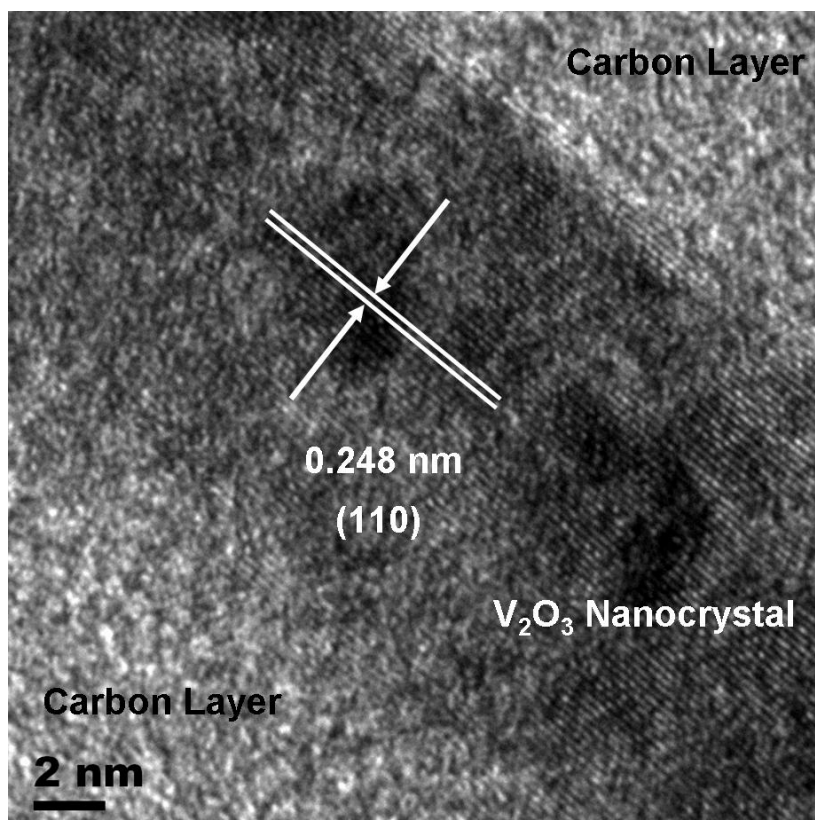
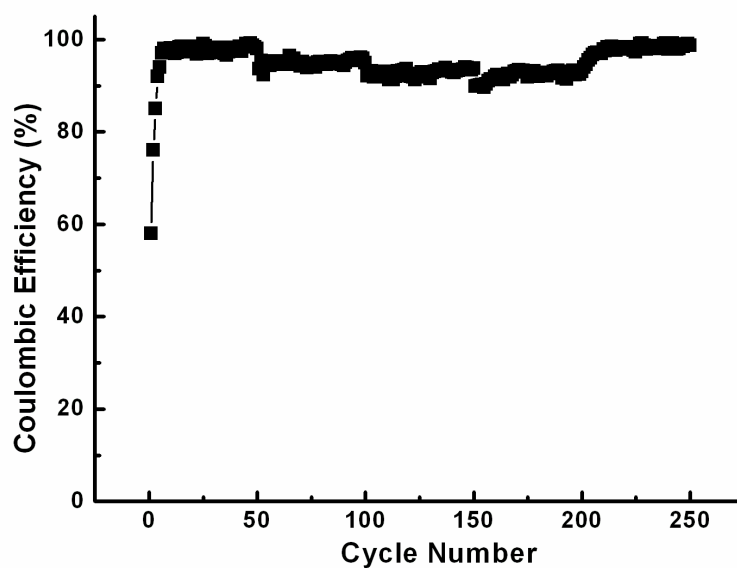


Supplementary Information



S.I. Fig. 1 The crystal lattices of the encapsulated V₂O₃ nanostructures are clearly determined by high-resolution TEM (HRTEM) technique.



S.I. Fig. 2 Coulombic efficiency (CE) for the charge-discharge processes as shown in fig. 7c is demonstrated, where we can see the enhanced CE normally above 93% except for the first few cycles.