

Supplementary Information

One-pot synthesis of spring-like superstructures consisting of layered tin(IV) hydrogen phosphate nanodisks

Hui Qiao,^a Falong Jia,^a Zhihui Ai,^a Zhaosheng Li^b and Lizhi Zhang^{*,a}

^a Key Laboratory of Pesticide and Chemical Biology, Ministry of Education, College of Chemistry, Central China Normal University, Wuhan, Hubei, 430079, P. R. China

Tel/Fax: 86 27 6786 7535

Email: zhanglz@mail.ccnu.edu.cn

^b Ecomaterials and Renewable Energy Research Center, Department of Physics, Nanjing University, Jiangsu, 210093, P. R. China.

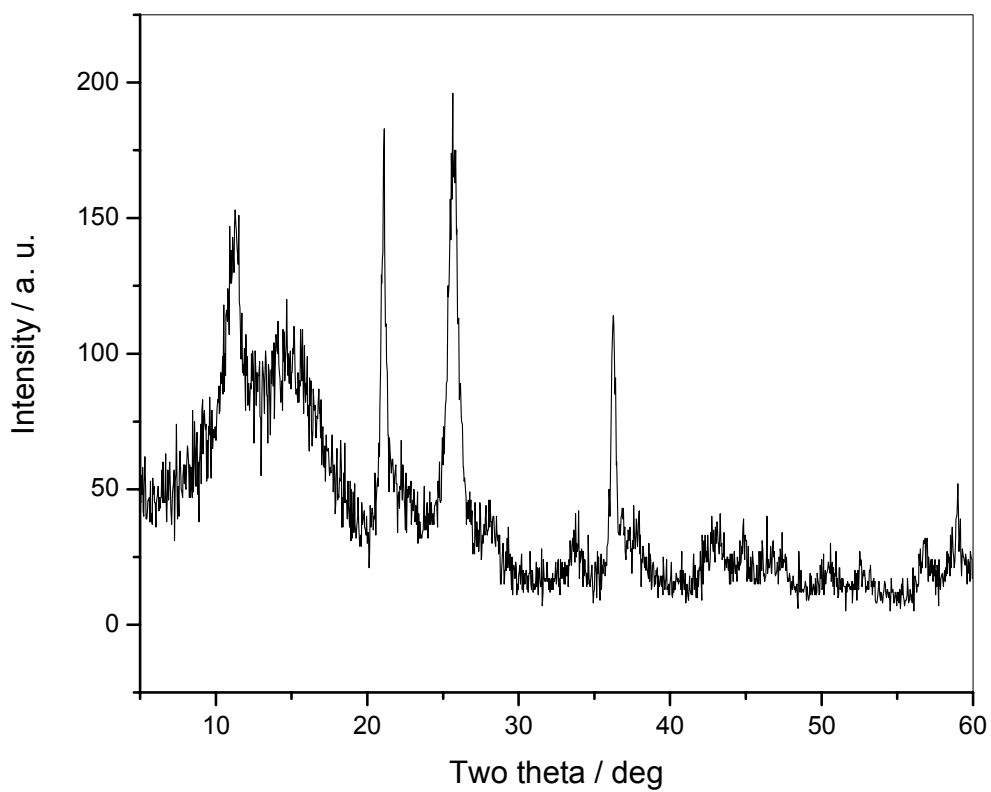


Fig. S1 XRD pattern of the sample obtained in the presence of 0.3 mL H_3PO_4 via solvothermal reaction for 6 h.

