

Supplementary information for:

Light driven asymmetric polymerization: an approach for tele-control reaction

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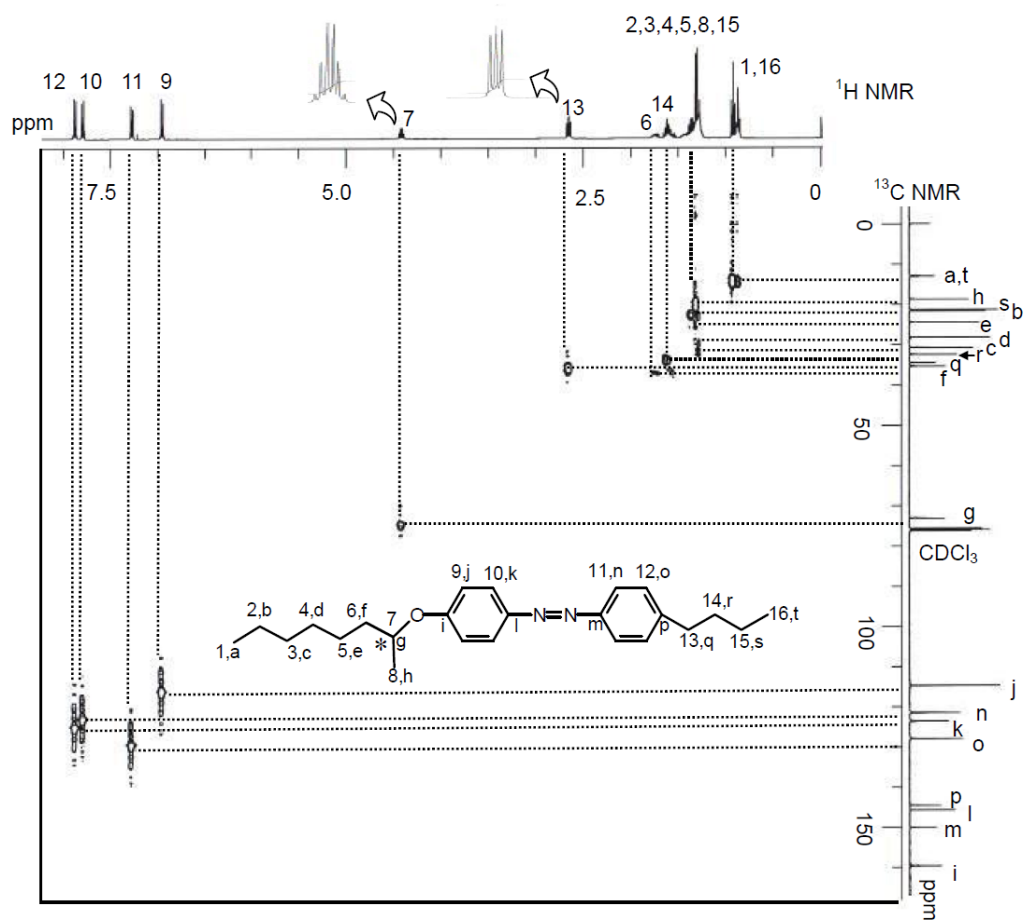


Fig. S1. Heteronuclear Multiple Quantum Coherence (HMQC) 2-D ^1H - ^{13}C correlation NMR spectrum of AZO*.

