Supplementary Information

A general self-template-etched solution route for synthesis of 2-D γ-manganese sulfide nanoplates and its enhanced supercapacitive performance

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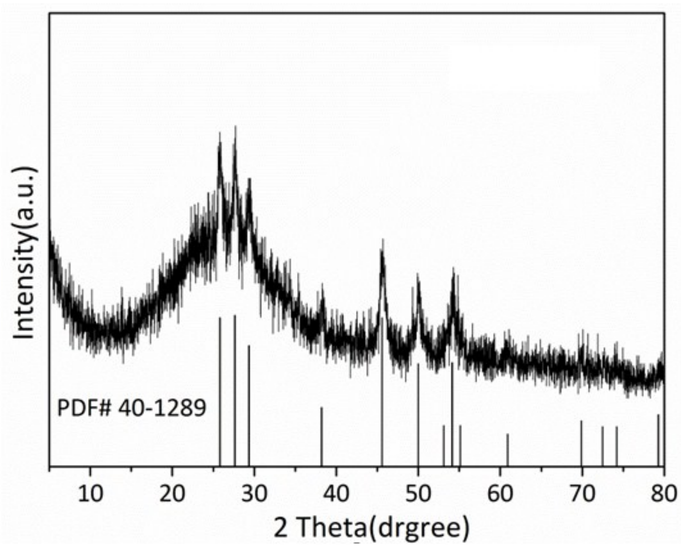

Fig. S1. XRD pattern of the as-obtained γ-MnS particles.

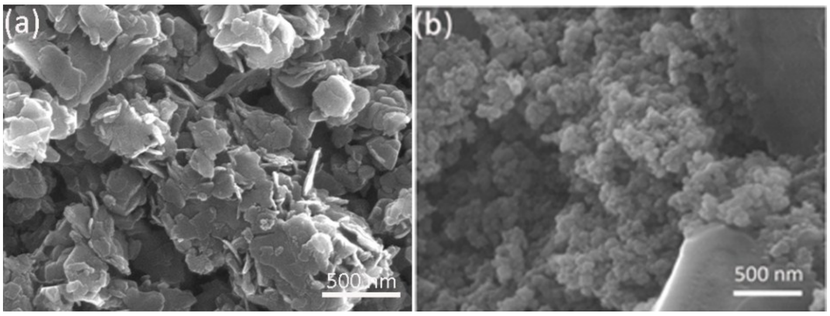

Fig. S2. SEM images of γ-MnS products with hydrothermal treatment time of (a) 6 h and (b) 12h.

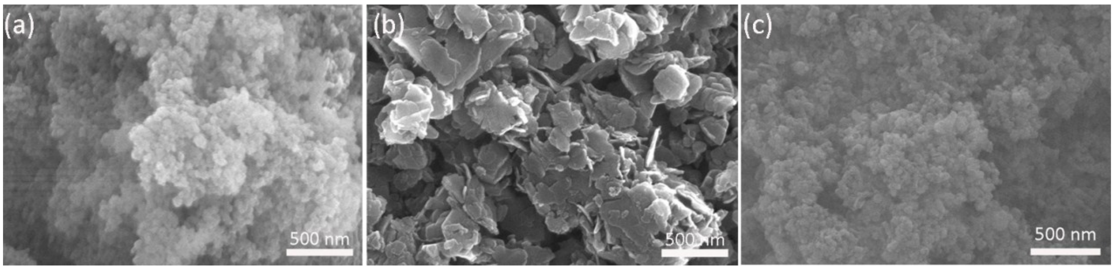

Fig. S3. SEM images of the γ-MnS products synthesized with different volume ratio of ethylene glycol and water ratios: (a) 3:5, (B) 4:4 and (C) 5:3.

