

ABSTRACT

The present invention relates to the field of lithium-ion batteries. Disclosed are a negative electrode material, a preparation method therefor and an application thereof, and a lithium-ion battery. The negative electrode material has a core-shell structure, wherein the core comprises a silicon-containing material, the shell comprises an organic lithium salt and a porous carbon film, and at least part of lithium ion is intercalated in the porous carbon film. The preparation method therefor comprises: (1) mixing a silicon source and a carbon source, and then calcining the mixture; (2) mixing the calcined product obtained in the step (1) with the organic lithium salt; and (3) subjecting the materials obtained in the step (2) of mixing to vacuum freeze-drying. The negative electrode material of the present invention has improved reversible charging capacity, and when used in lithium ion batteries, can improve the energy density of the same.

Fig. 1