Supporting Information

UV-Sensing Organic Phototransistor Memories with a Doped Organic Polymer Electret Composed of Triphenylamine-Based Aggregation-Induced Emission Luminogens

Teng-Yung Huang,‡ Chia-Hui Chen,‡ Chia-Chi Lin, Yu-Jung Lee, Cheng-Liang Liu, and Guey-Sheng Liou**

T.-Y. Huang, C.-H. Chen, Prof. G.-S. Liou
Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan. E-mail: gsliou@ntu.edu.tw
Prof. G.-S. Liou
Advanced Research Center for Green Materials Science and Technology, National Taiwan University, Taipei 10617, Taiwan
C.-C. Lin, Y.-J. Lee, Prof. C.-L. Liu
Department of Chemical and Materials Engineering, National Central University, Taoyuan 32001, Taiwan. E-mail: clliu@ncu.edu.tw
Prof. C.-L. Liu
Research Center of New Generation Light Driven Photovoltaic Modules, National Central University, Taoyuan 32001, Taiwan

Keywords: phototransistor; aggregation-induced emission; electret; doping; photomemory

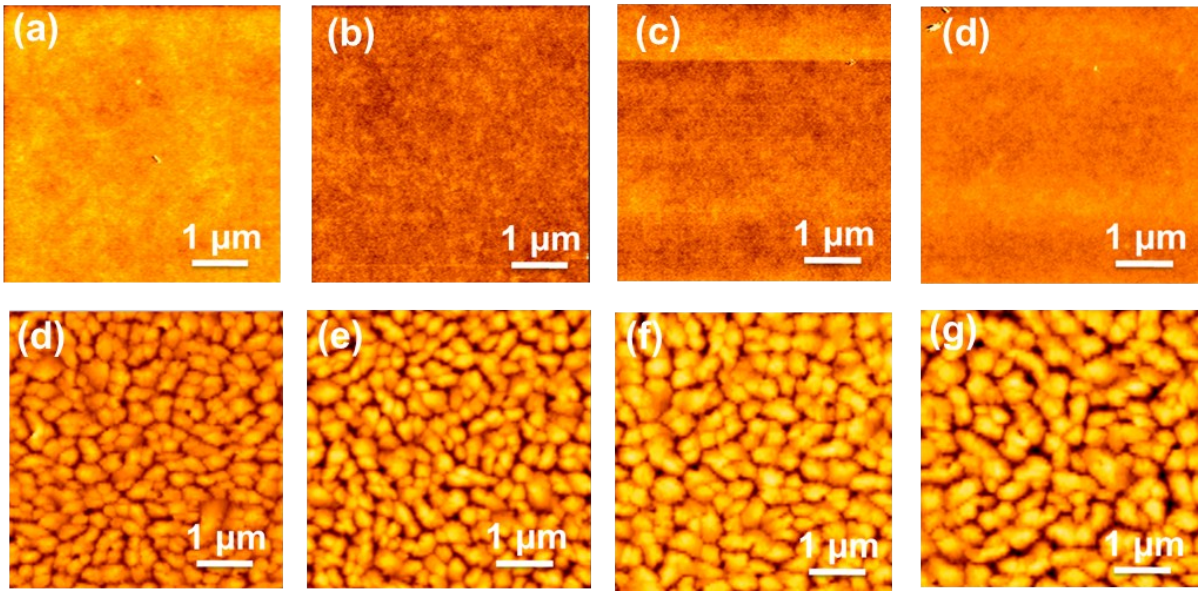


Figure S1. AFM topographies of (a) PA, (b) PI, (c) PA-SM5, (d) PI-SM5 and (d-g) petacene on (a-d) coated substrates.

