

ABSTRACT

The present application provides a composite separator and an application thereof. The composite separator includes a separator substrate and an electrolyte layer provided on at least one surface of the separator substrate. The electrolyte layer at least comprises inorganic nanotubes and solid electrolyte particles. A volume fraction of through-pores of the inorganic nanotubes in the electrolyte layer is 0.2%-5%. The composite separator not only has excellent heat resistance and electrolyte solution wettability, but also has excellent lithium-ion transport performance when applied to a battery, thereby reducing the internal resistance of the lithium-ion battery and improving the rate performance and cycle performance of the lithium-ion battery.

Fig. 1