

Supporting information

Ruthenium Decorated Hierarchically Ordered Macro- mesoporous Carbon for Lithium Oxygen batteries

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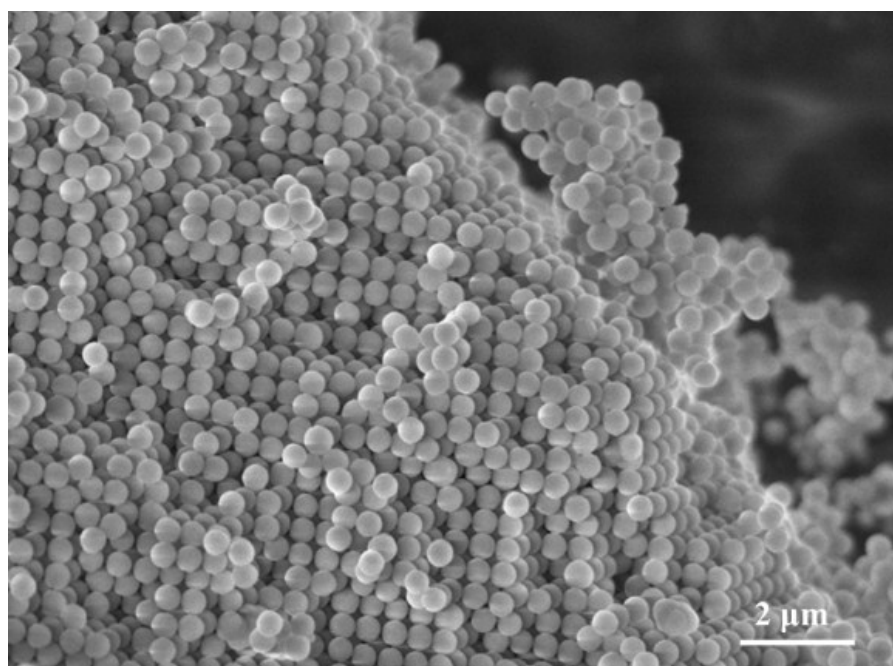


Fig. S1 SEM image of SiO₂ templates.

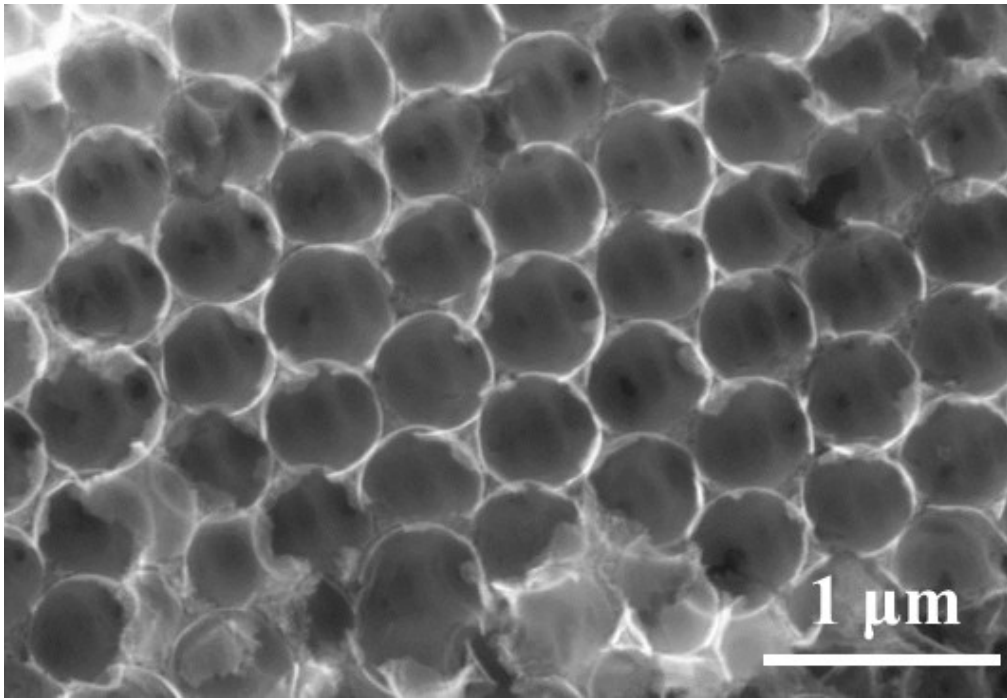


Fig. S2 SEM image of MmC@Ru.