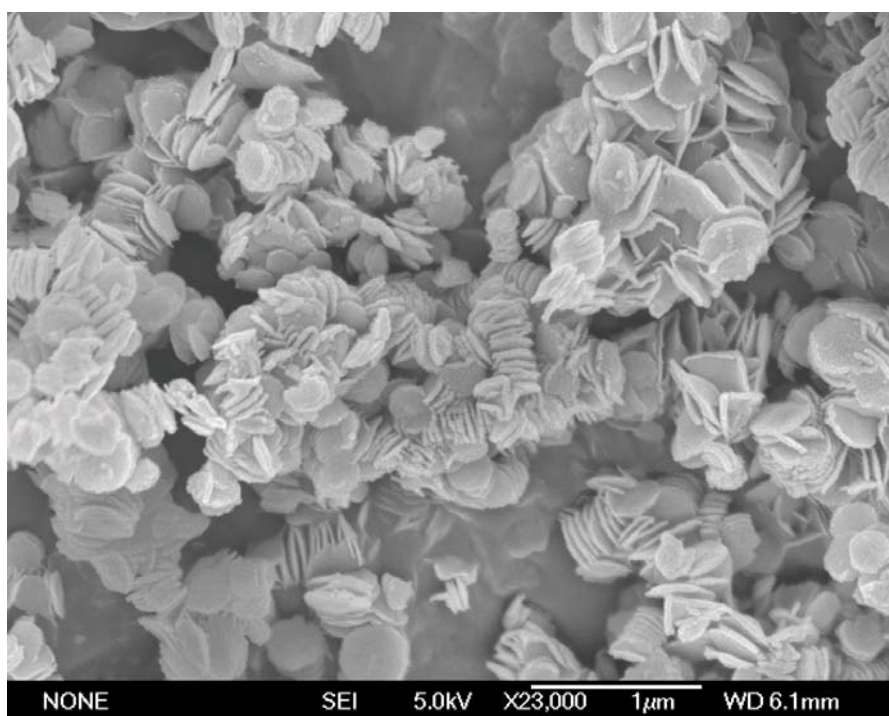


Fig. S2 SEM image of the resulting $\text{Sn}(\text{HPO}_4)_2 \cdot \text{H}_2\text{O}$ superstructures obtained in the presence of 0.6 mL H_3PO_4 via solvothermal reaction for 24 h.

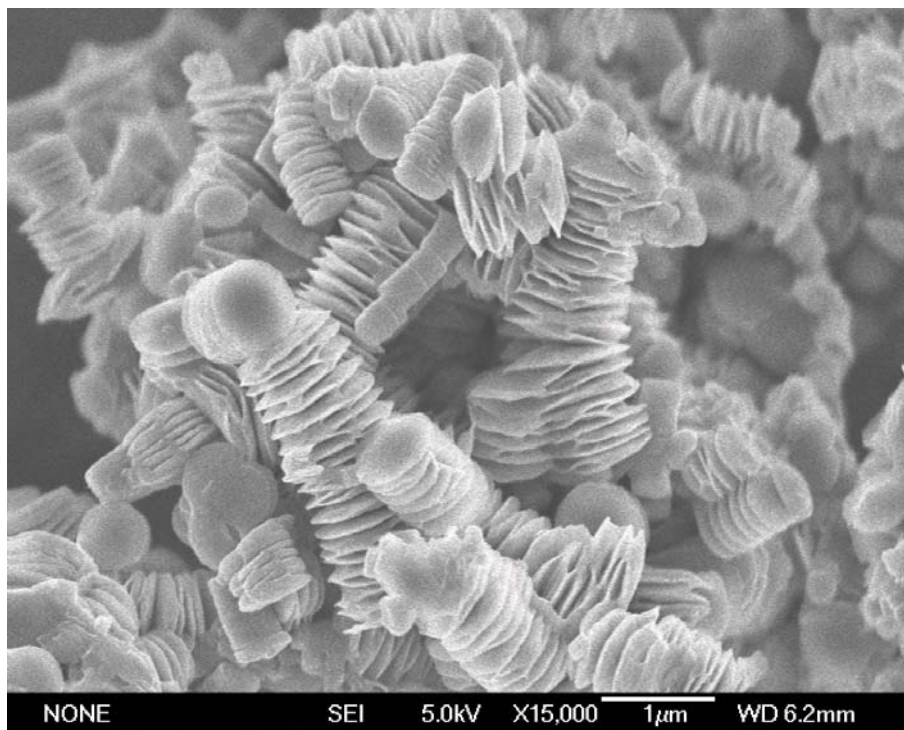


Fig. S3 SEM image of the resulting $\text{Sn}(\text{HPO}_4)_2 \cdot \text{H}_2\text{O}$ superstructures obtained in the presence of 0.3 mL H_3PO_4 via solvothermal reaction for 48 h.

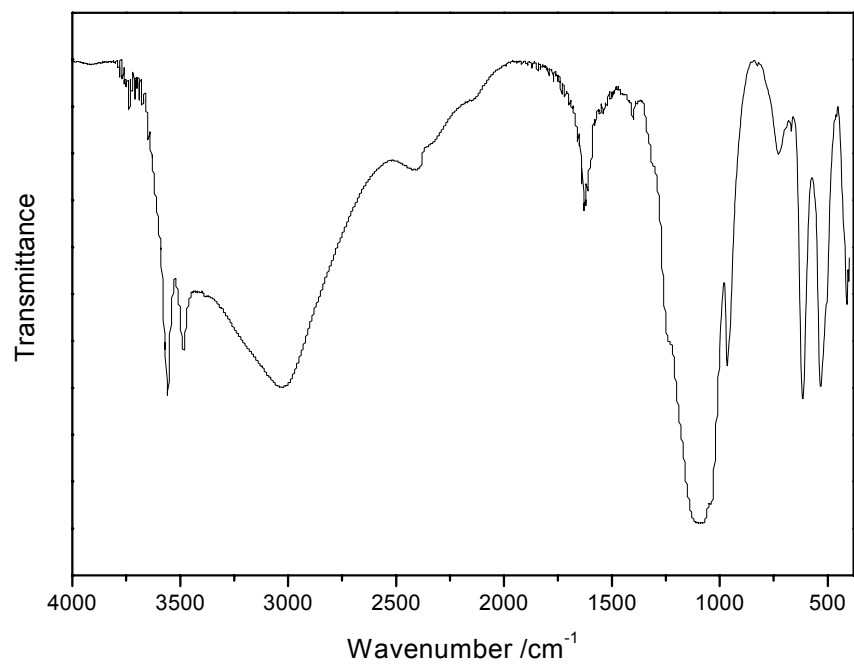


Fig. S4 FTIR spectra of resulting Sn(HPO₄)₂·H₂O superstructures.

