Electronic Supplementary Information for

Probing the Effect of Substituted Groups on Sensory Properties Based on Single-Crystalline Micro/Nanostructures of Perylenediimide Dyes

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Supporting Figures

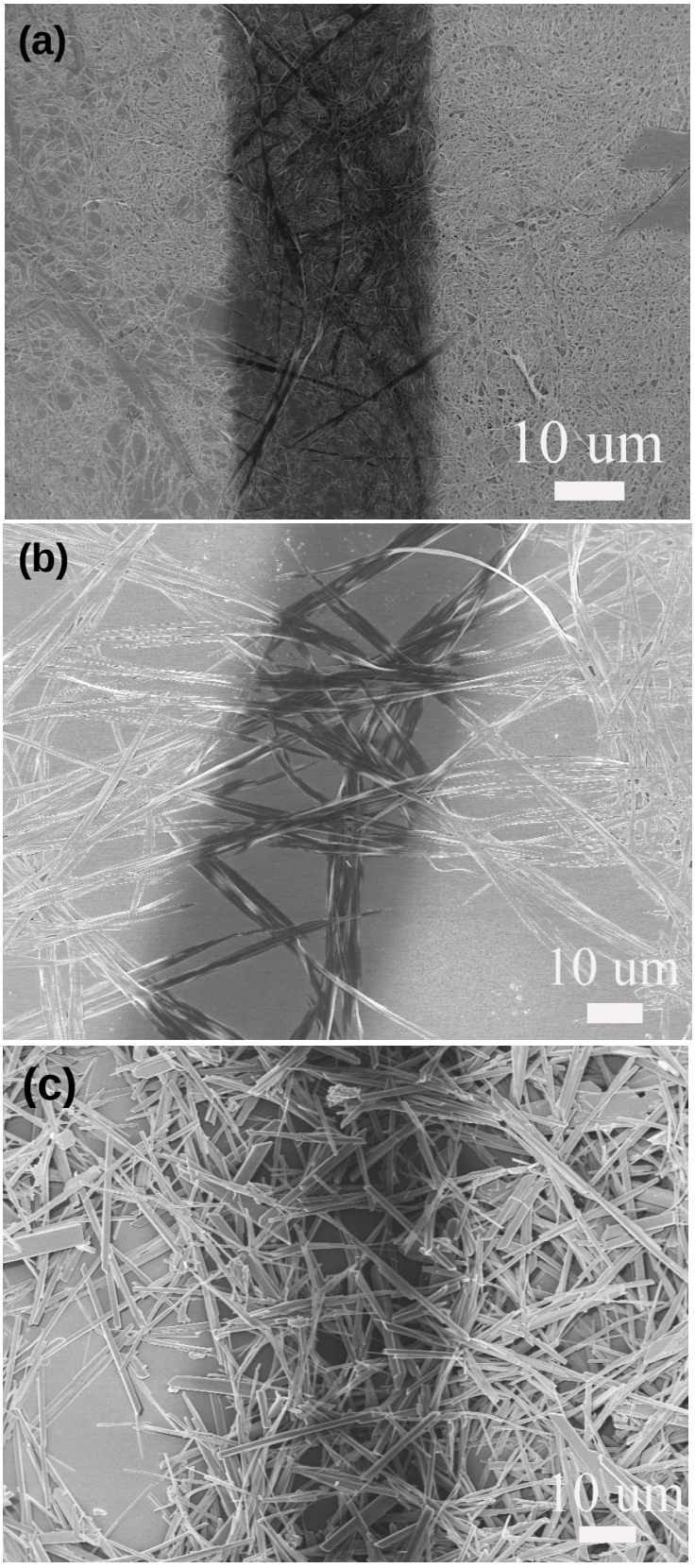

Fig. S1 SEM images of gas sensor devices of (a) **PTCDI-C_{12}** ,(b) **PTCDI-ClC_{12}** and **(c) PTCDI-ClC_4F_7**.

