Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

Supplementary Information

Porous hollow MoS_2 microspheres derived from core-shell sulfonated polystyrene microspheres@MoS_2 nanosheets for efficient electrocatalytic hydrogen evolution

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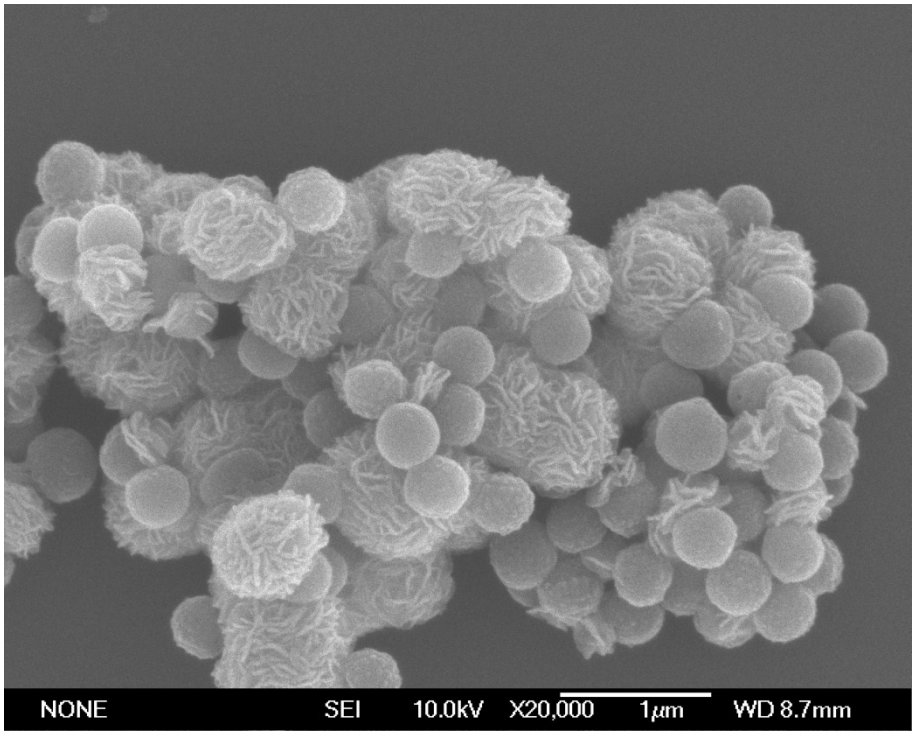

Fig. S1 SEM image of SPS@MoS_2 (180 ^oC / 3hours)

