Sodium battery changsha

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Intelligent insights & conversations with global power industry professionals

In partnership with AESP: The increasing roles of DERs, connected technology and Big Data are driving rapid change in energy efficiency. As we shape the Utility of the future, this community will help you keep up with the latest developments.

Germ?n Jos? Manuel Toro Ghio, son of Germ?n Alfonso and Jenny Isabel Cristina, became a citizen of planet Earth in the cold dawn of Sunday, May 11, 1958, in Santiago, capital of southern Chile....

In Changsha, deep in China"s interior, thousands of chemists, engineers and manufacturing workers are shaping the future of batteries.

The city"s Central South University churns out the graduates who are advancing the technology, much as Stanford University molded the careers of Silicon Valley entrepreneurs who pioneered microchips. Across the Xiang River, vast factories mix minerals into the highly processed compounds that make rechargeable batteries possible.

These batteries, mostly made of lithium, have powered the rise of cellphones and other consumer electronics. They are transforming the auto industry and could soon start doing the same for solar panels and wind turbines crucial in the fight against climate change. China dominates their chemical refining and production.

Now China is positioning itself to command the next big innovation in rechargeable batteries: replacing lithium with sodium, a far cheaper and more abundant material.

Sodium, found all over the world as part of salt, sells for 1 to 3 percent of the price of lithium and is chemically very similar. Recent breakthroughs mean that sodium batteries can now be recharged daily for years, chipping away at a key advantage of lithium batteries. The energy capacity of sodium batteries has also increased.

And sodium batteries come with a big advantage: They keep almost all of their charge when temperatures fall far below freezing, something lithium batteries typically do not do.

In Changsha, graduates from Central South University"s leafy campus are working on sodium battery technology at nearby research laboratories run by companies including Germany"s BASF, the world"s biggest chemical maker. One of the first large factories for sodium battery chemicals is already under construction a few blocks away from the labs.

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Chinese battery executives said in interviews that they have figured out in the past year how to make sodium battery cells so similar to lithium ones that they can be made with the same equipment. Chinese giant CATL, the world"s largest manufacturer of electric car batteries, says it has discovered a way to use sodium cells and lithium cells in a single electric car"s battery pack, combining the low cost and weather resistance of sodium cells with the extended range of lithium cells. The company says it is now prepared to mass produce these mixed battery packs.

Research into using sodium for batteries began in earnest in the 1970s, led then by the United States. Japanese researchers made crucial advances a dozen years ago. Chinese companies have since taken the lead in commercializing the technology.

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