Supplementary Material (ESI) for Chemical Communications
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Supplementary Information

Superconducting $TaS_{2-x}I_y$ hierarchical nanostructures

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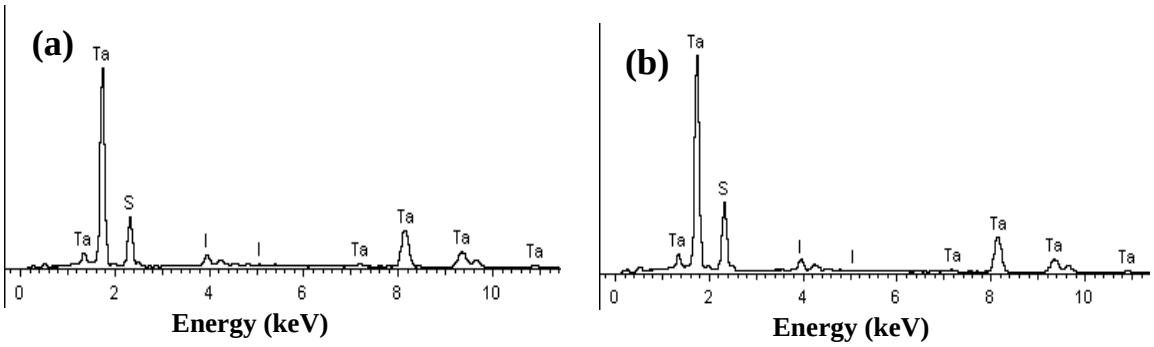

Fig. S1. EDX spectra of the products prepared with a 30 mg of iodine. (a) A single nanorod; (b) a piece of nanosheet.

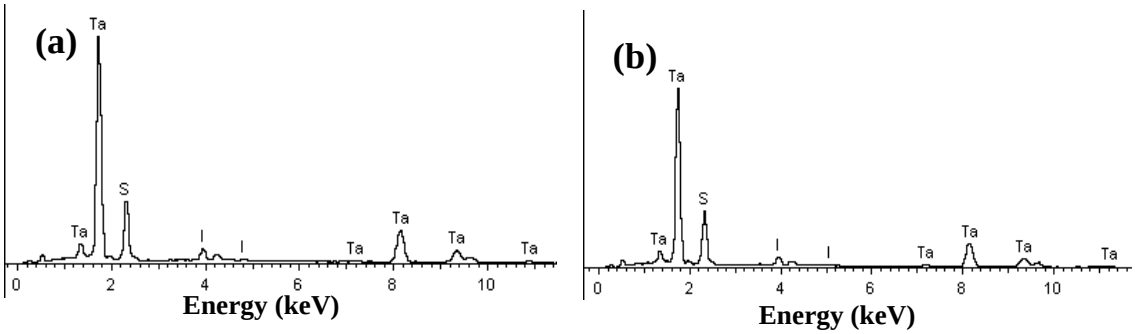

Fig. S2. EDX spectra of the products prepared with a 60 mg of iodine. (a) A single nanorod; (b) a piece of nanosheet.

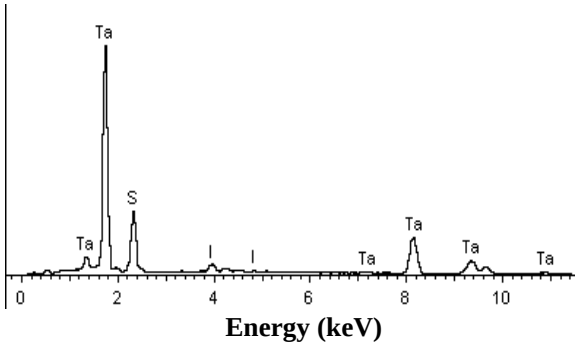

Fig. S3. EDX spectrum of the nanosheets prepared with a 120 mg of iodine.

Discussion about the XRD patterns:

In the powder XRD patterns, the intense peaks of the sample 1, 2 are similar to those of 1T-TaS_2, but both need adopt 3R-TaS_2 structure if all peaks are indexed, and moreover the most intense peak ($2\theta=14.95^o$, d=0.593 nm) of the XRD are closer to peak (d_{003} =0.594 nm)of 3R-TaS_2. The main phases of the sample 3, 4 can be indexed according to 2H-TaS_2 (a=0.3314 nm, c=1.209 nm, ICDD PDF: 80-0685), but length of c-axis increases to 1.258 nm. It may be attributed to intercalation of iodine.