# Fluorescent Diphenylfluorene-pyrenyl Copolymer with Dibenzothiophene-S, S-dioxide and Adamantine Units for Explosive Vapor Detection

Yuerong Wang[a,b], Yixun Gao[a,b], Lei Chen[a,b], Yanyan Fu[a], Defeng Zhu[a], Qingguo He[*a], Huimin Cao[a], Jiangong Cheng[*a], Runsheng Zhang[c], Shuiqing Zheng[c], Songmao Yan[c]

[a]State Key Laboratory of Transducer Technology, Shanghai Institute of Microsystem and Information Technology, Chinese

Academy of Sciences, 865 Changning Road, Shanghai 200050, China. Fax: 86-21-62511070-8934; Tel: 86-21-62511070-8967;

E-mail: hqg@mail.sim.ac.cn (Q. G. He), jgcheng@mail.sim.ac.cn (J. G. Cheng).

[b]University of Chinese Academy of Sciences, 19 Yuquan Road, Beijing 100039, China

[c]Shanghai Key Laboratory of Crime Scene Evidence, Shanghai Institute of Forensic Science, 803 North ZhongShan No.1 Road, ,
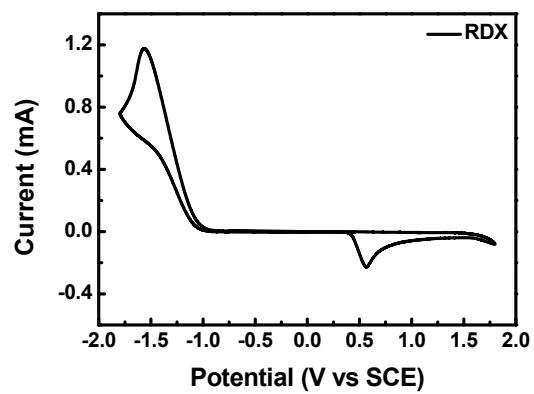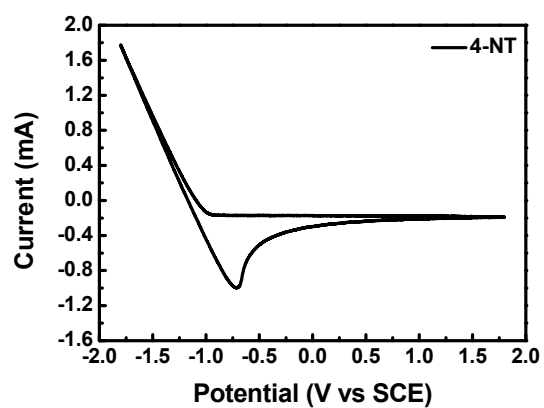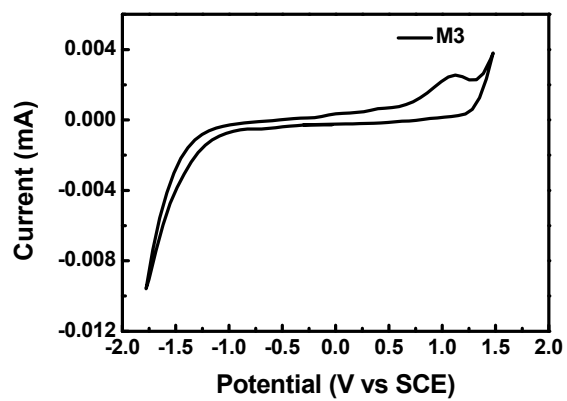
Shanghai 200083, China.
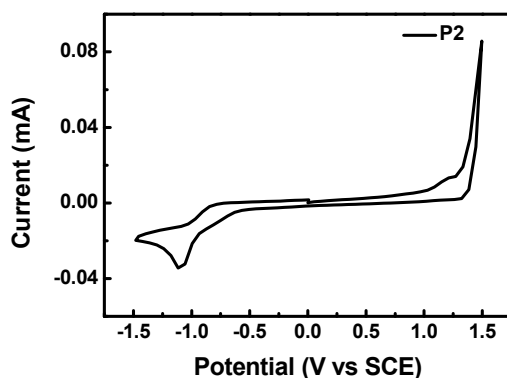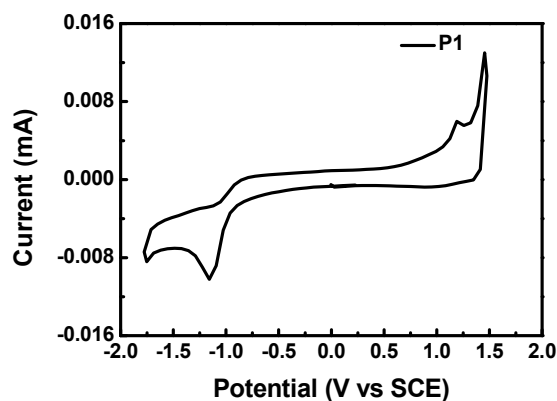
Fig. S1 The CV curves of **P1**, **P2**, **M3**, 4-NT and RDX in CH$_3$CN solution at a sweep rate of 100 mVs^{-1}.
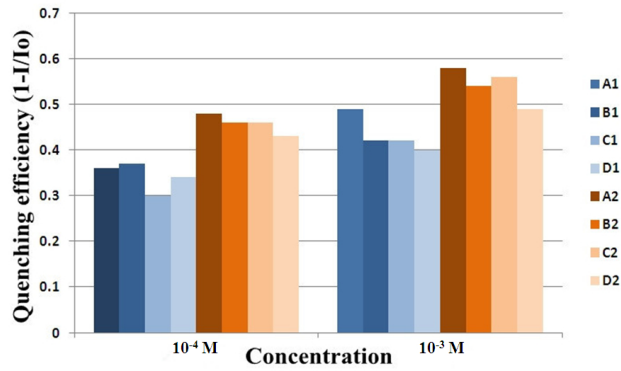
Fig. S2 Quenching efficiencies of **P1** and **P2** films (Blue: **P1**, Yellow: **P2**; spin-toluene (A1, A2), spin-tetrahydrofuran (B1, B2), dip-toluene (C1, C2), dip-tetrahydrofuran (D1, D2).) exposed to saturated TNT vapor for 300 s.
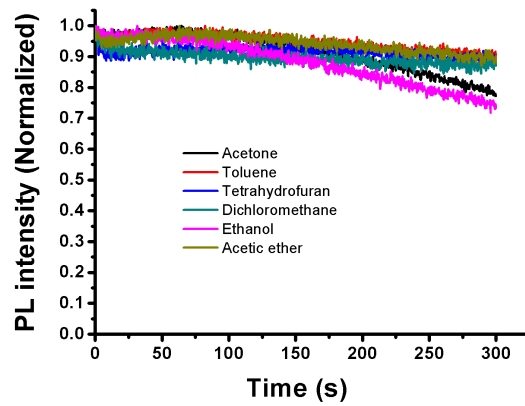

