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(54) **FABRICATION OF SI-MWCNT NANOCOMPOSITES (SMC) AS ANODES FOR LITHIUM-ION BATTERIES**

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(57) **ABSTRACT**

There is disclosed a hybrid composite anode for lithium-ion batteries comprising silicon nanoparticles, multi-walled carbon nanotube (MWCNTs) flakes, and a polymer binder which enables enhanced capacity retention of the hybrid composite anode. A process of fabrication of an anode for a lithium-ion battery is also disclosed, the process comprising the steps of fabricating carbon nanotube (CNT) mats on an anode current collector; dispersing the fabricated CNT mats in a mixture of deionized (DI) water to ethanol using a probe sonicator and magnetic stirrer; and adding silicon nanoparticles, multi-walled carbon nanotube (MWCNTs) flakes, and a polymer binder to the mixture, forming Si-MWCNT nanocomposite (SMC) anodes.