Electronic Supplementary Information

Phosphorescent and semiconductive fiberlike micelles formed by platinum(II) complexes and block copolymers

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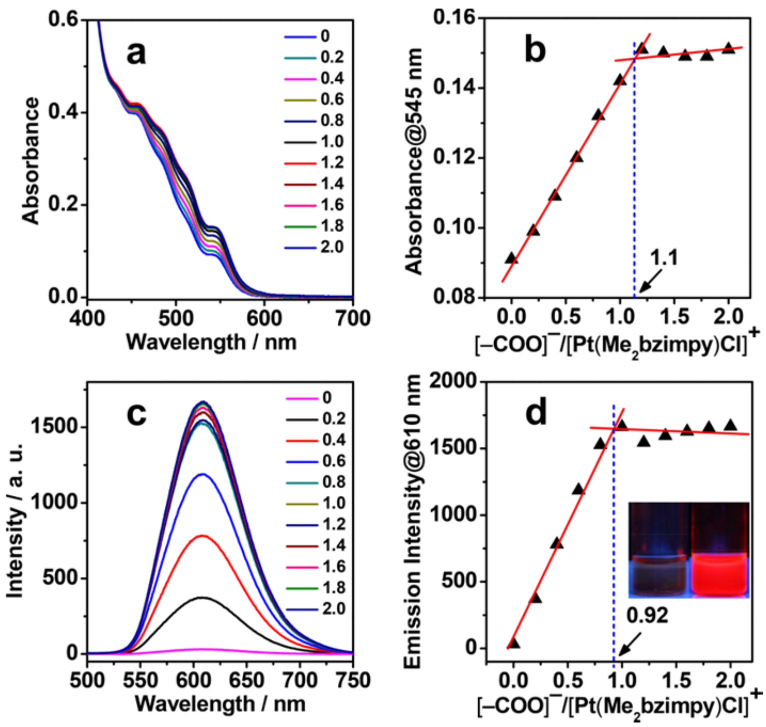

Fig. S1 UV-vis absorption (a and b) and emission (c and d) spectral changes of $[Pt(Me_2bzimpy)Cl]^+Cl^-$ (0.4 mmol/L) upon dropwise addition of E$_{136}$-*b*-A$_{28}$ ($[-COO]^-/[Pt(Me_2bzimpy)Cl]^+$ = 0, 0.2, 0.4, 0.6, 0.8, 1.0 1.2, 1.4, 1.6, 1.8, and 2.0). As revealed in the titration curves of $[Pt(Me_2bzimpy)Cl]^+Cl^-$/E$_{136}$-*b*-A$_{28}$ (Fig. S1) and $[Pt(Me_2bzimpy)Cl]^+Cl^-$/E$_{136}$-*b*-A$_{72}$ (Fig. S2), the $[-COO]^-/[Pt(Me_2bzimpy)Cl]^+$ molar ratio is not exactly equal to 1.0 like $[Pt(Me_2bzimpy)Cl]^+Cl^-$/E$_{136}$-*b*-A$_{28}$ (Fig. 2), but rather close to 1.0. This is acceptable when one considers the experimental errors. Alternatively, this slight difference can be attributed to the polydispersity of the A$_m$ blocks. The titration experiments of EAPt-1 and EAPt-3 have been repeated for at least ten times and the molar charge ratio was 1.0 ± 0.2. Even though with the errors, with increasing the "*m*" value, the number of the $[Pt(Me_2bzimpy)Cl]^+$ group increased steadily in the individual nanofibers (28 ± 5 < 42 < 72 ± 14 for EAPt-1, EAPt-2, and EAPt-3, respectively). This order is consistent with the increasing width of the fiberlike micelles.

