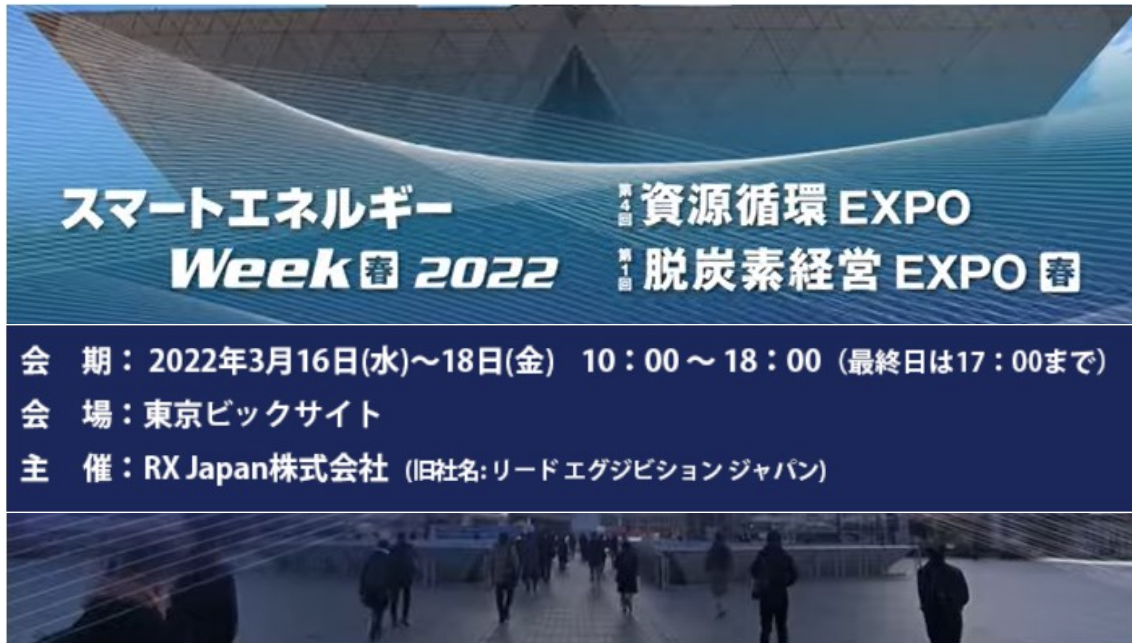


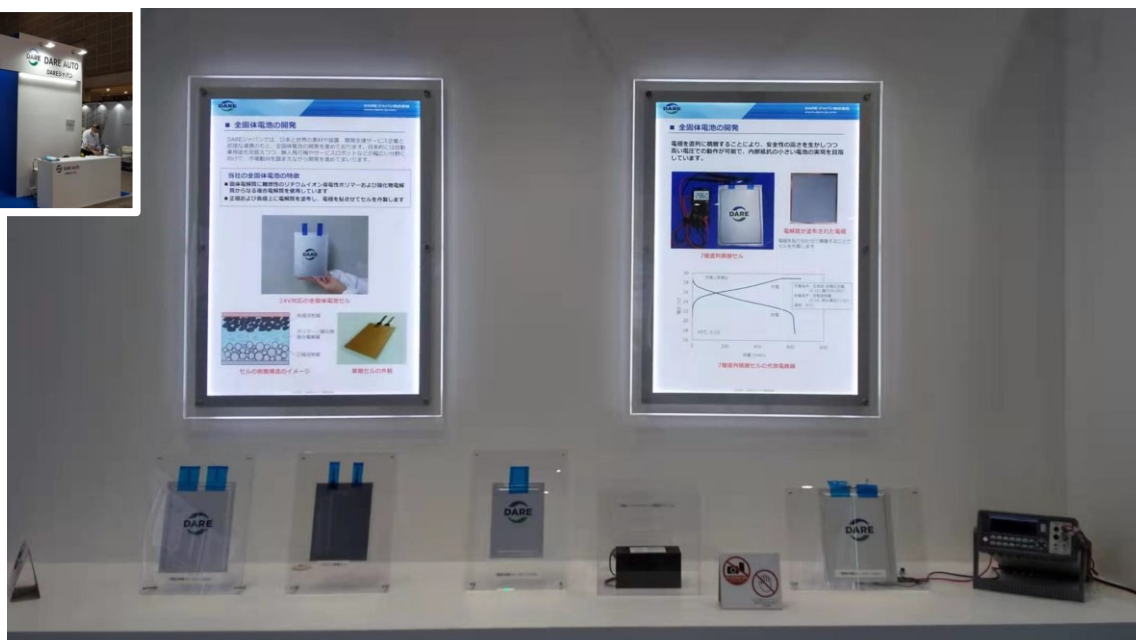
DARE AUTO affiliated subsidiary:

Exhibited at Japan Hydrogen and Fuel Cell Exhibition (FC EXPO)

From March 16th to 18th, 2022, Japan, a subsidiary of DARE AUTO, was invited to exhibit at the Japan International Hydrogen and Fuel Cell Exhibition (FC EXPO 2022).