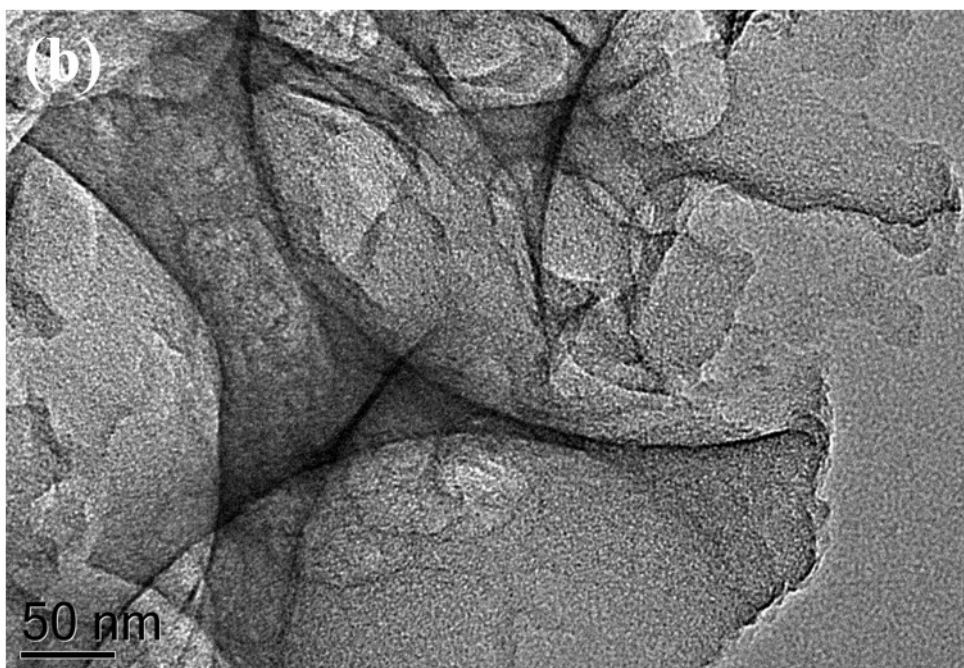
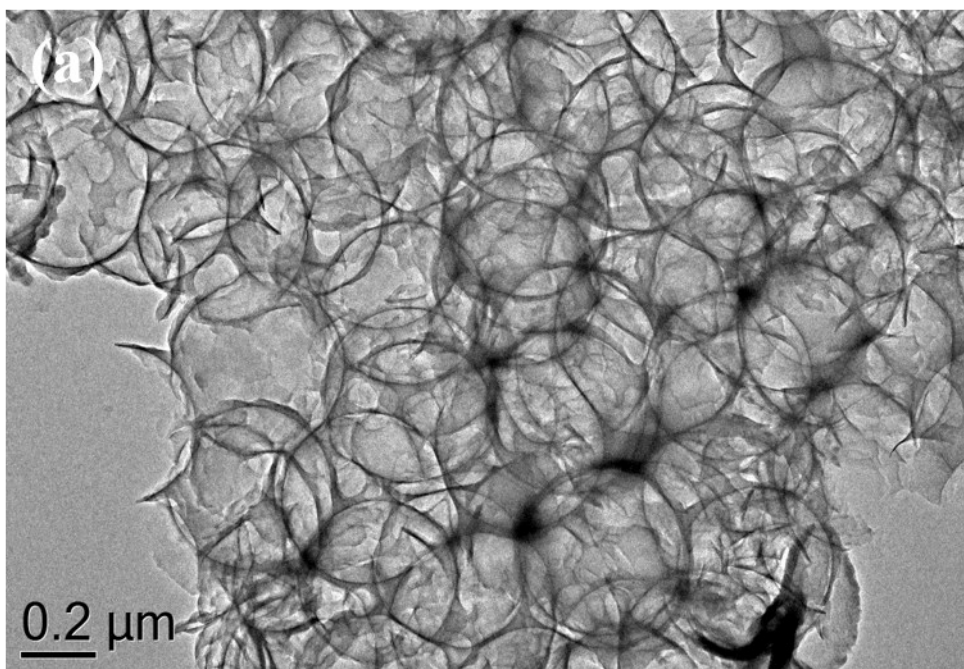


