

Supporting information

One-Pot Synthesis of an FeS@GQDs Composite for Lithium Storage with Coal Tar Pitch as “Natural GQDs”

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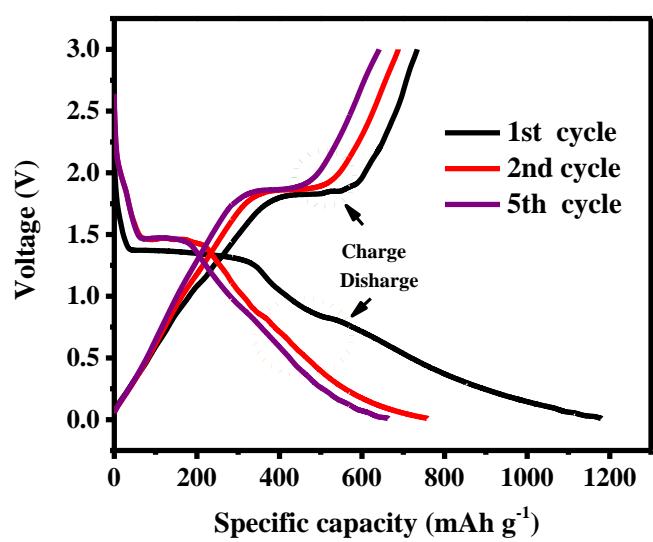


Figure S1. Initial charge/discharge curves of FeS@CTP electrode in the first cycle at 100 mA g⁻¹.

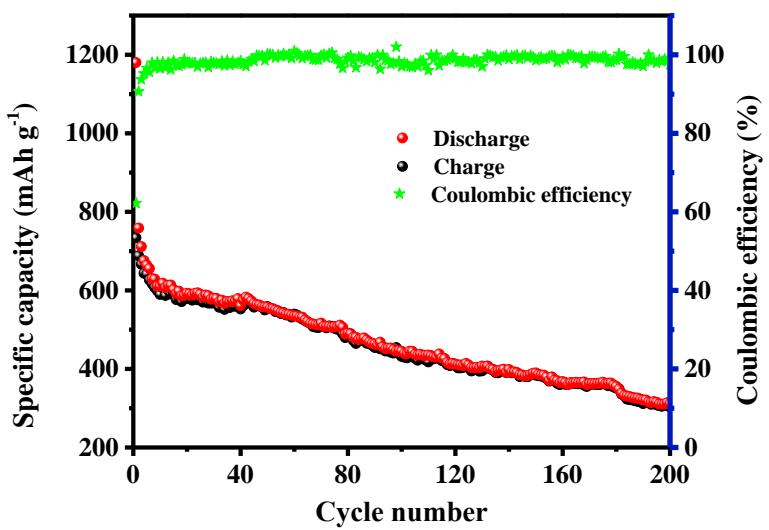


Figure S2. Cycle performance and Coulombic efficiency of FeS@CTP electrode.

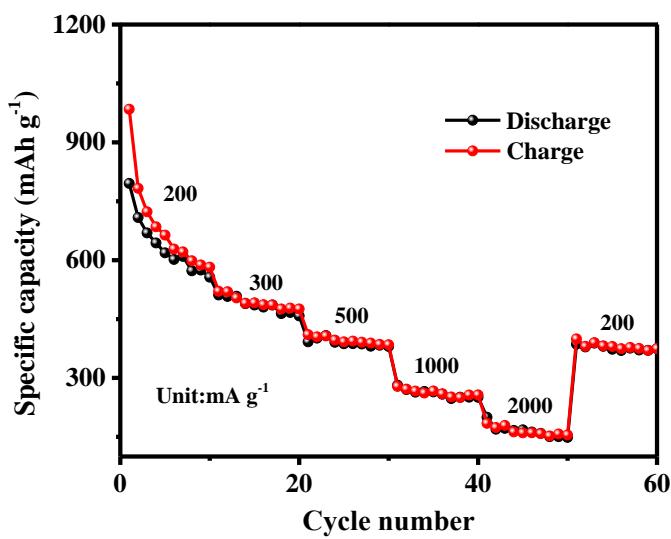


Figure S3. Rate performance of FeS@CTP electrode at various current densities.

Table S1

The initial discharge/charge capacity and Coulombic efficiency of FeS, FeS@GQDs and FeS@CTP anodes.

Sample	Current density (mA g ⁻¹)	Initial discharge (mAh g ⁻¹)	Initial charge (mAh g ⁻¹)	Coulombic efficiency (%)
FeS	100	1063.1	590.3	55.5
FeS@GQDs	100	1373.1	951.3	69.3
FeS@CTP	100	1180.2	733.9	62.2

Table S2

The reversible specific capacity of FeS, FeS@GQDs and FeS@CTP anodes at 100 mA g⁻¹ after 200 cycles.

Sample	Current density (mA g ⁻¹)	Current number (Nth)	Retaining capacity (mAh g ⁻¹)
FeS	100	200	16.3
FeS@GQDs	100	200	718.7
FeS@CTP	100	200	312.2

Table S3

The reversible specific capacity of FeS, FeS@GQDs and FeS@CTP anodes at different current density.

Sample	Reversible specific capacity (mAh g ⁻¹)					
	200 (mA g ⁻¹)	300 (mA g ⁻¹)	500 (mA g ⁻¹)	1000 (mA g ⁻¹)	2000 (mA g ⁻¹)	200 (mA g ⁻¹)
FeS	475	310	233	122	44	256
FeS@GQDs	847	726	595	378	276	675
FeS@CTP	613	486	387	266	163	370