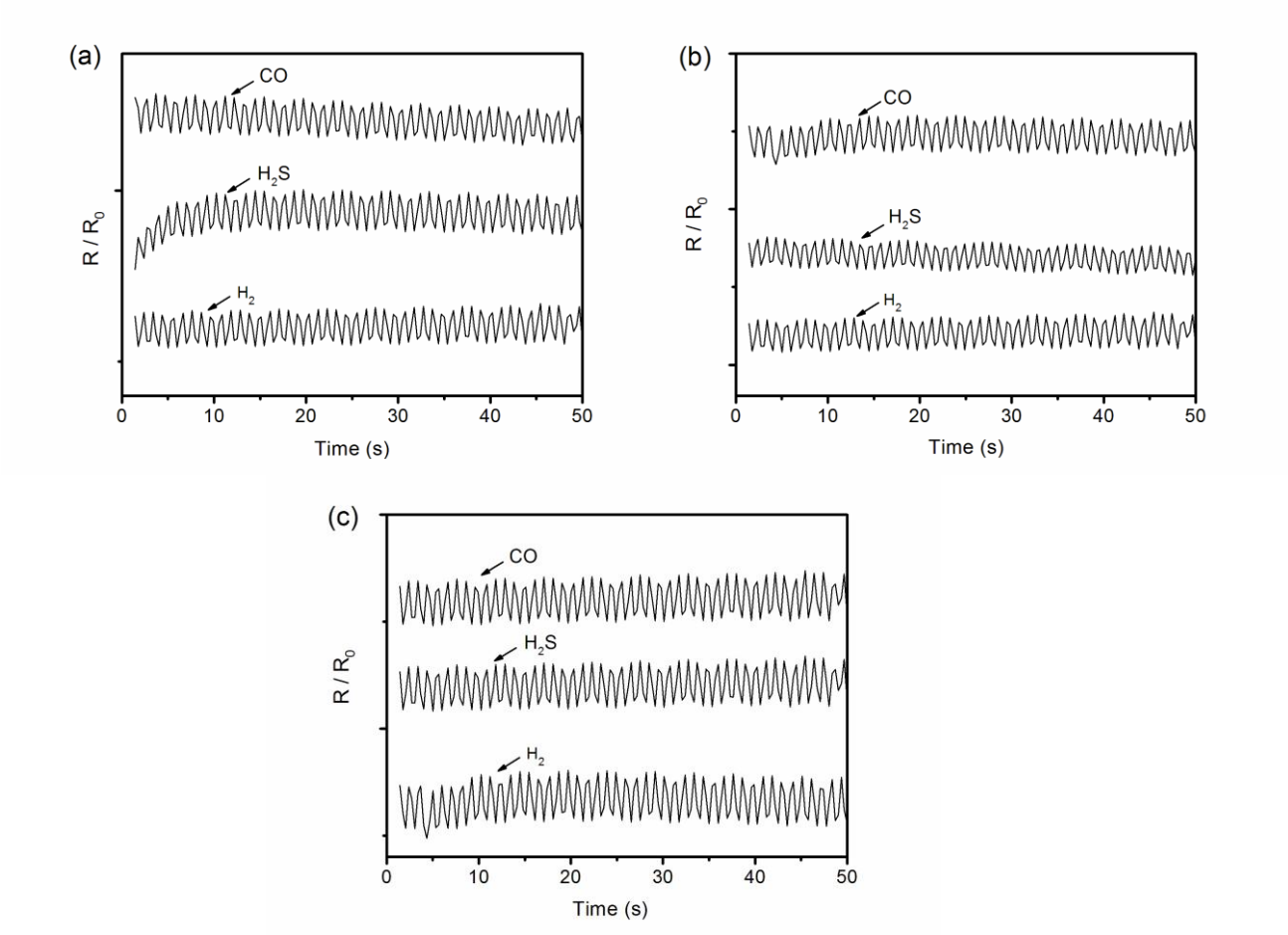

Fig. S2 Resistance modulation (R/R_0)-time (t) curves of (a) **PTCDI-ClC$_{12}$**, (b)**PTCDI-ClC$_4$F$_7$** and (c) **PTCDI-C$_{12}$** gas sensors in CO, H_2S and H_2, respectively.

