Electronic Supplementary Material(ESI) for RSC Advances.

Supporting Information

Hollow-structured upconverting sesquioxide targeted nanoprobes for magnetic resonance and fluorescence imaging

Jinchang Yin,[a] Chaorui Li,[a] Yubiao Yang,[b] Wenyong Hu,[a] Huan Liu [a] and Yuanzhi Shao*[a]

[a.] State Key Laboratory of Optoelectronic Materials and Technologies, School of Physics, Sun Yat-sen University, Guangzhou 510275, P. R. China.

[b.] Institute for Advanced Materials, School of Material Science & Engineering, Jiangsu University, Zhenjiang, 212013, P. R. China.

*Corresponding Author:stssyz@mail.sysu.edu.cn

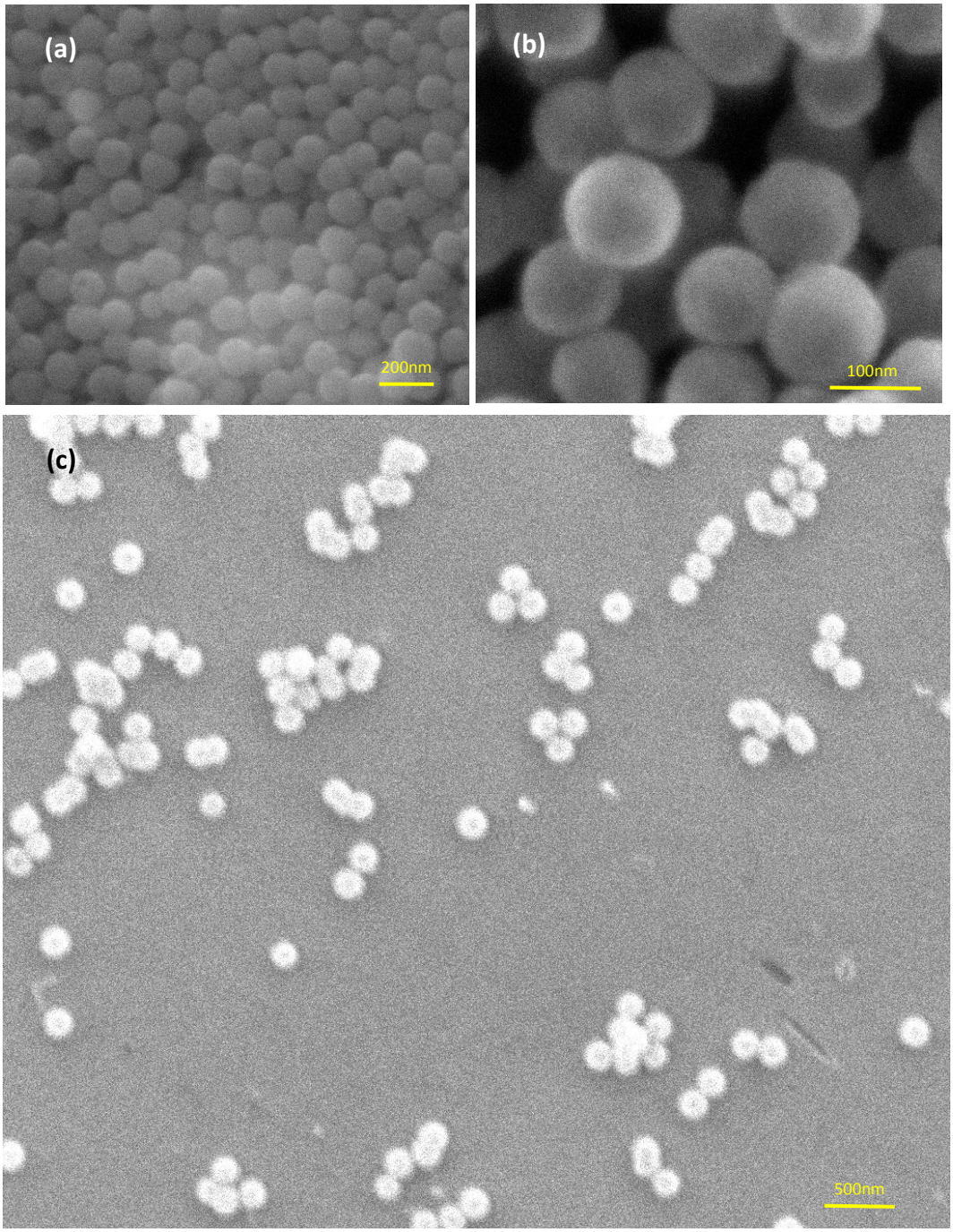

Fig. S1 Typical SEM images of (a)SiO_2@$Gd_2O(CO_3)_2{\cdot}nH_2O$:$Ho^{3+}$/$Yb^{3+}$, (b)SiO_2@Gd_2O_3:Ho^{3+}/Yb^{3+} NPs and (c) Hollow-structured Gd_2O_3:Ho^{3+}/Yb^{3+} NPs

