

Supplementary information

Aqueous electrosynthesis of silver indium selenide nanocrystals and photothermal properties

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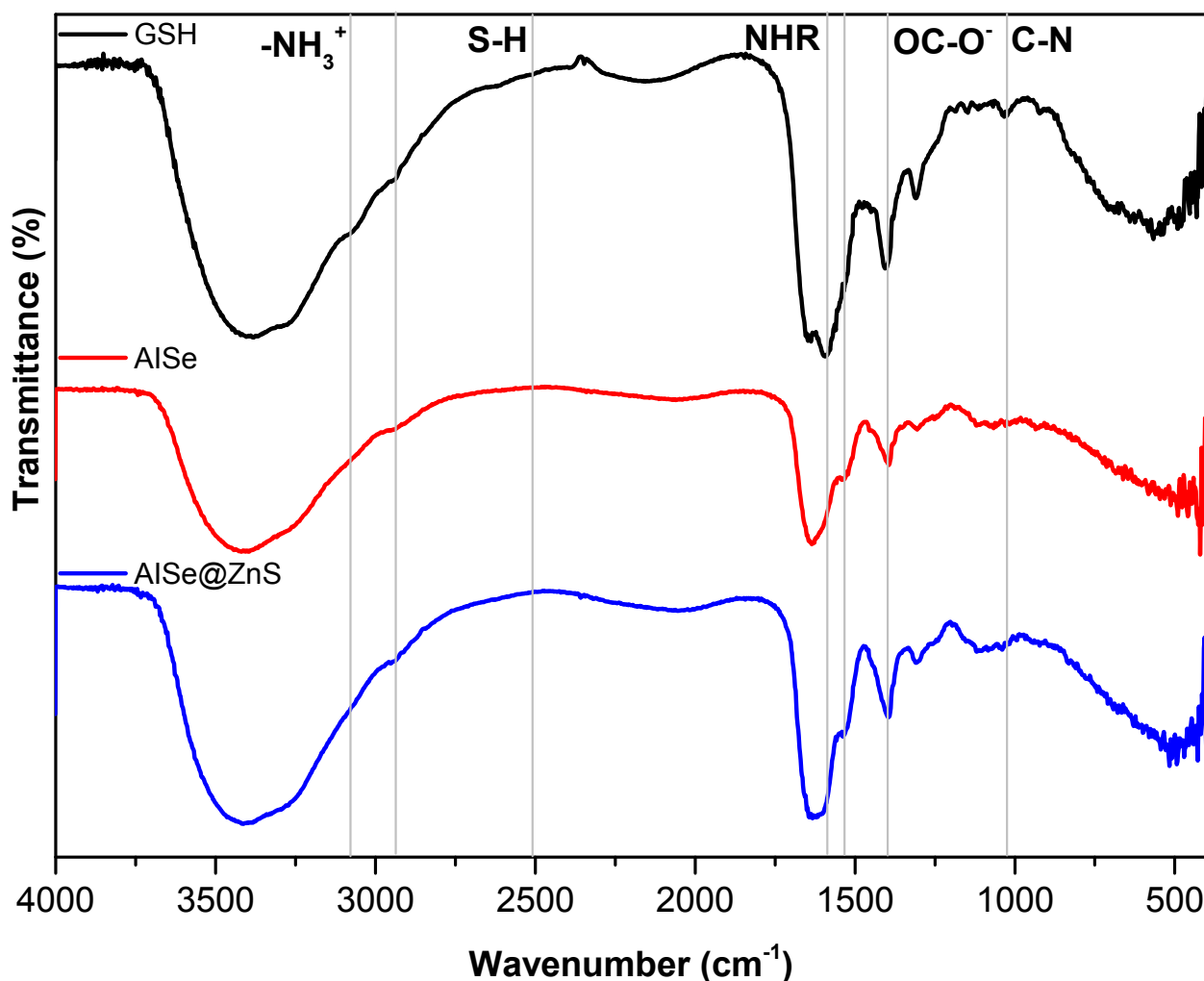


Figure S1. FTIR spectra of GSH, AISe and AISe/ZnS systems at pH 9.