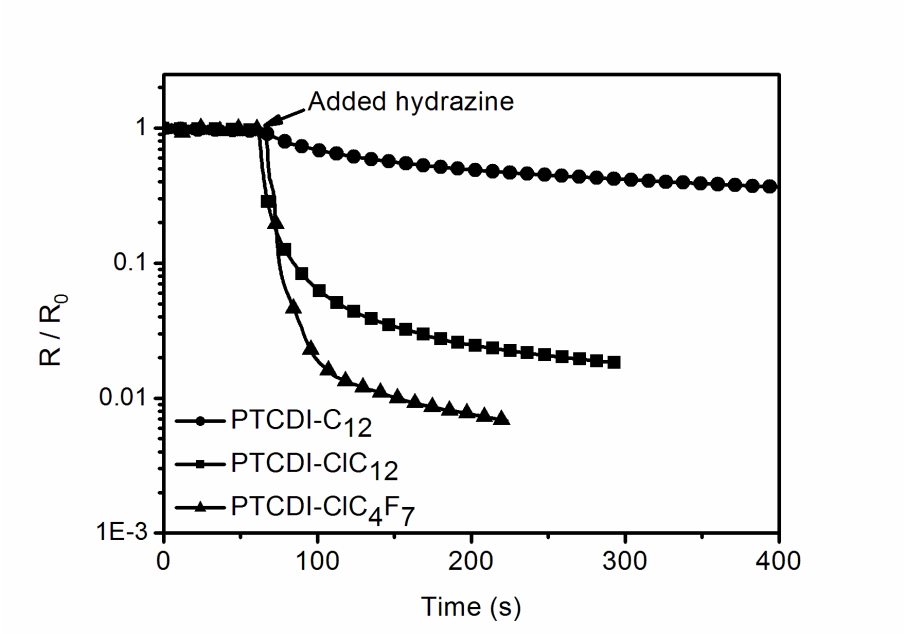

Fig. S3 Resistance modulation *(R/R_0)*-time (*t*) curves of **PTCDI-ClC$_{12}$**, **PTCDI-ClC$_4$F$_7$** and **PTCDI-C$_{12}$** gas sensors in hydrazine vapor (8 ppm).

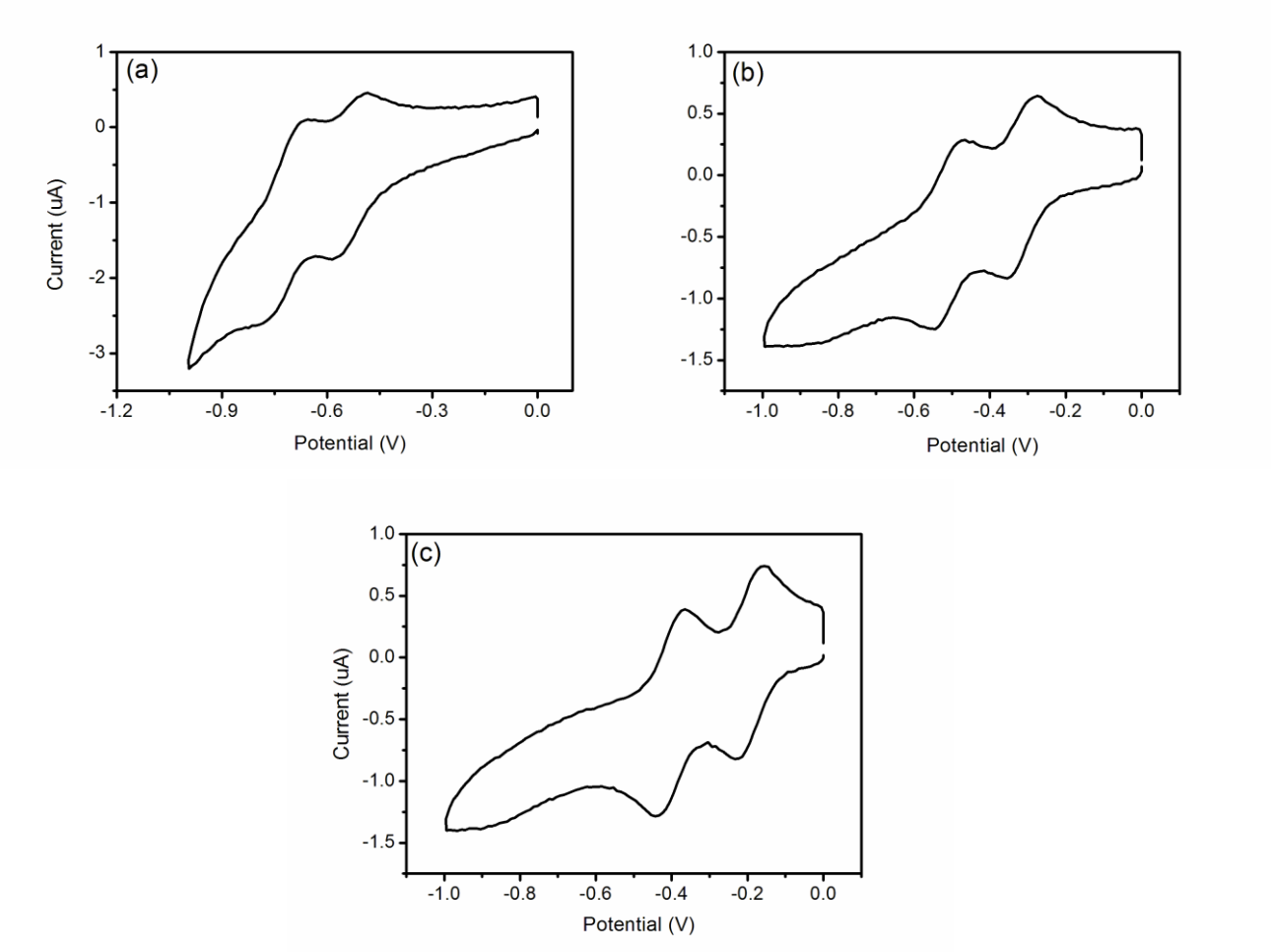

Fig. S4 Cyclic voltammograms of reduction potentials for (a) **PTCDI-C_{12}**, (b) **PTCDI-ClC_{12}** and (c) **PTCDI-ClC_4F_7** in dichloromethane-$TBAPF_6$ (scan speed 100 mV s^{-1}).