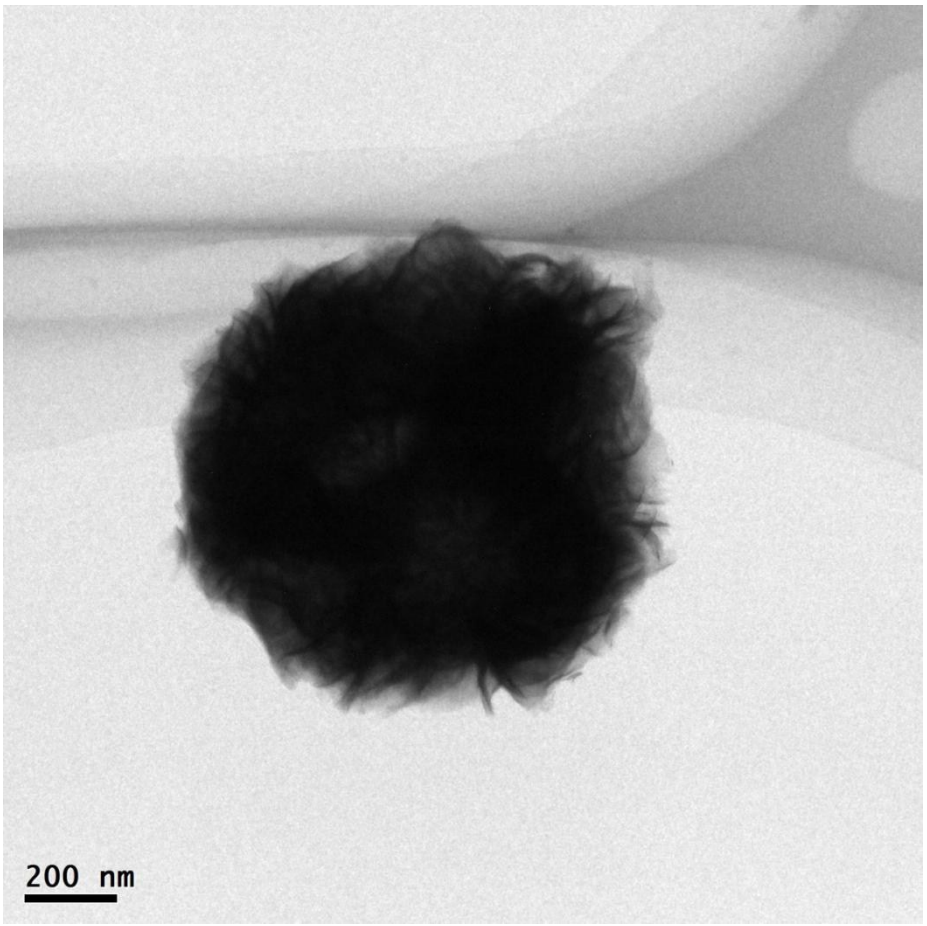

Fig. S2 TEM image of SPS@MoS_2 (180 ^oC / 12 hours)

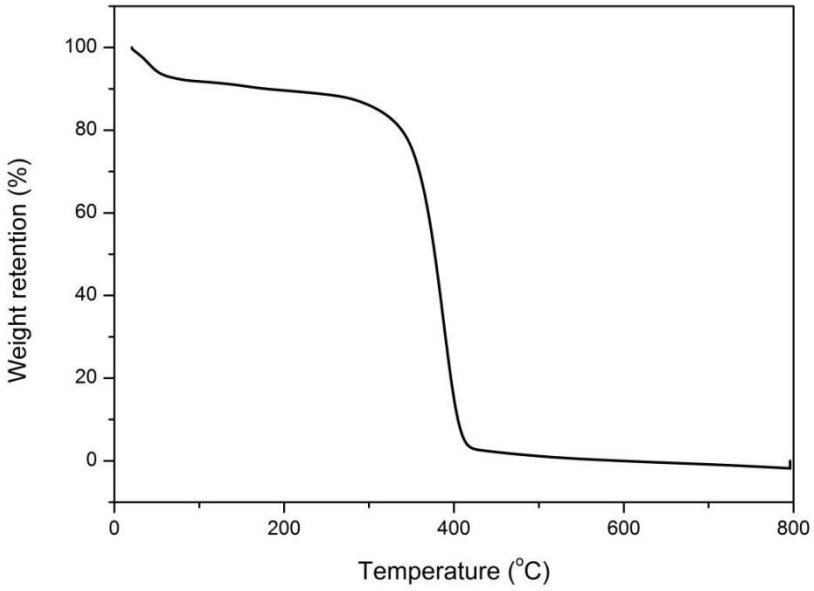

Fig. S3 TG curves of SPS microspheres under Ar atmosphere.

