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Sanyo Chemical Industries, Ltd

Development of Elemental Technologies for New Lithium-Ion Batteries is in Sight

Sanyo Chemical Industries, Ltd. (Head office: Higashiyama-ku, Kyoto City; President: Takao Ando) announced that they have developed some elemental technologies for a new type large-capacity lithium-ion battery (LIB) under a joint study with some research institutes such as universities. With these technologies, Sanyo Chemical is now making business plans including the commercialization of its original LIB system.

[Background]

Compared to other secondary batteries, LIB has some clear advantages, including high energy density, compact size, and light weight. Therefore, it has a wide application from small devices like mobile phones to large-scale stationary systems such as power supply systems in an office buildings, and these markets are expected to keep expanding. On the other hand, in the field of power storage system, the capacity of conventional LIB is not sufficient to deal with a growing demand in electricity.

Electrodes (anode / cathode) of general LIB are manufactured by casting slurry of electrode materials on metal foil and drying. The electrodes and separators are stacked and formed into a cell. Then all other needed attach and connect to the assembly of the cells and then provide a LiBs system. The thicker electrodes improve the electric capacity of the cell. However, 200 μ m is the upper limit of electrode's thickness with the conventional manufacturing technologies. Because of this limitation, many cells have to be connected to achieve a large power storage system.

[Abstract of the technology]

Our original new technologies, which have been jointly developed with research institutes such as universities, are expected to improve the capacity, since our technology enables to increase the thickness of the electrodes more than a couple of times. As a consequence, our technologies provide a more compact and high-capacity system by reducing the number of the parts such as connectors, which are occupying a large portion of the volume in the conventional battery system. Moreover it is expected to significantly reduce the risk of problems caused by the parts.

[Future Plan]

Sanyo Chemical will continue to develop our technologies for the new type LIB to expand the application to the stationary system or various consumer products as well as look into the feasibility of the entry to battery business as a battery manufacture.