Supplementary Material

A cost-effective approach for practically viable Li-ion capacitors by using Li$_2$S as an in-situ Li-ion source material

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Fig. S1. SEM images of (a) activated carbon, and (b) a 8 wt.% Li$_2$S-loaded activated carbon.
Fig. S2. Possible surface oxygen functionalities on activated carbon.\textsuperscript{1} (a) Phenolic hydroxyl group, (b) carboxylic group, (c) carboxylic acid anhydride group, (d) ether group, (e) cyclic peroxide group, (f) normal lactone group, (g) fluoresceintype lactone group, (h) quinone-type carbonyl group, (i) phenolic/quinone group with hydrogen bonding.

Fig. S3. S2p XPS spectrum of a 8 wt.% Li2S-loaded activated carbon electrode after initial activation by charging at 0.1 mA cm\textsuperscript{-2} to 4.2 V vs. Li/Li\textsuperscript{+}.

Reference