

Silica cross-linked nanoparticles encapsulating fluorescent conjugated dyes for energy transfer-based white light emission and porphyrin sensing

Fangyuan Gai,^a Tianlei Zhou,^a Ligong Zhang,^b Xiang Li,^a Weijia Hou,^a Xinchun Yang,^a Yantao Li,^a Xiaogang Zhao,^a Da Xu,^a Yunling Liu^a and Qisheng Huo^{*a}

a. State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, College of Chemistry, Jilin University, Changchun 130012, P. R. China.

b. Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences, Changchun 130033, P.R. China

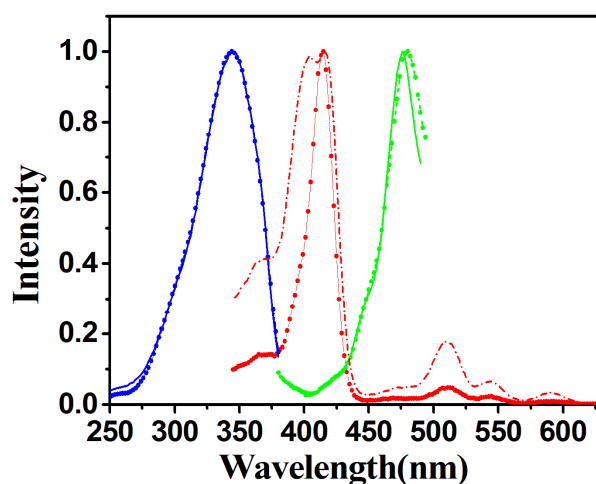


Figure S1. Fluorescence excitation spectra of HCE (blue line), 8CQA (green line) and TPP (red line). The corresponding dye-SCMNPs are represented with dotted lines.

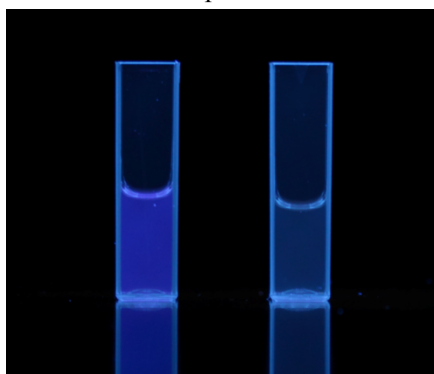


Figure S2. Color change of HCE-SCMNPs under UV light (left, 7.4×10^{-6} M), with addition of ammonia (right, 7.4 M).

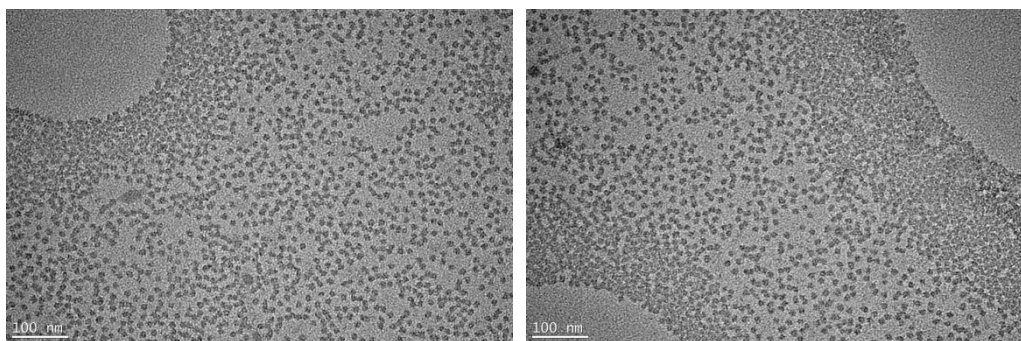


Figure S3. TEM image of TPP-SCMNPs (left) and 8CQA-SCMNPs (right).

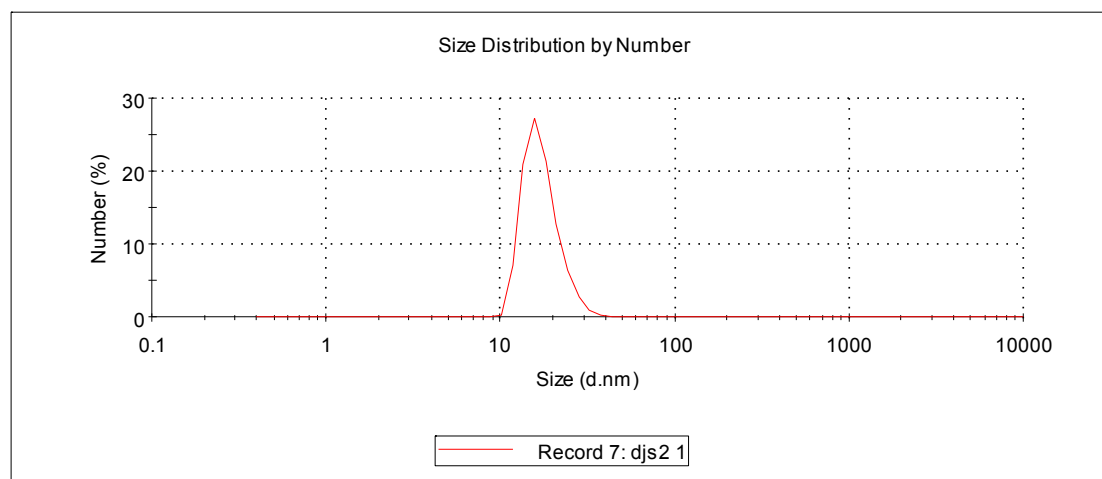


Figure S4. Size distribution of dye-SCMNPs

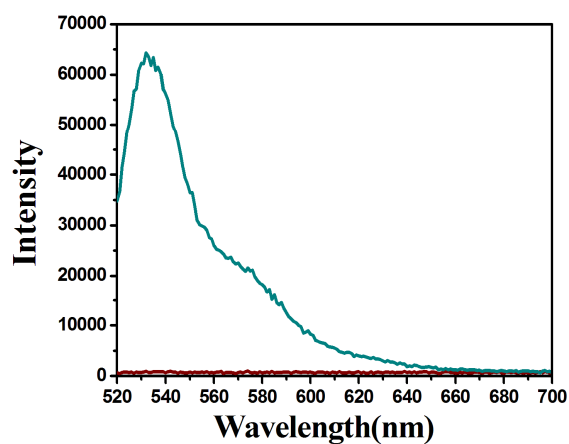


Figure S5. The leakage testing using fluorescence, the blue line: the product inside the dialysis tube; the red line: the solution outside of the dialysis tube.

Table S1. Optical properties of organic dyes dissolved in THF and those of encapsulated inside SCMNPs.

	HCE in THF	HCE-SCMNPs	8CQA in THF	8CQA-SCMNPs	TPP in THF	TPP-SCMNPs
Qutuum yield	0.49	0.42	0.80	0.71	0.06	0.08
Molar extinction coefficient (L/mol·cm)	17705.5	6319.5	12128.9	1855	180930.9	86430.9