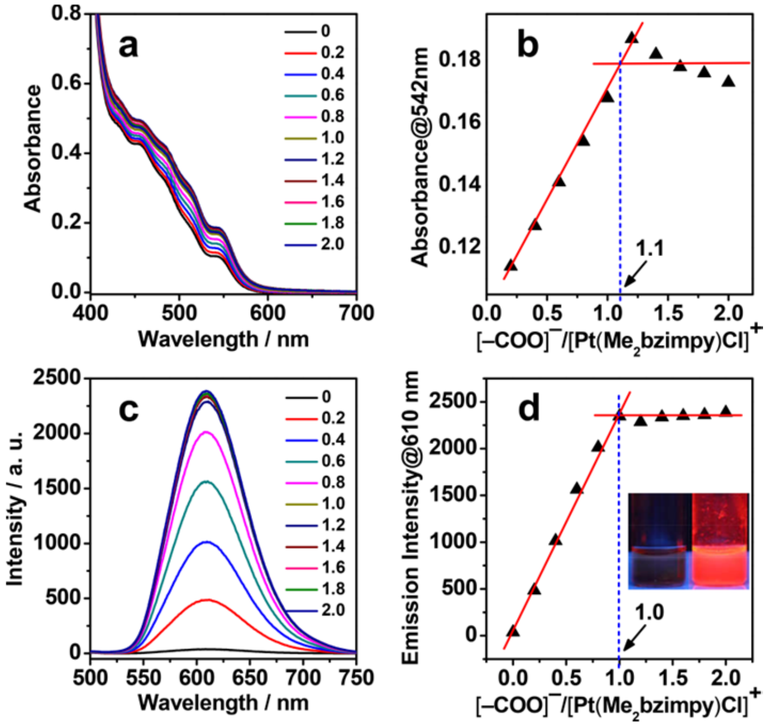

Fig. S2 UV-vis absorption (a and b) and emission (c and d) spectral changes of $[Pt(Me_2bzimpy)Cl]^+Cl^-$ (0.4 mmol/L) upon dropwise addition of E_{136}-*b*-A_{72} ($[-COO]^-/[Pt(Me_2bzimpy)Cl]^+$ = 0, 0.2, 0.4, 0.6, 0.8, 1.0 1.2, 1.4, 1.6, 1.8, and 2.0).

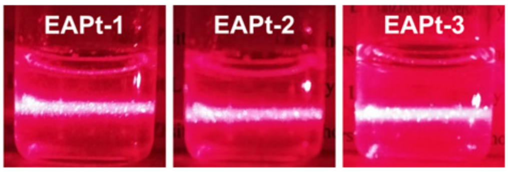

Fig. S3 The solutions of EAPt-1, EAPt-2, and EAPt-3 showed clear Tyndall effects.

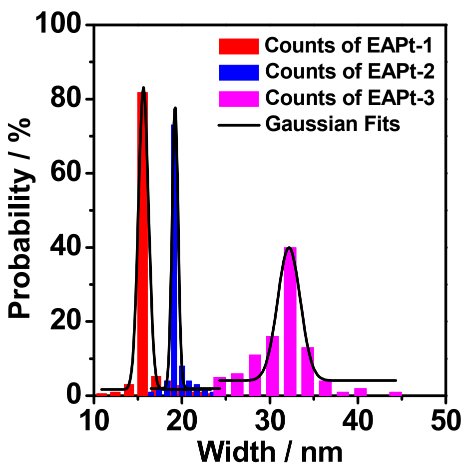

Fig. S4 The ionic core widths of fiberlike micelles of EAPt-1, EAPt-2, and EAPt-3 were determined to be 15.6 ± 1.2, 19.2 ± 0.7, and 32.2 ± 2.6 nm, respectively, by counting more than 500 nanofibers

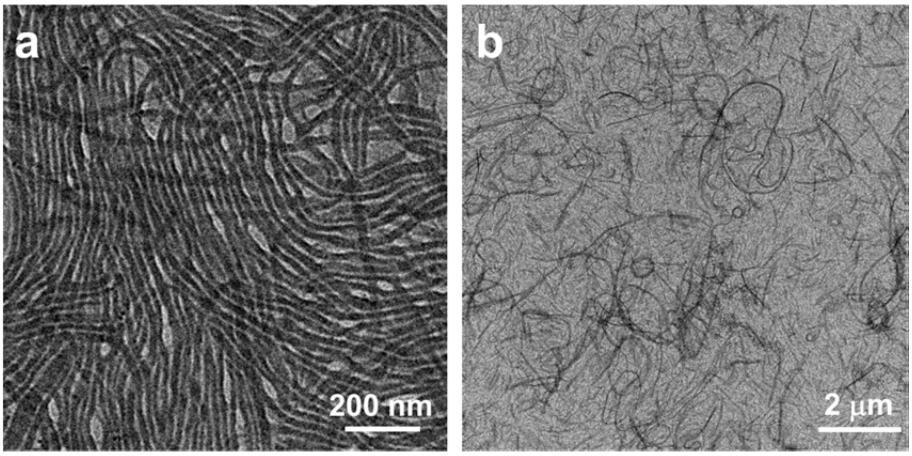

Fig. S5 TEM images of EAPt-2 (a) and EAPt-3 (b) drop-cast from the 0.4 mmol/L aqueous solutions.

