

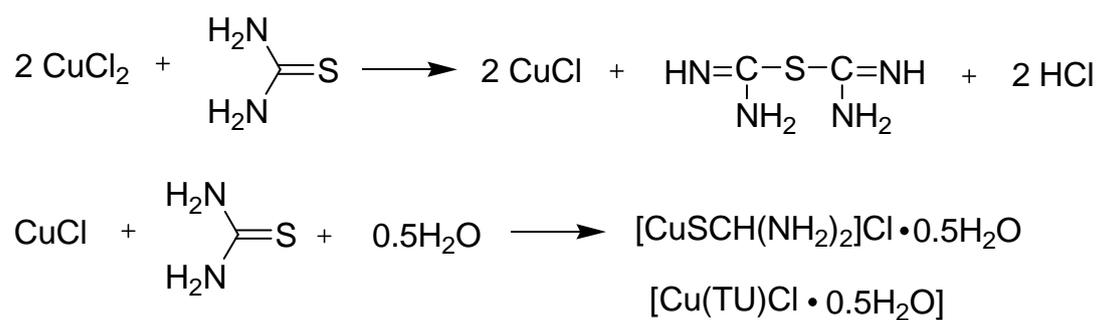
**Electronic Supplementary Information (ESI)**

**Rapid and scalable route to CuS biosensors: a  
microwave-assisted Cu-complex transformation into CuS  
nanotubes for ultrasensitive nonenzymatic glucose sensor**

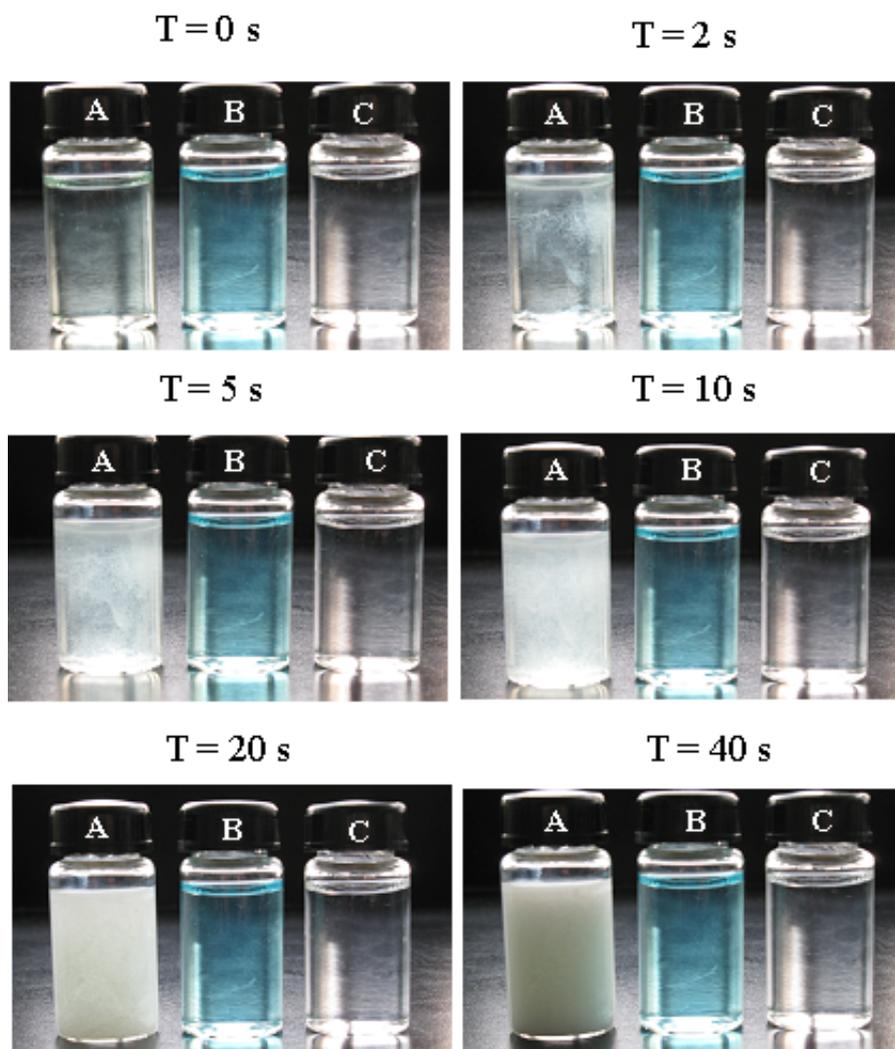
Jun Liu and Dongfeng Xue\*

State Key Laboratory of Fine Chemicals, Department of Materials Science and  
Chemical Engineering, School of Chemical Engineering, Dalian University of  
Technology, Dalian 116012, P. R. China

