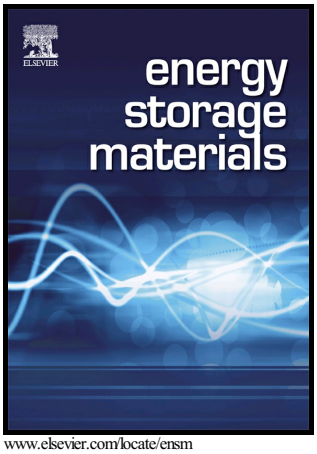

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Enhanced electrochemical performance of hyperbranched poly(amidographene)

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Abstract

We report a facile route for the synthesis of hyperbranched polyamido-graphenes (HBP(A-G)) as non-metallic high capacity electrodes for charge storage in supercapacitors. HBP(A-G) were synthesized by Michael addition of polyamines, ethylene diamine (EDA), diethylene triamine (DETA), triethylene tetraamine (TETA), to acrylamide grafted graphene oxide, followed by reduction *in situ*. A 3D network of stiff graphene sheets connected by flexible polyamine chain was formed. Hyperbranching increased d-spacing and BET surface area of graphene stacks, which enhanced accessibility of sites for ion storage, and prevented restacking. HBP(A-G) electrodes displayed electric double layer capacitance behaviour with excellent specific capacitance. The charge storage

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