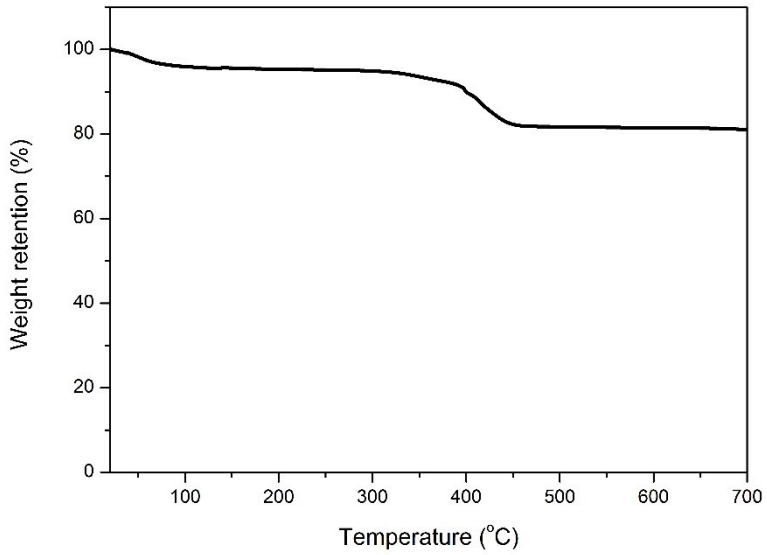

Fig. S4 TG curves of hollow MoS_2 microspheres under air atmosphere

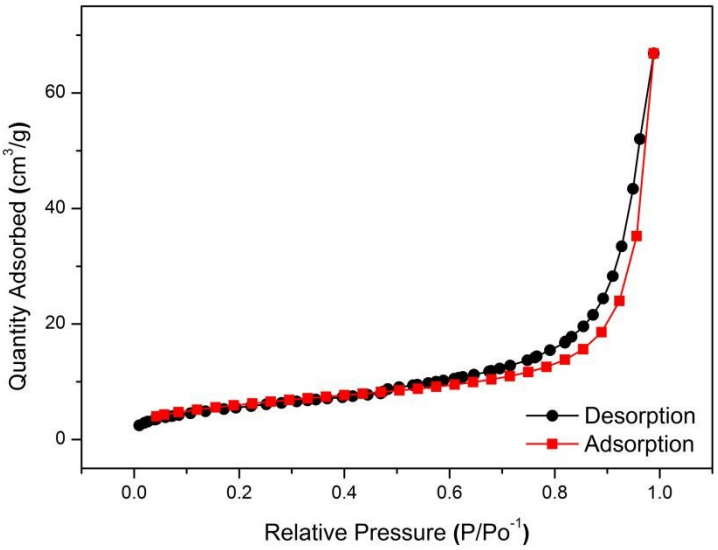

Fig. S5 N_2 adsorption isotherms curve of SPS@MoS_2

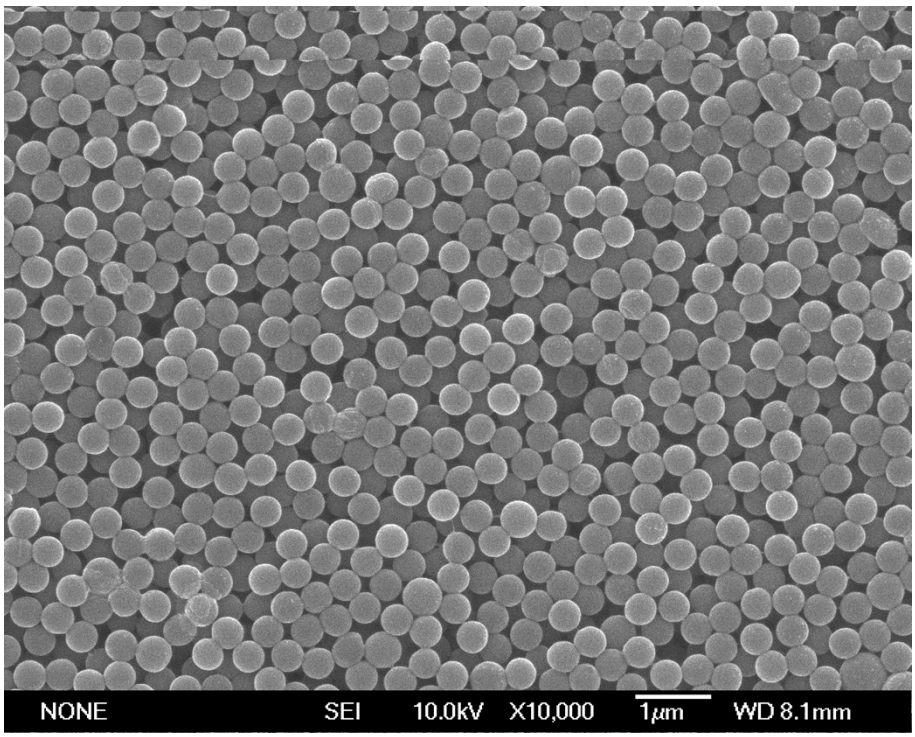