Fig. S3 Sensing properties of **P2** film (spin-coated; toluene: 10^{-3} M) exposed to saturated vapor of common solvents.
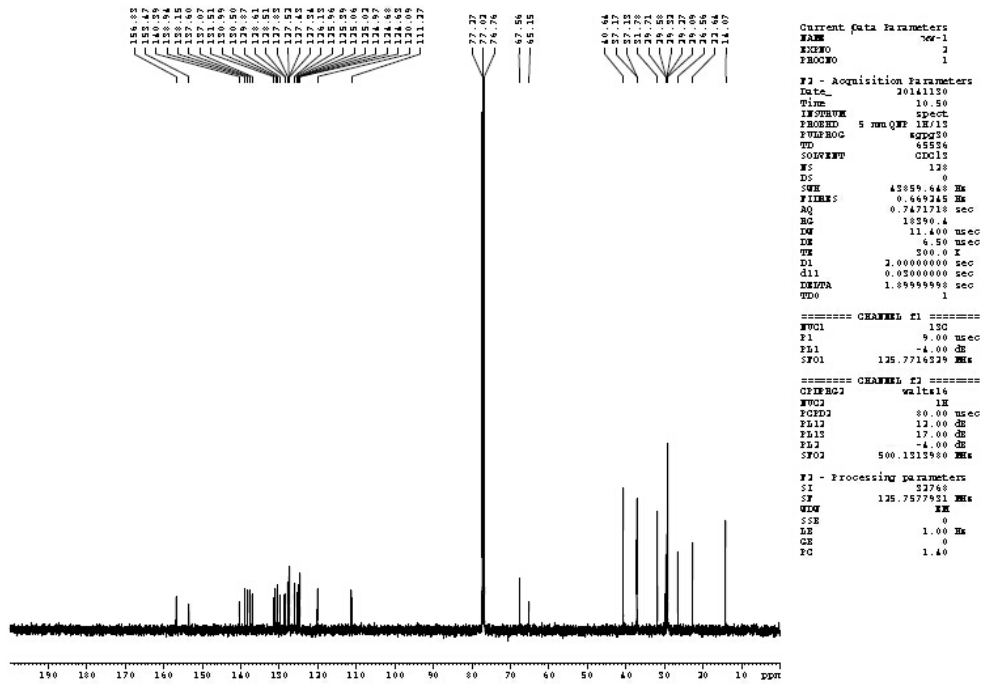

Fig. S4 ^{13}C-NMR of M3