

**Fluorescent sensors based on AIEgen-functionalised mesoporous
silica nanoparticles for the detection of explosives and **antibiotics****

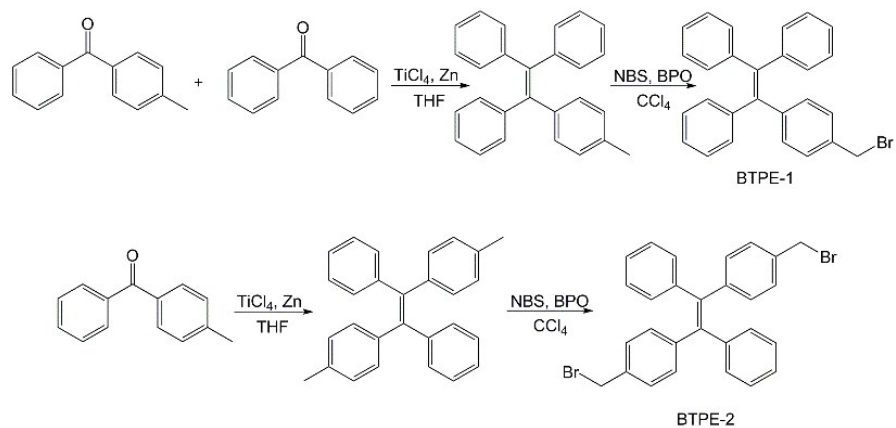
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Scheme S1 Synthetic routes to BTPE-1 and BTPE-2.

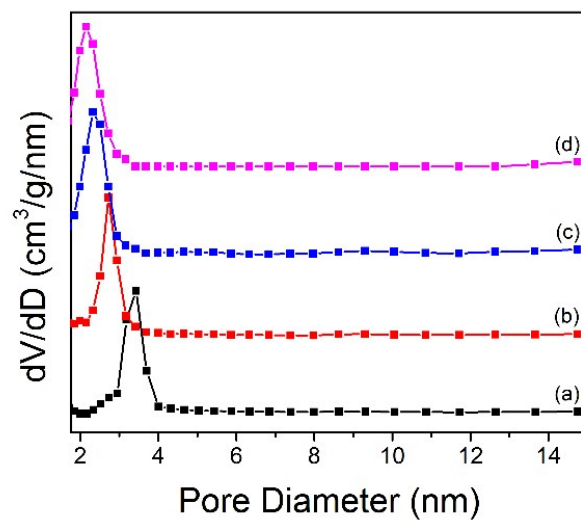


Fig. S1 Pore-size distribution of (a) MSN, (b) MSN-NH₂, (c) FMSN-1, and (d) FMSN-2.

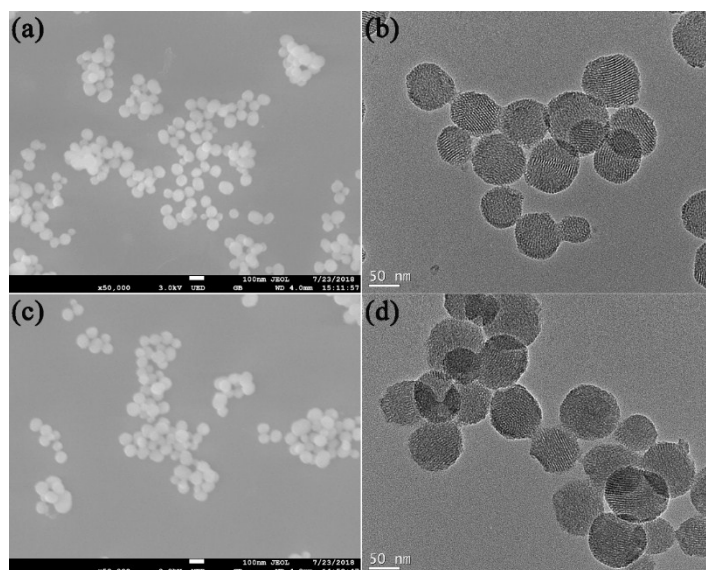


Fig. S2 SEM and TEM images of (a, b) MSN, and (c, d) MSN-NH₂.