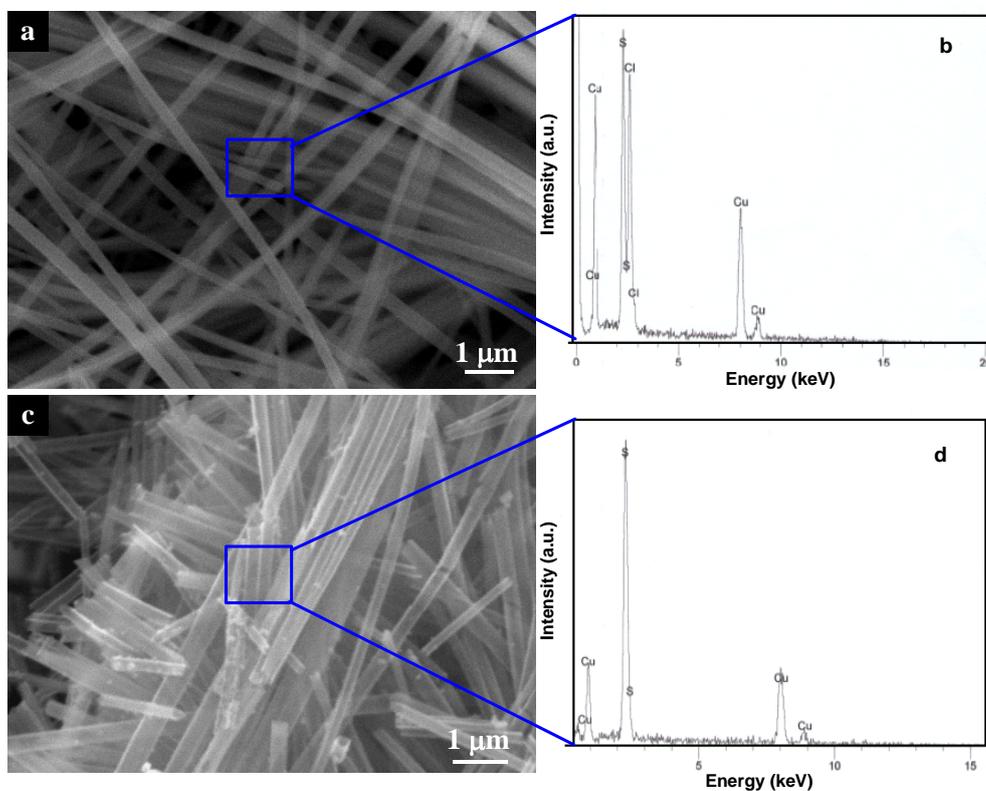
E-mail: dfxue@dlut.edu.cn (D. Xue)



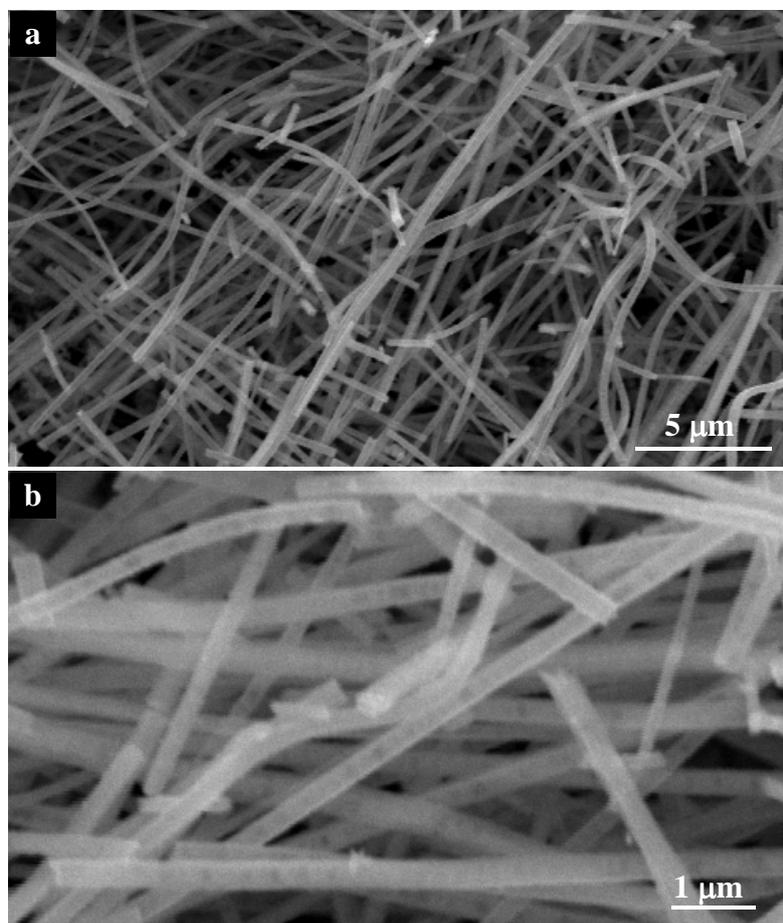
**Fig. S1** Reaction routes for Cu(TU)Cl·0.5H<sub>2</sub>O complex.<sup>1-3</sup>



