Electrochemical properties of microporous carbon as an electrode for supercapacitor prepared by triazine based conjugated microporous polymer

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In this study, we demonstrate a facile strategy for the design and synthesis of regular microporous carbon nanoparticle as an electrode for high performance supercapacitor. Microporous carbon particle were fabricated using novel organic polymer synthesized simple Friedel-Craft method which was for the first time synthesized by cyanuric chloride and 1,3,5-triphenylbenzene in dichloromethane (DCM) under solvothermal condition at 70 °C using anhydrous aluminium chloride as a catalyst. After synthesis, the attained sample was carbonized in tubular furnace at 700, 800, and 900 °C with nitrogen and carbon dioxide atmosphere, respectively. Microporous carbon nanoparticle carbonized at 800 °C as a supercapcitor electrode showed unique capacity behavior (389 F/g at 1 A/g) and excellent cycling stability (98 % retention after 1000 cycles at 1 A/g) in 6 M KOH aqueous electrolyte.
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