Supplementary Information

Formation of Nanowires by Single Particle-Triggered Linear Polymerization of Solid-State Aromatic Molecules

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Experimental Details

Electron paramagnetic resonance (EPR) spectroscopy was recorded at 298 K on a JEOL model JES-FA-200 X-band spectrometers. Size-exclusion chromatography (SEC) measurement was performed at 40 °C on a Hitachi model chromatography instrument (L-2130, L-2455, L-2350) with Shodex columns (KF-804L/KF-805L) using tetrahydrofuran (Wako Pure Chemical Industries, Ltd., HPLC grade, stabilizer free) as an eluent at a flow rate of 1 mL min^{-1}.

Supporting Figures

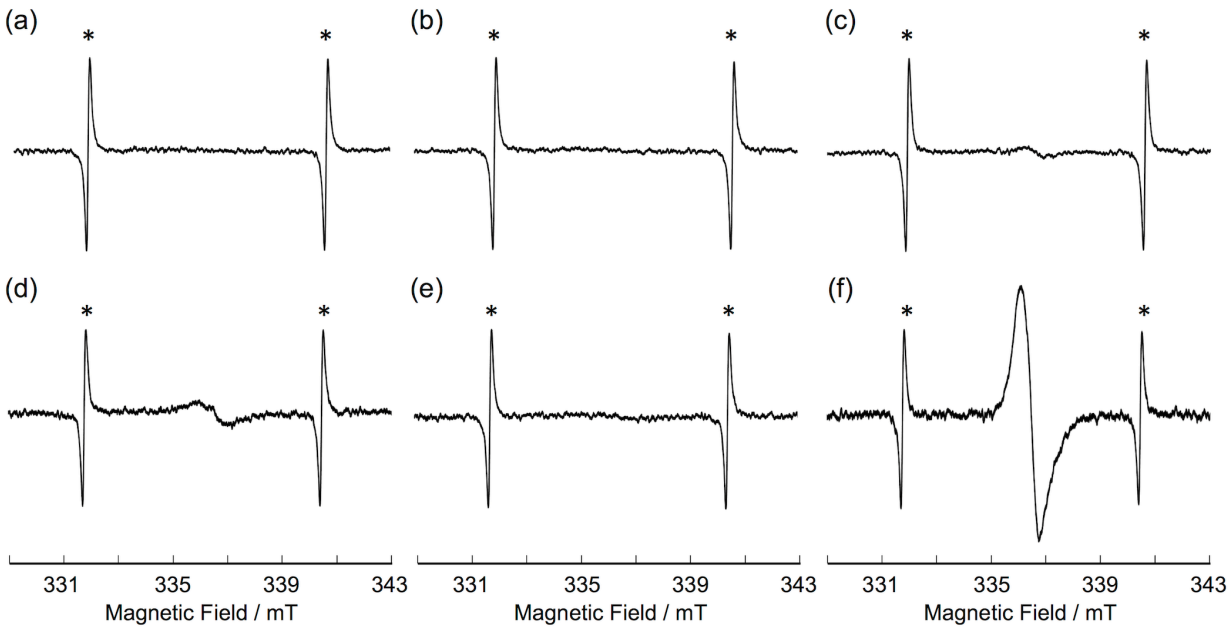

Fig. S1. EPR spectra of solid state (a)(d) **3**, (b)(e) **4** and (c)(f) **5**. Samples in (a)–(c) were as-purchased or as-synthesized in the solid state. Samples in (d)–(f) were after irradiation with 490 MeV $^{192}Os^{30+}$ at a fluence of 1×10^{10} ions cm^{-2}. No development process was carried out. Asterisk indicates signals from Mn^{2+} as internal standard.

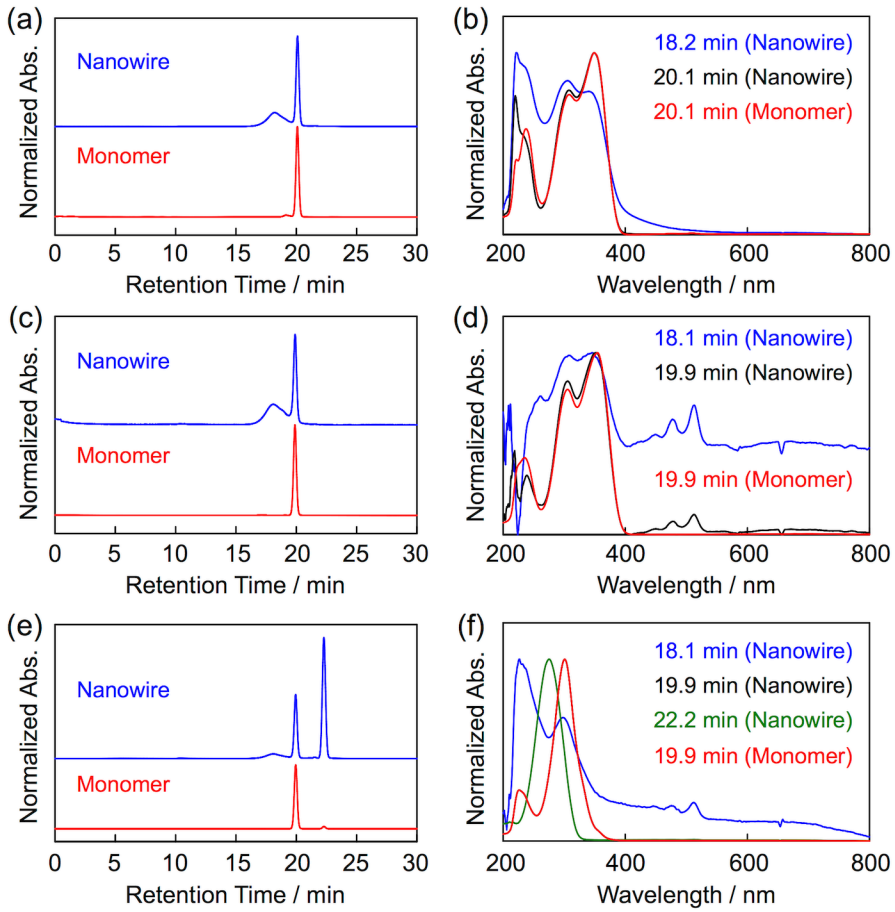

Fig. S2. Analytical SEC profiles of monomers (red) and soluble fractions of their nanowires (blue) in THF for (a) **3**, (c) **4** and (e) **5**. The formation of nanowires was confirmed by AFM after irradiation with 490 MeV $^{192}Os^{30+}$ at a fluence of 1×10^{11} ions cm^{-2} and subsequent development of the dropcast films of each compound. Then the nanowires on a Si substrate was immersed in THF, sonicated, filtered from insoluble fraction and then injected into an analytical SEC system using THF as an eluent. Retention time was monitored by UV light at 350 nm for **3** and **4**, and 300 nm for **5**. UV-vis absorption spectra of eluted fraction corresponding to the retention peaks in the SEC trace. (b), (d), and (f) correspond to the SEC charts (a), (c), and (e), respectively. Black and red curves in (f) are completely identical.