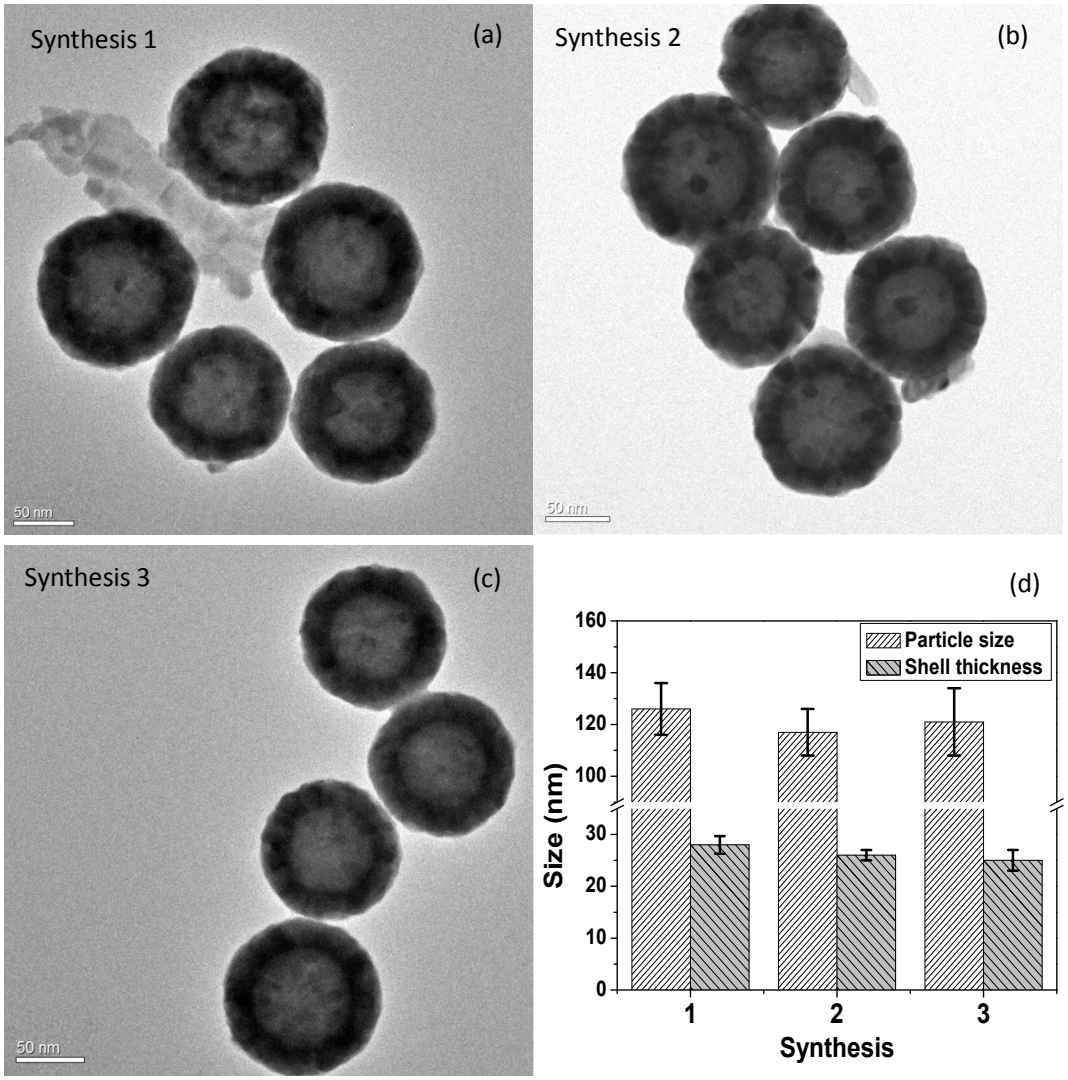

Fig. S2 The triplicate TEM images of Hollow-structured (a)Gd_2O_3:Er^{3+}/Yb^{3+} , (b)Gd_2O_3:Ho^{3+}/Yb^{3+} and (c) Gd_2O_3:Tm^{3+}/Yb^{3+} NPs; (d) a comparison diagram of the average particle size and shell thickness of each synthesis.

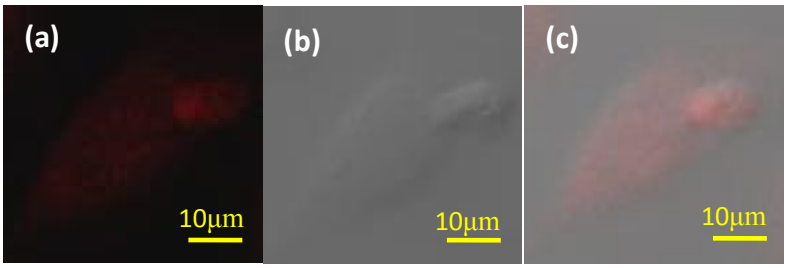

Fig. S3 Confocal laser microscopy images of HeLa cells incubated with hollow structured Gd_2O_3:Ho^{3+}/Yb^{3+} NPs. (a) Fluorescence images under irradiation of 980 nm wavelength with red emission channel. (b) Bright-field image. (c)Superimposed image.