

Carbon Nanotube on Spherical Silicon Microparticles for Lithium Ion Battery Applications

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Optimization of electrode materials is paramount for lithium ion batteries (LIBs) in large scale energy storage systems, electric vehicle applications because the electrodes mainly decide LIBs' total energy/power densities and cycle stability. To improve the performance, a variety of approaches have been applied in the materials' synthesis, including coating, doping, nanostructuring, and composites. In this work, I will present a scalable synthesis of spherical micrometer sized particles containing silicon and carbon nanotubes. I will discuss a gas flow assisted synthesis method and its applications for LIB half-cells. Silicon-carbon nanotube composite electrode and its graphite blending electrode were prepared and evaluated, respectively.