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Bimetallic Zeolitic Imidazolate Frameworks for Symmetric Electrical Double-Layer Supercapacitors with Aqueous Electrolytes

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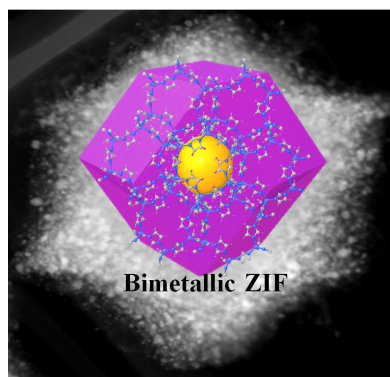
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Abstract

We have investigated a facile synthesis of nanoporous carbon using a bimetallic (Co^{2+} and Zn^{2+}) zeolitic imidazolate framework (ZIF) as a precursor. The properties of the as-prepared bimetallic ZIF-derived carbon, including the specific surface area, porosity, and degree of graphitization, are precisely controlled. This material has been directly applied in a symmetric electrical double-layer supercapacitor (EDLC). The specific capacitance of the symmetric EDLC is estimated to be $10.5 \text{ F}\cdot\text{g}^{-1}$ at a high current density of $10 \text{ A}\cdot\text{g}^{-1}$ in 0.5 M sulfuric acid.



KEYWORDS: Aqueous Electrolyte; Electrical Double-Layer Supercapacitor; Zeolitic Imidazolate Framework

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