Fig. S6 SEM image of SPS

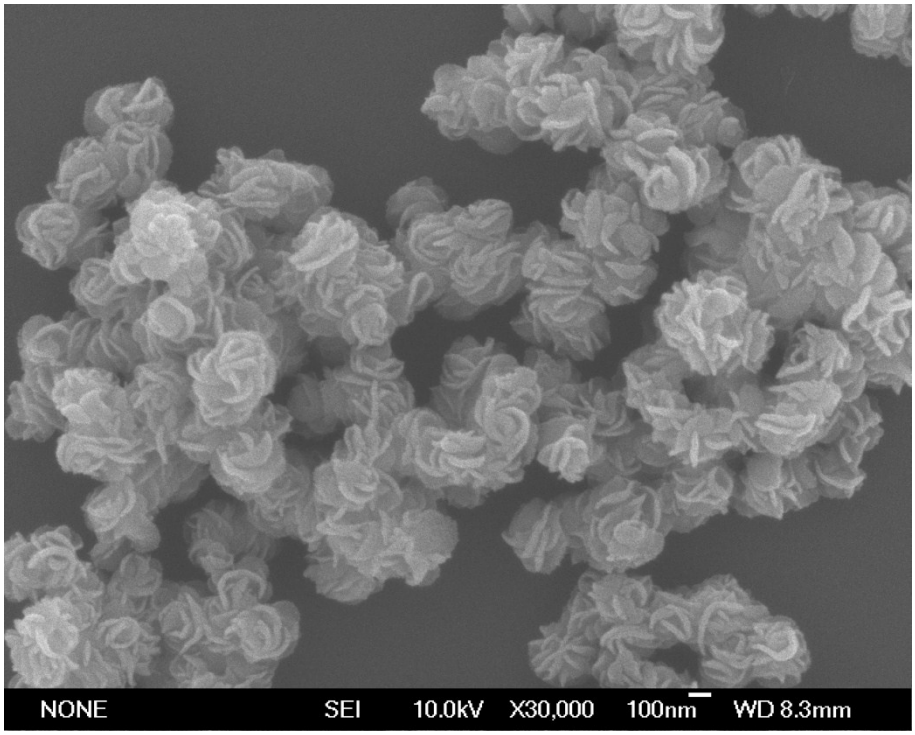

Fig. S7 SEM image of pure MoS_2

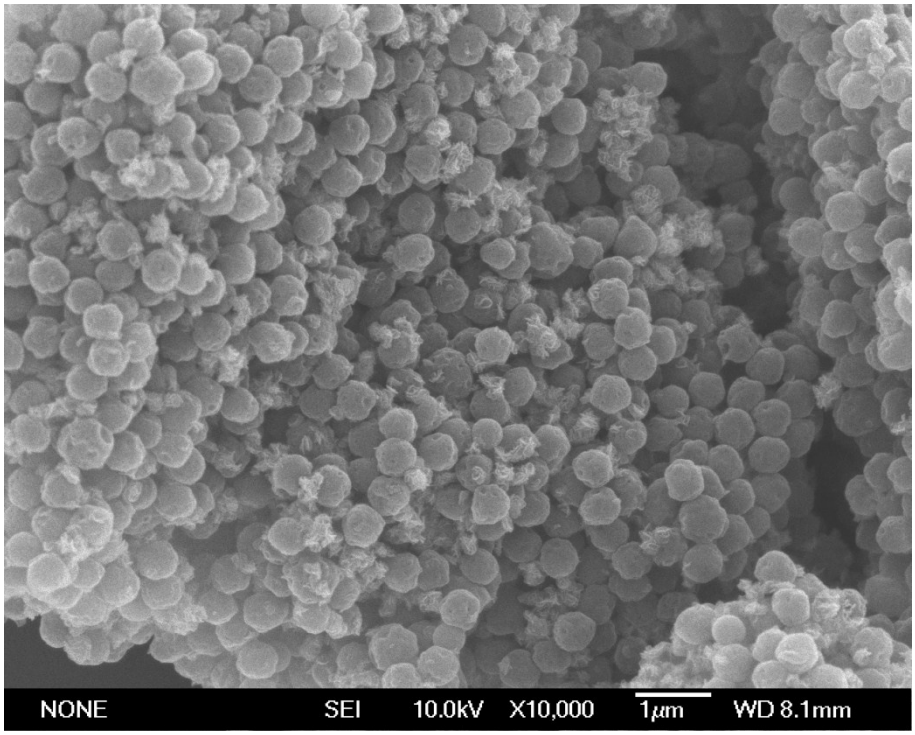

Fig. S8 SEM image of PS/MoS_2 using PS microspheres as templates at 180 ^{o}C for 6 h.

