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In-situ growth amorphous carbon nanotube on silicon particles as lithium-ion battery anode materials

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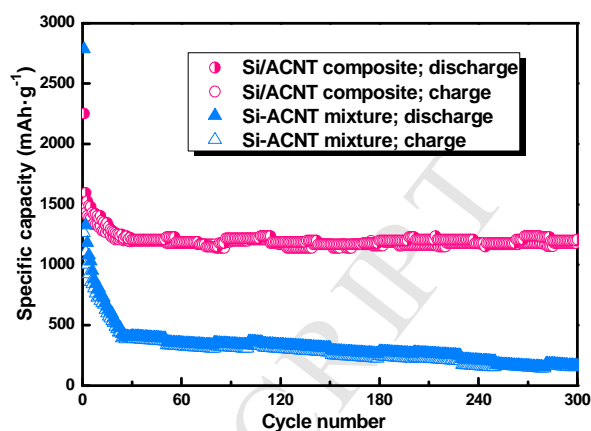
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Graphical abstracts

A novel silicon core / amorphous carbon nanotube shell composite that can be used as lithium-ion batteries anode material was *in-situ* synthesized in the chemical vapor deposition (CVD) growth process. The ACNTs composed of carbon clusters with short-range order and long-range disorder were successfully deposited



onto the surface of the silicon particles. This Si/ACNT composite delivered a high capacity of 1496 mAh·g⁻¹ at a current density of 100 mA·g⁻¹, and a superior cycling stability with 80% capacity retention after 300 cycles.

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