Supplementary Material (ESI) for Polymer Chemistry

Selected-Area In Situ Generation of Highly Fluorescent Organic Nanowires Embedded in a Polymer Film: The Solvent-Vapor-Induced Self-Assembly Process

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ELECTRONIC SUPPLEMENTARY INFORMATION

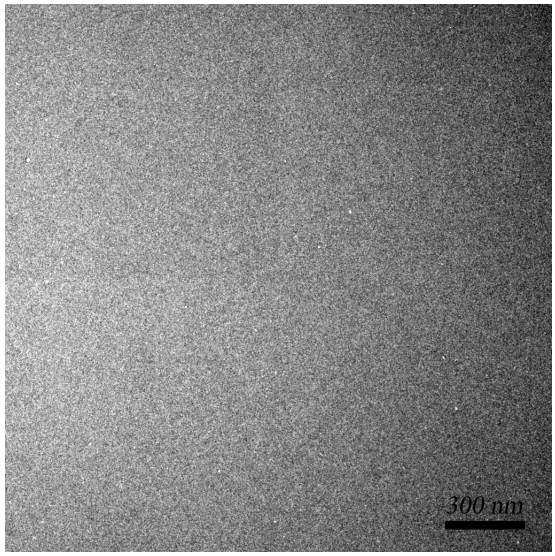


Fig. S1 TEM image of CN-TFMBE-doped polystyrene matrix before SVA.

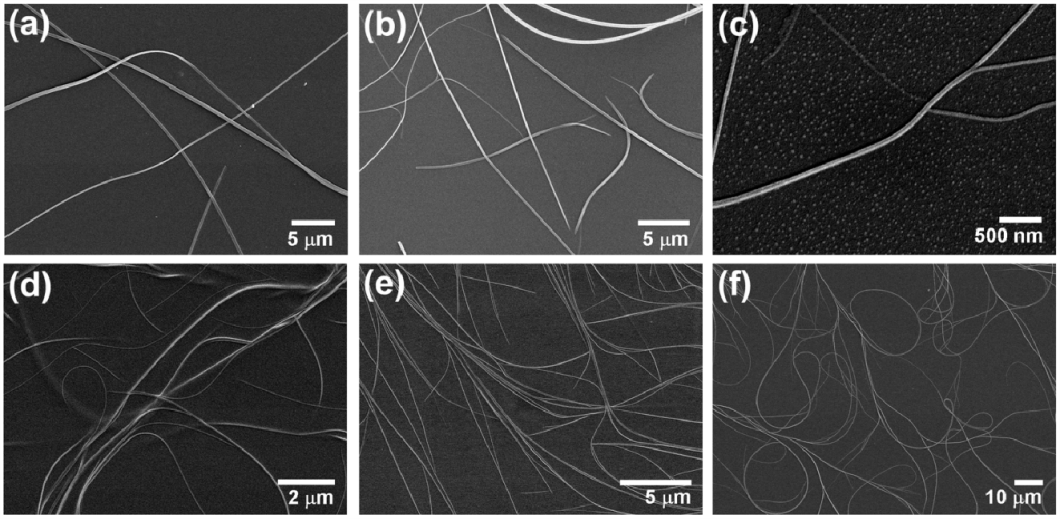


Fig. S2 Self-assembled 1D nanowire structures of CN-TFMBE generated by solvent-vapor annealing on various polymer matrices and solid substrates: (a) polystyrene (PS), (b) regio-regular poly(3-hexylthiophene) (RR-P3HT) and (c) poly(9-vinylcarbazole) (PVK) on a glass substrate; CN-TFMBE 1D nanowires fabricated on (d) a PMMA coated glass substrate, (e) a silicon substrate, and (f) a mica substrate.

