

Deep eutectic solvent assisted one step synthesis of metal /metal oxide-carbon composite for energy storage applications

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Carbon materials (e.g., CNTs, porous carbon, & graphene) are preferred candidates in duo with metal oxide nanostructures by virtue of their excellent electrical conductivity and mechanical/electrochemical stability. Therefore innovative design and synthesis of such composite attract the wide research interest in energy storage applications such as LIBs and supercapacitors. Herein we proposed the simple and scalable, deep eutectic solvent (DESs) assisted synthesis path for the preparation of metal/metal oxide-carbon nanocomposite (M/MO-C). In this work, the use of DESs which collectively act as solvent-precursor-reactant system, offers an interesting alternative for the conventional synthesis route. As synthesized M/MO-C shows the mesoporous crystalline structure with high surface area and metallic content. Also the selection of less toxic component is possibly by virtue of compositional versatility of DESs. Hence we believe that this synthetic route opens the avenue to design the biocompatibility synthesis methods for M/MO-C nanocomposite. This work was supported by the National Research Foundation of Korea (NRF) funded by the Ministry of Education (No.2009-0093816).