

SK Innovation to invest USD30 million in solid-state battery startup Solid Power

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SK Innovation has signed an MoU with Solid Power to develop all-solid-state batteries

South Korean EV battery manufacturer SK Innovation announced on 28 October that it will invest USD30 million to acquire an undisclosed stake in Colorado-based solid-state battery startup, Solid Power. SK Innovation said that it has signed a memorandum of understanding (MoU) and joint development agreement (JDA) with Solid Power to develop all-solid-state batteries.



Source: Getty Images/Dilok Klaisataporn

Notably, besides SK Innovation, leading global automakers such as Ford Motor and BMW have also invested in Solid Power to get access to the startup's all-solid-state cell development and production technology.

According to SK Innovation, under the JDA, the two companies are committed to set out to produce all-solid-state batteries employing the nickel, cobalt, manganese (NCM) cathode materials used in lithium-ion batteries and high-content silicon anode materials.

"These materials are expected to realize a target energy density of 930 Wh/L or higher. If achieved, this signifies approximately 33% higher performance than that of current lithium-ion batteries," it said, adding that this means assuming a battery of the same size, an electric car capable of running 700 km on a single charge could travel up to 930 km with the new all-solid-state battery.

Interestingly, the two companies also plan to validate that Solid Power's all-solid-state-cells can be manufactured on the existing lithium-ion battery manufacturing equipment, thereby removing the need for expensive and time-consuming re-tooling of the existing battery manufacturing plants.

"Under the JDA, Solid Power will leverage the plants owned by SK On, SK Innovation's battery business subsidiary, to produce all-solid-state batteries," the company said.

Significance: It is to be noted that SK Innovation would be able to establish a strong foothold in the all-solid-state battery market on the back of this partnership, besides its already robust position in the existing lithium-ion (Li-ion) battery market globally.

According to Solid Power, all-solid-state batteries use a solid electrolyte instead of a liquid electrolyte, which is currently used in lithium-ion batteries, or a gel electrolyte used in hybrid batteries. The advantage of applying solid electrolytes in place of a liquid or gel is that it significantly reduces the risk of fire. Furthermore, the all-solid-state battery also decreases the weight and volume of batteries, making it deliver superior performance than the conventional Li-ion batteries.

Solid Power is known for already producing prototype of its all-solid-state cells on its pilot production line at its Louisville, Colorado based facility. The company said it is also producing sulfide-based solid electrolyte. It had

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recently announced that it will be expanding its electrolyte manufacturing capacity by adding a new facility in Thornton, Colorado.

“SK Innovation plans to work with Solid Power to further develop Solid Power’s existing all-solid-state battery development technology by raising energy density and jointly tackling the technological challenges of commercialization,” the company said in a statement on Thursday.

“The partnership with SK Innovation is designed to validate that Solid Power’s all-solid-state production processes are scalable and compatible with existing lithium-ion production technology. The ability to collaborate with a global leader in lithium-ion cell production is key to our go-to-market strategy and meeting anticipated demand,” said Doug Campbell, CEO and cofounder of Solid Power.

“SK Innovation’s battery business is expanding the industrial ecosystem by developing technologies and battery products that deliver the safest and best performance. We will develop high-performance all-solid-state batteries in cooperation with Solid Power, which we believe has the world’s best all-solid-state batteries technology, to become a leading company in not just lithium-ion but also all-solid-state cells markets in the future,” said Dr. Lee Seongjun, CTO, SK Innovation.

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