

Free base Porphyrin Polymers and their Metal Complexes for Supercapacitor and Methanol Electro-Oxidation

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Investigation towards the development of supercapacitor materials have mainly focused on the metal oxides, graphenes, and their composites. Thus, there is a need to explore other potential materials to expand the technology. A recent emerging material, CMPs (Conjugated Microporous Polymers), was investigated to study its applicability for supercapacitor and methanol oxidation. The polymeric porphyrin based material, synthesized via suzuki-cross coupling, offers high surface area to provide more active sites, extended π -conjugation for conductivity and formation of transition metal complexes. The formation of the porphyrin macrocycle was determined by XPS analysis showing two distinct peaks at 399.8 eV and 397.8 eV. This work was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science, ICT and Future Planning (NRF-2016R1C1B2008694).