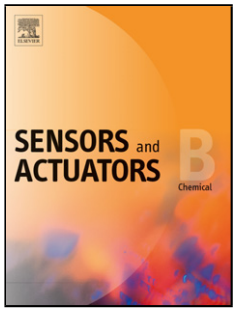

Title: 2D hyperbranched conjugated polymer for detecting TNT with excellent exciton migration

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2D hyperbranched conjugated polymer for detecting TNT with excellent exciton migration

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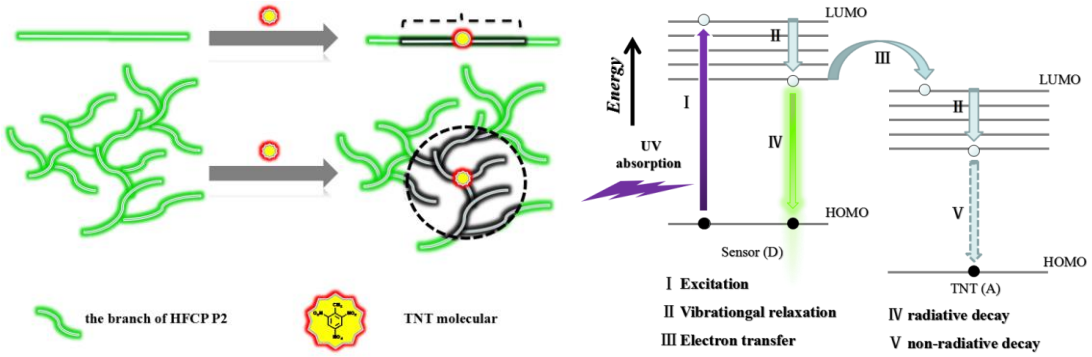
Graphical abstract



Compared with linear conjugated polymers, 2D hyperbranched conjugated polymers afford multi-dimensional transport pathways for exciton migration, meaning that an exciton formed on one chromophore of the hyperbranched conjugated polymer can be quenched by an analyte interacting with a second chromophore. In addition, the electrons can transfer rapidly from the LUMO (lowest unoccupied molecular orbital) of hyperbranched conjugated polymers to that of TNT. This gives rise to the potential for sensing response amplification and the superior performance of hyperbranched conjugated polymers.

Highlights:

- The 2D hyperbranched conjugated polymer **P_2** was synthesized and used as a sensor for detecting TNT.
- Thermal stability, solubility, sensitivity and thermodynamic driving force of the hyperbranched conjugated polymer were improved.