

ABSTRACT

Provided are a coated separator, a preparation method of a coated separator, and a battery. Mixing first nanofibers (21) having similar sizes in a first coating layer (20) and mixing second nanofibers (31) having similar sizes in a second coating layer (30),
5 avoids the problem that nanofibers with similar surface energy tends to agglomerate due to a huge difference in their surface energy, which is caused by large size difference between different nanofibers, and greatly improves the uniformity of mixing between nanofibers. Moreover, by setting the first coating layer (20) to be a mixture of large-size first nanofibers (21) and large-particle-diameter first ceramic
10 particles (22) and setting the second coating layer (30) to be a mixture of small-size second nanofibers (31) and small-particle-diameter second ceramic particles (32), the first coating layer (20) has a large aperture and a strong skeleton structure, causing the coated separator to maintain high heat resistance and high permeability. The second coating layer (30) having a small aperture can improve the transmission capability of
15 lithium ions, and reduce the risk of electrochemical stability of high-temperature storage or long-term cycling.

Fig. 1