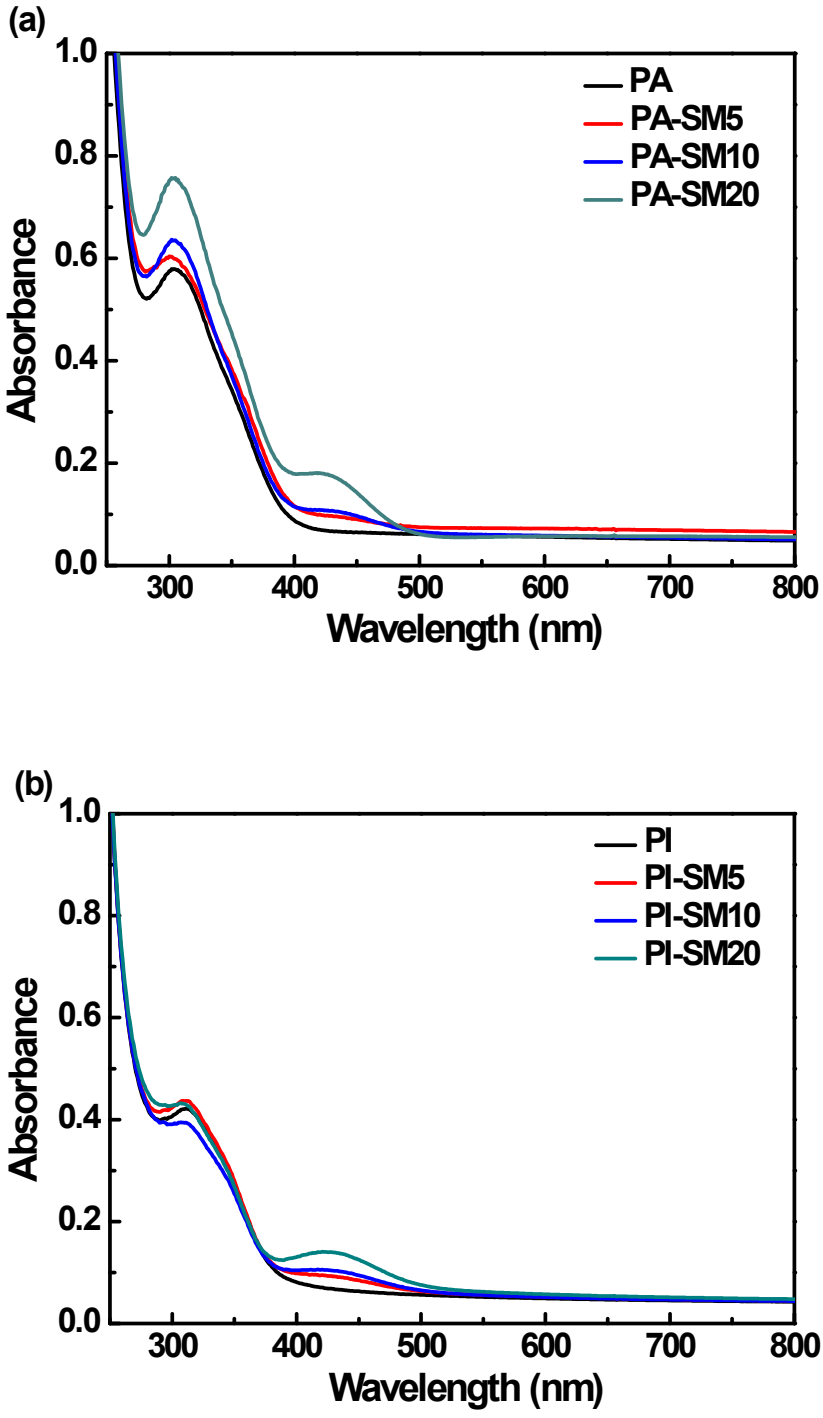


Figure S2. UV-Vis spectra of (a) PA and PA-SMX and (b) PA and PI-SMX films.

