



Supplementary Materials

Scalable Preparation and Improved Discharge Properties of FeS₂@CoS₂ Cathode Materials for High-Temperature Thermal Battery

Qianqiu Tian ¹, Jing Hu ^{2,*}, Shiyu Zhang ¹, Xiaopeng Han ^{1,3,*}, Hao Guo ⁴, Licheng Tang ⁴, Jiajun Wang ¹ and Wenbin Hu ¹

¹ School of Materials Science and Engineering, Tianjin University, Tianjin 300072, China; tianqianqiu@tju.edu.cn (Q.T.); zsy272@tju.edu.cn (S.Z.); wangjjtju@126.com (J.W.); wbhu@tju.edu.cn (W.H.)

² Shandong Engineering Research Center of Green and High-Value Marine Fine Chemical, Weifang University of Science and Technology, Shouguang 262700, China

³ Haihe Laboratory of Sustainable Chemical Transformations, Nanjing University, Tianjin 200192, China

⁴ State Key Laboratory of Advanced Chemical Power Sources, Zunyi, 563003, China; guohao_powersources@outlook.com (H.G.); tcl19851221@163.com (L.T.)

* Correspondence: wkhujing@wfust.edu.cn (J.H.); xphan@tju.edu.cn (X.H.)

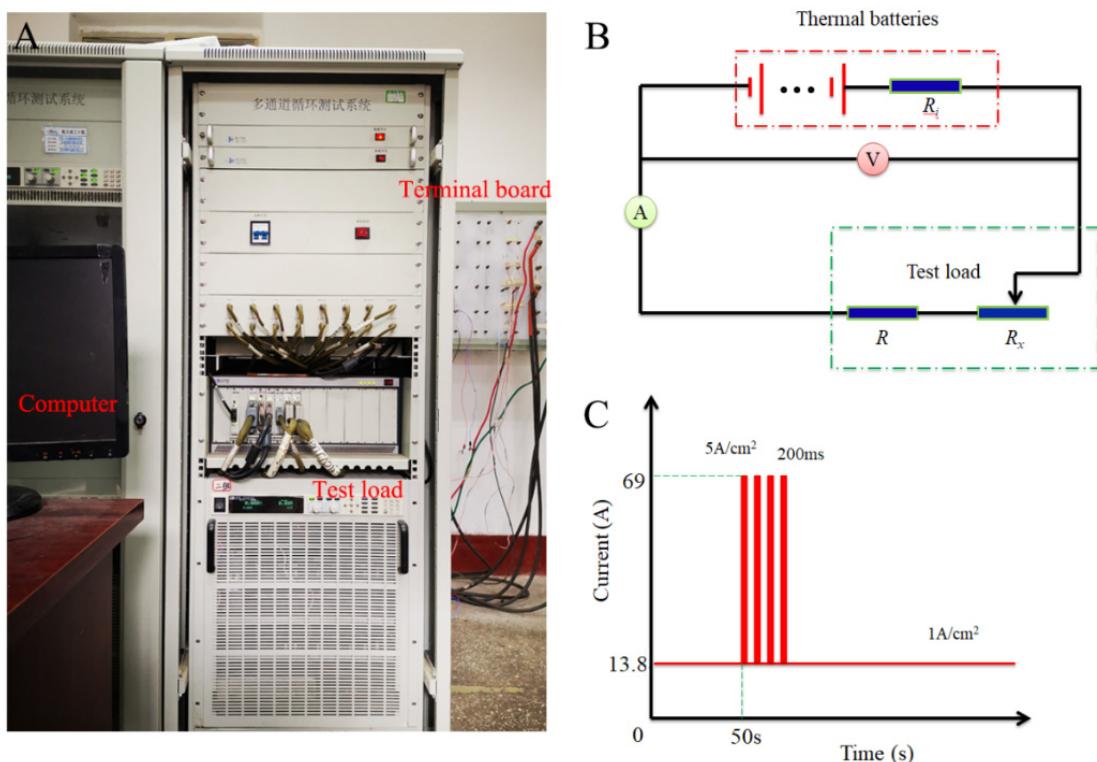


Figure S1. (A) Dedicated device for testing the thermal batteries; (B) The test schematic diagram; (C) The discharge test conditions.

