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Ultra-thick porous films of graphene-encapsulated silicon nanoparticles as flexible anodes for lithium ion batteries

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Highlights

1. A flexible and porous RGO/Si composite film as thick as 25 μm was readily prepared.

2. The porous structure enhances the contact area of the active material and electrolyte.

3. RGO provides continuous conductive path for Si NPs and prevents them from pulverizing.

4. The electrode shows a high specific capacity and an excellent rate capability.

Abstract

Silicon is a highly promising anode material of lithium ion batteries (LIBs) for its