Supporting Information

Exploration and Size Engineering from Natural Chalcopyrite to High-performance Electrode Materials for Lithium-ion Batteries

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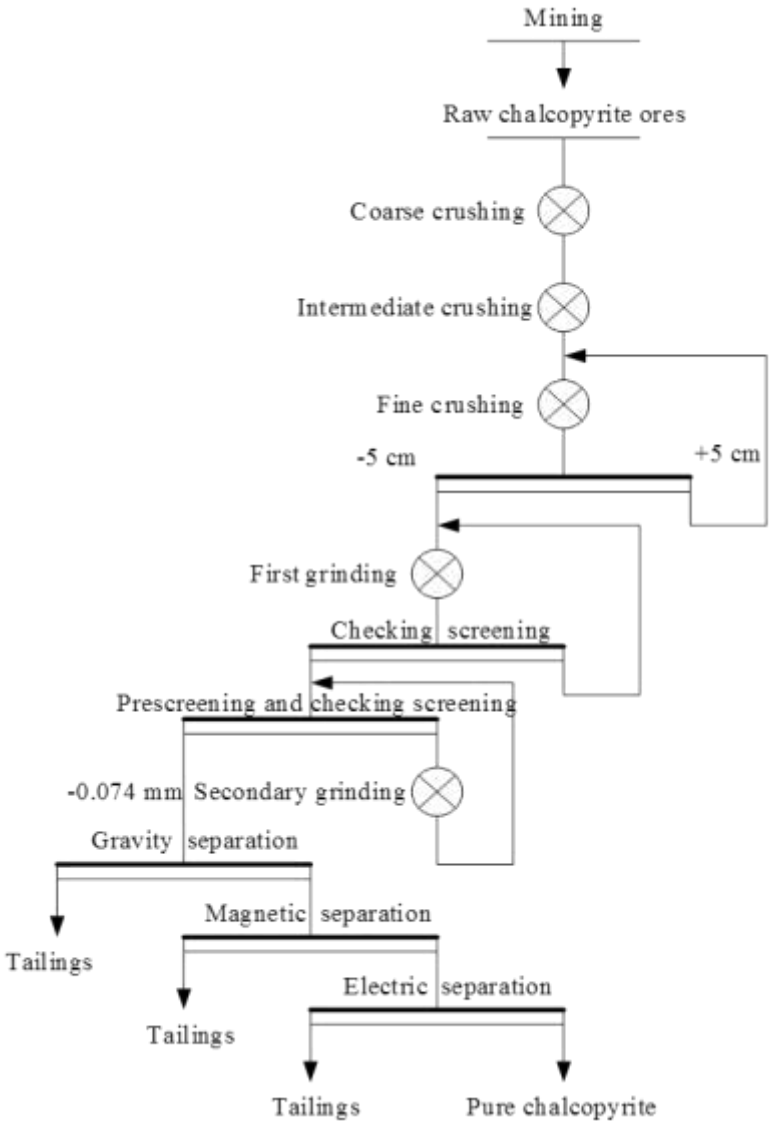

Figure S1 Mineral processing technology for preparing high purity of chalcopyrite sample

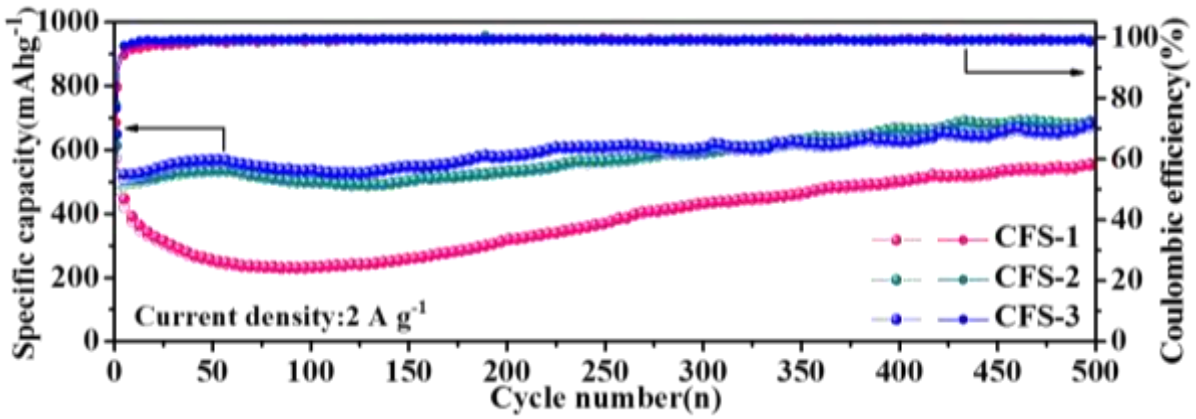

Figure S2 The long-term cycling performances at high current density of 2 A g^{-1}

