

**NIPPON KODOSHI CORPORATION Develops Next Generation High Heat
Resistant Lithium Ion Batteries Separator,” TopNove™ ”**

NIPPON KODOSHI CORPORATION (NKK) has developed, compared to our conventional products, higher heat resistant and lower resistance separator for lithium ion batteries (LIB) , “TopNove™”. NKK will examine the commercialization feasibility through provisions of the samples to potential customers.

In recent years, market for LIB, especially for electric vehicle (EV) power source, is growing in rapid rate due to enforced environmental regulation, such as CO₂ reduction, and the growth of this market is expected to continue. For EV batteries, higher safety resistance to flames and ruptures under harsh conditions is required, in addition to high rate property, higher energy capacity, and longer life.

Newly developed and innovative high heat resistant LIB separator “TopNove™” is designed based on the paper-making technique for aluminum electrolytic capacitor separator accumulated over the years, fused with Kevlar® MicroCore™ fibers developed by DuPont.

Kevlar® MicroCore™ developed by DuPont has superior properties of non-flammability and stability under high heat. This function is successfully passed down to “TopNove™” design, experiencing practically no dimensional shrinkage under high temperature 300°C, while maintaining high affinity with various types of electrolyte, enabling to accept high viscosity electrolyte. In addition to this, due to its exceptional high porosity, internal resistance in the battery can be minimized and is fit for high rate charge and discharge. These properties will assist achieving better and safer battery cell concepts and designs.

NKK aims and continue contribute to sustainable society realization with looking ahead to carbon neutral by releasing this new product and supplying eco-friendly product lines, along with supply expansion of conventional LIB separator product line, “Cellulion®”.

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