DARE Japan is engaged in research and development of all-solid-state batteries and fuel cell components.

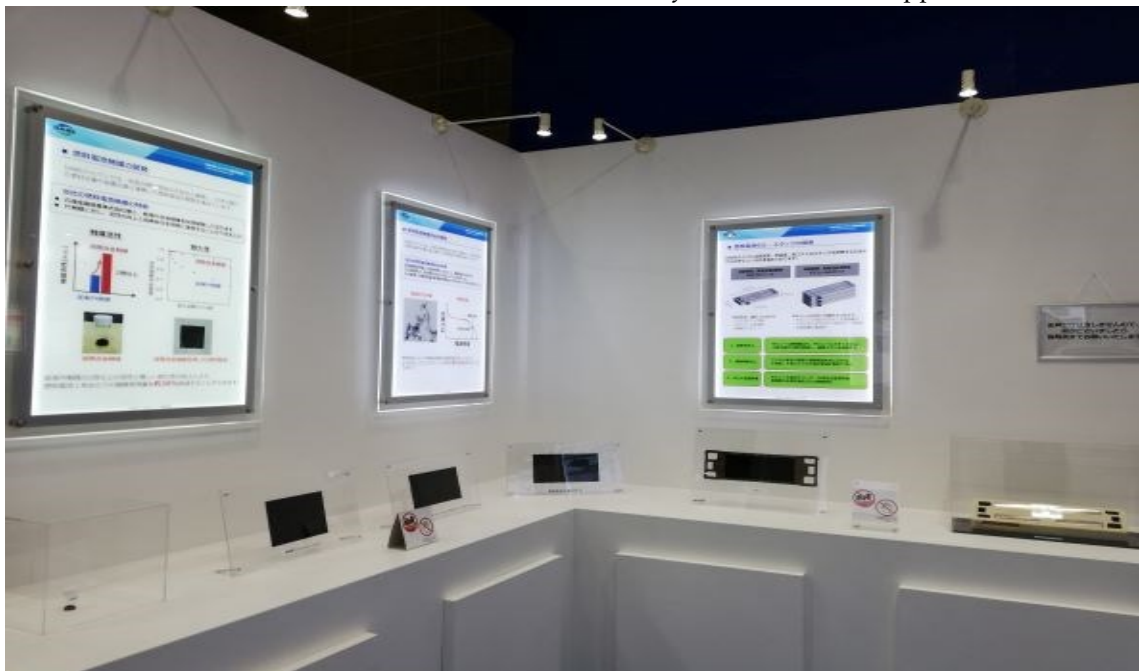


At this exhibition, we exhibited products for new energy vehicles such as all-solid-state batteries and fuel cell components. The medium-sized (A5 / A6 size) all-solid-state battery exhibited uses a composite electrolyte consisting of a flame-retardant lithium-ion conductive polymer and an oxide electrolyte as the solid electrolyte. In addition, we have adopted a

construction method in which an electrolyte is applied on the positive and negative electrodes and the electrodes are attached to form a cell.



The characteristics of the A5 size are that it has a relatively large capacity (0.5Ah or more) and can operate at high voltage (24V compatible), which is a new technical appeal. In addition, by stacking electrodes in series, we are aiming to realize a battery with low internal resistance that can operate at high voltage while taking advantage of high safety. Currently, we are developing all-solid-state batteries in close cooperation with materials, equipment, and development support service companies in Japan and around the world. In the future, we will proceed with development based on market trends for a wide range of fields such as unmanned aerial vehicles and service robots, with an eye on automobile applications.



The catalyst exhibited this time was a joint development of a new Pt alloy catalyst with a supplier, and it was possible to improve the activity and extend the life of the Pt catalyst at the same time. As a feature, we were able to reduce the amount of catalyst used per fuel cell by about 30% due to the activity more than twice that of the conventional Pt catalyst and the remarkable improvement in durability.



The characteristic of DARE Japan's fuel cell catalyst carrier is that by using a carrier with a developed higher-order structure, it was possible to improve the gas diffusivity and drainage in the catalyst layer. As a result, the power generation performance and output in the high current density range were improved, and the number of cells could be reduced by about 10%.



DARE Japan is promoting the modularization of cells in order to develop high-performance, high-quality, low-cost stacks. There are the following three features of modularization. 1) Improved mass productivity 2) Improved stacking accuracy 3) Evaluation of each cell performance on a module-by-module basis.

By assembling the modules at the same time, it is possible to reduce the stack assembly man-hours and mass production cost, and at the same time, the stacking accuracy is improved. We will continue to develop for mass production.



During the session, people from each company also visited the DARE AUTO booth and exchanged technology. From the establishment of DARE Japan, a wholly owned subsidiary of DARE AUTO in 2018, to the research and development, production and sales of hydrogen filling equipment with Nippon Tatsuno in 2019, DARE AUTO is receiving more and more attention from the industry in its strategic layout in the hydrogen energy field. We believe that the steady operation of DARE AUTO and a stronger combination will support the development of the company's hydrogen energy industry.