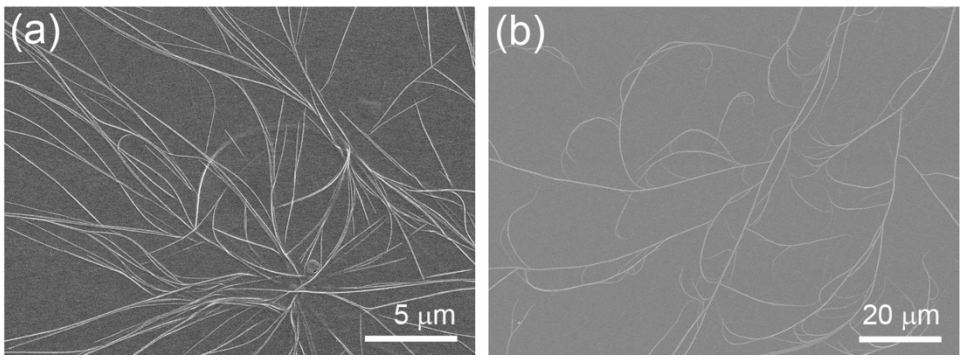
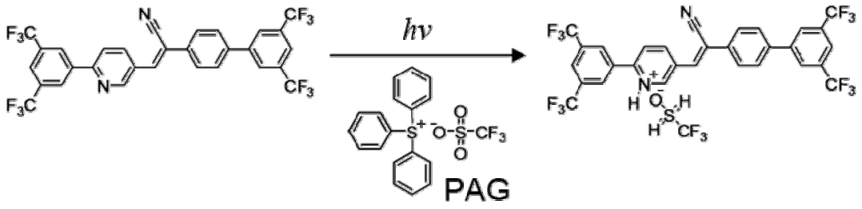


Fig. S3 Self-assembled 1D nanowire structures of Py-CN-TFMBE/PMMA film generated by the solvent-vapor annealing process on two substrates: (a) silicon substrate and (b) mica substrate.



Scheme S1 Photochemical reaction of Py-CN-TFMBE by photo-acid generator.

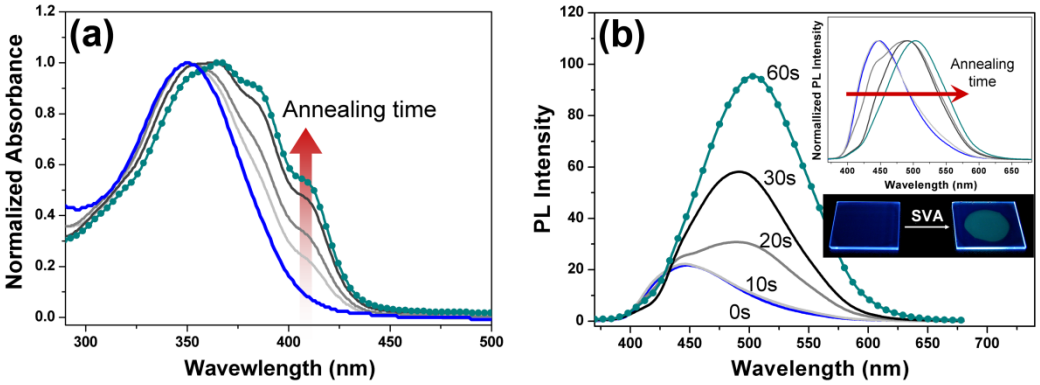


Fig. S4 UV-visible absorption spectra and PL spectra of a Py-CN-TFMBE doped-PMMA film after nanoaggregate formation. (a) Normalized UV-visible absorption spectra and (b) PL spectra for different vapor-exposure times, before (blue line) and after (greenish-blue dotted line) nanowire formation. Insets show an image of the fluorescence change and normalized PL spectra recorded during the solvent-vapor annealing (SVA) process.

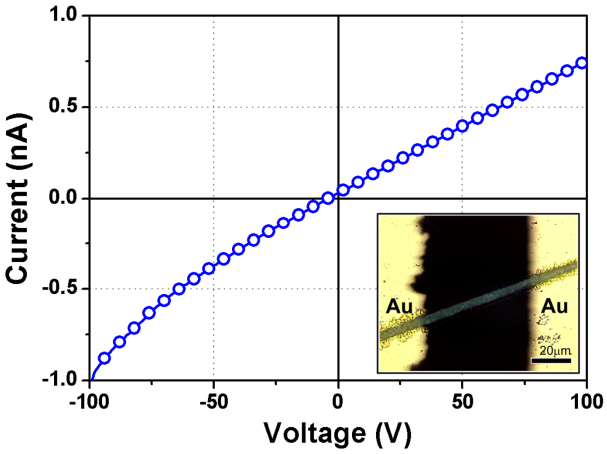


Fig. S5 *I–V* characteristics of MIMIC (micro-molding in capillaries)-patterned Py-CN-TFMBE microwires connecting two electrodes separated by a distance of 50 μm. Inset shows an optical microscopy image.