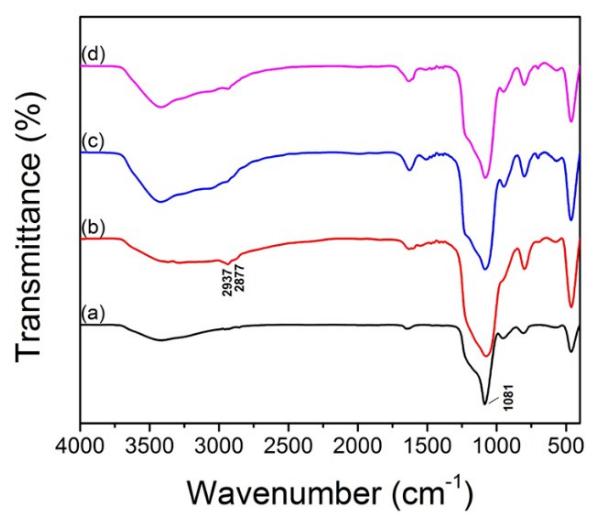


Fig. S3 FT-IR spectra of (a) MSN, (b) MSN-NH₂, (c) FMSN-1, and (d) FMSN-2.

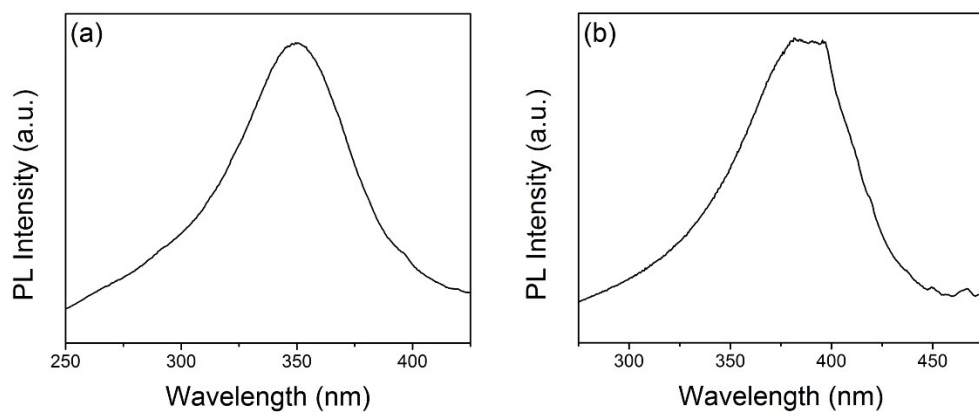


Fig. S4 Excitation spectra of (a) FMSN-1 and (b) FMSN-2.

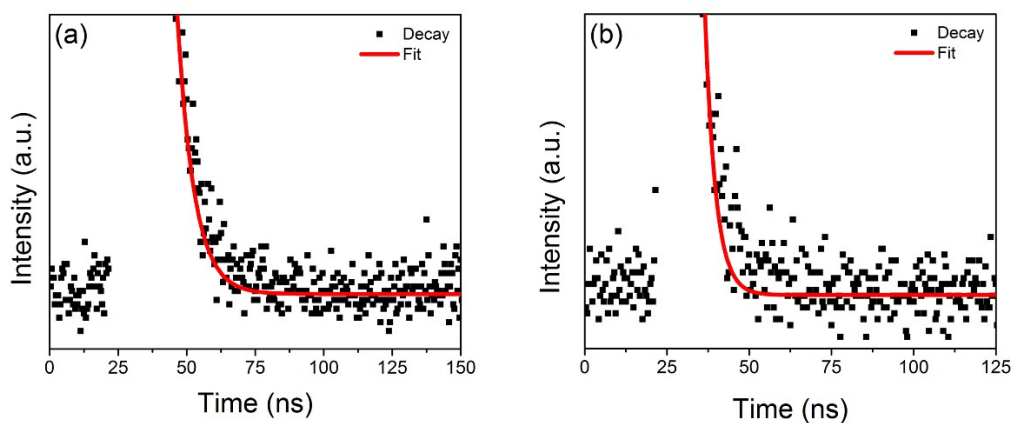


Fig. S5 Fluorescence decay profiles of (a) FMSN-1 and (b) FMSN-2

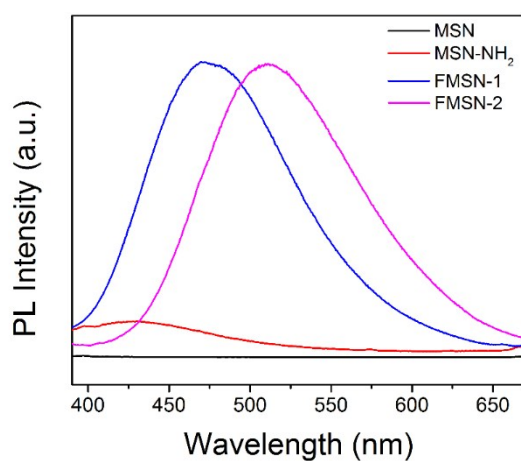


Fig. S6 PL spectra of MSN, MSN-NH₂, FMSN-1, and FMSN-2.

