Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supplementary Information

An ecofriendly and universal strategy to balance the active sites and electric conductivity of biomass-derived carbon for superior lithium storage

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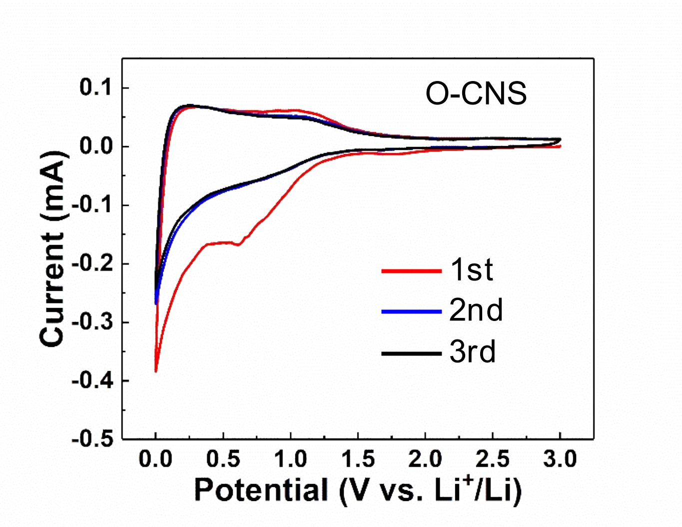

Figure S1. CV cuvres of the O-CNS electrode at the scan rate of 0.2 mV s^{-1}.

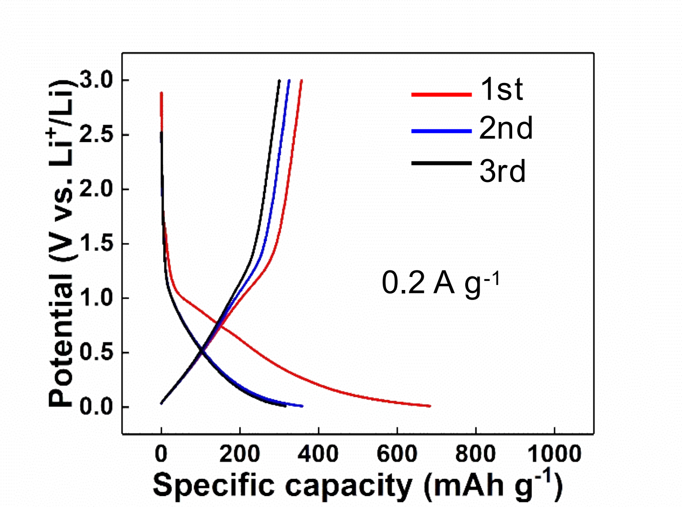

Figure S2. The voltage profiles of the O-CNS electrode tested at the current density of 0.2 A g^{-1} in the first three cycles.

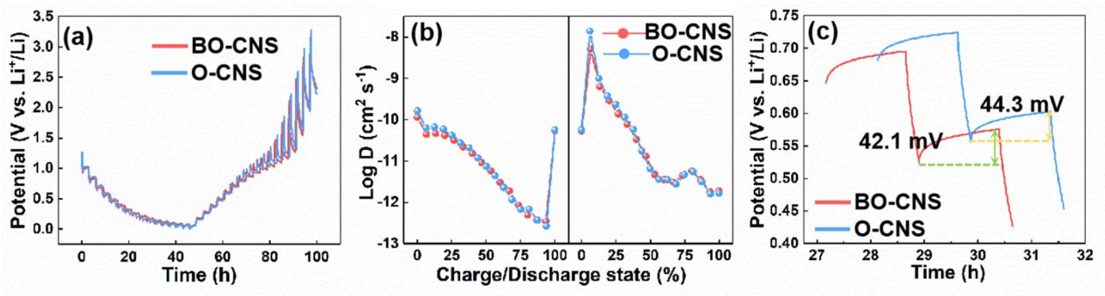

Figure S3. (a) GITT potential profiles, (b) diffusion coefficients calculated from the GITT profiles during charge/discharge processes of the obtained electrodes, and (c) the potential drop of BO-CNS and O-CNS electrodes.