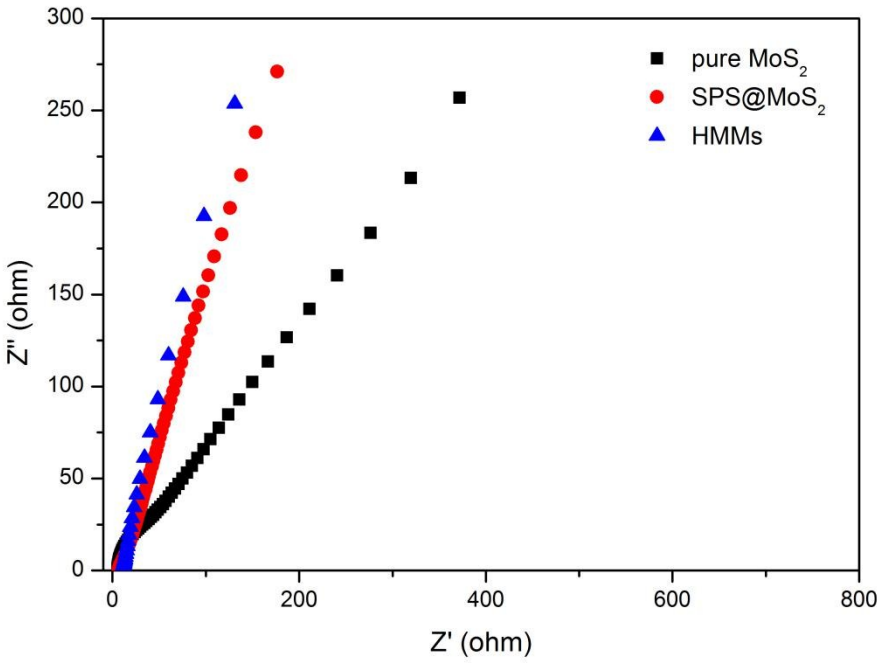

Fig S9 Nyquist plots of different samples over the frequency range from 1000 kHz to 10 mHz at the open-circuit voltage with an AC voltage of 5 mV.

Table S1 R_{ct} values of different samples.

Samples	R_{ct} (ohm)
HMMs	121.4
SPS@MoS_2	365.6
Pure MoS_2	910.7

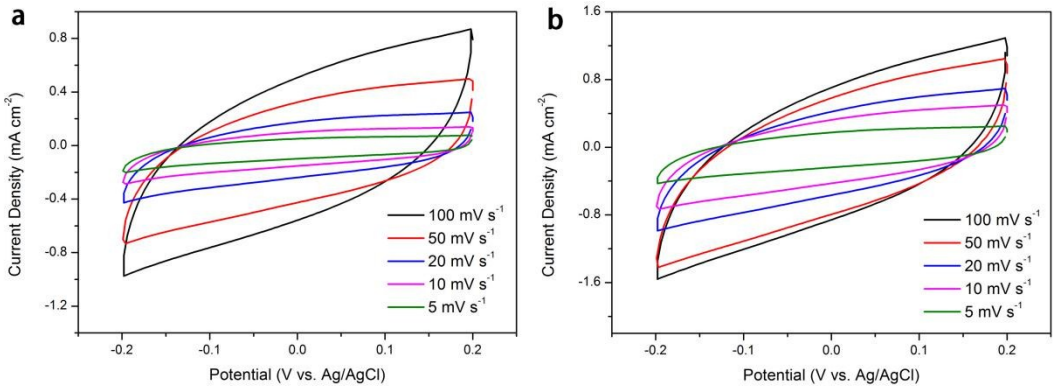

Fig. S10 CVs in the region from -0.2 to 0.2 V vs. Ag/AgCl for pure MoS_2 (a) and hollow MoS_2 microspheres (b). The electrochemical double-layer capacitance was determined from the CV curves measured in a potential range without redox processes according to the following equation: Cdl = Ic / ν, where Cdl, Ic, and ν are the double-layer capacitance (F cm^{-2}) of the electroactive materials, charging current (mA cm^{-2}), and scan rate (mV s^{-1}), respectively.