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INTEGRATION OF METAL-ORGANIC FRAMEWORK AND AMORPHOUS CARBON FROM BACTERIAL CELLULOSE FOR LI-ION BATTERIES

Metal-Organic Frameworks (MOFs) are widely studied as anode materials for lithium-ion batteries (LIBs). They exhibit outstanding properties, such as prominent porosity, and molecular storage capacity, but they have a number of significant limitations, including poor electrical conductivity. In this case, MIL-53(Fe) was successfully prepared using pyrolysis carbon assisted from bacterial cellulose (abbreviated as pBC). To solve the problem, a solvothermal strategy was used to provide a homogenous distribution of particles product, which was not only a result but also a controlled size. After 100 cycles, the electrochemical performance of MIL-53(Fe)@pBC exhibited good specific capacity, however there is an irreversible capacity loss due to the SEI layer. Pyrolysis carbon template synthesis is based on the principle of crystal nucleation kinetics, and it is reasonable for promising electrode materials.

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