Fig. S3 (a) Low magnification TEM and (b) HRTEM images of MC.

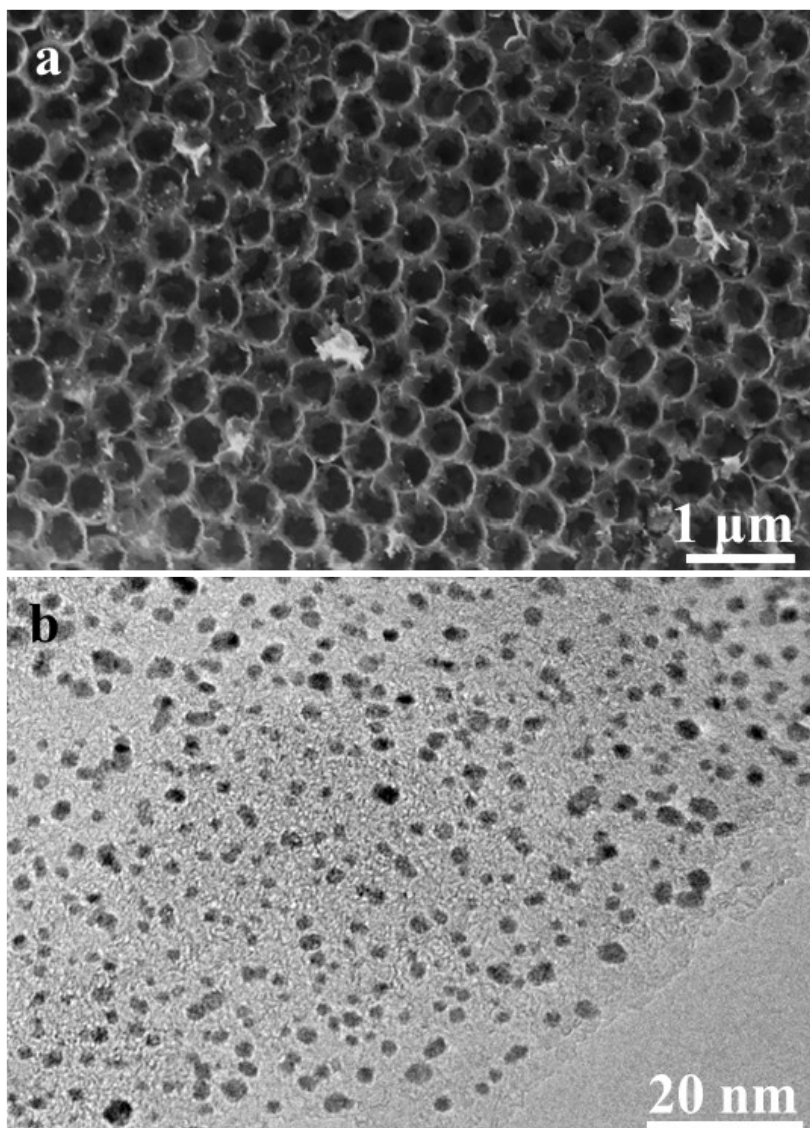


Fig. S4 (a) SEM image and (b) medium magnification TEM image of MC@Ru composite.

