Supporting Information

Water Soluble Sulphur Quantum Dots for Selective Ag+ Sensing Based on the Ion Aggregation-Induced Photoluminescence Enhancement

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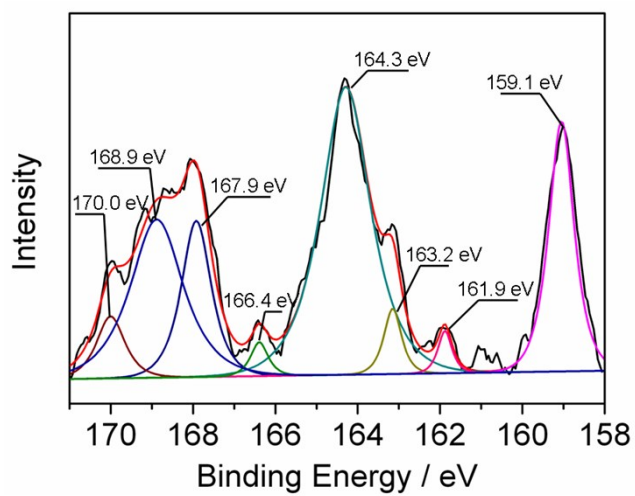E-mail: lishunxing@mnnu.edu.cn; shunxing_li@aliyun.com

Figure S1. The X-ray photoelectron spectroscopy of SQDs. (Ref. *Adv. Funct. Mater.*
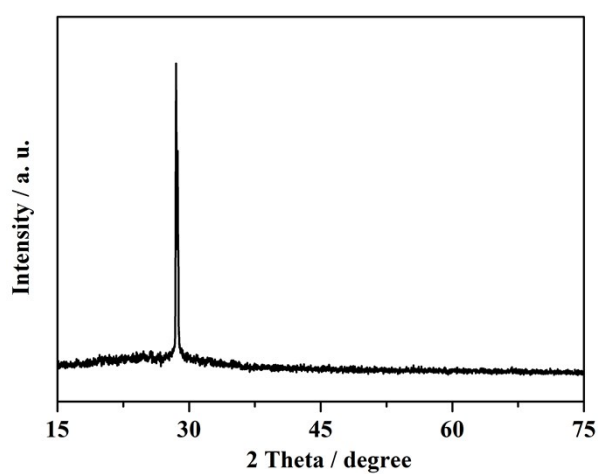
2014, 24, 7133-7138)

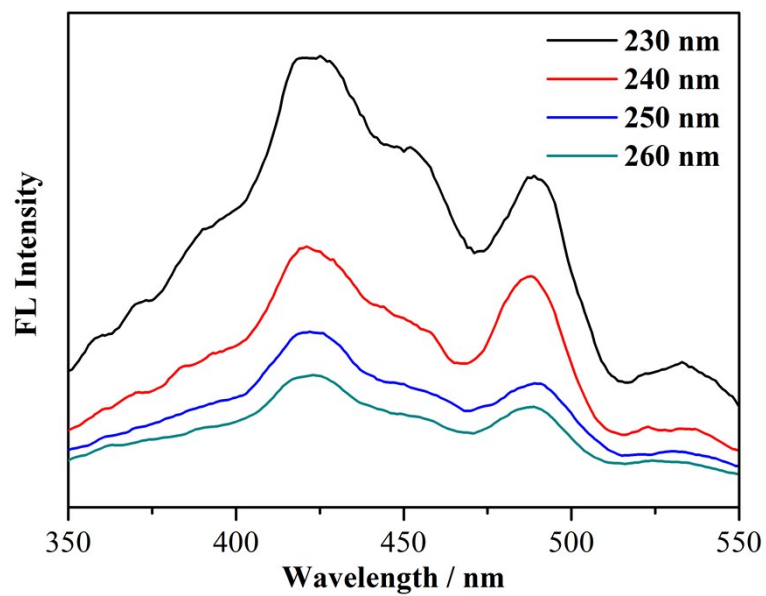**Figure S2.** XRD spectrum of the SQDs.

Figure S3. FL spectrum of the SQDs at different excitation wavelengths from 230 to 260 nm.
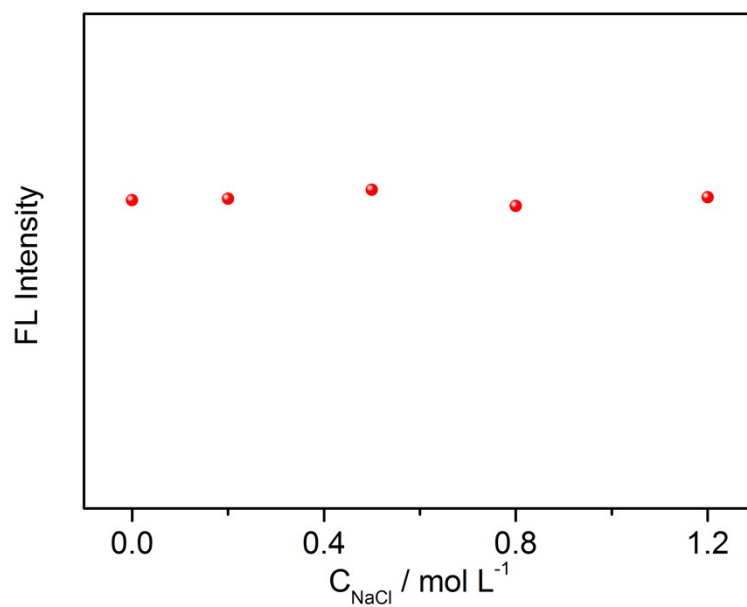