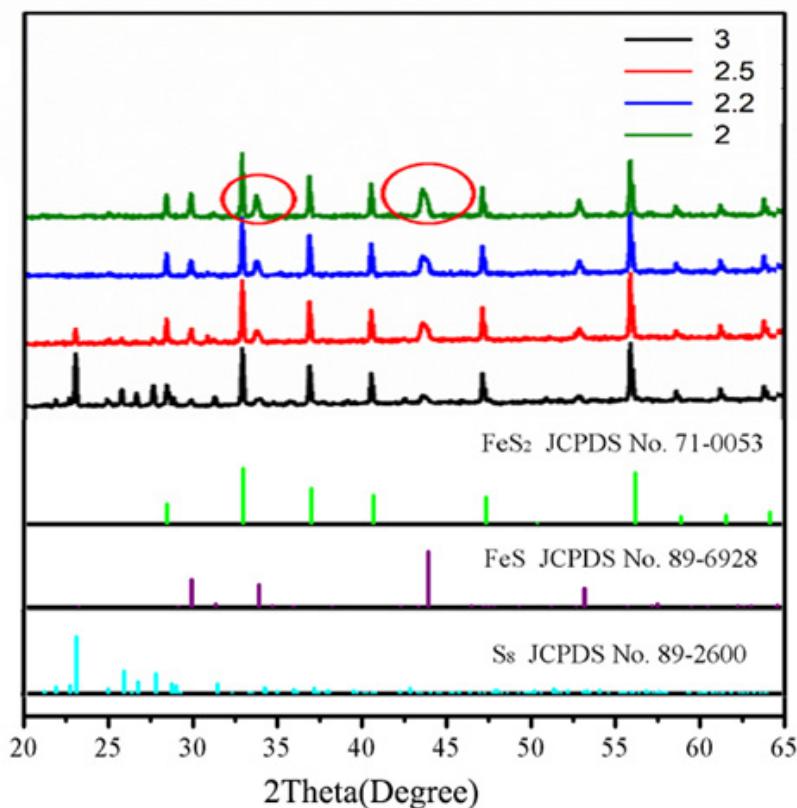


Figure S2. Effect of S/Fe mole ratio on product composition.

