

Methods to prepare large quantities of Mesoporous TiO₂ B Microspheres for Lithium Ion Batteries

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Technology Summary

High power and high energy density are essential to batteries for applications in electric vehicles, stationary energy storage systems for solar and wind energy as well as smart grids. Because conventional lithium ion batteries are inadequate to meet these needs, advanced materials with high capacity and fast charge-discharge capability are critical for next generation lithium ion batteries. Titanium dioxide (TiO₂) with various polymorphs (anatase, rutile, and TiO₂-B (bronze)) have been widely investigated as lithium ion battery anode materials, due to their advantages in terms of cost, safety and rate capability. In particular, the polymorph of TiO₂-B shows a favorable channel structure for lithium mobility, which results in fast chargedischarge capability of a lithium cell. Reported a simplified, scalable, economic approach to make mesoporous TiO₂-B powders.

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