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High-Selective Room-Temperature NO_2 Sensors Based on a Fluoroalkoxy-substituted Phthalocyanine

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Supplementary Information

Contents：

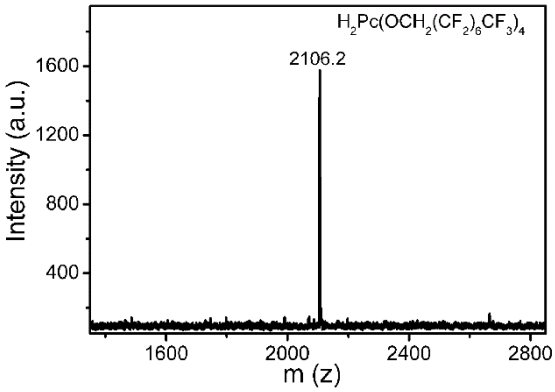

Fig. S1 MALDI-TOF mass spectrum of $H_2[Pc(OCH_2(CF_2)_6CF_3)_4]$.

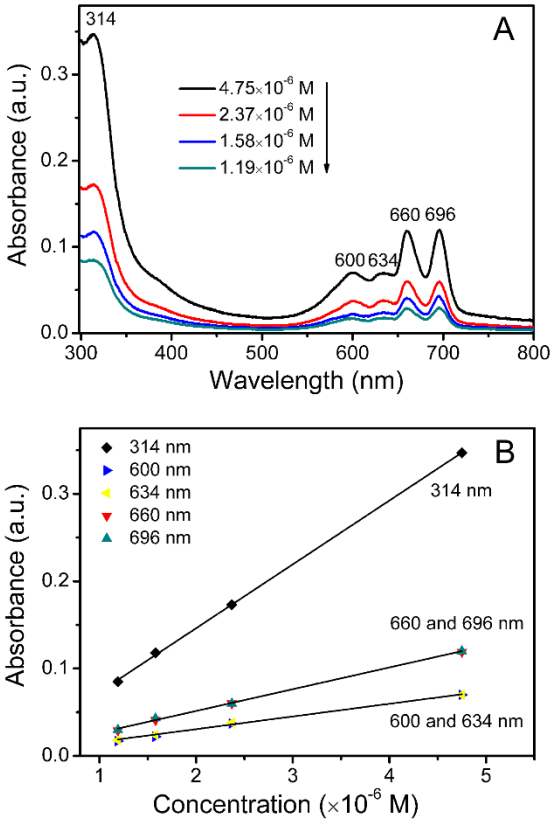

Fig. S2 The electron absorption spectra of $H_2[Pc(OCH_2(CF_2)_6CF_3)_4]$ in different concentrations of THF solution (A), and the working curves at different wavelengths (B).

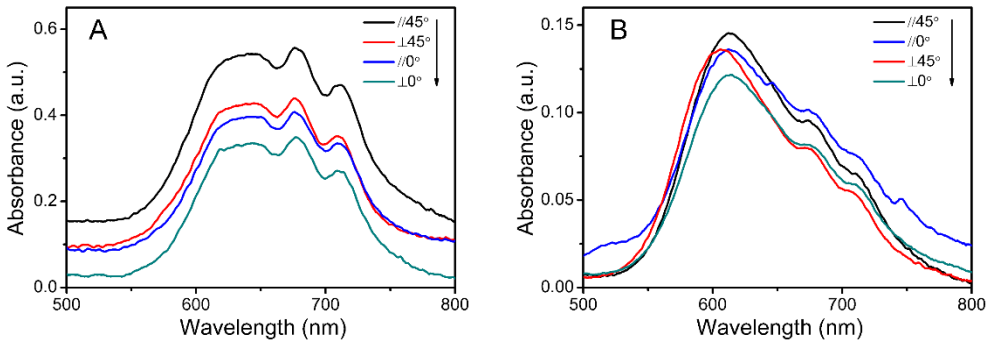

Fig. S3 Polarized UV-vis spectra of $H_2[Pc(OCH_2(CF_2)_6CF_3)_4]$ in the DC film (A) and the VD film (B) on quartz substrate.

Table S1. The orientation angle of the phthalocyanine ring determined from polarized UV–vis absorbance of the DC film and the VD film.

Film Type	$A_{0//}$	$A_{0\perp}$	D_0 ($A_{//}/A_{\perp}$)	$A_{45//}$	$A_{45\perp}$	D_{45} ($A_{//}/A_{\perp}$)	θ
DC film	0.390	0.335	1.164	0.535	0.420	1.274	47°
VD film	0.136	0.122	1.115	0.146	0.134	1.090	55°

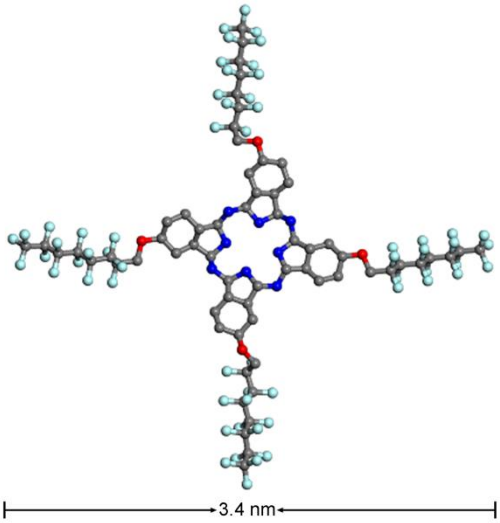

Fig. S4 The geometry-optimized molecular dimension of $H_2[Pc(OCH_2(CF_2)_6CF_3)_4]$.