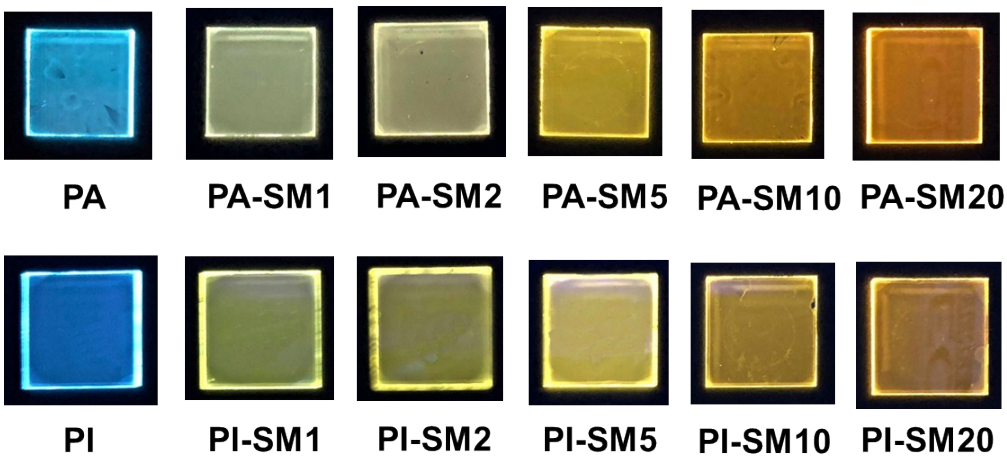
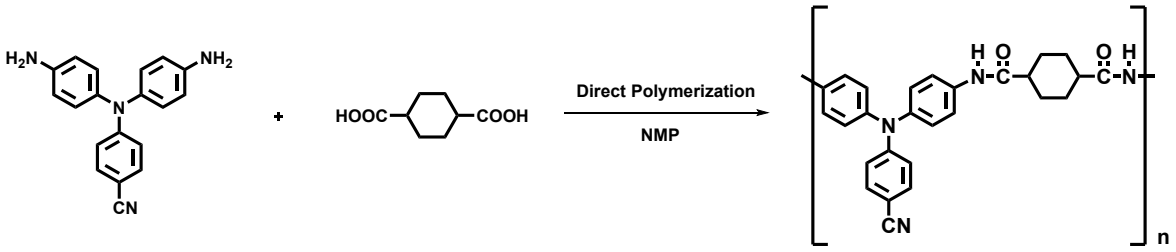
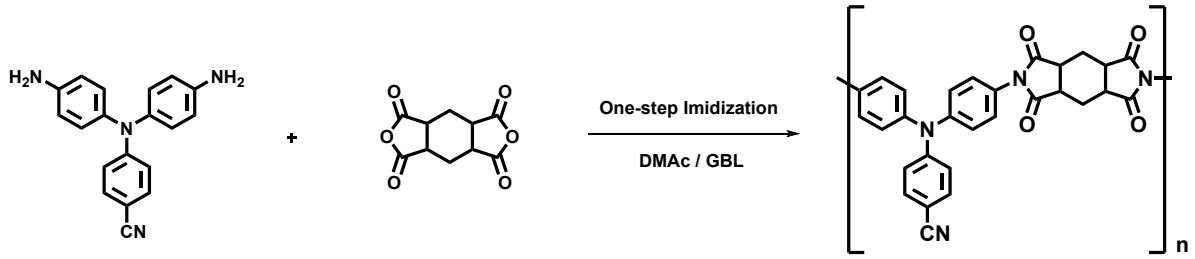


