

## Begasse as a carbon structure with high sulfur content for lithium-sulfur battery

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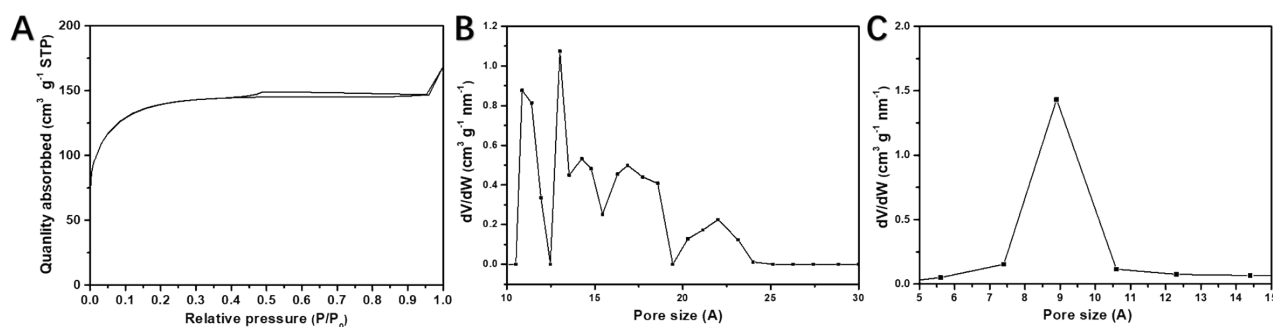


Fig.S1 N<sub>2</sub> adsorption/desorption isotherms (A) of S/CNT; Pore size distribution plots calculated by H-K (B) and DFT (C) of S/CNT

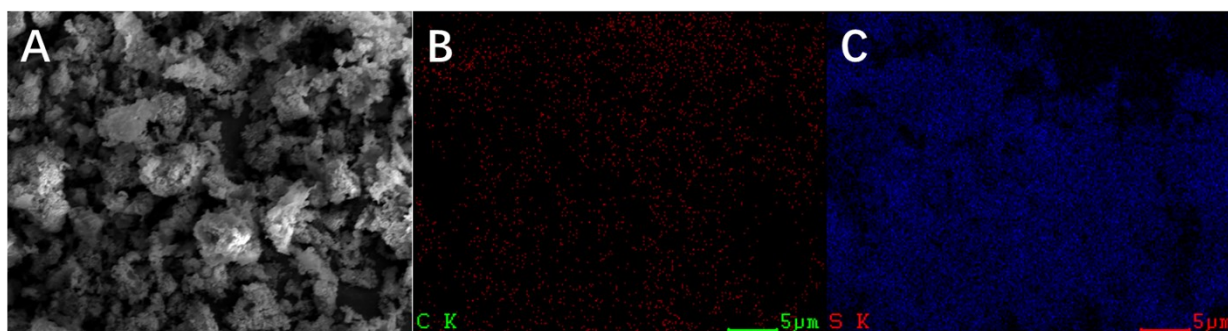


Fig.S2 SEM images of S/BC (A) and the corresponding C (B) and S (C) elemental mappings

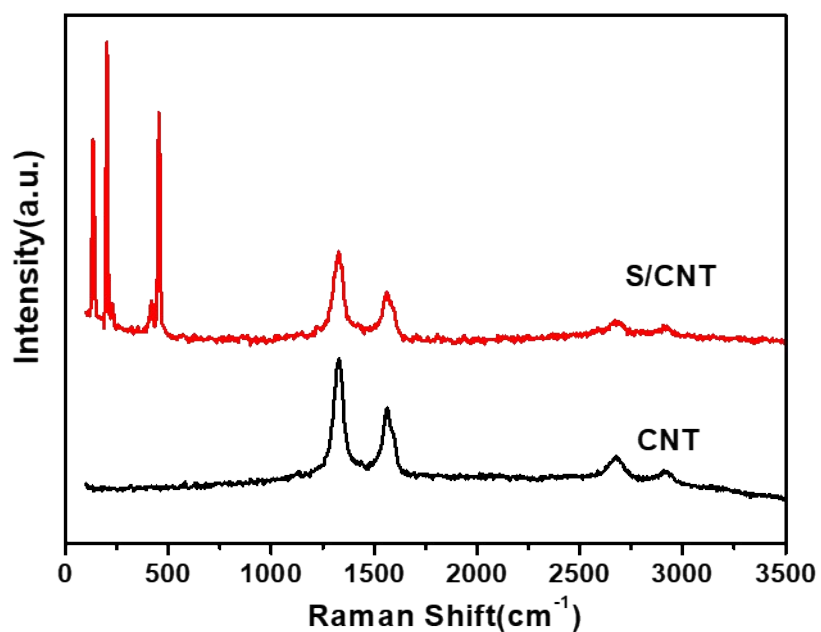


Fig.S3 Raman spectra of CNT and S/CNT

Table S1. Summary of some publications of natural materials used for the Li-S battery

Sample name	Sulfur Content (wt%)	First reversible specific capacity (mAh/g)	Capacity retention (mAh/g)	Cycle number	Ref
S/NMPC	63	1327	757	100(0.1C)	1
S/NMPC	63	1327	624	100(1C)	1
S/NBC-15	56	1169	898	200(0.2C)	2
S/NBC-15	56	1098	682	500(0.5C)	2
Pomelo peel carbon	60	1258	750	100(0.2C)	3
Starch derived carbon	81.29	922	683	100(0.5C)	4
Spent coffee carbon	47.6	1150	613	100(0.2C)	5
N/BC	68.8	1360	790	200(0.2C)	This work
N/BC	68.8		601	150(1C)	This work

Table S2. The Nyquist plots of S/BC and S/CNT

Conditions and parameters	S/BC	S/CNT
At the 1st	<b>Re(<math>\Omega</math>)</b>	2.9
	<b>Rc(<math>\Omega</math>)</b>	11.3
At the 10th	<b>Re(<math>\Omega</math>)</b>	3.5
	<b>Rc(<math>\Omega</math>)</b>	277.5

## References

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