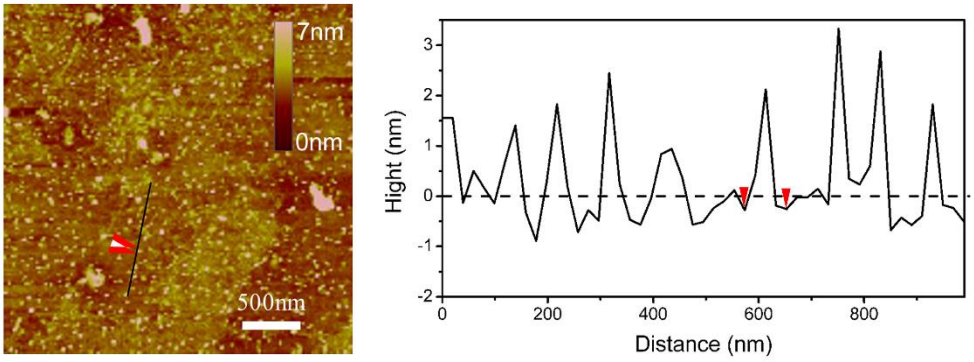

Fig. S5 The corresponding section analysis of the nanoparticles on the VD film.

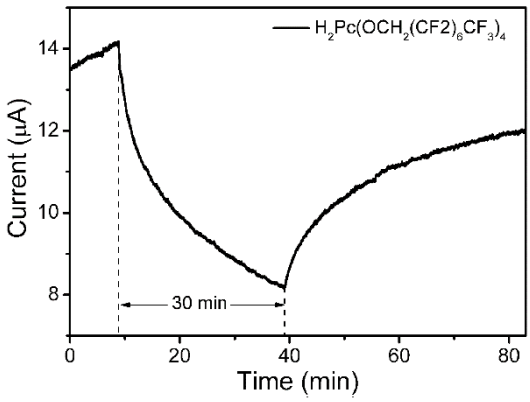

Fig. S6 The time-dependent current plot of a saturated exposure/rest cycle as a function of the 0.5 ppm NO_2 concentration in N_2 atmosphere for the VD film.

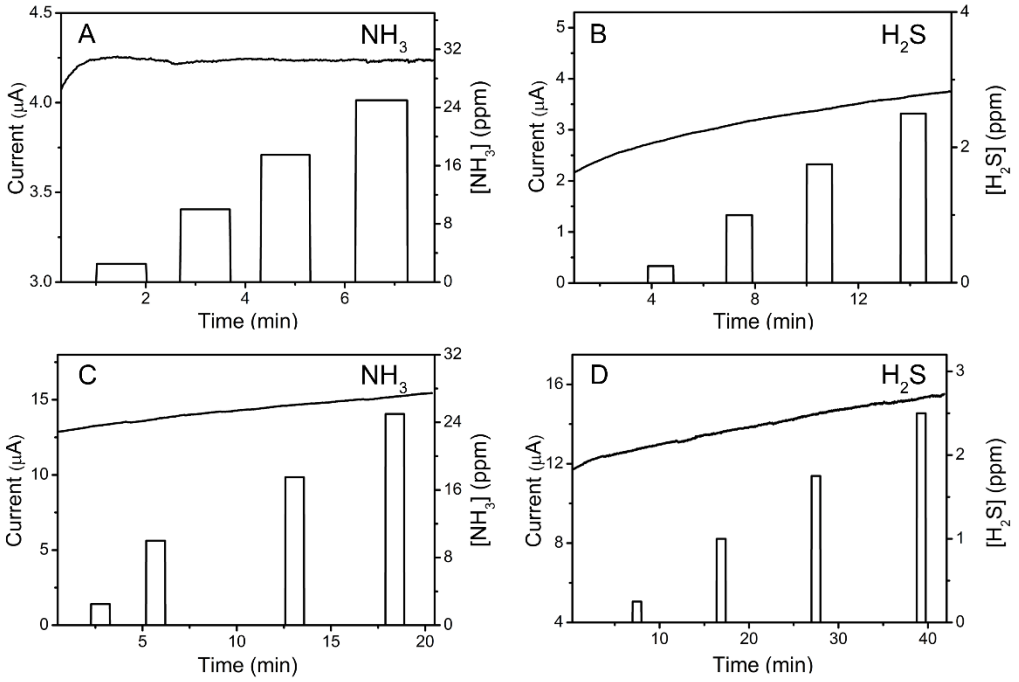

Fig. S7 The time-dependent current plots to NH_3 and H_2S at varied concentration for the DC film of $H_2[Pc(OCH_2(CF_2)_6CF_3)_4]$ **(**A, B**)** and the VD film of $H_2[Pc(OCH_2(CF_2)_6CF_3)_4]$ (C, D), respectively.