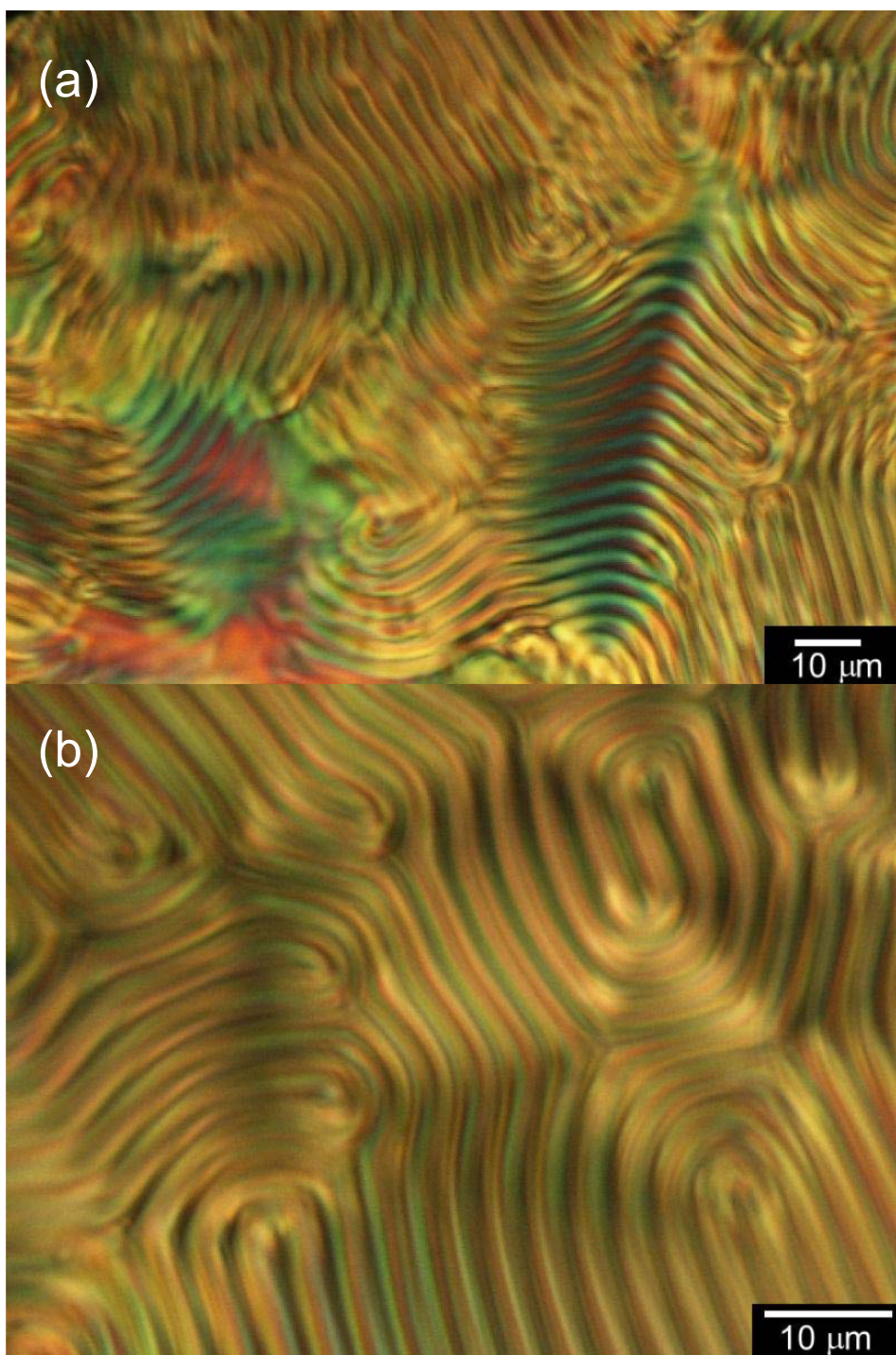


Fig. S2. POM images of monomer-free LC solution containing AZO* (20 mg) in 6CB (0.3 g) at 25 °C. (a) 500 x, (b) 1000 x.

