Electronic Supplementary Material (ESI) for New Journal of Chemistry

Supporting Information

Multifunctional manganese-doped core/shell quantum dots for magnetic resonance and fluorescence imaging of cancer cells

Babao Lin,[†a] Xiuzhong Yao,[†b] Yihua Zhu,[a]* Jianhua Shen,[a] Xiaoling Yang,[a] Hongliang Jiang,[a] and Xiaoqing Zhang[a]

[a]. *Key Laboratory for Ultrafine Materials of Ministry of Education, School of Materials Science and Engineering, East China University of Science and Technology, Shanghai 200237, China.*

[b]. *Department of Radiology, Zhongshan Hospital of Fudan University and Department of Medical Image, Shanghai Medical College of Fudan University, Shanghai Institute of Medical Imaging, 138 Fenglin Road, Shanghai 200032, China.*

*Corresponding author: Fax: +86-21-64250624; Tel: +86 21 64252022; yhzhu@ecust.edu.cn (Y. Zhu)

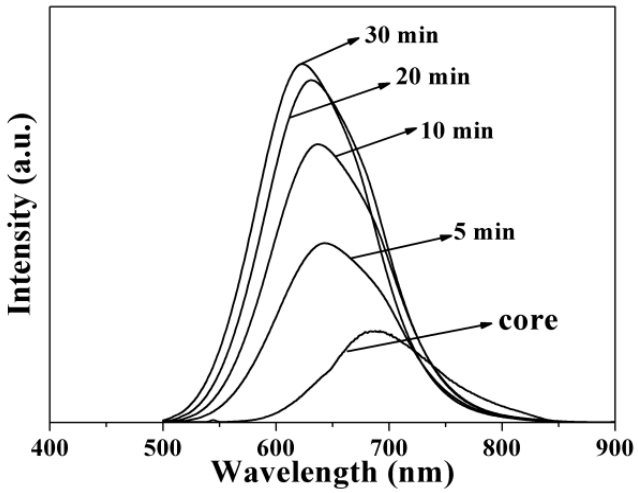

Figure S1. Evolution of PL spectra of the resulting QDs during the growth of a ZnS shell.

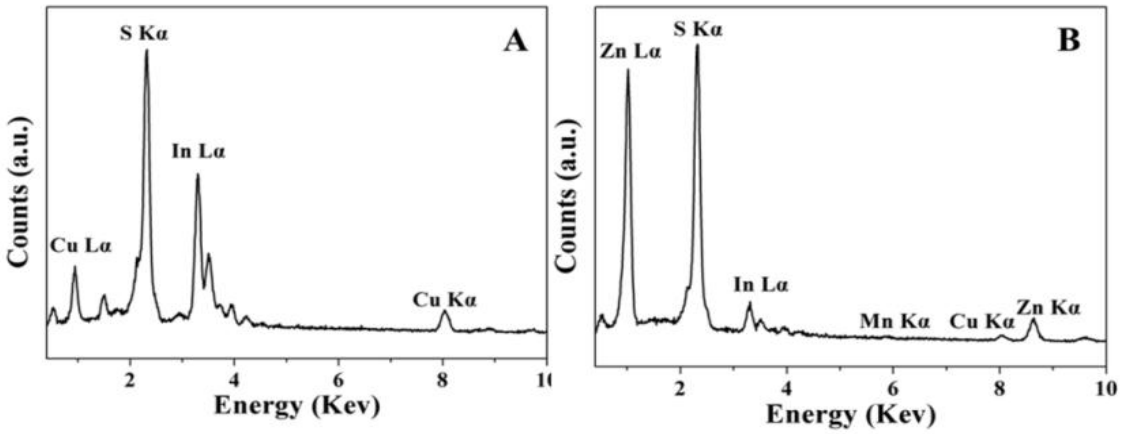

Figure S2. EDX spectra of core QDs (A) and core/shell QDs (B).