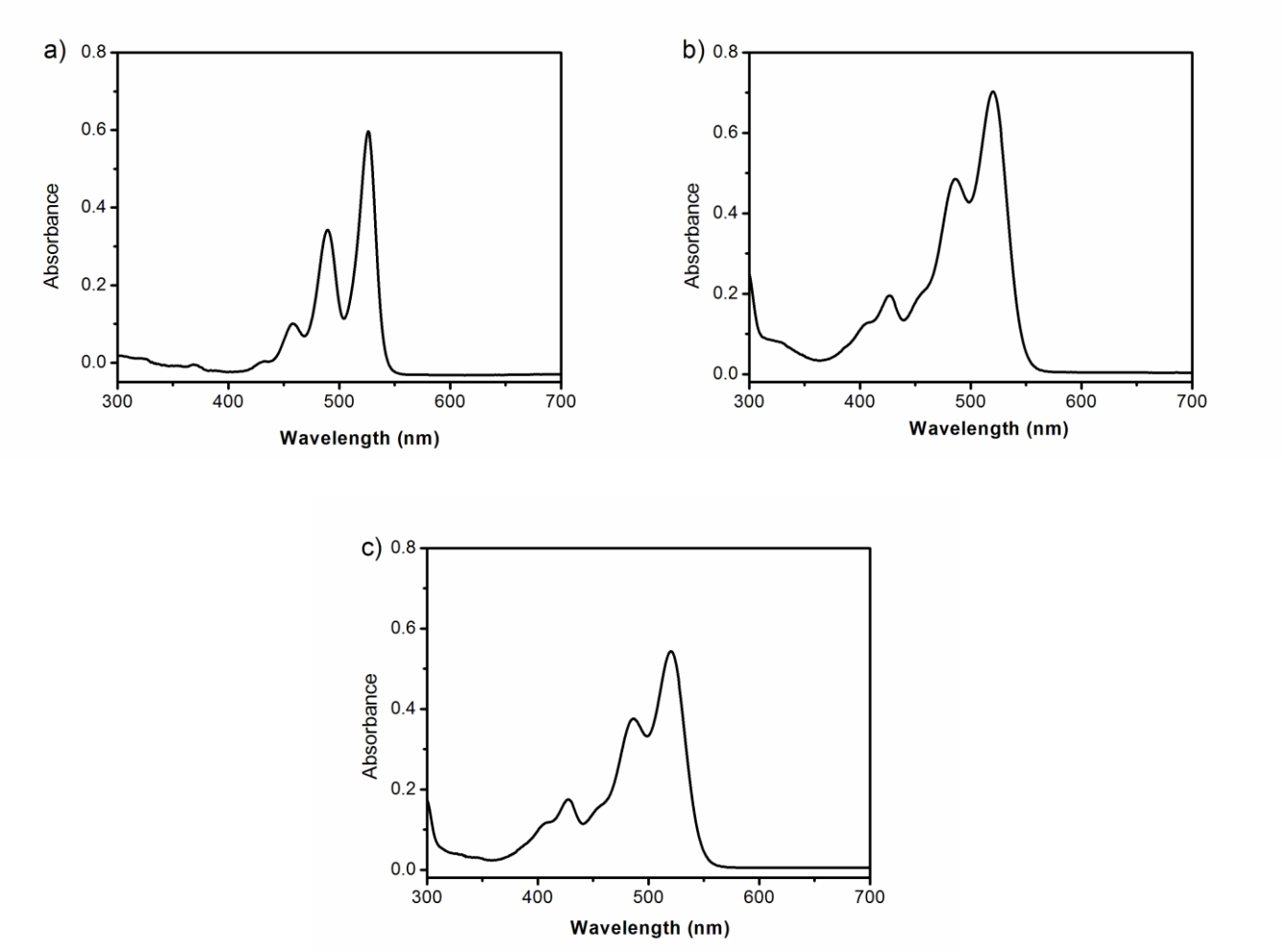

Fig. S5 UV-vis spectra of (a) **PTCDI-C_{12}** ,(b) **PTCDI-ClC_{12}** and (c) **PTCDI-ClC_4F_7** in CH_2Cl_2.