

Supporting Information

APTS and RGO Co-Functionalized Pyrenated Fluorescent Nanonets for Representative Vapor Phase Nitroaromatic Explosives Detection

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TABLE S1 Vapor pressure of TNT and its analogues¹

| Molecule | Vapor pressure (ppb) 25°C |
|-------------------|---------------------------|
| TNT | 10 |
| DNT | 180 |
| PA | 7.7×10^{-3} |
| PNT | 647 |
| NaNO ₃ | 0.255 |

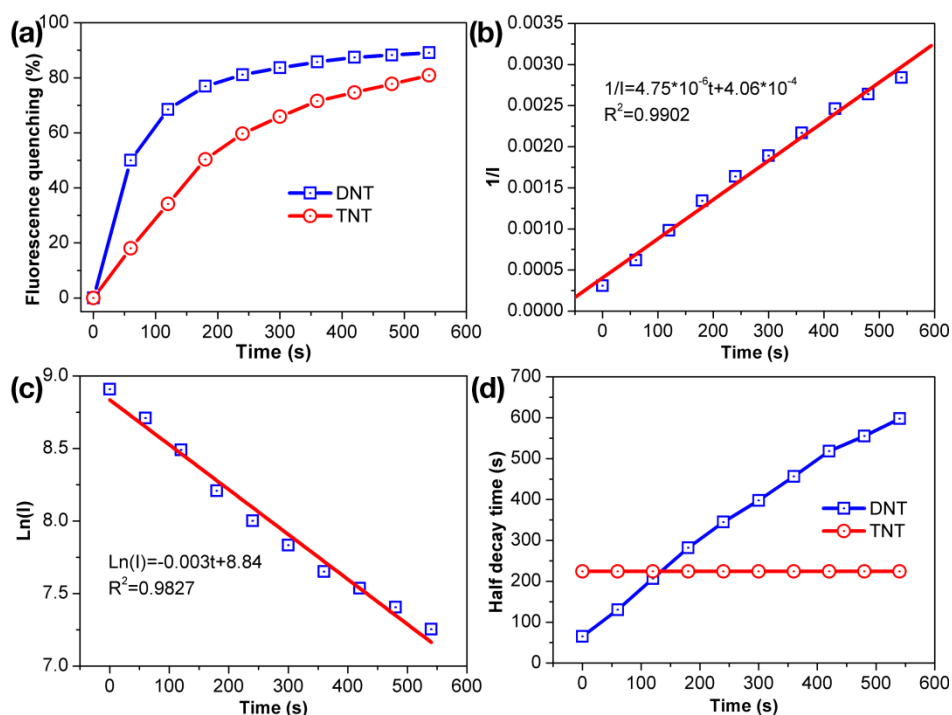


Fig. S1 a) Quenching efficiencies of the PVP/Pyrene/APTS/rGONanonets upon exposure to DNT and TNT subsaturated vapor at room temperature with respect to time. Fluorescence quenching kinetics of b) DNT ($1/I \sim t$) and c) TNT ($\text{Ln}(I) \sim t$). d) Half decay time upon exposure to DNT or TNT vapor.

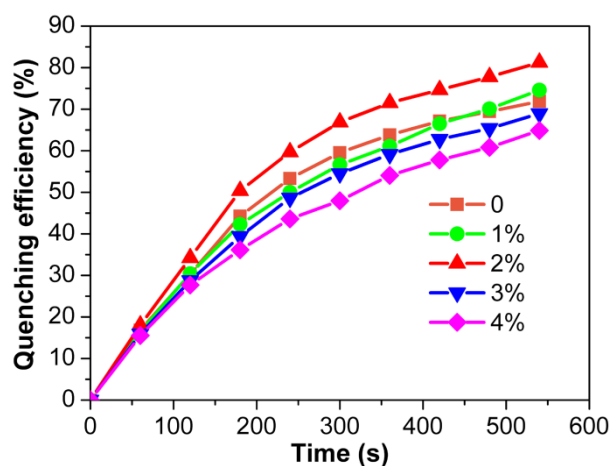


Fig. S2 Fluorescence quenching efficiencies of PVP/Pyrene/APTS/rGO nanonets containing different amounts of APTS upon exposure to subsaturated TNT vapor.

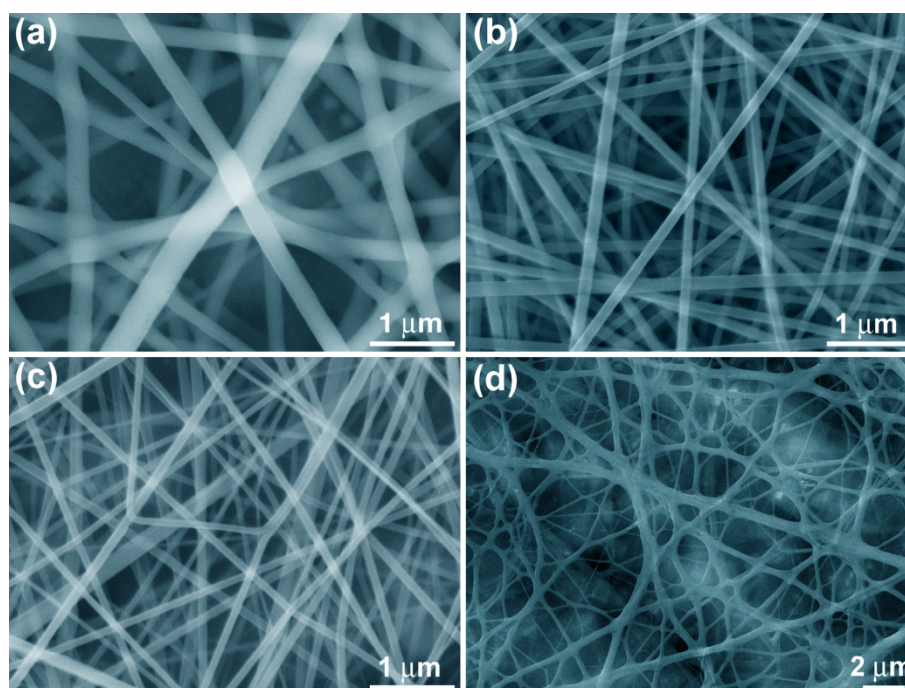


Fig. S3 SEM images of PVP/Pyrene/APTS/rGO nanofibrous film/nanonets with different amount of rGO (wt%). a) 0, b) 0.1, c) 0.2 and d) 0.4.

Reference

1. R. G. Ewing, M. J. Waltman, D. A. Atkinson, J. W. Grate and P. J. Hotchkiss, *TrAC, Trends Anal. Chem.*, 2013, **42**, 35-48.