One-Pot Synthesis of Reverse Type-I In$_2$O$_3$@In$_2$S$_3$ Core-shell Nanoparticles

Zhaoyong Sun,$^a$ Amar Kumbhar,$^b$ Kai Sun,$^c$ Qingsheng Liu$^d$ and Jiye Fang$^{*ae}$

$^a$Department of Chemistry, State University of New York at Binghamton, Binghamton, NY 13902, USA
$^b$Electron Microscope Facility, Clemson University, Anderson, SC 29625, USA
$^c$Electron Microbeam Analysis Laboratory, University of Michigan, Ann Arbor, MI 48109, USA
$^d$Department of Chemistry, Texas A&M University, TX 77842, USA
$^{ae}$Multidisciplinary Program in Materials Science & Engineering, State University of New York at Binghamton, Binghamton, NY 13902, USA

Figure S1a. TEM image of In$_2$O$_3$ core nanocrystals.
Figure S1b. TEM image of In$_2$O$_3$@In$_2$S$_3$ core-shell nanoparticles.
Figure S1c. High-resolution TEM image of In$_2$O$_3$-In$_2$S$_3$ nanoparticles.
Figure S2. Photoluminescence spectra recorded with various reaction conditions, showing that the reduction step is more important than the sulfidization step for the formation of In$_2$S$_3$ shell.