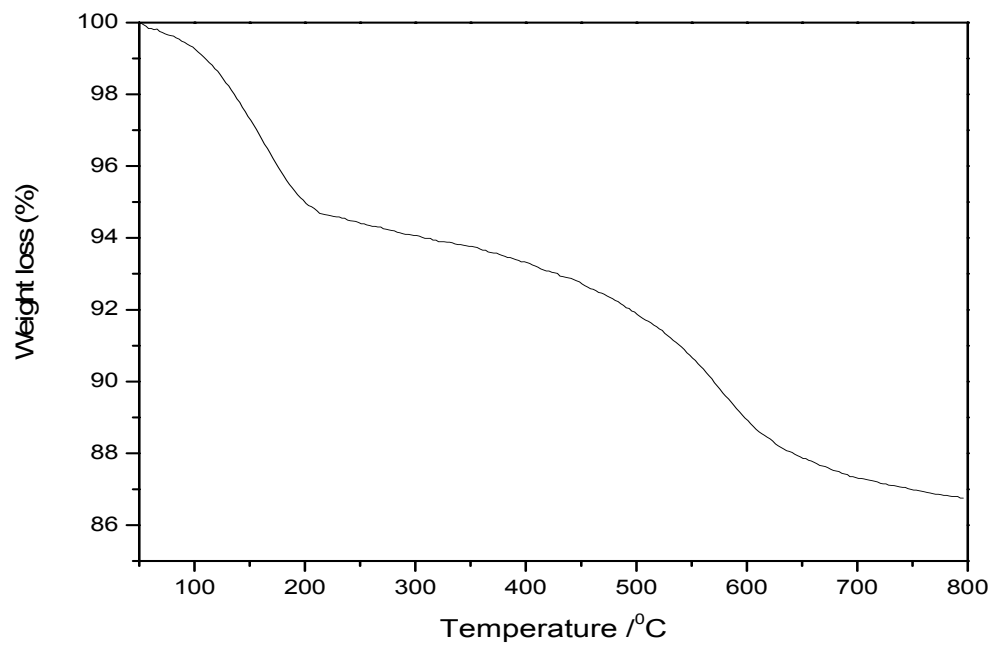


Fig. S5 TGA curve of Sn(HPO₄)₂·H₂O superstructures.

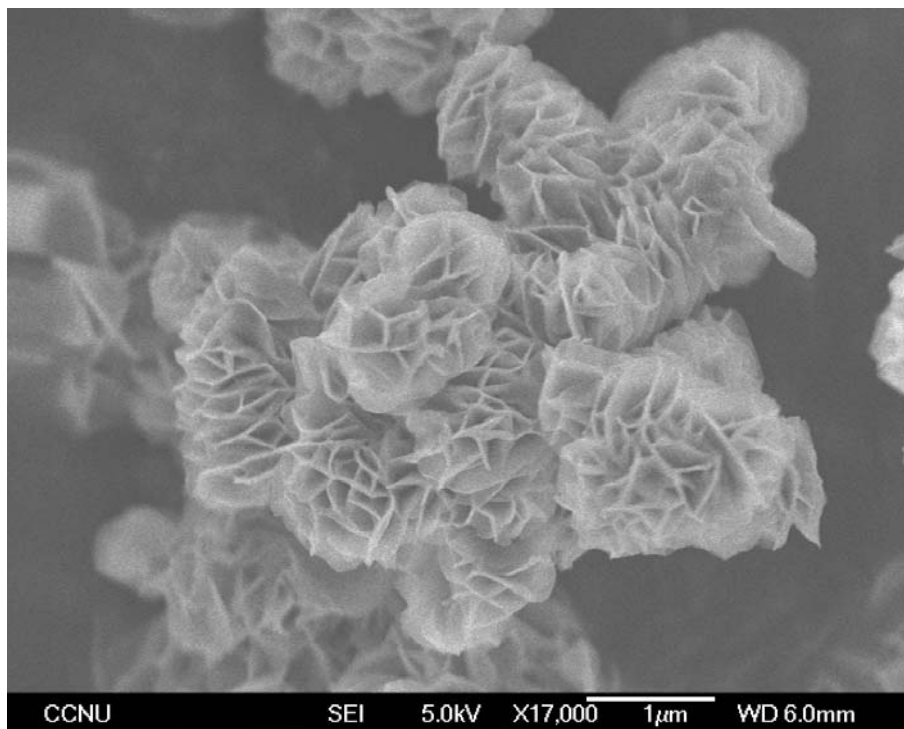


Fig. S6 SEM image of the resulting $\text{Sn}(\text{HPO}_4)_2 \cdot \text{H}_2\text{O}$ in the presence of excess water.

