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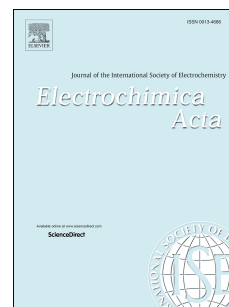
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Graphene-embedded $\text{LiMn}_{0.8}\text{Fe}_{0.2}\text{PO}_4$ composites with promoted electrochemical performance for lithium ion batteries

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Abstract: Electron transfer and lithium ion diffusion rates are the key factors leading to sluggish electrochemical kinetics of $\text{LiMn}_{0.8}\text{Fe}_{0.2}\text{PO}_4$. In this work, we have successfully synthesized graphene-embedded $\text{LiMn}_{0.8}\text{Fe}_{0.2}\text{PO}_4$ composites via a facile graphene oxide assisted solvothermal route associated with carbonthermal treatment. The effect of graphene on the morphology, crystalline structure as well as electrochemical properties of $\text{LiMn}_{0.8}\text{Fe}_{0.2}\text{PO}_4$ is investigated. It can be found that the introducing graphene can reduce the particle size to form $\text{LiMn}_{0.8}\text{Fe}_{0.2}\text{PO}_4$ nanocrystals without destroying the crystalline structure of $\text{LiMn}_{0.8}\text{Fe}_{0.2}\text{PO}_4$. And the $\text{LiMn}_{0.8}\text{Fe}_{0.2}\text{PO}_4$ nanocrystals dispersed on the graphene sheets which were further cross-linked via the oxygen-containing groups of GO as cross-linking sites, resulting in that graphene sheets embedded in the $\text{LiMn}_{0.8}\text{Fe}_{0.2}\text{PO}_4$ composites. Benefiting from

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