

***In-situ* reduced graphene oxide/Li<sub>4</sub>Ti<sub>5</sub>O<sub>12</sub> nanocomposites in N-Methylpyrrolidone for the application to lithium battery anode**

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Recently, reduced graphene oxide/spinel LTO nanocomposites has been considered as an excellent material for lithium battery anode due to an enhanced electrical conductivity and shortening of the Li-ion diffusion distances obtained by 2D graphene sheets. To achieve a good contact between the graphene and LTO *in-situ* solvothermal method seems more appropriate; which provide the uniform decoration of LTO particles on the graphene sheets. Herein, we report on the preparation of *in-situ* solvothermally reduced graphene oxide/LTO nanocomposites using NMP as a solvent. The solvothermal reactions of NMP produce a functionalized and reduced graphene oxide. The RGO/LTO nanocomposites were tested in lithium battery anode for evaluating the effect of electrochemical performances in lithium battery.