Battery Show North America

With the pace of new developments accelerating, international battery consultant Shmuel De-Leon will keep conference and workshop attendees up to speed.

China stands alone as the global leader in battery production and tech, and in the last year alone has only accelerated the pace of battery design, chemistry application, and production innovation. Developments like solid- or semi-solid-state batteries on drawing boards in the West are on the street in China. Next-generation cells are driving extreme performance improvements, offering higher energy densities, longer life, enhanced safety, and reduced costs.

International battery expert and researcher Shmuel De-Leon will lead both a three-hour workshop on Monday, October 6, and a more abbreviated conference presentation on Tuesday, October 7, at The Battery Show North America. He recently sat down with *Battery Technology* to provide notable highlights, including significant misperceptions the West is making regarding China.

Shmuel De-Leon: Basically, over the past few years, China experienced overproduction because EV battery demand was much lower than expected. Battery sales, battery materials, pricing, etc., all went down approximately 40% in 2 years as a

result. This led Chinese companies into a price war, aggressively exporting batteries overseas.

This caused a huge problem in Europe and North America, because their supply chains could not compete with these low prices. At the same time, automotive sales were slumping, competition was rising, and EV subsidies were disappearing, putting the brakes on EV growth.

Tariffs from the US administration furthered the battery crisis in the West by increasing investor uncertainty. Money stopped flowing to battery startups. We're seeing within the last six months significant layoffs in Europe and the US and more battery businesses closing.

Many analysts are saying that the China share of the world battery market, currently at 70 to 75%, will go down to 60% by 2030. My opinion is that China will be 80-85% of the world battery market by 2030.

Many market observers make a big mistake on how they view China, continuing to see it as a production factory when in reality it is a global innovation hub. Chinese companies have excellent scientists and are spending a lot of money on research and production. One result is that their time to market is amazing. Compared to getting a gigafactory built and producing in five or six years in America and Europe, the Chinese get a gigafactory up and running in a 1-2 years.

New Product Analysis

I will also be reviewing new Chinese technologies and products coming to market, the most important of which are the high-energy-density solutions, such as lithium metal anode, Lithium metal free and high silicone anodes. From that perspective, we have seven companies in China producing lithium-metal batteries, with the majority being quasi/semi-solid solutions delivering densities of 400 to 600 Wh/kg. This is supporting a huge and growing market in battery packs with very high energy densities. There are at least 10 companies in China selling off-the-shelf battery packs at energy densities in the 350 to 450 pack level range.

I've been studying the Chinese market for several years now, and in the last year alone the progress has been amazing. In my workshop and presentation, attendees will see the solid-state, semi-solid, and quasi-solid solutions from China presented by many

companies. We're looking at 20 to 25 companies developing and, in some cases, delivering such batteries from megawatt- and gigawatt-level factories already working. Other trends will include examining cylindrical cell production in China and how it has ramped up in the last year. We also will look at sodium-ion batteries in relation to LFP technology. With LFP, costs have fallen so low that there is no reason to pursue making sodium-ion.

I'm updating my presentation weekly based on new information coming in daily. If you're looking to track innovation in the battery business, I'm betting there will be those in the audience shocked at what they hear.

For more information, visit www.thebatteryshow.com.

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