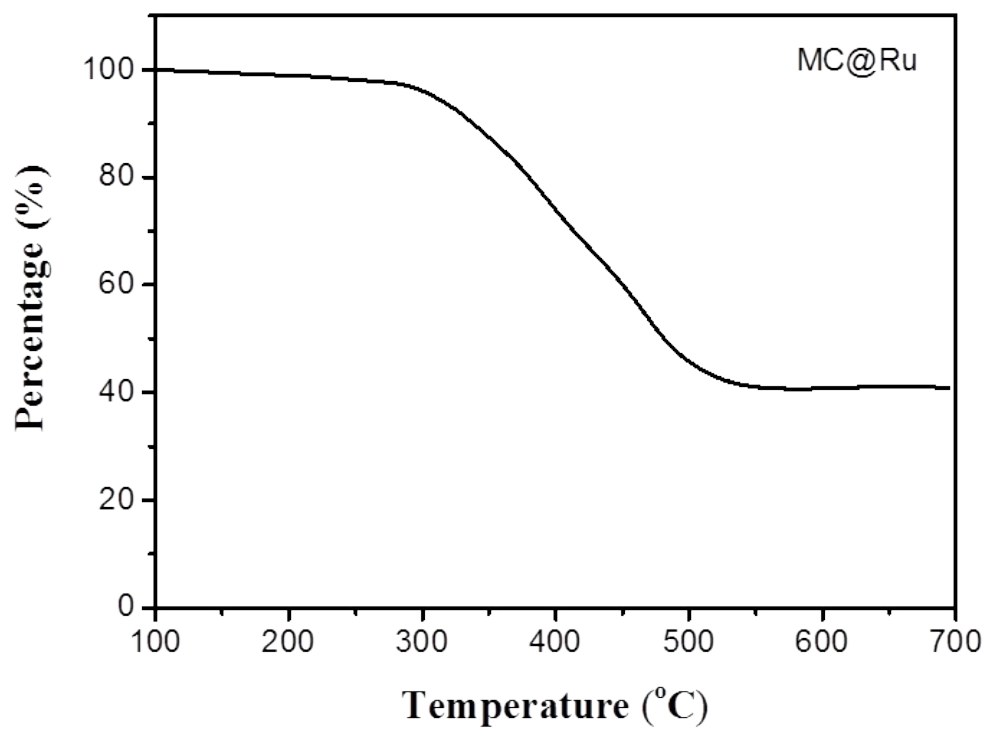


Fig. S5 TG curve of MC@Ru

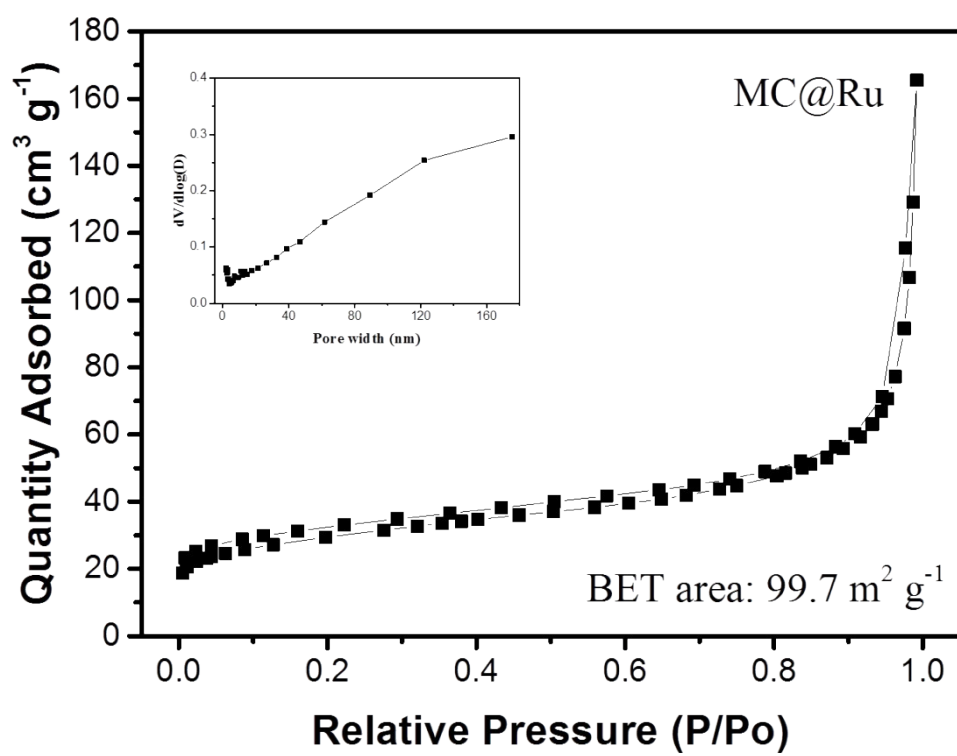


Fig. S6 Nitrogen adsorption/desorption