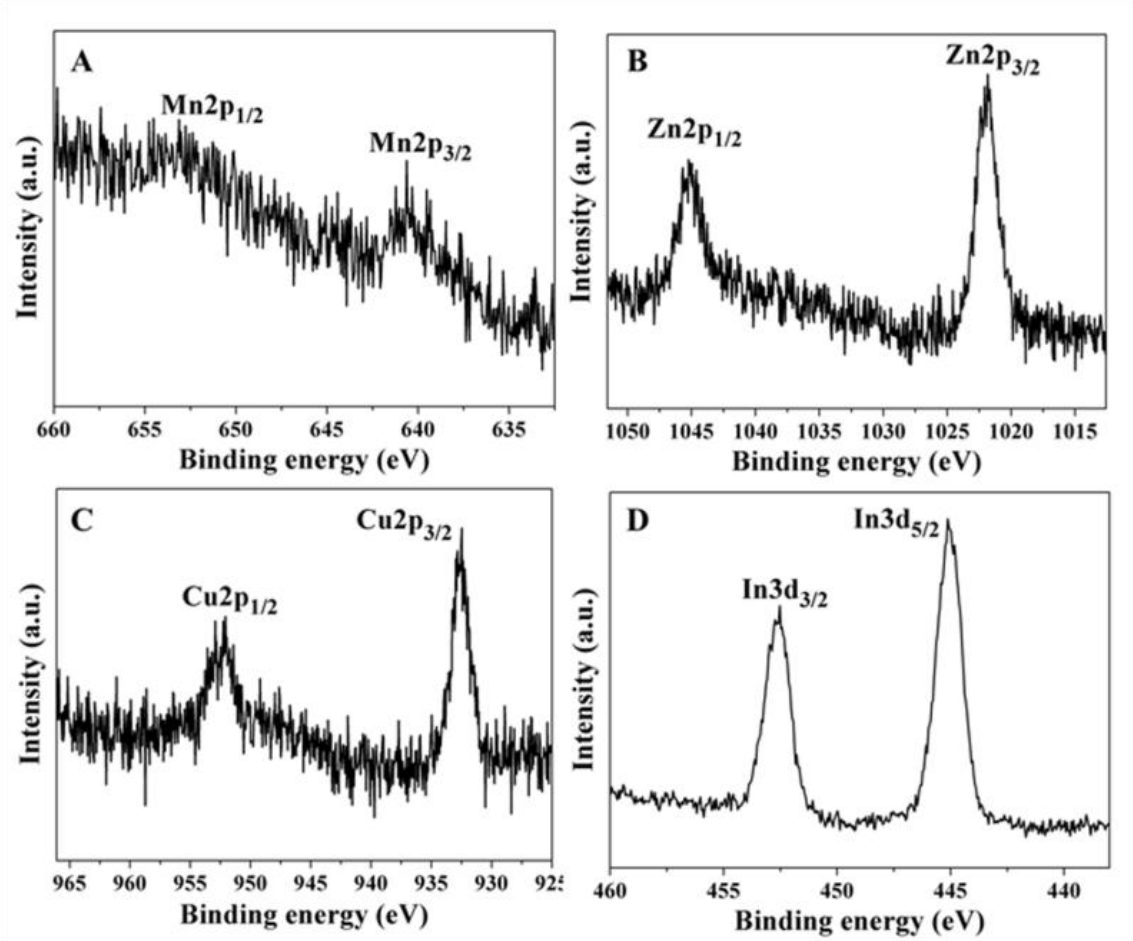

Figure S3. XPS spectra of the core/shell QDs. (A) Mn2p, (B) Zn2p, (C) Cu2p and (D) In3d.

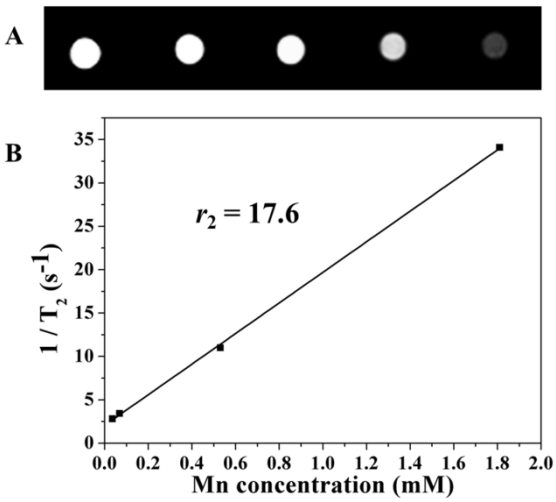

Figure S4. Multimodal core/shell quantum dots are detectable by MRI. (A) MR detection. Nanoparticles imaged by T_2-weighted MRI show increasing signal reduction as Mn^{2+} concentration increases (from left to right, 0, 0.035, 0.068, 0.53, 1.81 mM). (B) T_2 relaxivity plot of aqueous suspension of $CuInS_2/Zn_{1-x}Mn_xS$.