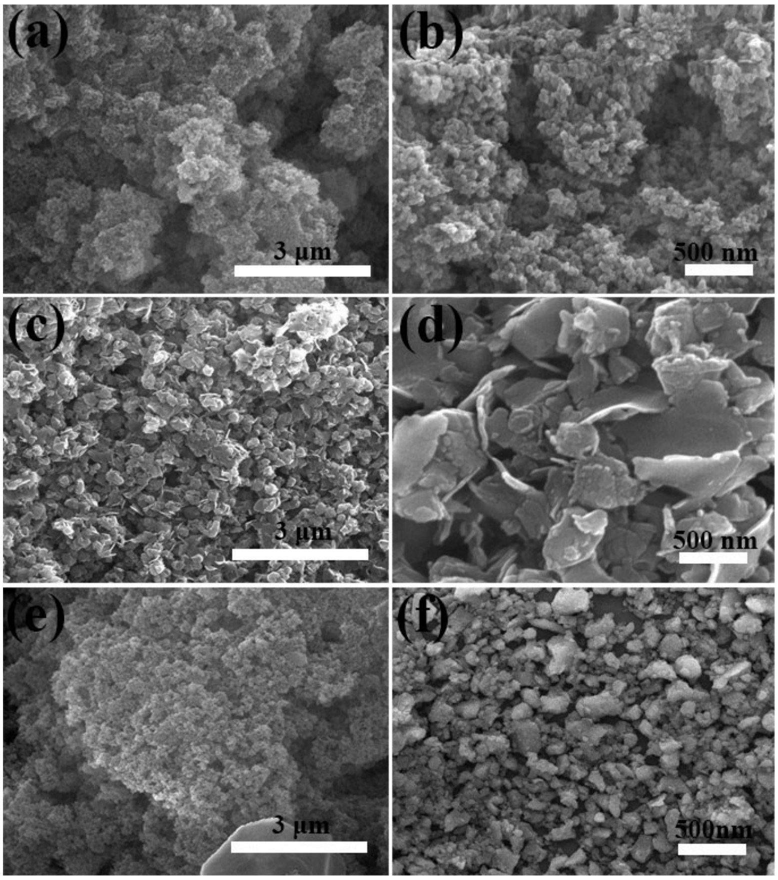

Fig. S4. SEM images of the γ-MnS products synthesized with different concentration of Na_2S solution: (a) 0.01 M, (b) 0.05 M, (c) 0.08 M, (d) 0.1 M, (e) 0.8 M and (f) 1.5 M.

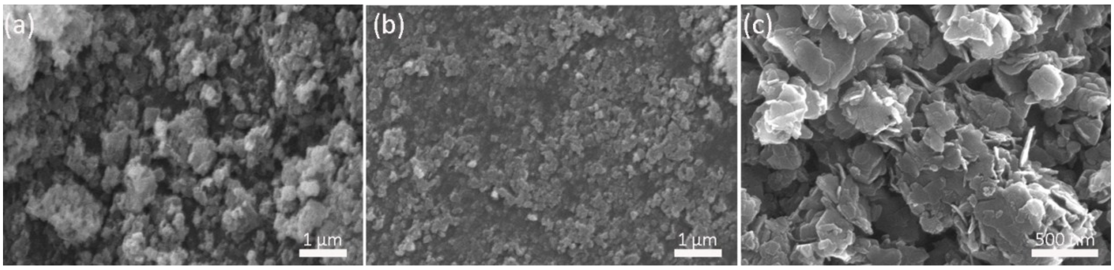

Fig. S5. SEM images of the MnS products synthesized with different solvent/H_2O system: (a) H_2O, (b) ethanol/H_2O, and (c) ethylene glycol/H_2O.

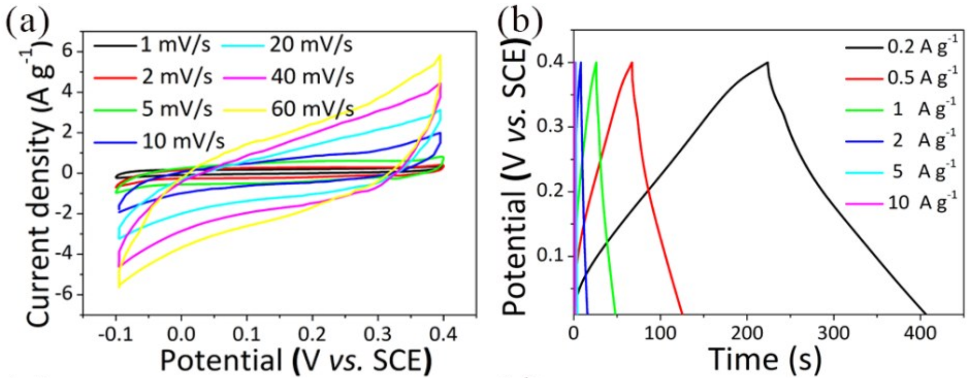

Fig. S6. Electrochemical characterizations of the γ-MnS nanoparticle electrode obtained: (a) Cyclic voltammetry curves. (b) Galvanostatic charging-discharging curves

Table S1 Comparison data of this work with literature of MnS in concern supercapacitive properties.

	Current density	Specific capacity (F g^{-1})	Electrolyte	Ref.
γ-MnS nanoplates	0.2 A g^{-1}	378	0.5 M Na_2SO_4	This work
MnS/GO-NH3	0.25 A g^{-1}	390.8	2M KOH	1
γ-MnS nanowire	0.5 A g^{-1}	573.9	2M KOH	2
γ-MnS/rGO-60	1 A g^{-1}	547.6	2 M KOH	3
γ-MnS/rGO	5 A g^{-1}	802.5	polysulfide electrolyte (1MKOH/0.5MNa2S$9H2O/ 0.5 M Sulfur powders)	4
α-MnS/N-rGO	1 A g^{-1}	933.6	3 M KOH	5
Tetrapod nanorod (TP-NR) γ-MnS-MnO_x	1 mV s^{-1}	704.5	2 M KOH	6
α-MnS/CT	1 mV s^{-1}	710.6	3 M LiCl	7
α-MnS microfibers	1 mV s^{-1}	747	1 M KOH	8

References

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