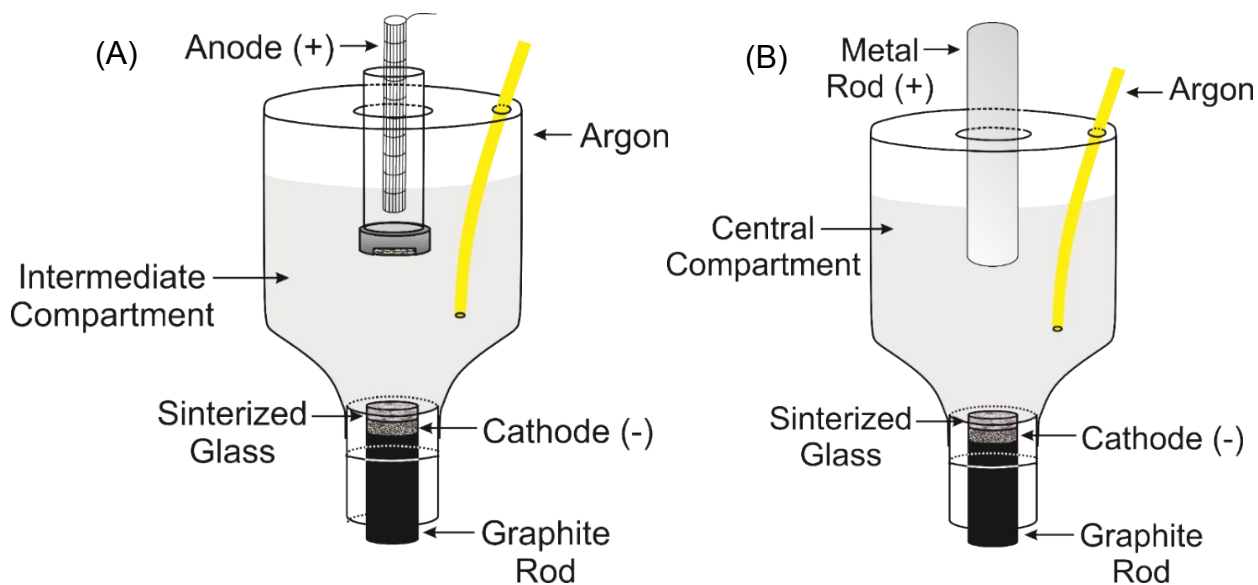


Figure S2: Electrochemical cell used for the synthesis of (A) AISe-GSH and (B) ZnS-GSH NCs (adapted from references 1 and 2).

Table S1. Emission wavelength and QY of AISe NCs synthesized by different methods.

entry	Strategy / Medium	Stabilizer	Chalcogen source	λ_{em}	QY (%)	Standard/ λ_{exc}	Ref.
1	Hot injection (n-trioctylphosphine)	n-trioctylphosphine	Se ⁰	700 – 850 nm	< 5.0	-	[1]
2	Hot injection (1-octadecene)	Oleylamine/ dodecanethiol	Se ⁰	619 nm	6.9	R101/450 nm	[2]
3	Hot injection (aqueous)	L-GSH	Se ⁰ /NaBH ₄	642 nm	10.3	R6G / 382 nm	[3]
4	Hydrothermal (aqueous)	Gelatine/TGA	Se ⁰ /NaBH ₄	575 – 650 nm	< 5.0	Integrating sphere	[4]
5	Electrochemical (aqueous)	L-GSH	Se⁰	610 nm	18.6	R6G / 488 nm	This work
6	Electrochemical (aqueous)	L-GSH	Se⁰/S⁰	634 nm	16.0	R6G / 488 nm	This work

References

- 1 O. Yarema, M. Yarema, D. Bozyigit, W. M. M. Lin and V. Wood, *ACS Nano*, 2015, **9**, 11134–11142.
- 2 D. Yao, H. Liu, Y. Liu, C. Dong, K. Zhang, Y. Sheng, J. Cui, H. Zhang and B. Yang,

Nanoscale, 2015, **7**, 18570–18578.

- 3 D. Che, X. Zhu, H. Wang, Y. Duan, Q. Zhang and Y. Li, *J. Colloid Interface Sci.*, 2016, **463**, 1–7.
- 4 X. Kang, Y. Yang, L. Huang, Y. Tao, L. Wang and D. Pan, *Green Chem.*, 2015, **17**, 4482–4488.