isotherms of the MC@Ru.

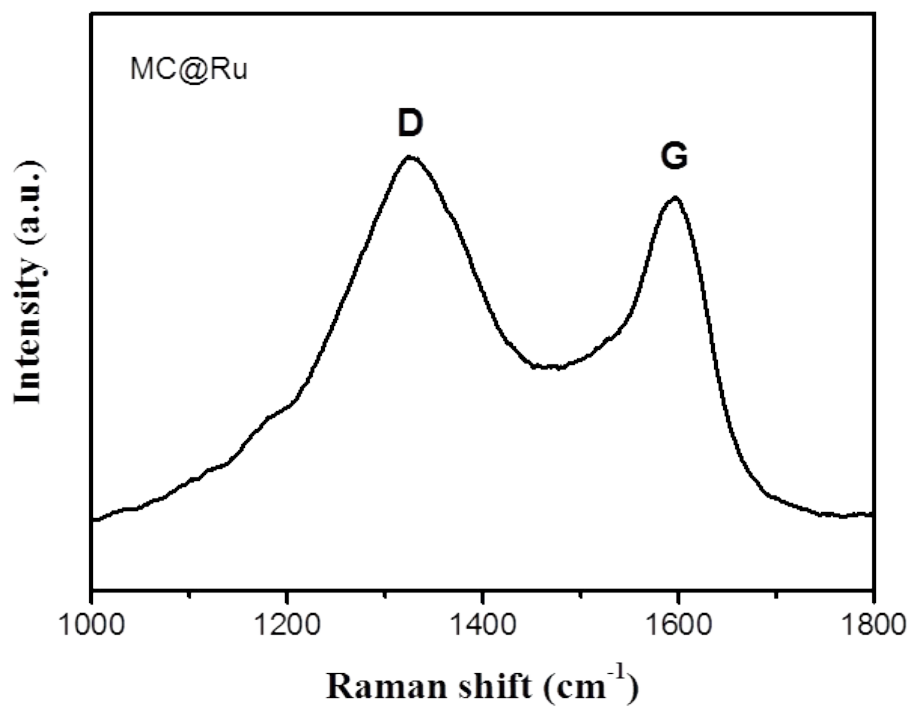


Fig. S7 Raman spectrum of MC@Ru in the range of 1000-1800 cm⁻¹.