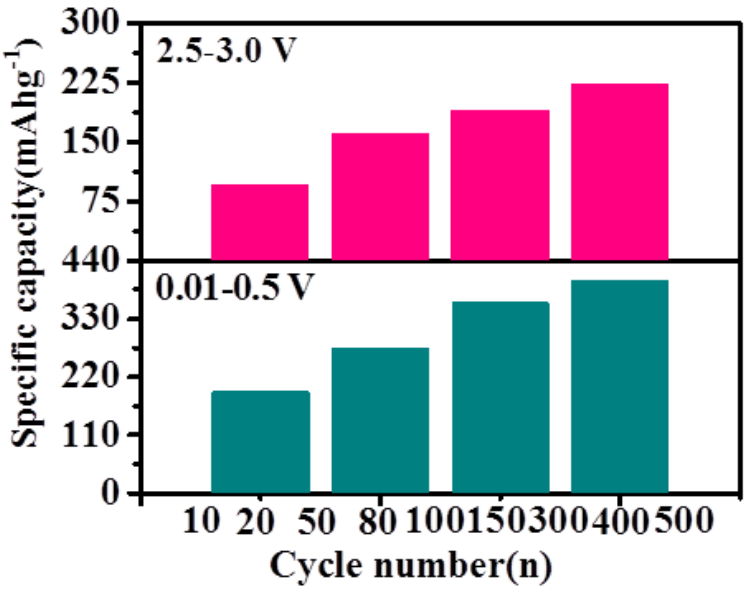

Figure S3 The capacities of CFS-2 below 0.5 V and between 2.5-3.0 V

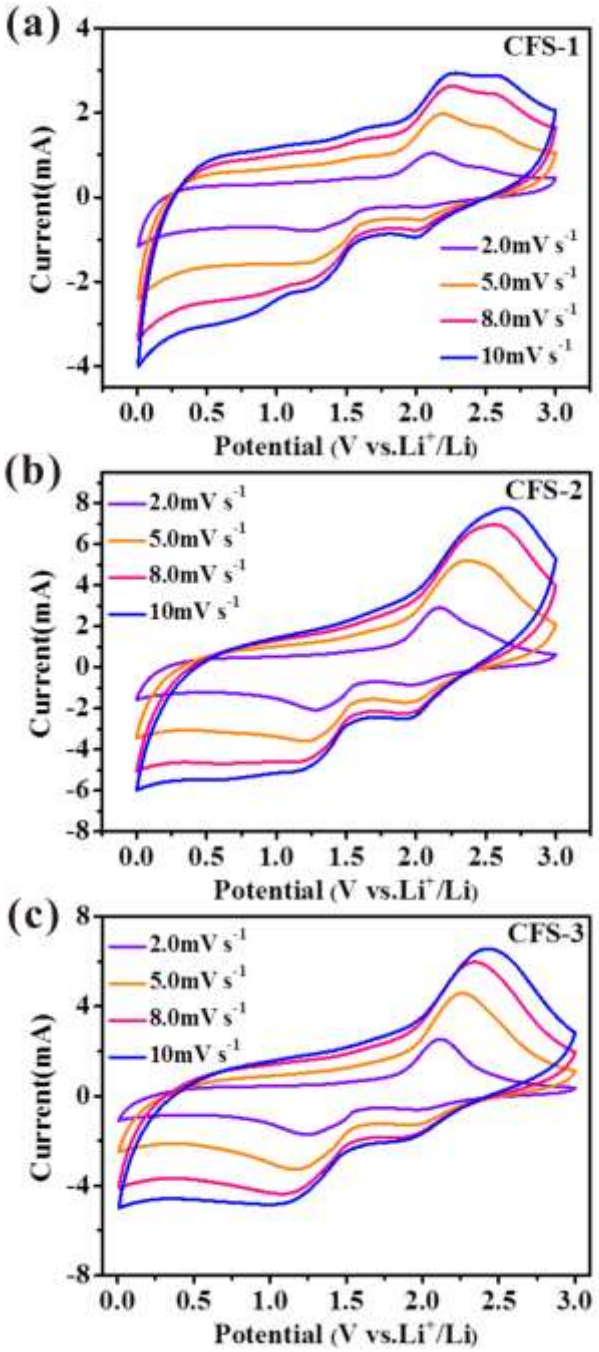

Figure S4 CV curves of (a) CFS-1, (b) CFS-2 and CFS-3 at various scan rates of 2.0, 5.0, 8.0 and 10 mV s^{-1}

