Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting Information

Synthesis of magnetofluorescence Gd-doped $CuInS_2$/ZnS quantum dots with enhanced longitudinal relaxivity

Jia-Yaw Chang,* Guan-Rong Chen, Jyun-Dong Li

Department of Chemical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan, Republic of China

E-mail: jychang@mail.ntust.edu.tw

Department of Chemical Engineering, National Taiwan University of Science and Technology, 43, Section 4, Keelung Road, Taipei 10607, Taiwan, Republic of China

Phone: +886-2-27303636

Fax: +886-2-27376644

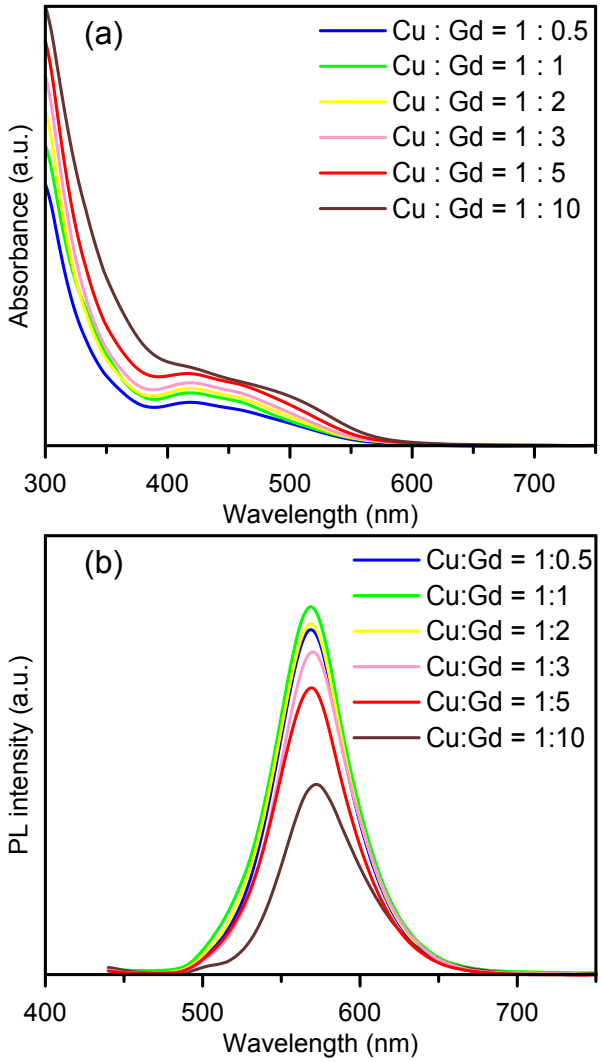

Figure S1. (a) Absorbance and (b) fluorescence emission spectra of Gd:CIS *q*-dots prepared under different Cu:Gd molar ratios, keeping the other variables constant

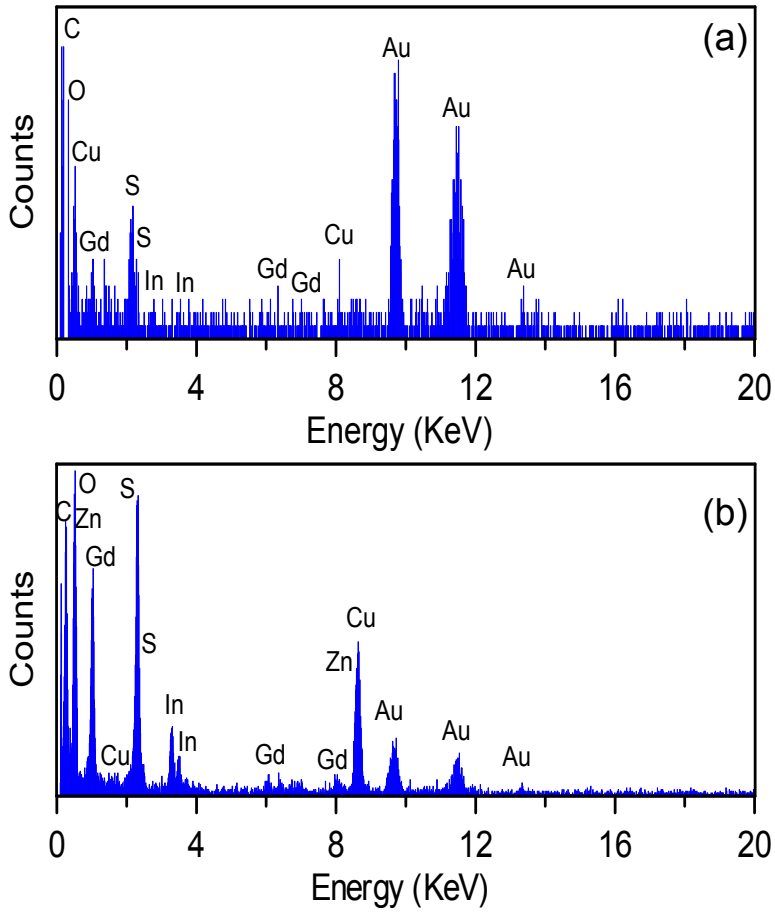

Figure S2. EDS analysis data of the as-prepared (a) Gd:CIS core and (b) Gd:CIS/ZnS core/shell *q*-dots. The Au signals are owing to the Au TEM grid.