Figure S4. The FL intensity at 425 nm (excitation at 260 nm) of the SQDs in the NaCl solution.
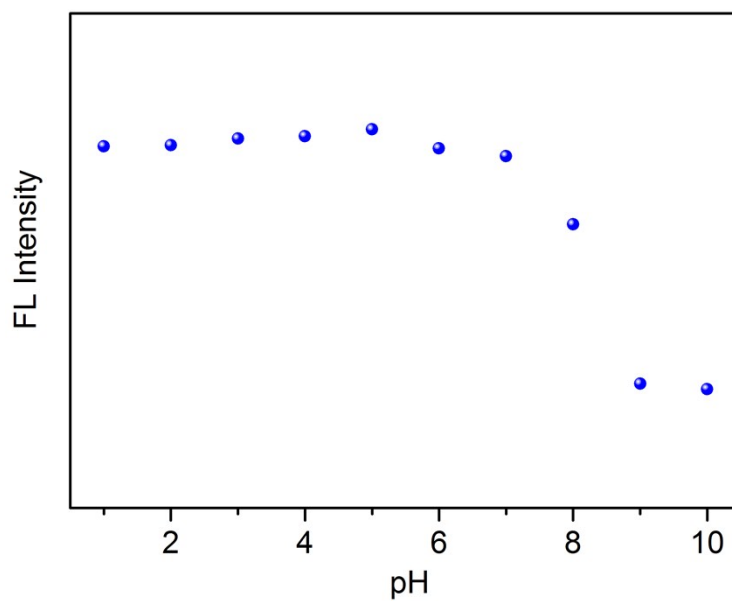
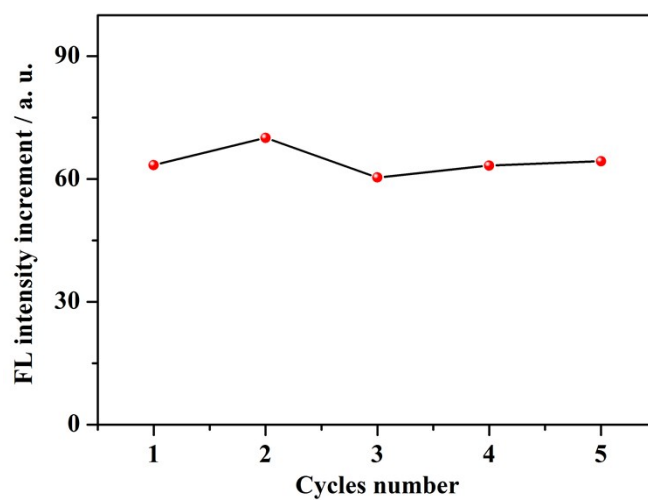**Figure S5.** Dependence of the FL intensity on the pH values from 1 to 10.

Figure S6. Cycles test Ag^+ by adding five times known concentration $AgNO_3$ (1 μL 1000 ppm).

Table S1: Comparison of the linear range and detect limit for silver ions using

different fluorescent probes.

Probes	Linear range	Detect limit	Reference
Rhodamine B derivative	0.1-5.0 μM	0.13 μM	1
Gold nanoclusters	25 nM-3 μM	9 nM	2
Au nanodots	3-300 nM	1.5 nM	3
Graphene quantum dots	0-100 nM	3.5 nM	4
Polymer Carbon Nanoribbons	5 nM-80 μM	1.73 nM	5
Fluorescein spirolactam derivative	0.1-10 μM	0.08 μM	6
Sulphur quantum dots	0-280 μM	0.81 μM	This work

Table S2: Analytical results for the determination of silver ions in well water and tap water samples using SQDs.

Samples	Added (μM)	Found (μM)	Recovery (%)	RSD (n=3, %)
Well water 1	50	50.14	104.69	4.44
Well water 2	100	98.45	98.47	3.06
Well water 3	200	189.87	95.49	5.05
Tap water 1	50	48.56	106.36	5.19
Tap water 2	100	95.15	96.74	4.51
Tap water 3	200	178.21	97.71	7.96

References:

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