Dispersing Hydrophilic Nanoparticles in Nonaqueous Solvents with Superior Long-Term Stability

Muhan Cao,‡ a Qipeng Liu,‡ a Min Chen,‡ a Peipei Yang, a Yong Xu, a Haihua Wu, a Jia Yu, a Le He, * a Xiao-Hong Zhang * a and Qiao Zhang * a

a Institute of Functional Nano & Soft Materials (FUNSOM), Jiangsu Key Laboratory for Carbon-Based Functional Materials & Devices, Soochow University, 199 Ren’ai Road, Suzhou, 215123, Jiangsu, PR China. Email: lehe@suda.edu.cn; xiaohong_zhang@suda.edu.cn; qiaozhang@suda.edu.cn

‡ These authors contribute equally to this work.

Supporting Figures

Figure S1. FTIR spectrum of polystyrene-capped Au nanospheres. The characteristic peaks of polystyrene can be observed, including at 686 cm⁻¹ (benzene ring folding), 760 cm⁻¹ (C-H bending of the benzene ring), 1386 and 1630 cm⁻¹ (C-C stretching of the benzene ring), and 2860 cm⁻¹ (saturation band C-H stretching)
Figure S2. Size distributions of Au nanoparticles and PS-capped Au nanoparticles. The average sizes are 11.2 and 11.4 nm for Au nanoparticles and PS-capped Au nanoparticles, respectively.

Figure S3. DLS curves of the polystyrene-capped SiO$_2$, TiO$_2$, RF colloids in toluene.