Short Communication

Cycling Stability of LiMnPO₄/C Composite Obtained by Different Processing Routes

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In this paper, LiMnPO₄ is composited with carbon black by two different processing routes and their cycling stability is compared. When the LiMnPO₄/C composite is finally processed by a ball milling treatment, amorphous domains are observed in LiMnPO₄, and the resulting composite shows an obvious impedance growth and capacity loss upon cycling. When the localized amorphization of LiMnPO₄ is eliminated by a post annealing treatment, the obtained composite shows an improved stability without any impedance growth upon cycling. Our result demonstrates that different processing route causes different crystallinity of LiMnPO₄ which has a big impact on the cycling stability of LiMnPO₄/C cathode.

Keywords: Lithium ion batteries; Cathode material; LiMnPO₄; Amorphization

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