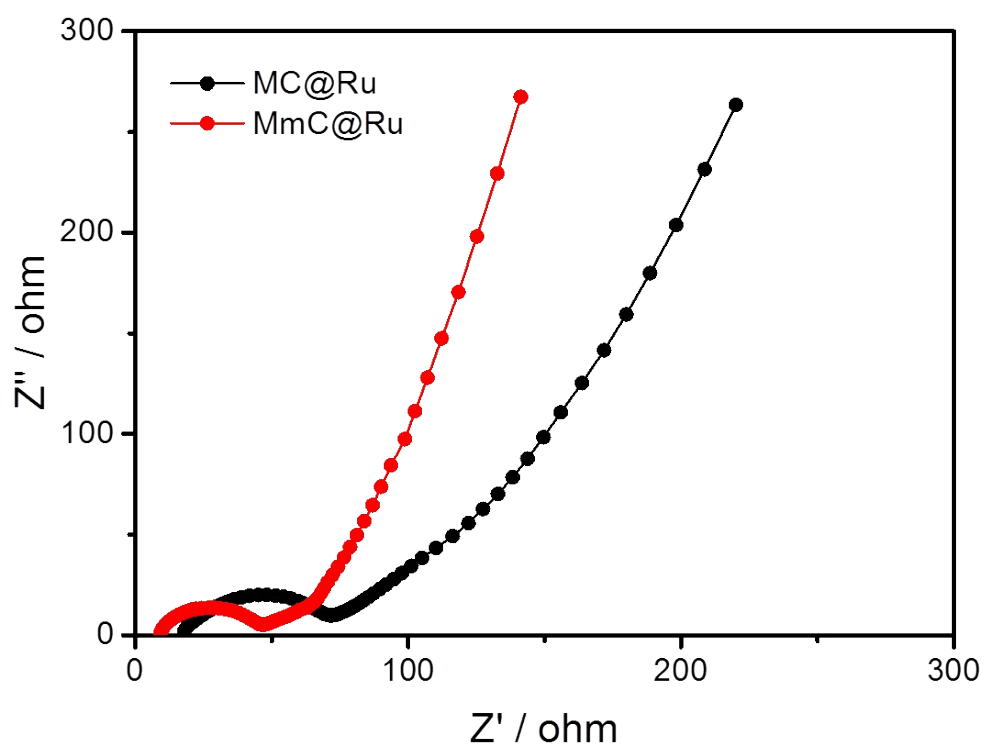


Fig. S8 Impedance spectra (Nyquist plots) of MC@Ru and MmC@Ru electrodes. The fresh electrodes were assembled into batteries and placed in oxygen atmosphere for 4h before the test.

