Self-branched Nb$_2$O$_5$ nanoarrays as the "electron-ion reservoirs" to enhance the conversion of polysulfides in flexible Li-S batteries

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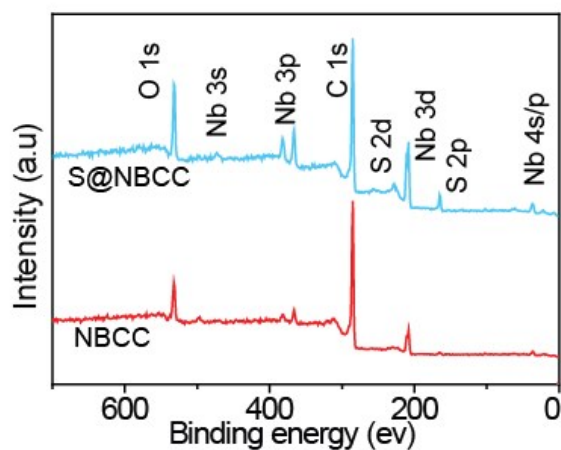*E-mail address:lihuanhuan@htu.edu.cn; baiguangyue@htu.edu.cn; xiess89@163.com*

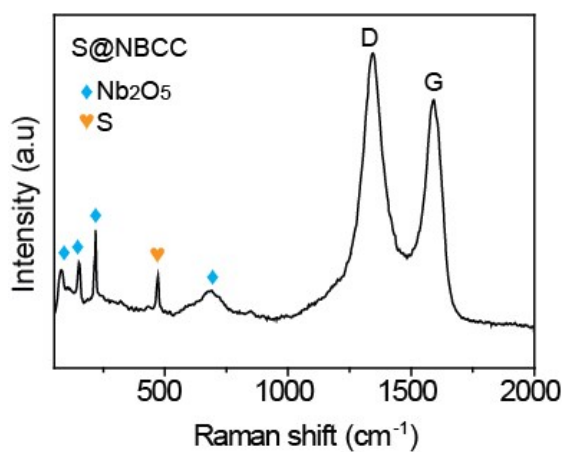**Figure S1.** XPS analysis of the prepared NBCC and S@NBCC, respectively.

Figure S2. Raman spectrum of the prepared S@NBCC. As a typical class of CC matrix in the S@NBCC composite is verified by Raman spectroscopy with two bands around 1580 cm^{-1} (graphitic carbon) and 1360 cm^{-1} (disordered carbon).
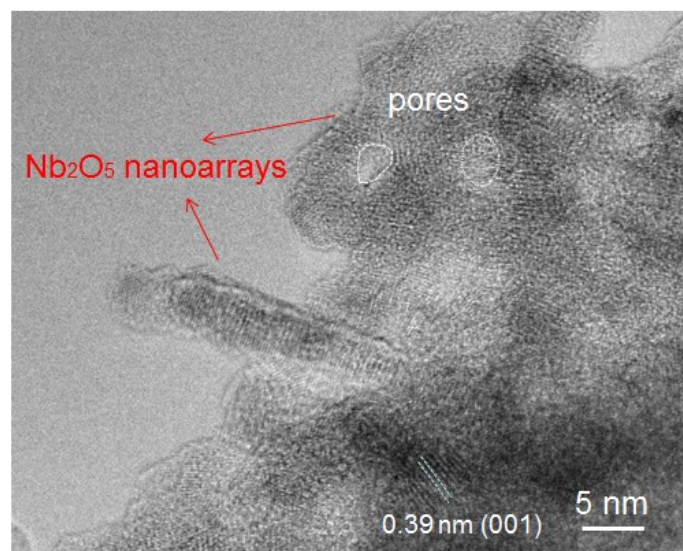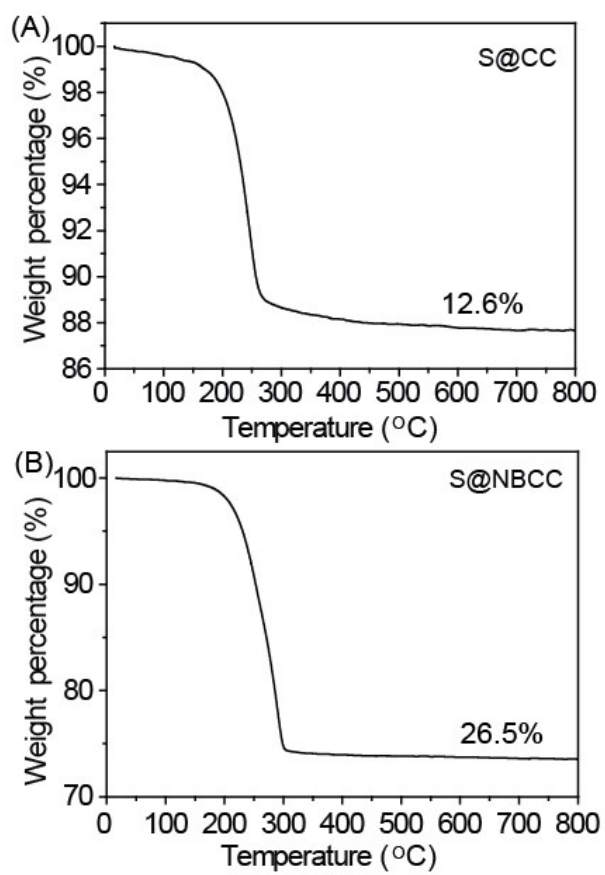
Figure S3. TEM image of NBCC.