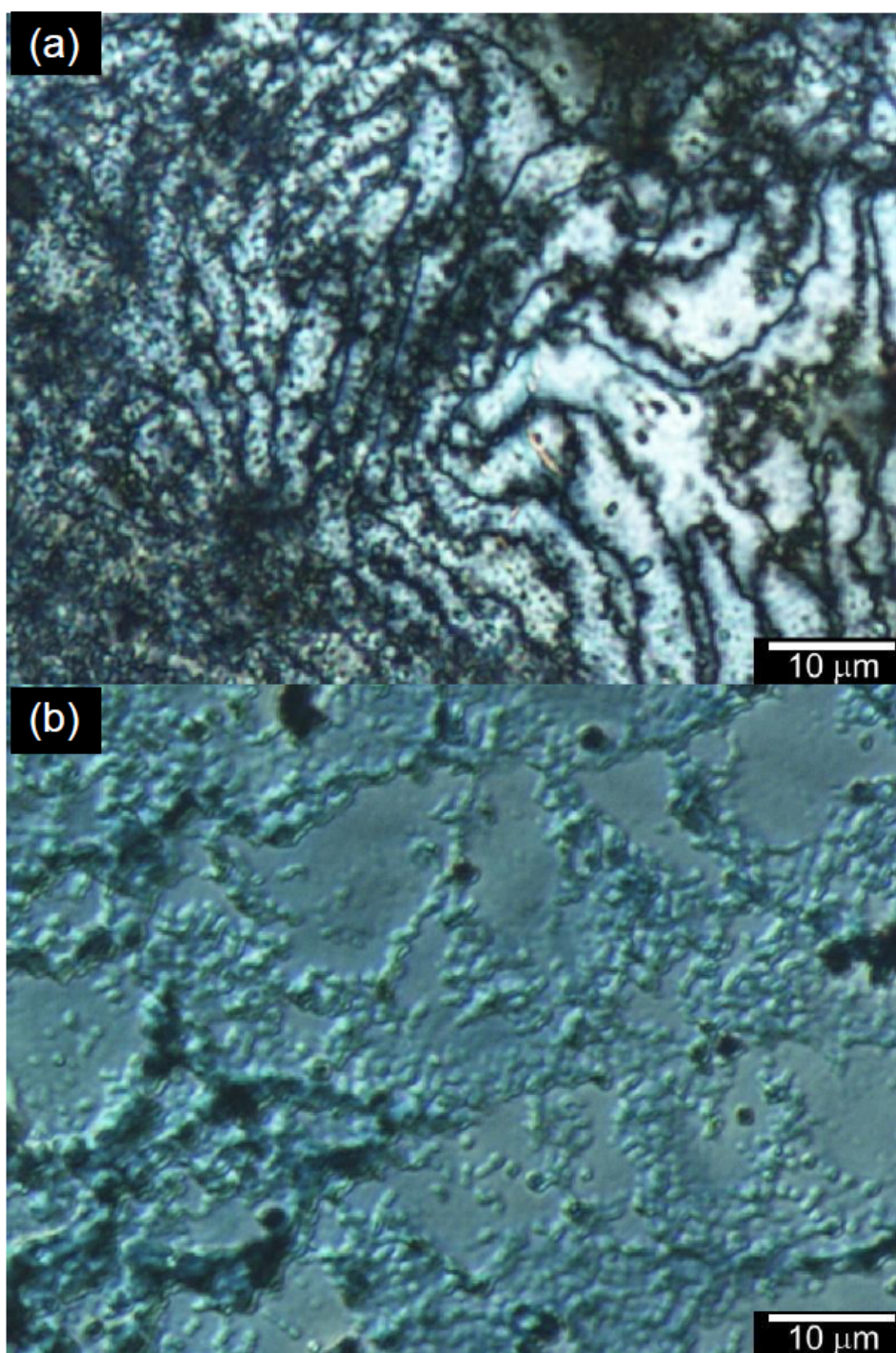


Fig. S3. Differential interference microscopic (DIM) images of *PterEDOT* prepared under light irradiation. (a) *PterEDOT* showing Schlieren texture. (b) *PterEDOT* showing no birefringence.

