

## **Supporting Information**

### **"A Turn-On" Florescent Probe for Nitric Oxide Detection in Aqueous Media**

## Experimental Section

### 1. Materials and sample preparation

The CdSe-QDs and the CdSe/ZnS-QDs were synthesized by using a typical pyrolysis process. High-purity chemicals of CdO (Sigma-Aldrich, 99.99%, U.S.A), Se powder (Sigma-Aldrich, 99.99%, U.S.A), zinc stearate (Riedel-dehaën, Germany), sulfur powder (Sigma-Aldrich, 99.998%, U.S.A), stearic acid (SA, Sigma-Aldrich, 95%, U.S.A), tetradecylphosphonic acid (TDPA, Sigma-Aldrich, 99.9%, U.S.A), trioctylphosphine oxide (TOPO, Sigma-Aldrich, 99%, U.S.A), trioctylphosphine (TOP, Sigma-Aldrich, 90%, U.S.A), tributylphosphine (TBP, Fluka, 99%), hexadecylamine (HA, Sigma-Aldrich, 98%, U.S.A) and dioctylamine (DA, Sigma-Aldrich, 98%, U.S.A) were used as raw materials. A typical pyrolysis is as follows. The CdO (0.2 mmol) and SA (0.8 mmol) were loaded into a 250-mL three-neck flask and heated to 150°C under an Ar atmosphere. After the CdO had been completely dissolved, the mixture was allowed to cool to room temperature. TOPO (4.52 mmol) and 7.23 mmol of HA were added to the flask, and the mixture was heated to 320°C under an Ar atmosphere to form an

optically clear solution. Then, the Se solution containing 2.0 mmol of Se dissolved in 2.36 mmol of TBP and 13.64 mmol of DA was swiftly injected into the reaction flask. After the injection, the reaction temperature was set at 290°C for the formation of nanocrystals. The nanocrystals was obtained by being centrifuged with methanol. The obtained CdSe-QDs were dispersed in toluene for UV-vis and PL measurement. Next, to obtain the CdSe/ZnS-QDs, the ZnS shell solution was slowly injected into CdSe-QDs using a syringe pump (0.1 ml/min). The reaction mixtures were mixed for 2 hours at 190°C. For the synthesis of the Zn solution, Zn stearate (0.088~1.332 mmol), sulfur powder (0.088~1.332 mmol), TOP (5-8 ml) and toluene (2 ml) were mixed for 5 min at 100°C.

CdSe/ZnS-QDs were capped with CTAB (hexadecyltrimethylammonium bromide, Sigma-Aldrich, 99.99%, U.S.A) as hydrophilic capping agents in order to disperse in water. Fabrication of CdSe/ZnS-QDs containing dirhodium complex: CTAB capped CdSe/ZnS-QDs and  $\text{Rh}_2(\text{AcO})_4$  were mixed with the molar ratio of 1:10 for 7 hours in water and stirred at 40°C. Finally, we injected DEA/NO (diethylamine NONOate sodium salt hydrate, Sigma-Aldrich, 99.99%, U.S.A) into CdSe/ZnS-QDs

containing dirhodium complex for investigating NO detection under Ar atmosphere.

## **2. Analysis**

The CdSe/ZnS-QDs and CdSe/ZnS-QDs containing dirhodium complex prepared in varying the reaction conditions were characterized by field emission transmission electron microscope (FE-TEM, Tecnai G2 F30 S-Twin, 300kV), UV-Vis spectrometer (S-3100 photodiode array, Scinco co., Korea), fluorescence spectrometer (FluoroMate FS-2, Scinco co., Korea), respectively.