

Graphene-based supercapacitors

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Security and defense sectors continuously demand better energy storage devices to power a large variety of applications. Among the key advantages of these devices are stand-alone (off-grid), back-up, or fuel-economy operation, portability, and reduced thermal and acoustic signatures.

Graphene foams (GFs) fabricated by chemical vapor deposition (CVD) [1] provide a versatile and scalable 3-dimensional (3D) network structure retaining the outstanding properties of 2D graphene. The unique combination of high specific surface area and outstanding electrical and mechanical properties of GFs and their composites offers new possibilities in energy storage devices. In this presentation, we will focus on the CVD synthesis of graphene foams and the fabrication of supercapacitors based on GFs functionalized with conducting polymers [2,3] and metal hydroxides [4] and oxides [5].

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References

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