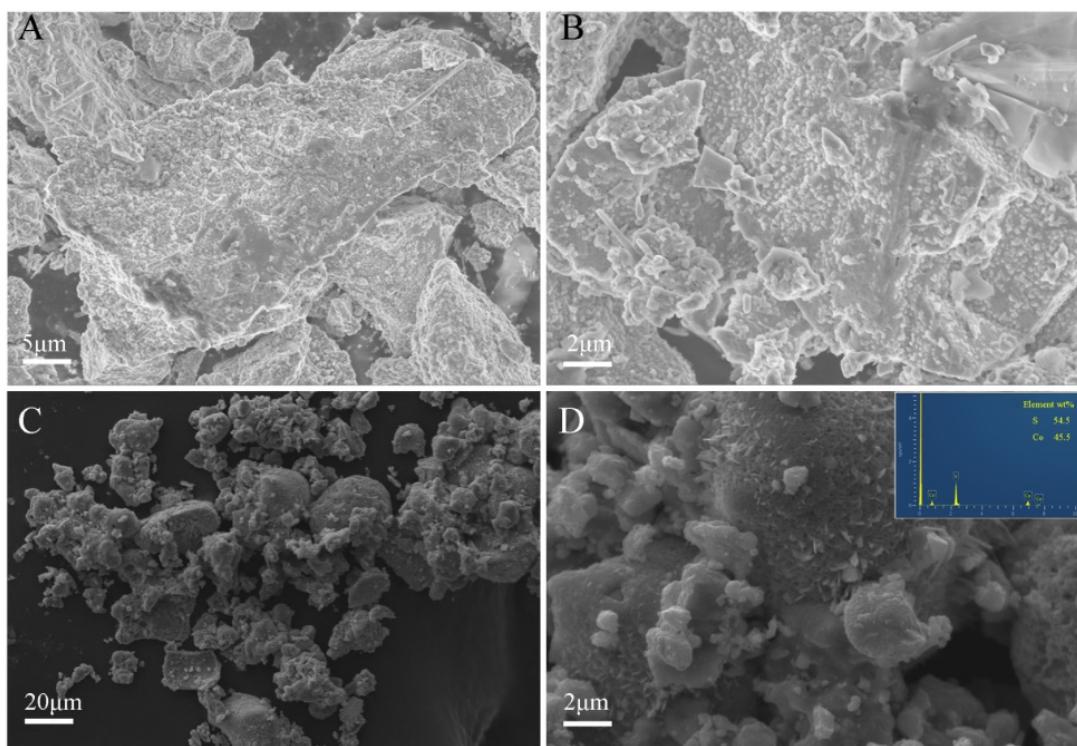


Figure S3. SEM images of (A–B) CoS₂ containing sulfur and (C–D) desulfurized CoS₂.

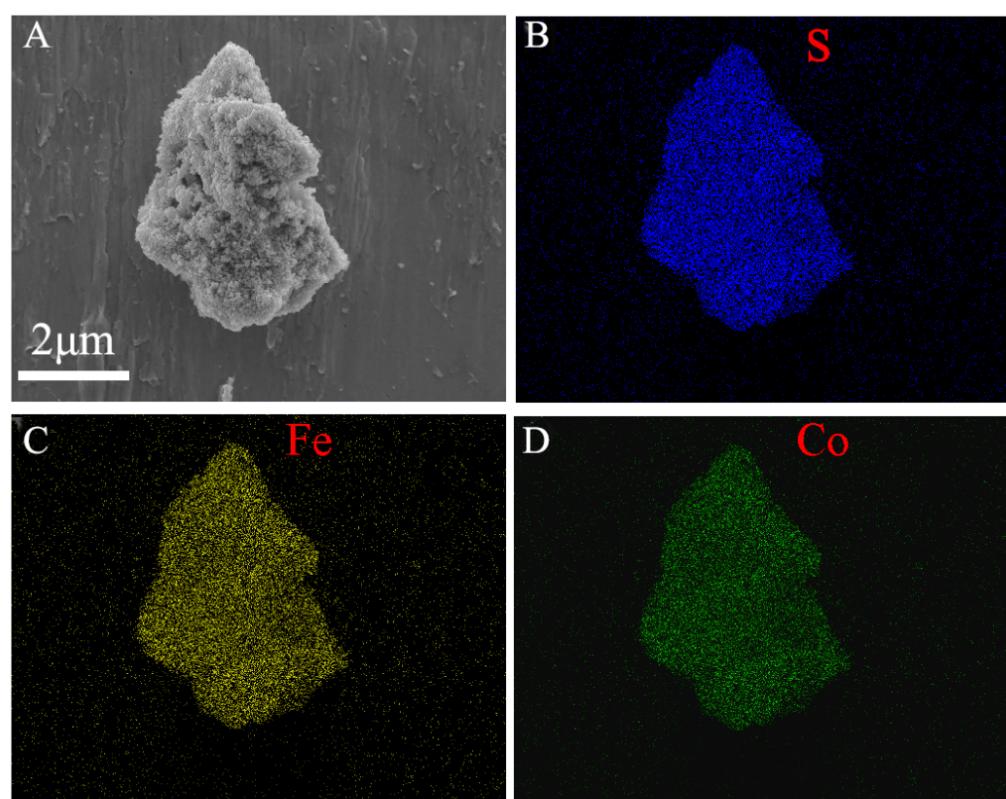


Figure S4. Element mappings of $\text{FeS}_2@40\%\text{CoS}_2$.

