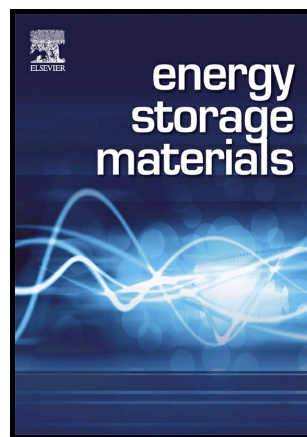


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## Heterogeneous Nucleation and Growth of Electrodeposited Lithium Metal on the Basal Plane of Single-layer Graphene

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### Abstract

Lithium metal anode has attracted soaring attention for high energy batteries. However, uncontrollable growth of dendritic Li and high chemical reactivity with electrolyte incur serious safety issues, hindering its practical applications. Carbon materials and their composites with controllable structures and properties, have been explored to address these issues and show great potential for lithium anode protection as stable scaffolds or Li storage reservoirs. However, the study of heterogeneous nucleation and growth of Li on carbon surfaces, especially on the basal plane of graphite layers, which is the dominating surface for graphene, carbon nanotube, and many other

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<sup>1</sup> These authors contributed equally to this work

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