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Synthesis of cobaltic oxide/carbon nanotube/graphene composites for anode materials of lithium-ion batteries

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Carbon nanotube/graphene composites are directly grown on nickel foil without additional catalysts by chemical vapor deposition (CVD). Next, cobalt is deposited on carbon nanotube/graphene composites by radio-frequency (RF) sputtering with different power levels and time periods. Then the cobalt is transform into cobalt oxide by annealing. The higher specific capacity is obtained at the sputtering conditions (power = 100 W and time = 60 min). The longer the time period, the higher the specific capacity. Furthermore, it also shows higher electrochemical stability for cobaltic oxide/carbon nanotube/graphene composites in comparison with cobaltic oxide.

Biography

Chuen-Chang Lin got his PhD from Wayne State University. He is the professor of Department of Chemical & Materials Engineering, National Yunlin University of Science and Technology. He has published 31 papers in SCI journals.

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