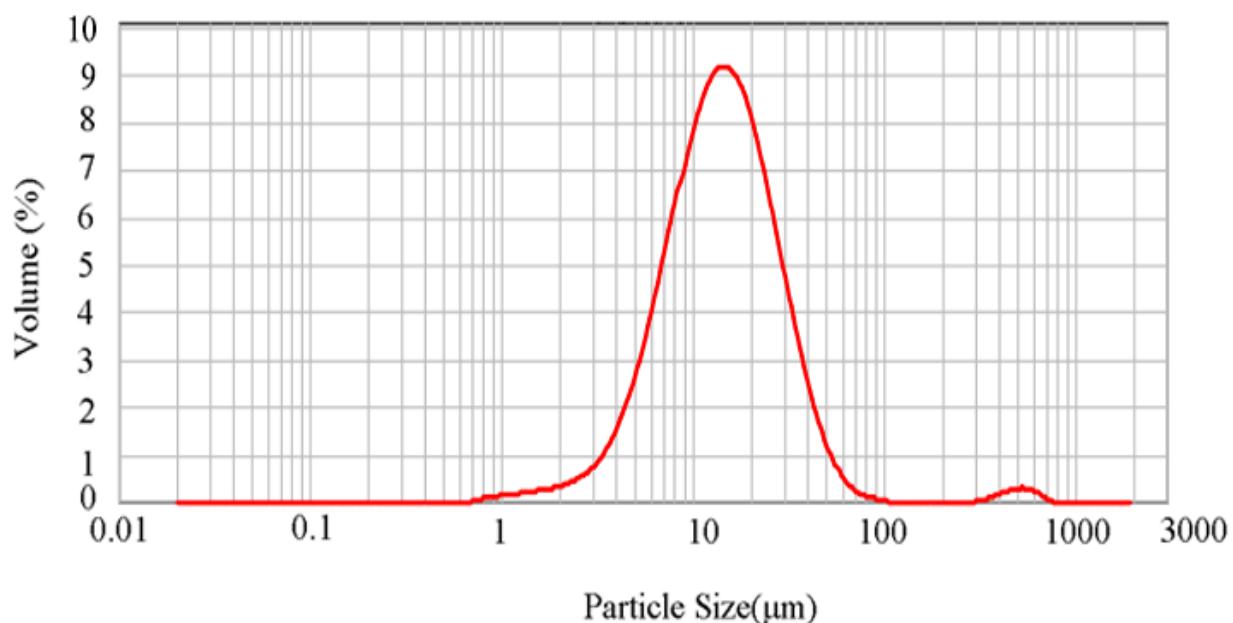


Figure S5. Particle size distribution diagram of $\text{FeS}_2@40\%\text{CoS}_2$.

