Electronic Supplementary Material (ESI) for Nanoscale Advances.

Electronic Supplementary Information

Hybrid Conjugated Polymer/Magnetic Nanoparticle Composite Nanofibers through Cooperative Non-Covalent Interactions

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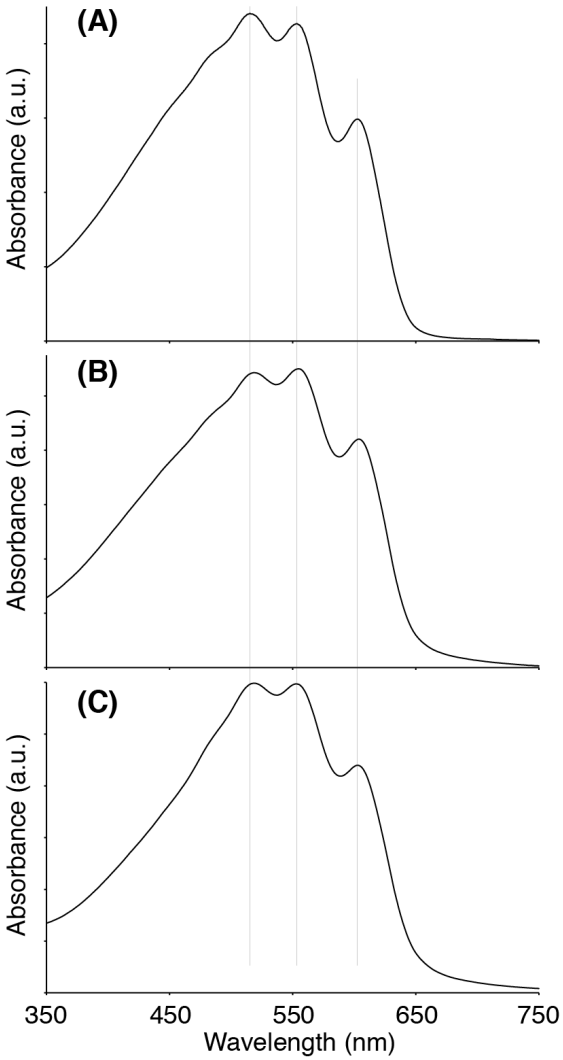

Figure S1. UV-vis absorption spectra of nanofiber solutions of (A) P3HT, (B) BCP1, and (C) BCP2.

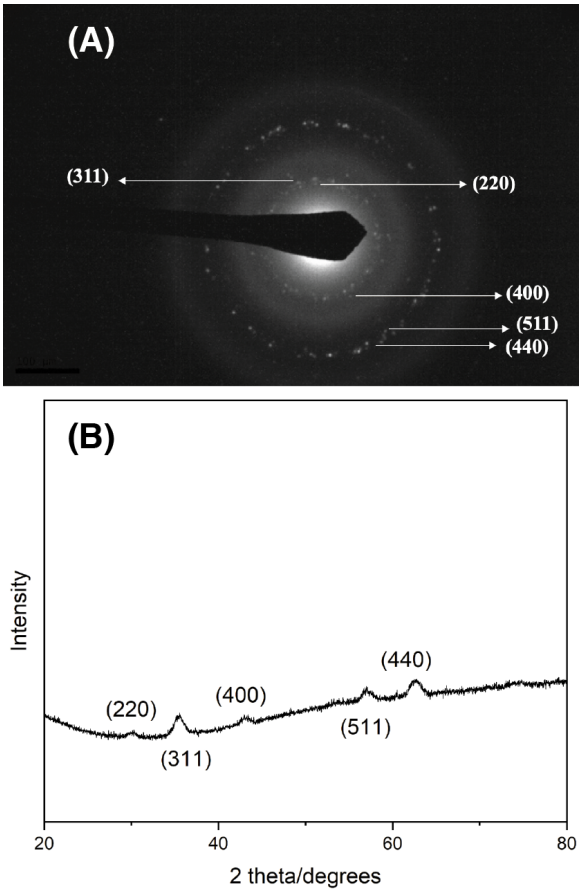

Figure S2. Selected area electron diffraction (SAED) pattern (A) and powder X-ray diffraction spectrum (B) of IONP-OA.

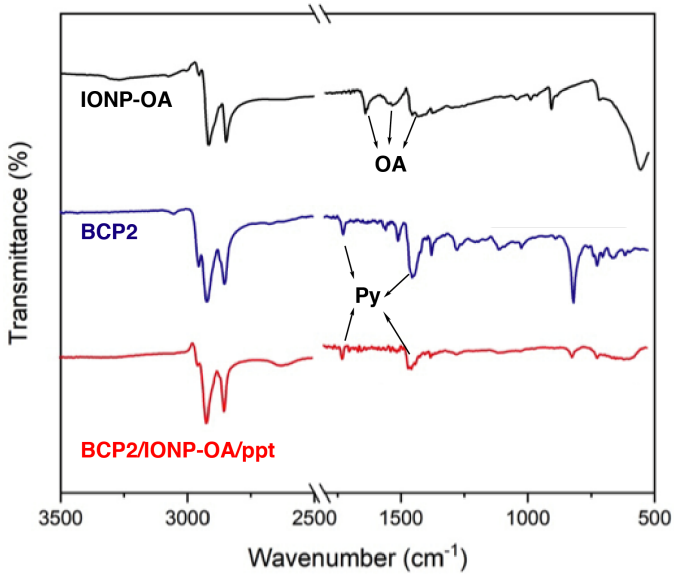

Figure S3. Infrared (IR) spectra on powders of IONP-OA (black), BCP1 (Blue), and precipitate of BCP1/IONP-OA mixture (red). OA: oleylamine; Py: pyridine.

