Novel Organic Electrode Material for LIBs

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A novel organic electrode material (PGC) was developed through a facile copolymerization of polyethyleneimine (PEI), gallic acid (GA) and Cu2+ (CuCl2). PGC shows strong adhesion and numerous reaction sites in the microstructure due to the multiple phenolic hydroxyl groups of GA. When Cu2+ was copolymerized with PEI-GA, the final product features extremely high stability, durability, capacity, and efficiency, enhancing the electrochemical performance of batteries. Through the adjustment of the polymerization method, the reaction mechanism of PGC has been obtained. Eventually, it was observed that LEDs could be lit successfully by using the LIBs coin cells made of PGC, revealing that the PGC's LIBs could have been applied to simple devices. It may provide a significant basis for the design of organic electrode materials in the future.

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