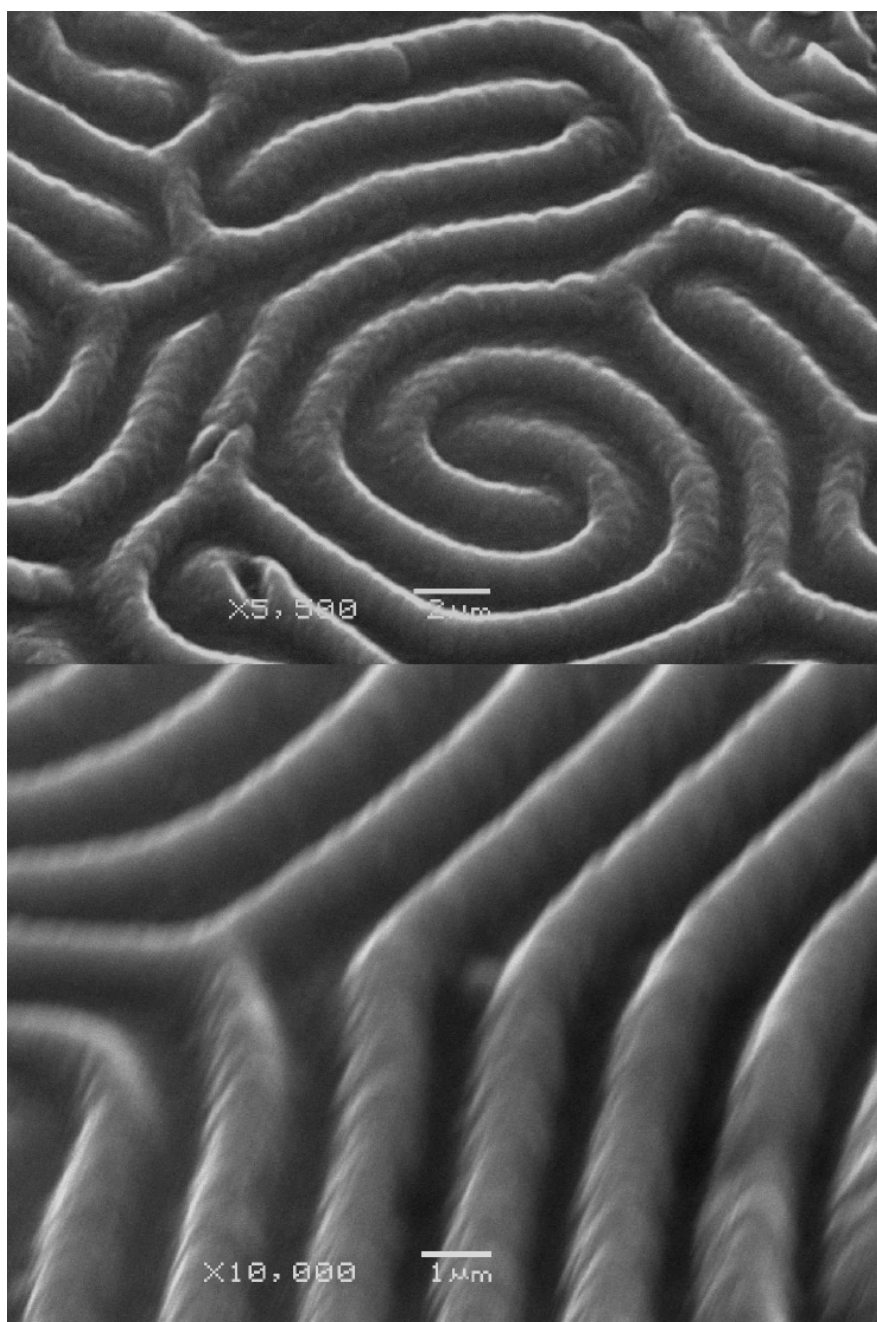


Fig. S4. SEM images of PFFLF prepared under Vis light (PFFLF(Vis)).