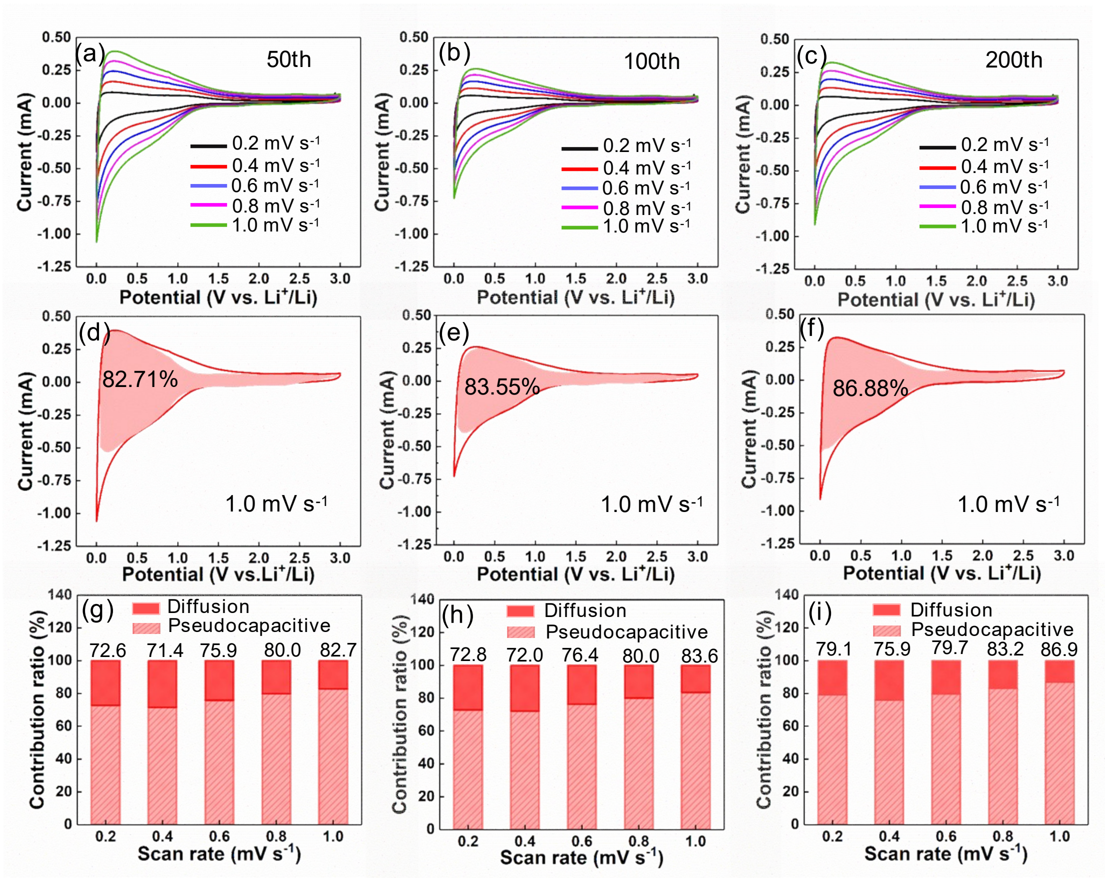

Figure S4. Li-ion storage electrochemistry of the BO-CNS electrode. (a–c) CV curves at different scan rate. (d–f) Fitted pseudocapacitive contribution in charge storage at

1.0 mV s^{-1}. (g–i) Pseudocapacitive charge storage contribution vs. scan rate. After 50 cycles (a, d, g,), after 100 cycles (b, e, h,), and for electrode after 200 cycles (c, f, i).

Table S1. The contents of the B, O, and C elements based on XPS results.

Elements	B (at.%)	C (at.%)	O (at.%)
Contents	6.36	77.22	16.42

Table S2. Electrochemical properties of biomass-derived carbons used as anodes in LIBs.

Sample	**Current Density (mA g^{-1})**	**Cycle number**	**Capacity retention (mAh g^{-1})**	**Reference**
Natural cotton	37.2	100	246	[1]
Spruce	77.4	70	195	[2]
Banana peel waste	77.4	200	272	[3]
Rice-starch	111.6	50	280	[4]
Sucrose	50	100	135	[5]
Loofah	100	200	225	[6]
Popped rice	100	150	383	[7]
Navel orange peel	500	500	234	[8]
cotton stalk	100	100	328	[9]
Waste biomass	100	200	131	[10]
BO-CNS	200	300	331	This work
	6000	1000	220	

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