

Supplemental

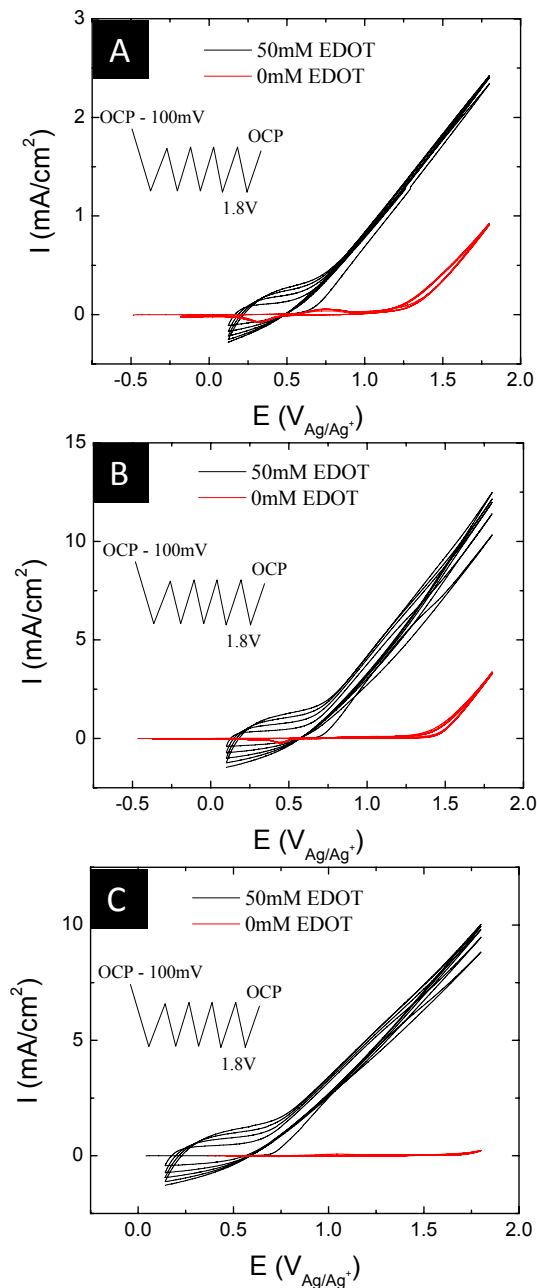


Fig. S1. Cyclic voltammograms of the three different baths, PP1, PC1 and PC2, with (black) and without (red) the monomer EDOT. The scans were performed at a scan rate of 100mV/s starting 100mV negative of OCP to 1.8V and back to OCP five time as indicated by inset potential profile.

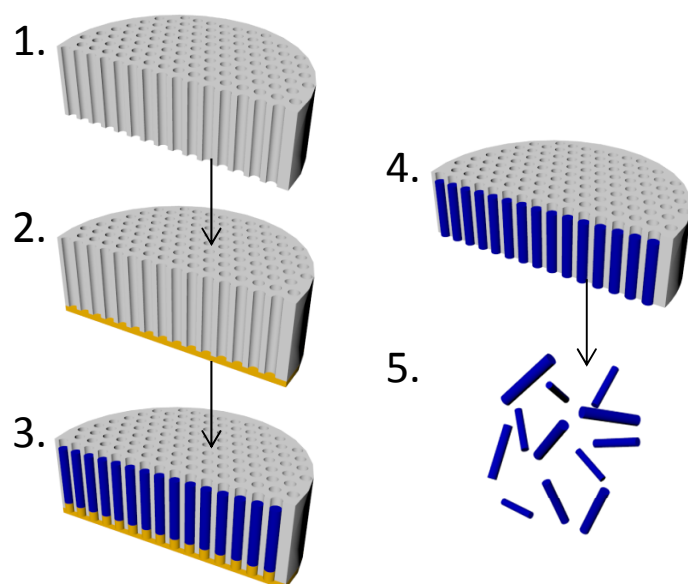


Fig S2. Schematic depiction for nanowire synthesis process. (1) An alumina template is (2) sputtered with Au on one side, (3) followed by electrodeposition of Au and PEDOT, (4) removal of the seed layer and Au plugs by polishing and (5) etching of the template.