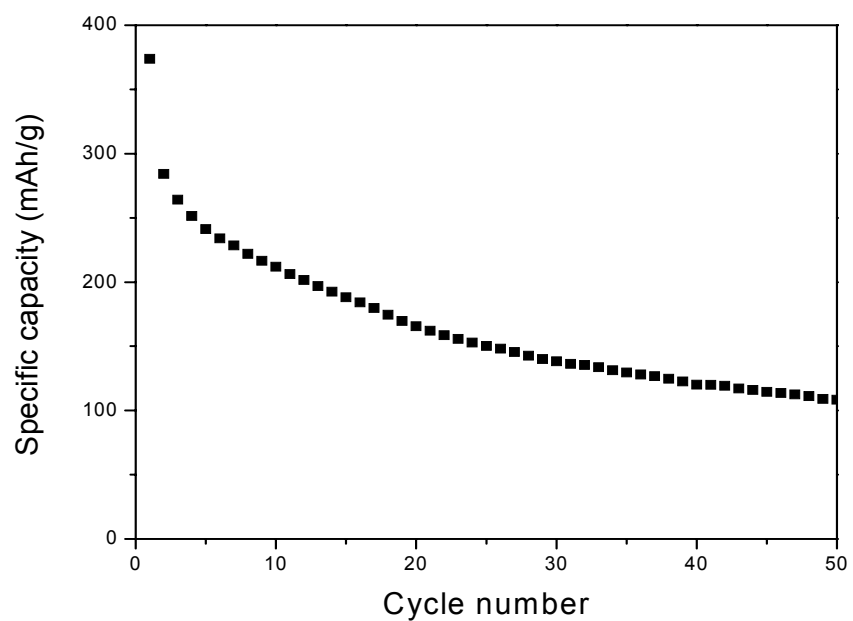


Fig. S7 Variation of discharge capacity vs number of cycles for the lithium ion batteries using $\text{Sn}(\text{HPO}_4)_2 \cdot \text{H}_2\text{O}$ spring-like superstructures as the anode electrode materials.

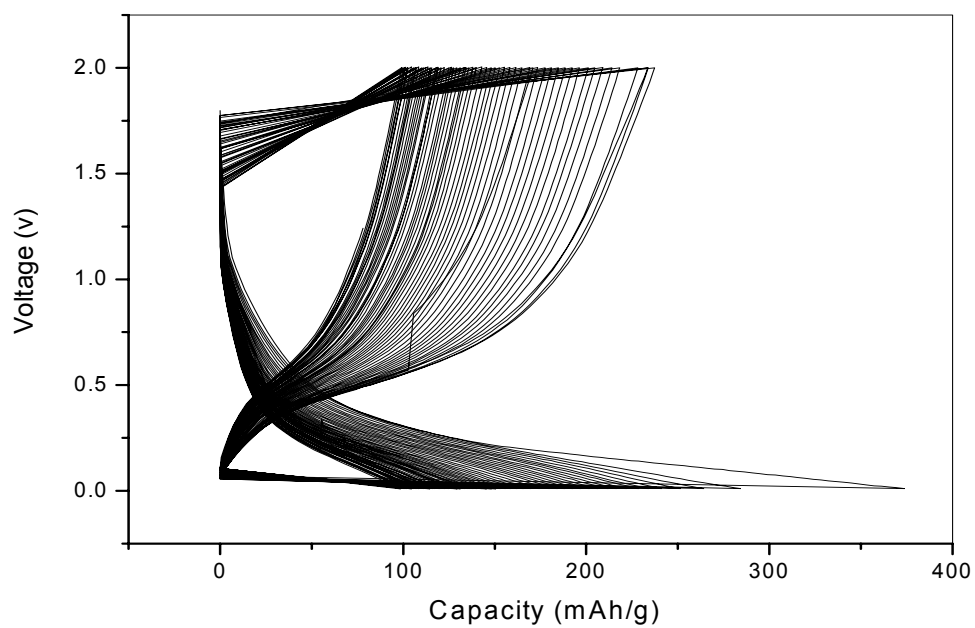


Fig. S8 Charge and discharge curves of the cell with $\text{Sn}(\text{HPO}_4)_2 \cdot \text{H}_2\text{O}$ spring-like superstructures during 1st to 60th cycles between 2.0 – 0 V.