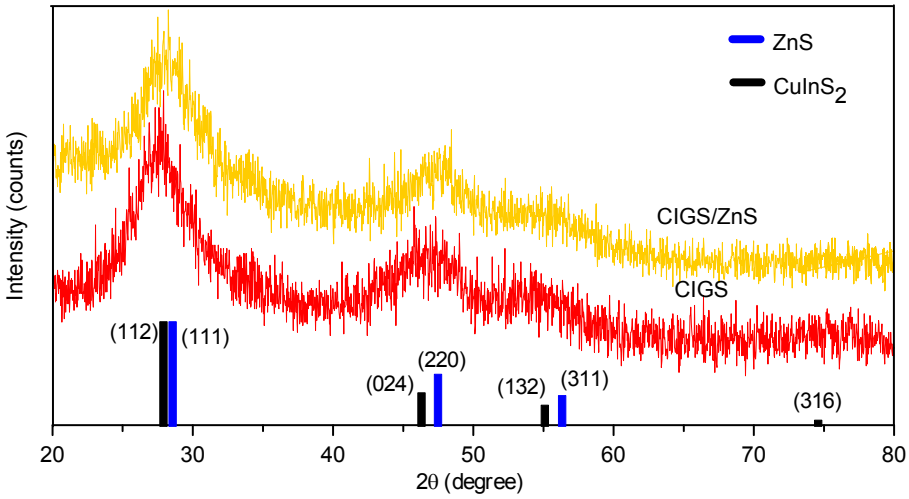

Figure S3. Representative XRD patterns of the as-prepared Gd:CIS core and Gd:CIS/ZnS core/shell *q*-dots. The XRD line patterns (bottom) correspond to bulk chalcopyrite $CuInS_2$ (JCPDS 85-1575) and bulk zinc blende ZnS (JCPDS 80-0020), respectively.

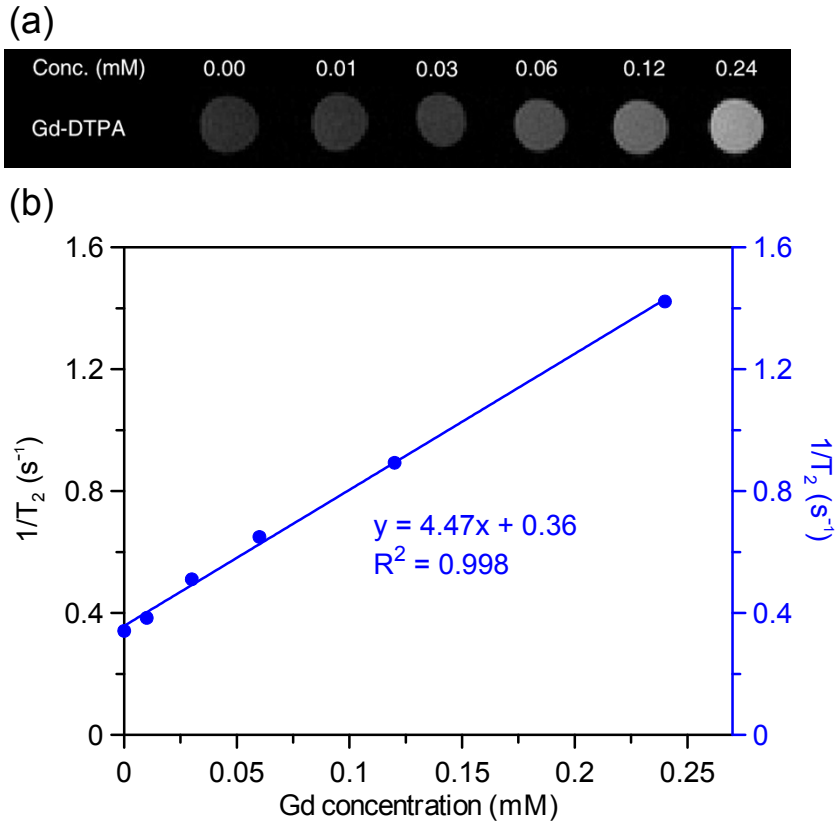

Figure S4. (a) T_1–weighted images of Gd-DTPA containing various Gd concentrations. (b) Plots of inverse relaxation times ($1/T_1$) versus Gd concentration of Gd-DTPA. The slope corresponds to the specific relaxivity value (r_1).