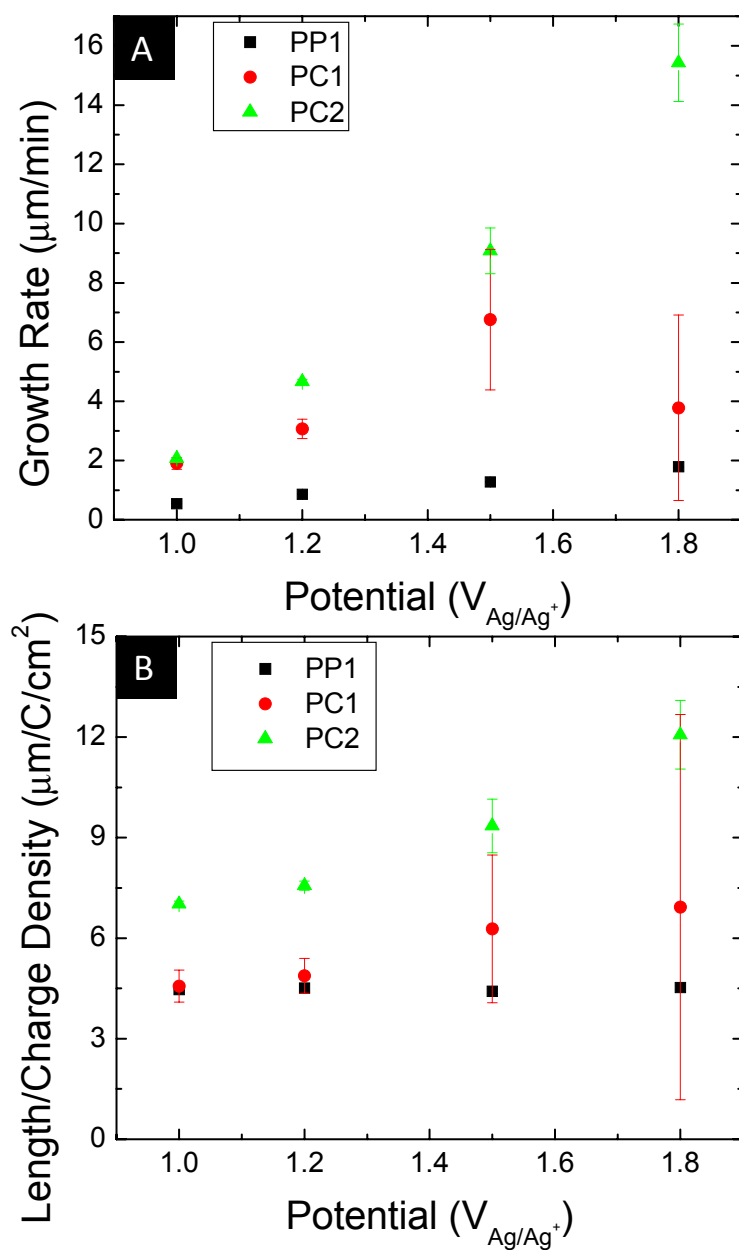


Fig S3. (A) The growth rate and (B) growth per unit charge density as a function of potential for are reported for each PEDOT bath used. A constant charge of 0.576C and 1.3C were used for the acetonitrile and mixed solvent baths, respectively. The area for all samples was held at 0.34cm². Error bars are standard deviations calculated from five samples.