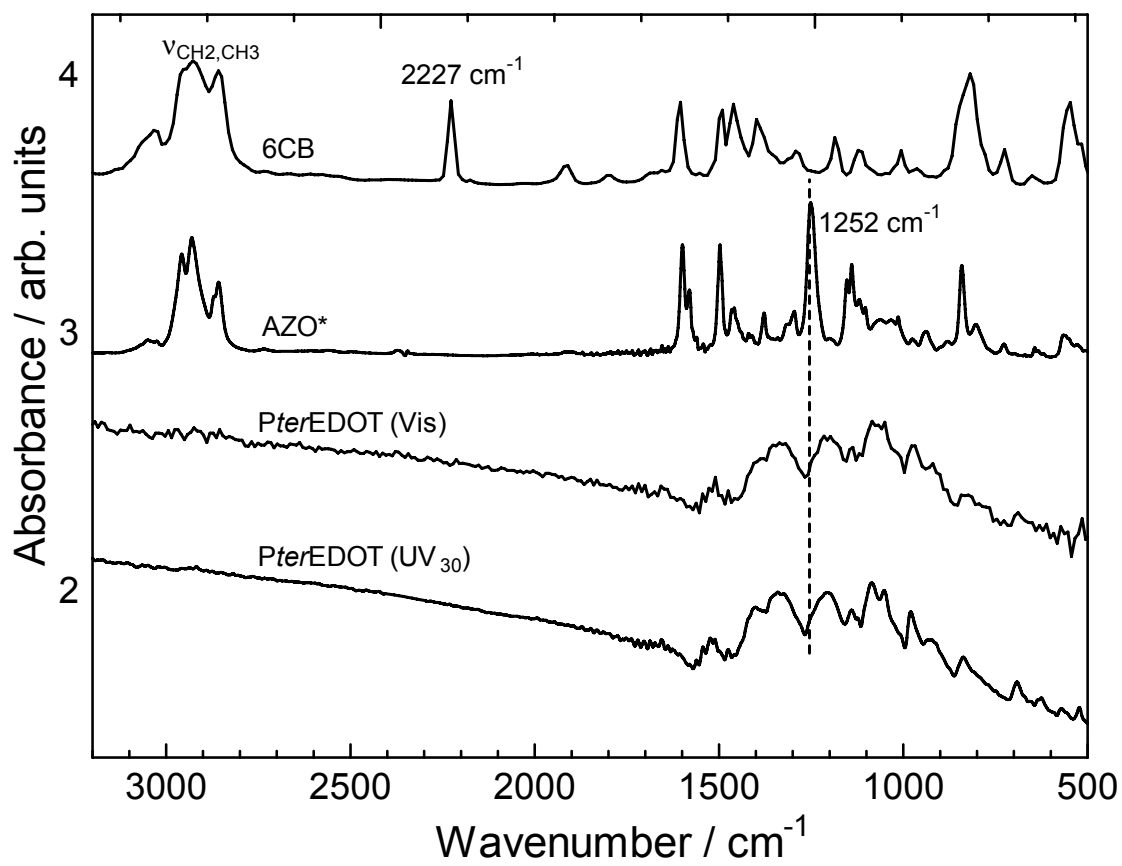


Fig. S5. IR absorption spectra of 6CB, AZO*, PterEDOT(Vis), and PterEDOT(UV₃₀).