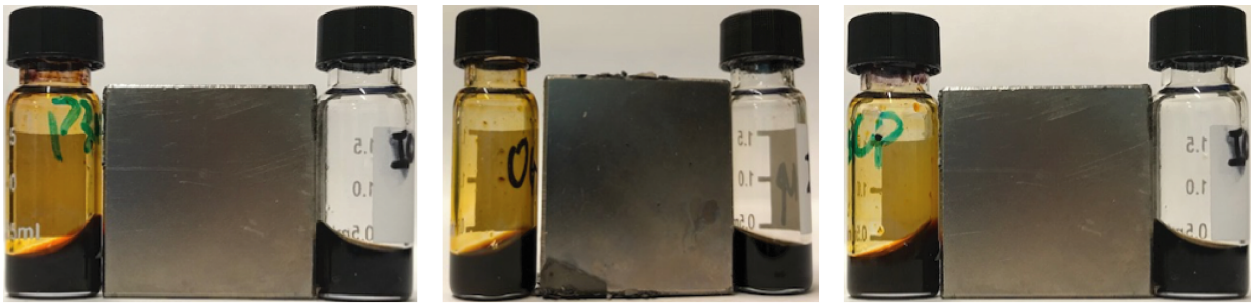

Figure S4. Photographs of well-dissolved solutions of P3HT (left), BCP1 (middle), and BCP2 (right) mixed with IONP-OA in chlorobenzene (2/1 wt./wt., 10 mg/mL polymer concentration) placed next to a permanent magnet cube. In each photo, the mixture solutions sit on the left and on the right are the pure IONP-OA solutions in chlorobenzene at identical concentrations.

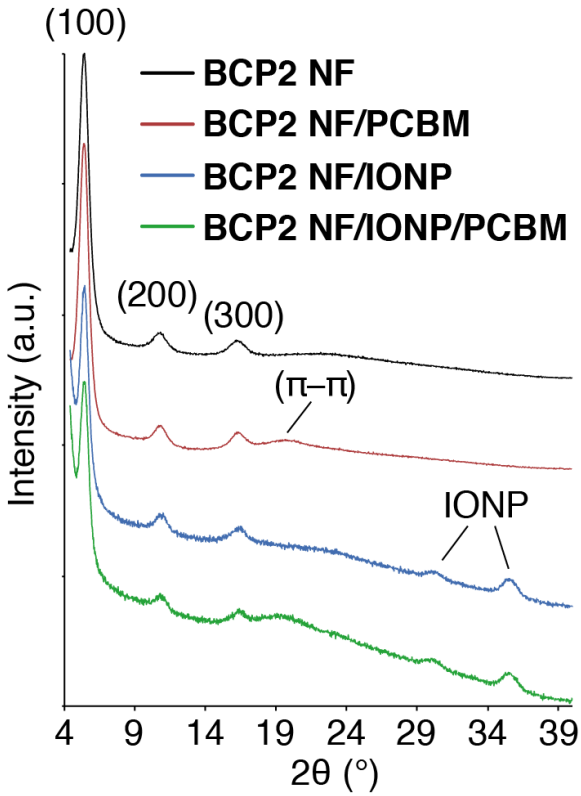

Figure S5. X-ray diffraction (XRD) profiles of thin films (100 nm in thickness, thermal annealed at 150 °C for 10 min) of BCP2 NF (black), BCP2 NF/PCBM (red), BCP2 NF/IONP (blue) and BCP2 NF/IONP/PCBM (green).

Table S1. Average numbers (N_{avg}) and maximum numbers (N_{max}) of IONPs closely associated with one polymer NF, from sampling ca. 50 individual NFs in TEM images.

	N_{avg} of IONP per NF	N_{max} of IONP per NF
P3HT NF / IONP-OA	1.1±1.1	4
P3HT NF / IONP-L-OA	0.3±0.5	3
P3HT NF / IONP-CA	N/A	N/A
BCP1 NF / IONP-OA	4.9±2.6	17
BCP1 NF / IONP-L-OA	3.6±1.3	10
BCP1 NF / IONP-CA	3.9±3.3	15
BCP2 NF / IONP-OA	Unable to count	34
BCP2 NF / IONP-L-OA	4.7±1.9	14
BCP2 NF / IONP-CA	9.6±8.0	48