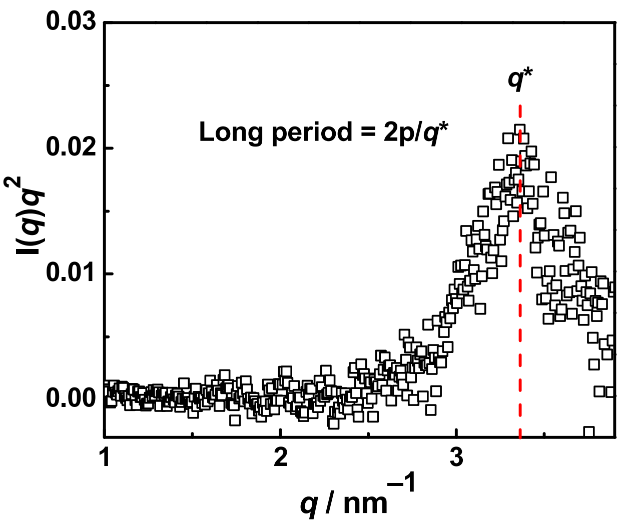

Fig. S6. The SAXS curve was calibrated by the Lorentz method to obtain the long period of EAPt-2. A scattering peak appeared at q^* = 3.28 nm^{-1}, corresponding a spacing of d ($d = 2\pi/q^*$ = 1.92 nm).

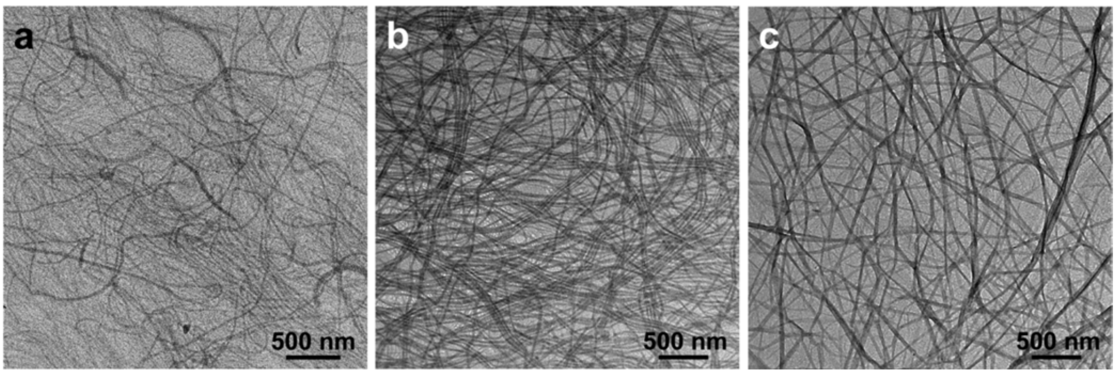

Fig. S7 TEM images of EAPt-1 (a), EAPt-2 (b), and EAPt-3 (c) drop-cast from the 0.4 mmol/L aqueous solutions that were aged for six months.

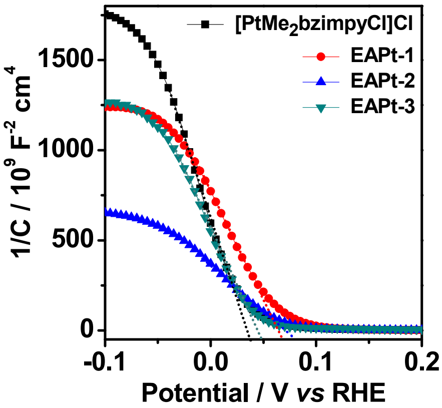

Fig. S8 Mott-Schottky plots of $1/C^2$ against potential offered negative slopes, suggesting that these nanofibers were p-type semiconductors.