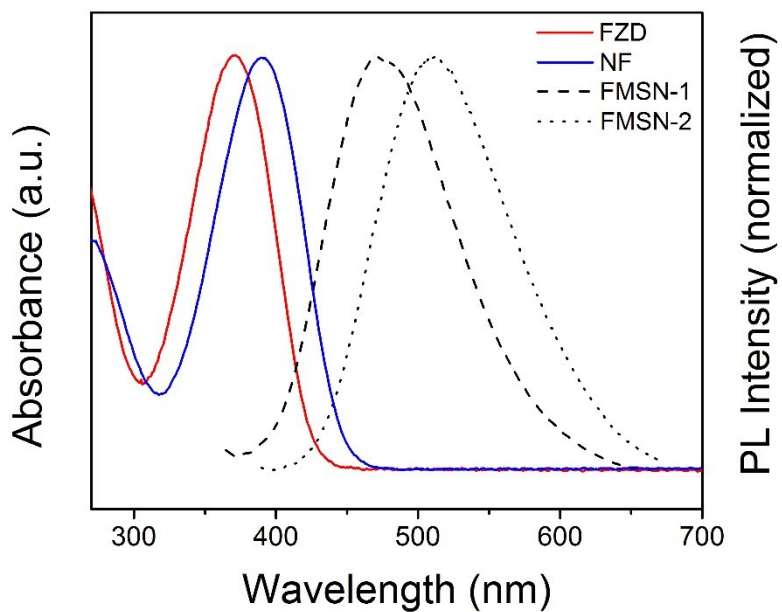


Fig. S7 UV-vis spectra of FZD and NF, and PL spectra of FMSN-1 and FMSN-2.

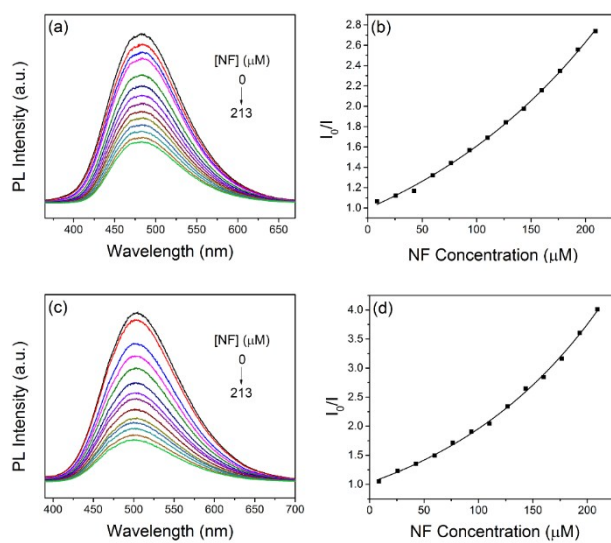


Fig. S8 (a) PL spectra of FMSN-1 with different NF concentration and (b) the corresponding Stern-Volmer plot of NF in water solution; (c) PL spectra of FMSN-2 with different NF concentration and (d) the corresponding Stern-Volmer plot of NF.

Tab. S1 CHN elemental analysis of MSN-NH₂, FMSN-1, and FMSN-2.

	Weight [mg]	N [%]	C[%]	H [%]	C/N ratio	C/H ratio
MSN-NH ₂	2.7730	2.73	14.52	3.365	5.3190	4.3150
FMSN-1	2.4830	2.15	21.81	3.864	10.1227	5.6446
FMSN-2	2.3100	2.29	19.80	3.903	8.6640	5.0740

Tab. S2 Lifetimes of FMSN-1 and FMSN-2.

	τ_1 /ns	τ_2 /ns	τ_{ave} /ns
FMSN-1	1.72	6.17	4.15
FMSN-2	0.89	3.27	2.07