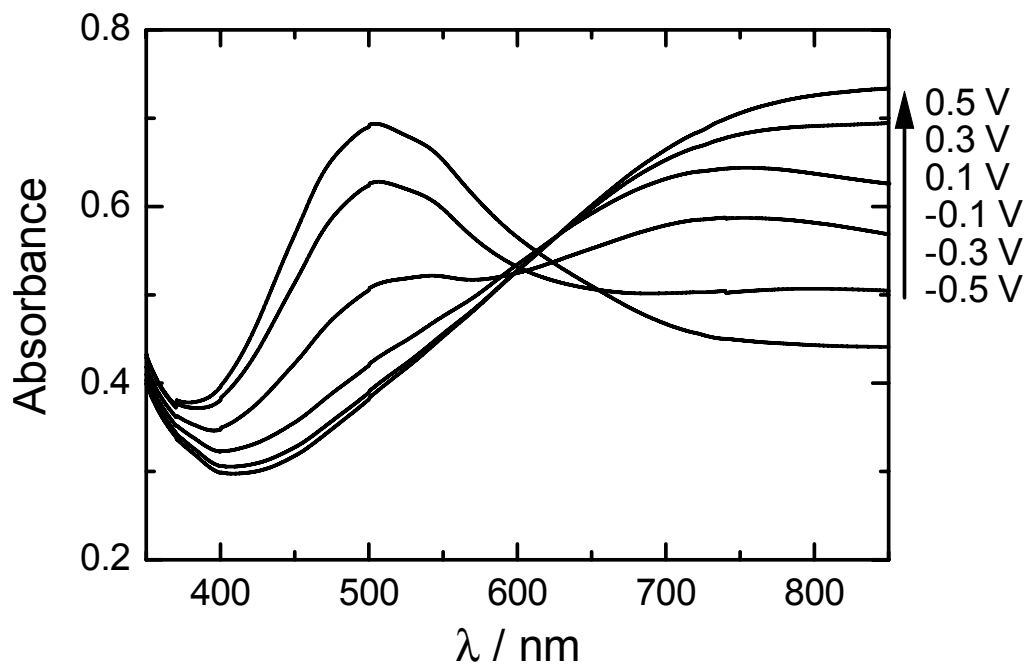


Fig. S6. Optical absorption spectra collected under voltage. Change in absorption of the polymer obtained after UV light irradiation for 30 min (*Pter*EDOT(UV₃₀)) during the application of voltage.

