

Sanyo Chemical licenses patented “All Polymer Battery” technology to Startup APB

-Enhancing the distribution of All Polymer Battery-

Sanyo Chemical Industries, Ltd. (Kyoto, Japan, “Sanyo Chemical”) announced that it has concluded a patent licensing agreement with its subsidiary; APB Corporation (Tokyo, Japan, “APB”), a pioneer in development of the next-generation lithium-ion batteries called "All Polymer Battery". The patent is concerning the elemental technologies of All Polymer Battery. This license allows APB to develop, manufacture and sell of All Polymer Battery within the non-automotive fields.

APB is a startup developing and manufacturing the first large scale bipolar lithium-ion battery modules called All Polymer Battery, which was co-developed by Hideaki Horie, current CEO of APB, Sanyo Chemical Industries, Ltd. (“Sanyo Chemical”) and Nissan Motor Corporation (Kanagawa, Japan). To realize high-quality batteries, we have developed a bipolar structure where current flows across the cell interfaces perpendicular to the electrode plane, and polymer as a basic material. The electrode material of All Polymer Battery is wrapped with gel-like polymer containing an electrolytic solution, which is realized by surface activity control technology of Sanyo Chemical. Through the adoption of such technologies, our All Polymer Battery is characterized by such features as high reliability, high energy density, and innovative manufacturing processes at the same time. With fewer parts needed thanks to bipolar structure and polymer-based constituent material, All Polymer Battery has high flexibility in size and shape of the cells, which will help us to create thicker electrodes and larger cells.

Sanyo Chemical is concluded to license its patented technologies for All Polymer Battery to APB. This license marks a milestone for an early implementation of such world’s first All Polymer Battery technology.

Currently, APB is funded by several leading Japanese companies and is preparing to establish a mass production plant capable of producing GWh-class batteries annually. Licensing is critical to accelerate the distribution of such batteries. We will continue to devote our management resources to the All Polymer Battery business and support APB.

All Polymer Battery will provide a more stable and safer power supply and it is expected to reduce the load on the global environment through various applications such as an energy storage system helping a promotion of renewable energy. It is also expected to upgrade of power infrastructure with IoT technology and Robot technology. Sanyo Chemical will contribute to build a better and

more sustainable society through the support of such benefitable All Polymer Battery's distribution.

" Sanyo Chemical has been promoting the development of All Polymer Battery since 2012. In addition, we made APB a subsidiary in February of last year and has been promoting the implementation of All Polymer Battery. We plan to fully support APB, including this licensing." said Takao Ando, President and CEO of Sanyo Chemical.

About APB Corporation

Since: October 2018

CEO : Hideaki Horie

Business Area: R&D, production and sales of lithium ion batteries

Head Office Location: 1-3-9 Kanda Sudacho, Chiyoda-ku, Tokyo