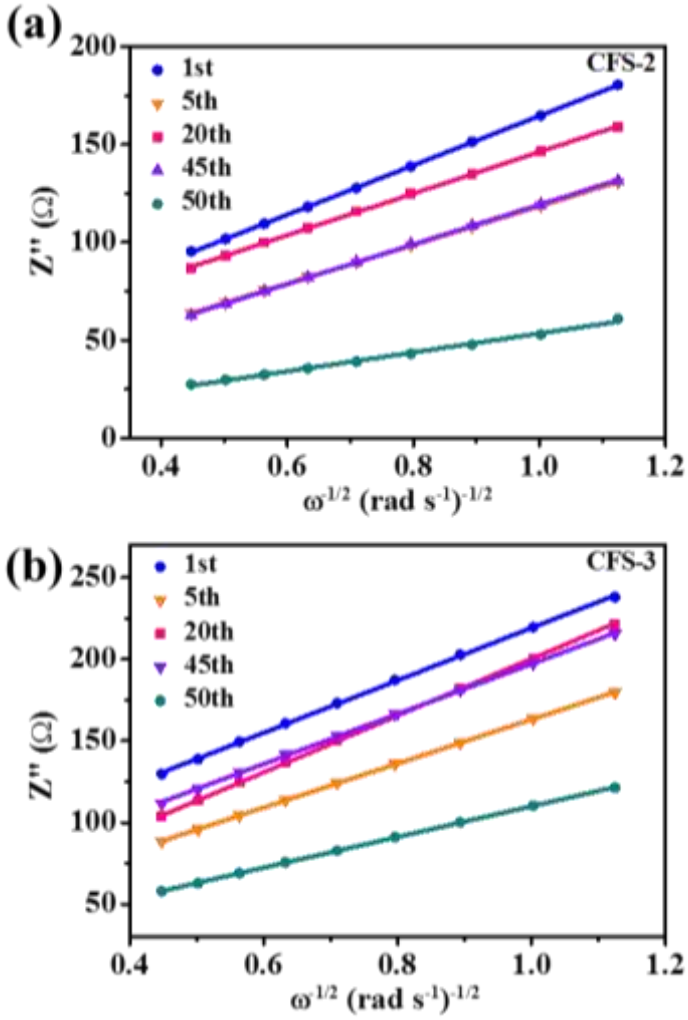

Figure S5 The liner relation between $\omega^{-1/2}$ and Z'' of (a) CFS-2 and (b) CFS-3 at various cycles.

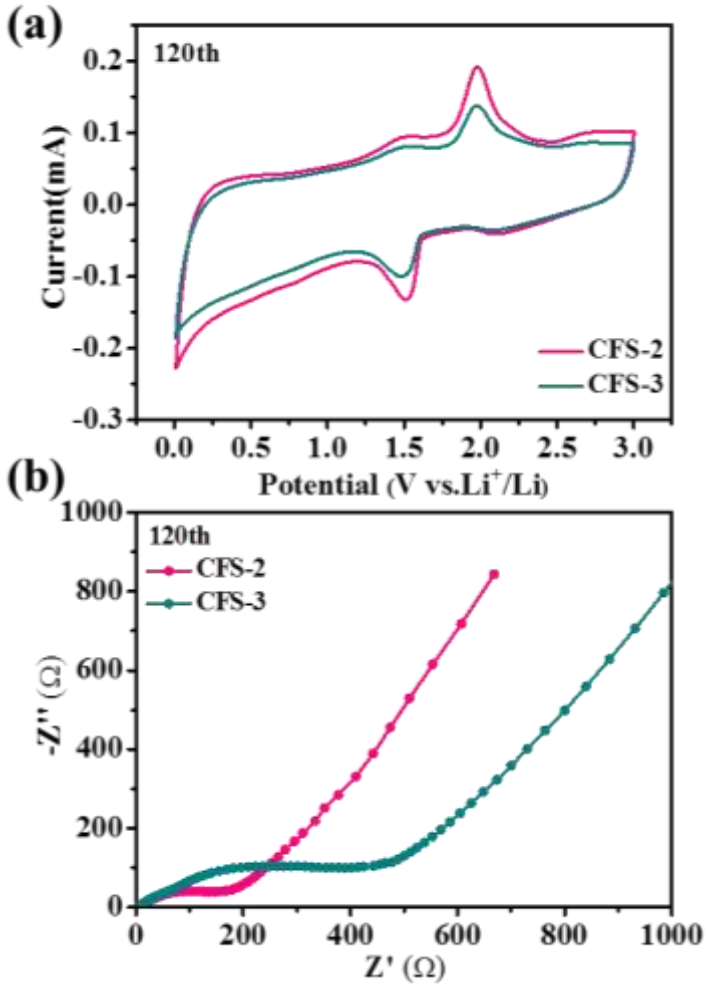

Figure S6 (a) CV curves at 0.2 mV s^{-1}, (b) EIS curves of CFS-2/3 at 120th cycle

Table S1. R_e, R_f and R_{ct} values of CFS-2/3 at fresh state

Samples	**R_e**	**R_f**	**R_{ct}**
CFS-2	2.733	555.8	204.6
CFS-3	2.514	611.6	303

Table S2. The diffusion coefficients of samples at different cycles.

	$D(Li^+)$ (cm^2 s^{-1}) × 10^{-15}				
	1st	5th	20th	45th	50th
CFS-2	3.54	5.76	5.00	5.50	24.14
CFS-3	2.19	3.10	1.86	2.40	6.37