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# A Two Layer Electrode Structure for Improved Li Ion Diffusion and Volumetric Capacity in Li Ion Batteries

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## Highlights

- A two layer negative electrode with a different nanomaterial morphology in each layer was first fabricated by a scalable suspension atomization and spray deposition processing technique for Li ion batteries.
- The two layer electrode was designed to contain TiO<sub>2</sub> nanoparticles in one layer and porous TiO<sub>2</sub> particles in the other layer to improve Li ion diffusion dynamics through the electrode thickness.
- The two layer electrode showed a combination of high volumetric capacity and rate capability that was superior to conventional, randomly blended electrodes comprising the same nanomaterials at the same charge/discharge rates.
- The two layer electrode demonstrated a scalable approach to structuring electrodes that can improve energy storage performance and increase active nanomaterial utilization.

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