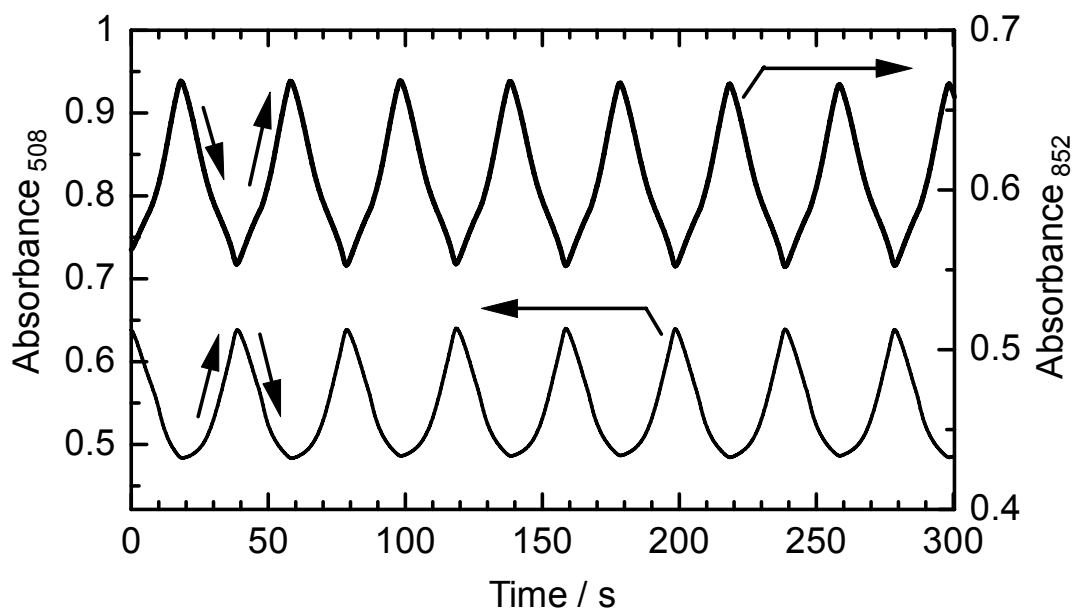
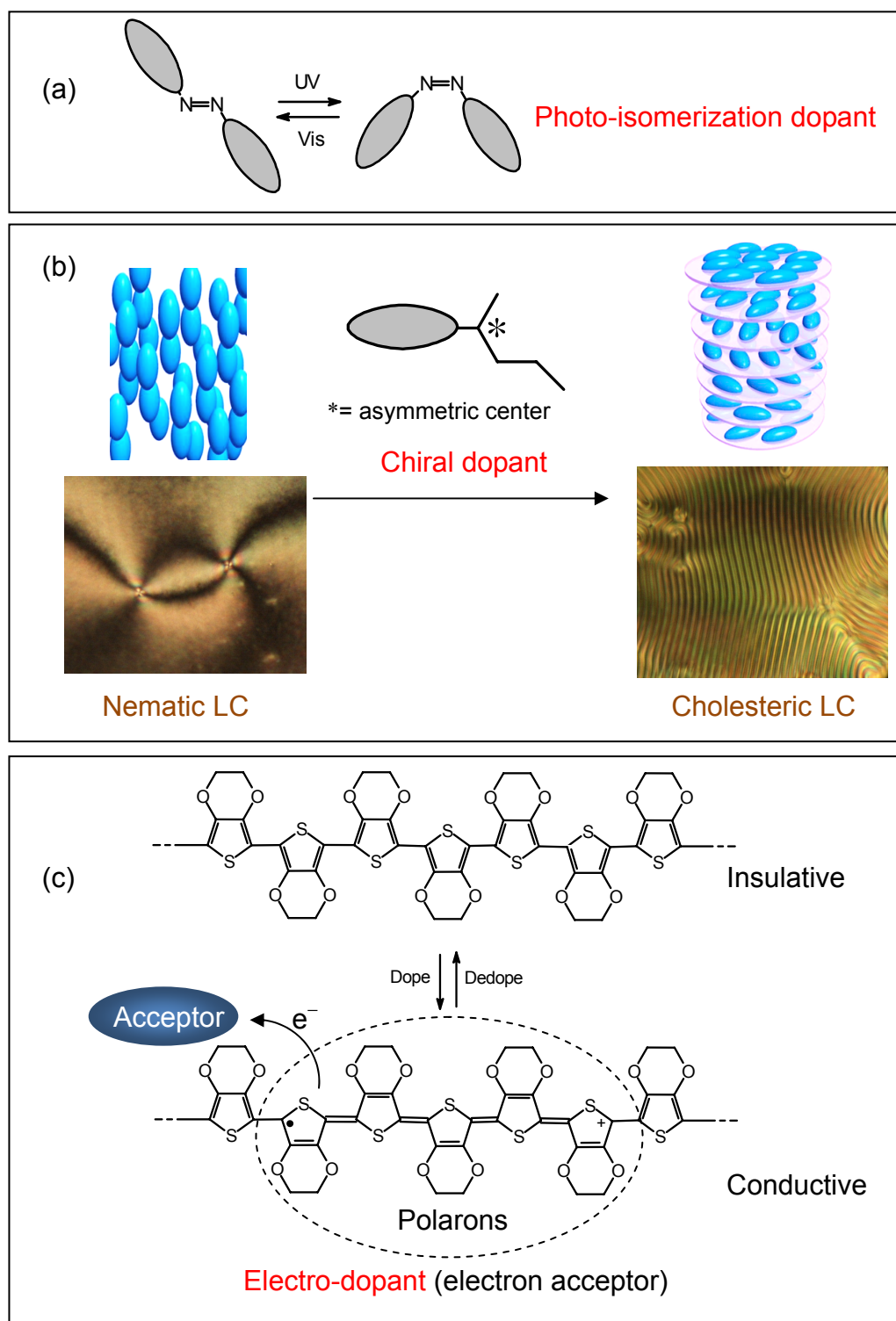


Fig. S7. Reversible changes in absorption for *Pter*EDOT (Vis) (the polymer prepared under Vis light) on ITO glass with repeated scanning between -0.5 V and $+0.5$ V vs. Ag/Ag^+ as a reference electrode in a monomer-free 0.1 M TBAP/acetonitrile solution. (Thick line) Absorption at 852 nm. (Thin line) Absorption at 508 nm.



Scheme S1. Three categories of dopants. (a) Photo-isomerization dopant, (b) chiral dopant (although the illustration draws pseudo-layer for convenience, actually cholesteric LC has no pseudo-layer structure), (c) electro-dopant for generation of charged carriers.