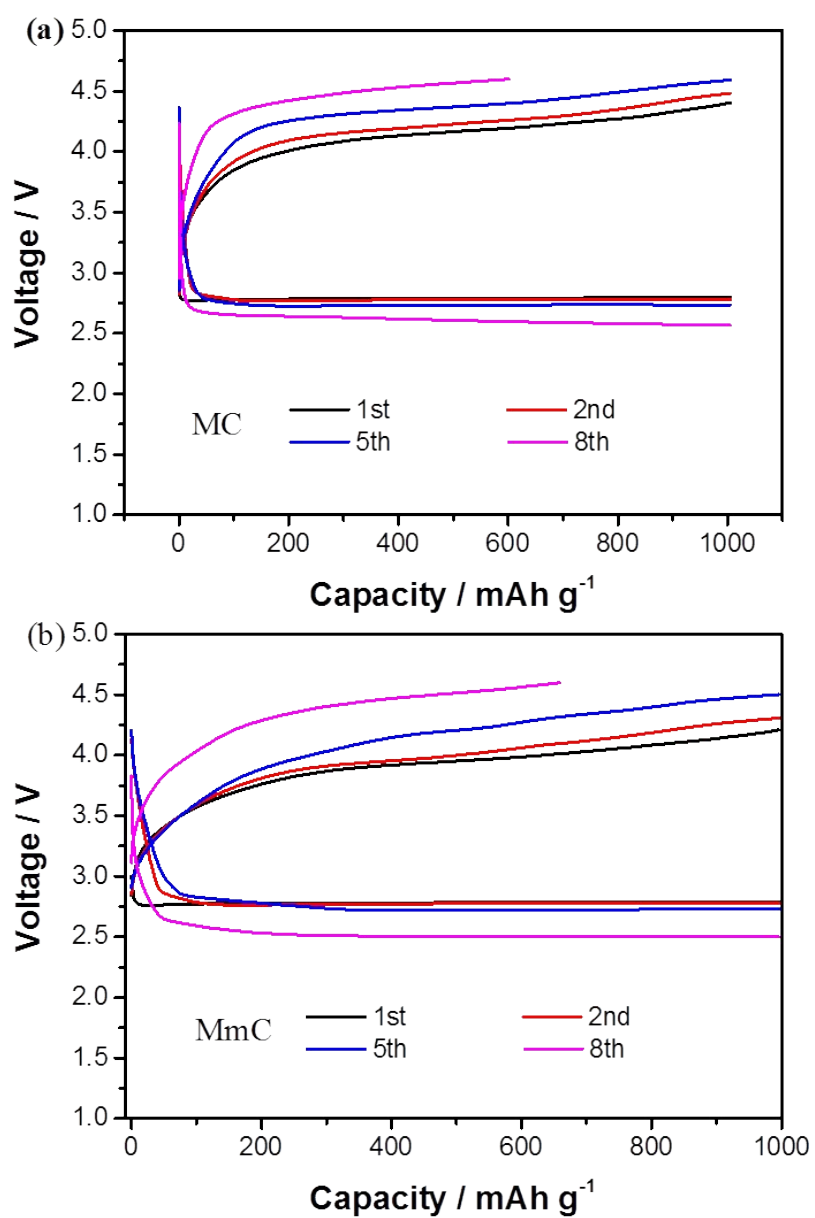


Fig. S8 Discharge/Charge profiles at different cycles of Li-O₂ batterie. (a) MC and (b) MmC cathode at a current density of 400 mA g⁻¹ with a curtailing capacity of 1000 mAh g⁻¹.

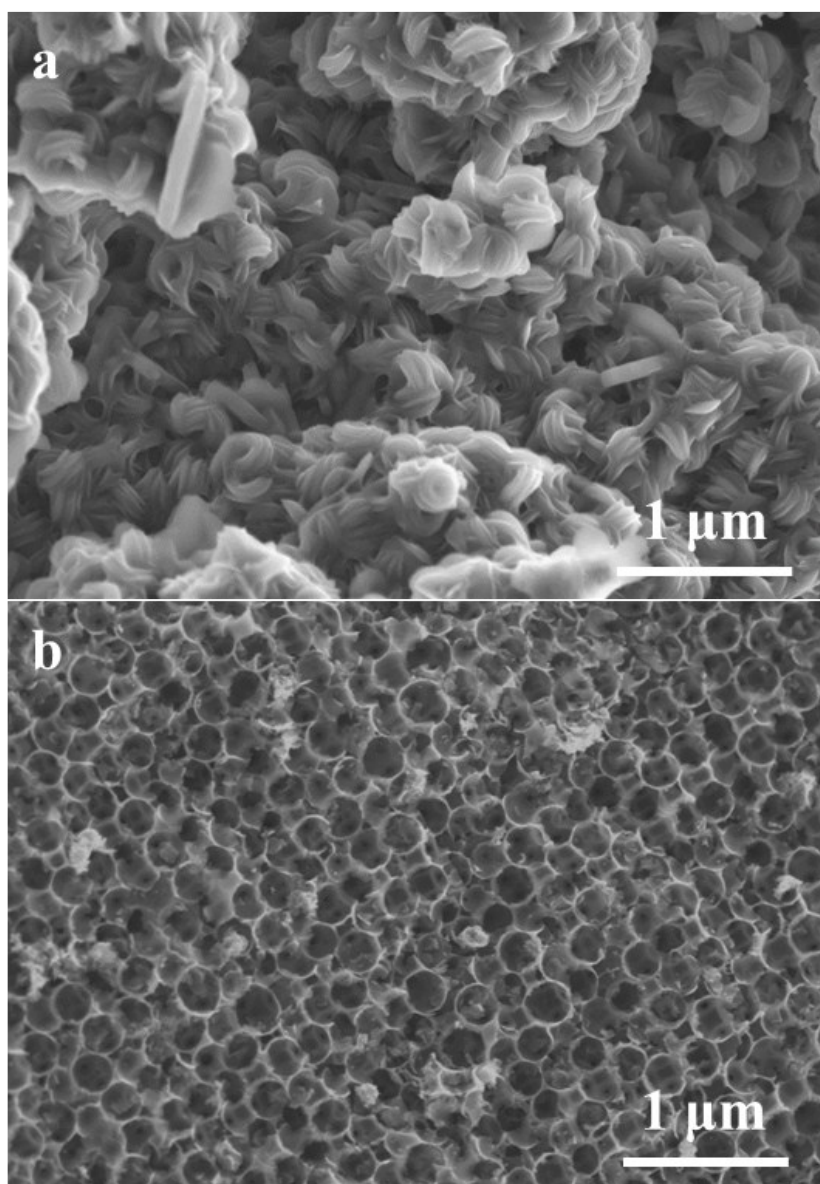


Fig. S9 SEM images of MC@Ru electrode after fully (a) discharge and (b) charge at 400mA g⁻¹.