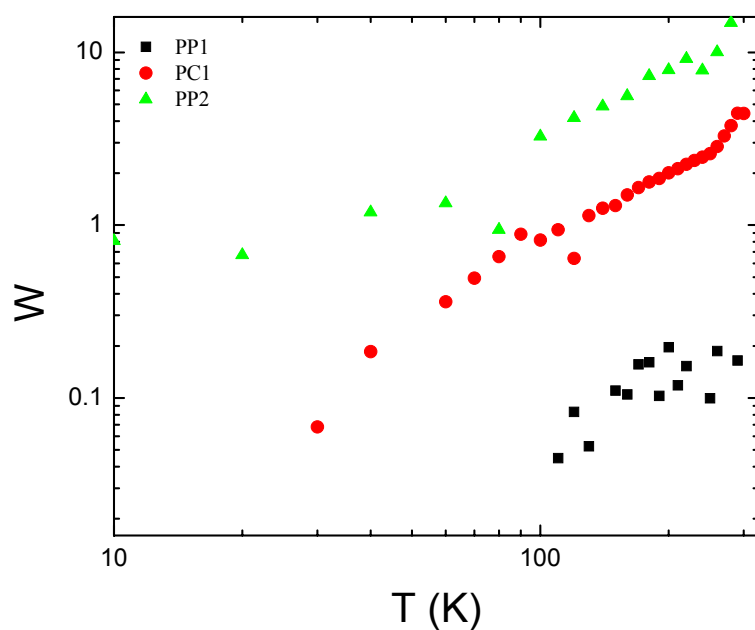


Fig S4. The reduced activation energy as a function of temperature for each bath type PP1, PC1 and PC2. The slope of dW/dT is indicative of relative order for conducting polymers with larger slopes correlating to great order.

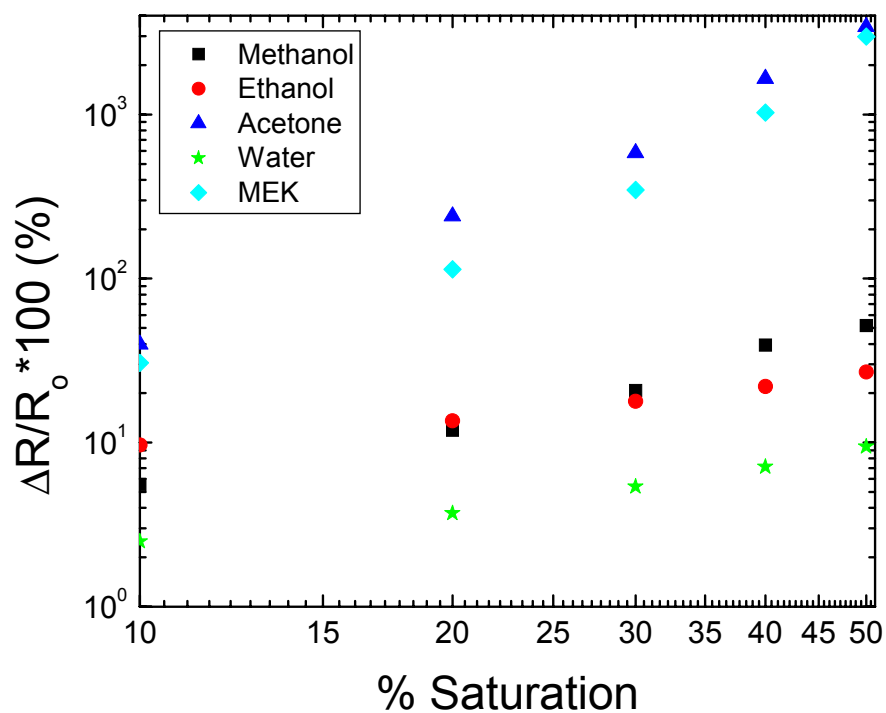


Fig S5. Log-log plot of normalized resistance responses of PC2 to methanol, ethanol, acetone, water and MEK with concentrations in % saturation or partial pressure. The linear slopes indicate a good fitting to the power law equation.