

Graphene-Coupled Sandwich-like Porous Polymers for Energy Storage and Conversion

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Abstract:

Porous polymers have attracted tremendous attention because of their porous features associated with prominent physicochemical properties and vast potential energy-related applications. We have focused on the design and synthesis of microporous polymers, which are famous for efficient synthesis with various functional monomers and adaptable properties. In order to obtain the perfect and robust porous structure, utilizing graphene as template is an excellent approach for the inspired construction of 2D porous nanohybrid materials. Furthermore, it is convenient to transfer into porous carbon structure with continuous networks by direct pyrolysis. The designed 2D polymers/carbons possess rich pore structures, high surface areas, and excellent electrical conductivity. Therefore, graphene coupled 2D porous polymers can exhibit multiple functions and novel applications. Most recent progress about this topic will be presented.

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