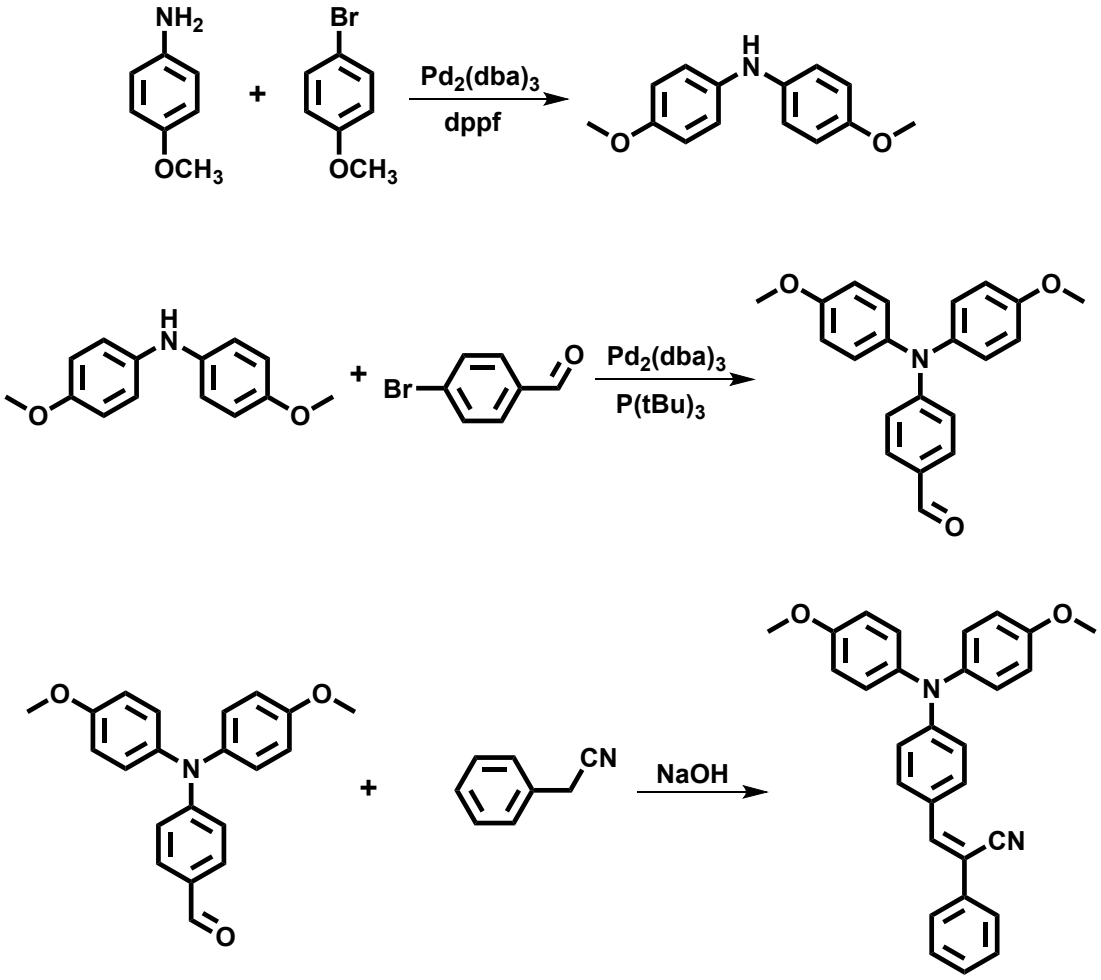
Figure S3. Photographs of PA, PA-SMX, PI and PI-SMX films under UV-light illumination.



Scheme S1. Synthetic route of PA.



Scheme S2. Synthetic route of PI.



Scheme S3. Synthetic routes of SM.

Table S1. Inherent viscosity[a)] and molecular weight[b)] of Polymers.

Polymer	η_{inh} (dL/g)	M_w	M_n	PDI[c)]
PA	1.38	231,700	72,000	3.22
PI	0.49	93,700	44,000	2.13

[a)] Measured at a polymer concentration of 0.5 g/dL in DMAc at 30℃; [b)] Calibrated with polystyrene standards, using NMP as the eluent at a constant flow rate of 0.5 mL/min at 40℃; [c)] Polydispersity index (PDI) = M_w/M_n.