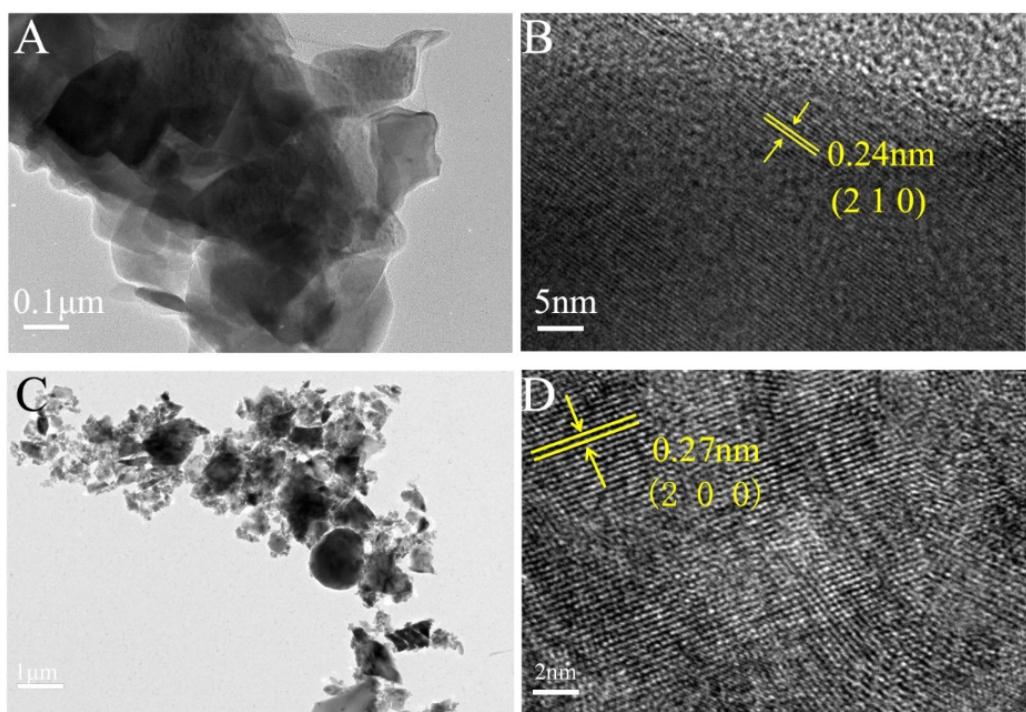


Figure S6. TEM images of (A–B) FeS₂ and (C–D) commercial CoS₂.

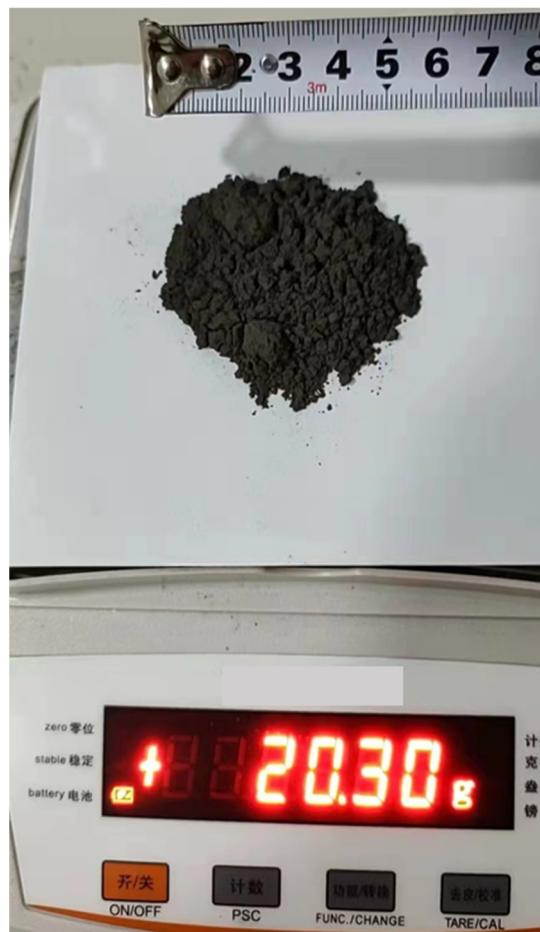


Figure S7. Scalable preparation of FeS₂@CoS₂ composite with over ten grams.

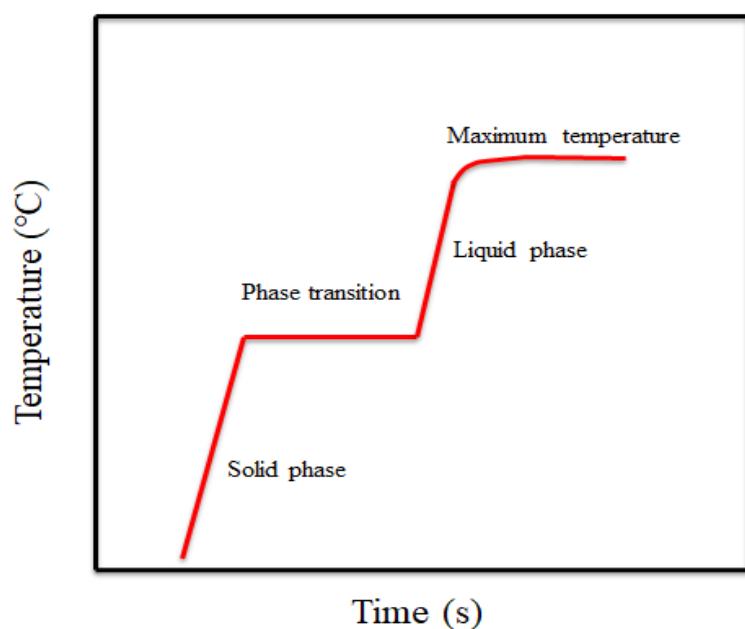


Figure S8. Schematic diagram of molten salt temperature rise curve.