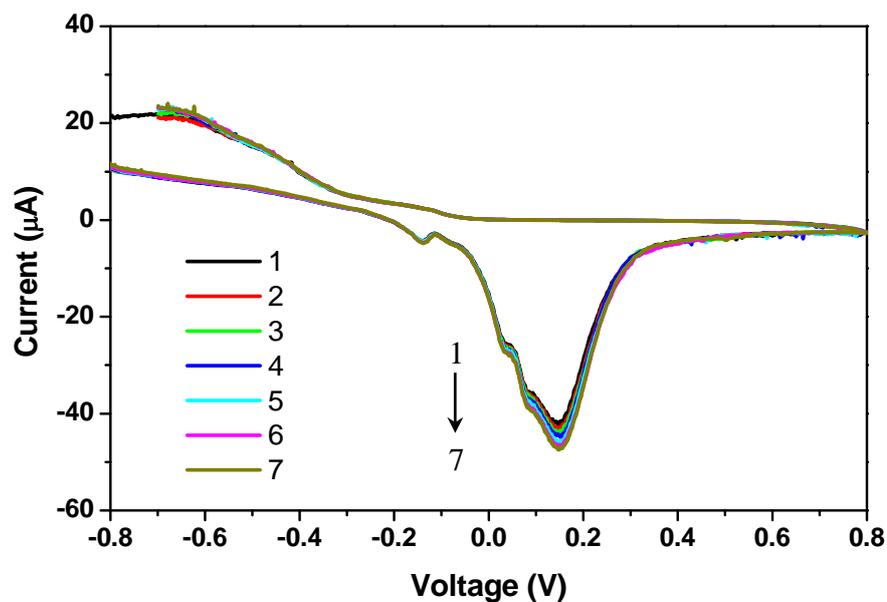
**Fig. S2** Photographic images showing the rapid formation process of  $\text{Cu(TU)Cl}\cdot 0.5\text{H}_2\text{O}$  complex nanowires. Bottles A, B and C contain mixture solution of thiourea and  $\text{CuCl}_2$  (A),  $\text{CuCl}_2$  solution (B), and thiourea solution (C), respectively.



**Fig. S3** SEM images (a,c) and EDS patterns (b,d) of  $\text{Cu(TU)Cl}\cdot 0.5\text{H}_2\text{O}$  complex nanowire precursors and their conversion into  $\text{CuS}$  nanotube products. In Fig. S3b, the peak that represents O element was not detected due to its low concentration. H, C, N elements were also not detected due to the limited sensitivity of EDS microanalysis.



**Fig. S4** SEM images showing the partial transformation of  $\text{Cu(TU)Cl}\cdot 0.5\text{H}_2\text{O}$  complex nanowire.



**Fig. S5** CV performance of CuS spherical particles/Nafion-modified GC electrodes in the presence of the different amount of the glucose in  $0.2 \text{ mol L}^{-1}$  PBS ( $\text{pH} = 7.2$ ) at a scan rate of  $50 \text{ mV s}^{-1}$ . (scans 1–7 correspond to 1, 2, 3, 4, 5, 6, 7,  $\mu\text{mol L}^{-1}$  glucose in  $0.2 \text{ mol L}^{-1}$  PBS, respectively.) The fabrication procedure of CuS spherical particles is shown in Ref. 4.

## References

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- 2 A. Jagminas, G. Niaura, A. Judzentiene and R. Juskenas, *Appl. Surf. Sci.*, 2004, **239**, 72.
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- 4 J. Liu and D. Xue, *J. Cryst. Growth*, 2009, **311**, 500.