Figure S4. The TGA curves of (A) S@CC, (B) S@NBCC measured under a N_2 flow.
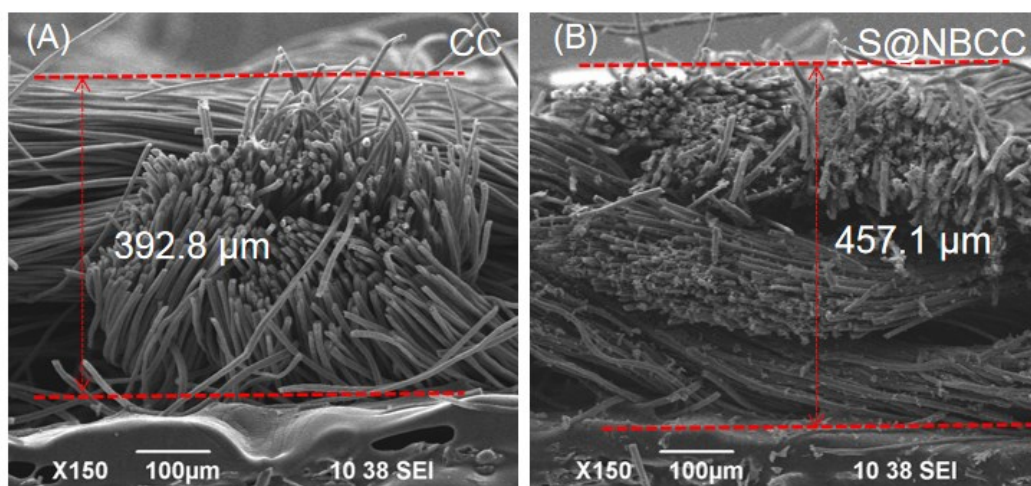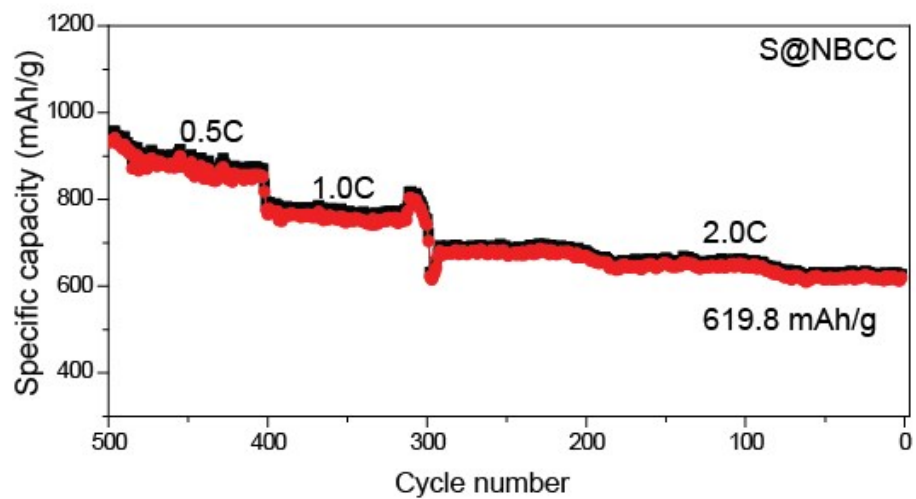

Figure S5. The cross-sectional SEM images of CC and S@NBCC, respectively.

Figure S6. The long-term cycle performance of S@NBCC.