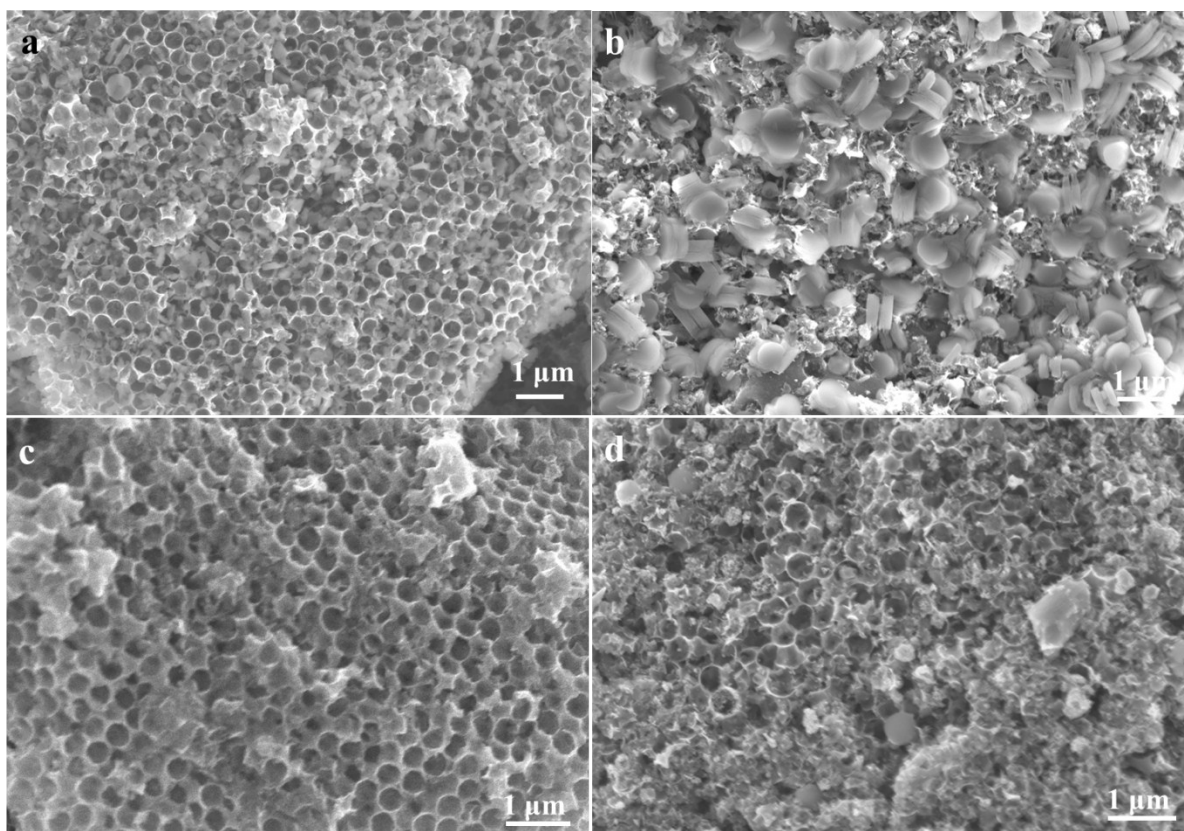


Fig. S10 (a) SEM images of discharged MmC@Ru electrode and (b) MC@Ru electrode by curtailing the capacity to 2000 mAh g⁻¹; (c) SEM images of MmC@Ru electrode and (d) MC@Ru electrode after 10 cycles at a current density of 400 mA g⁻¹ with a restricted capacity to 2000 mAh g⁻¹.