

# MoS<sub>2</sub> Coating Facilitating Delayed Activation and Fast Charge-Discharge properties in Highly-Doped n-type SiNW Anodes for Lithium-Ion Batteries

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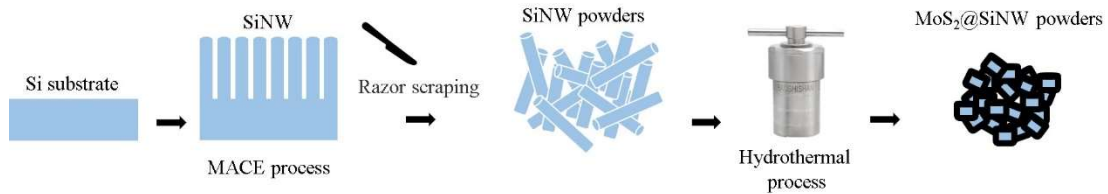


Fig. 1: The manufacturing scheme illustrates the formation of Silicon nanowires and the synthesis of MoS<sub>2</sub>@SiNW powder. The precursor for hydrothermal process consists of oxalic acid, NaMoO<sub>4</sub>, Thiourea and DI water.

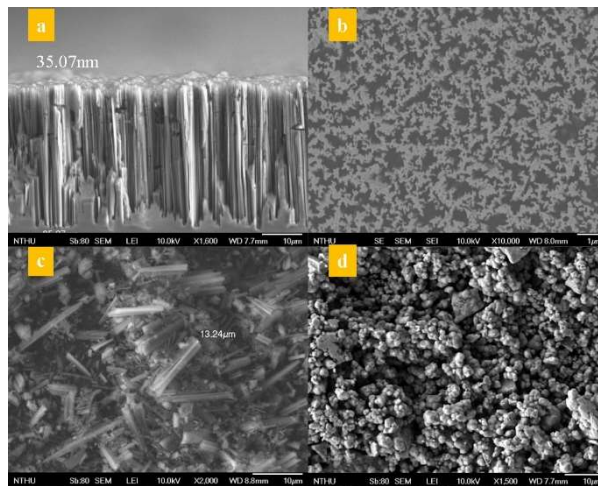


Fig. 2: Morphology of SiNW and MoS<sub>2</sub>@SiNW. (a) Side view (scale bar: 10 μm) and (b) Top view (scale bar: 1 μm) of SiNW. (c) SiNW powder (scale bar: 10 μm) and (d) MoS<sub>2</sub>@SiNW powder (scale bar: 10 μm)

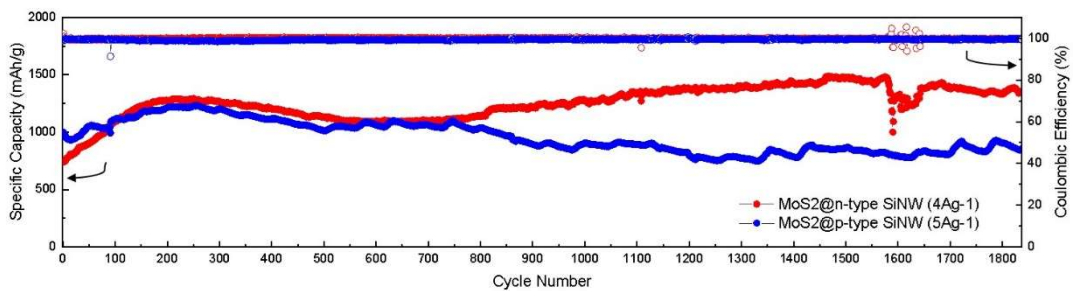


Fig. 3: Cycling performance of MoS<sub>2</sub>@n-type SiNW and MoS<sub>2</sub>@p-type SiNW anodes was measured at current densities of 4 A g<sup>-1</sup> and 5 A g<sup>-1</sup> each for around 1800 cycles.

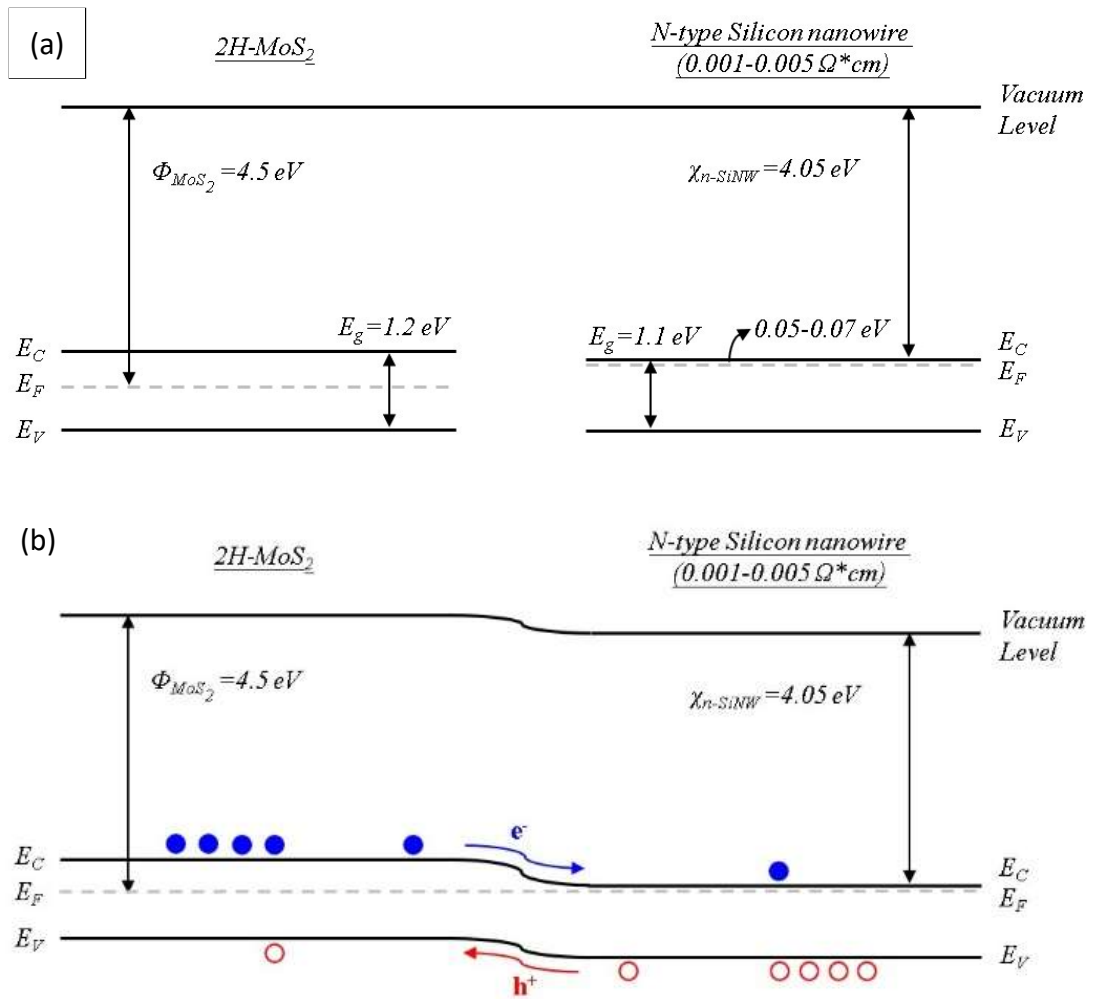


Fig. 4: (a) Band diagram of MoS<sub>2</sub>@n-type SiNW  
 (b) Band bending diagram of MoS<sub>2</sub>@n-SiNW