

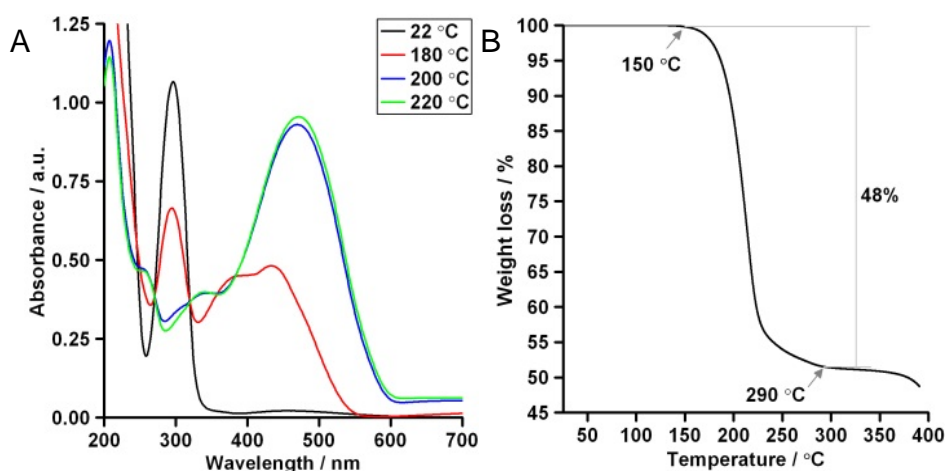
Supporting information for:

## Photolithographic Patterning of Alkoxy Substituted Poly(*p*-phenylenevinylene)s from Xanthate Precursors

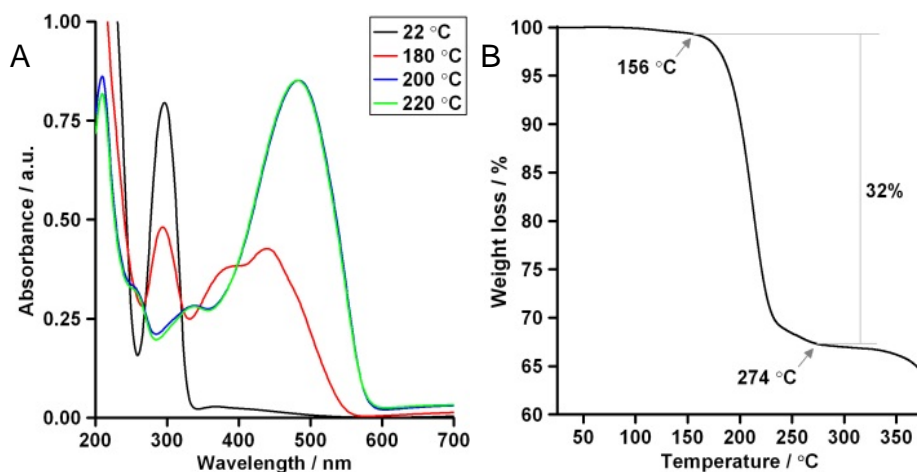
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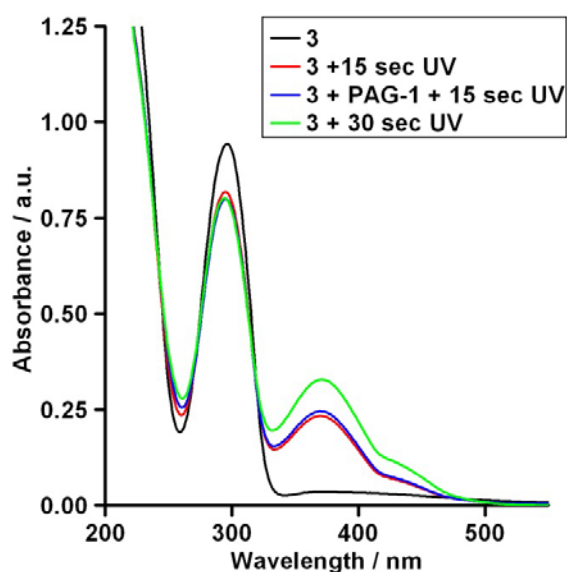
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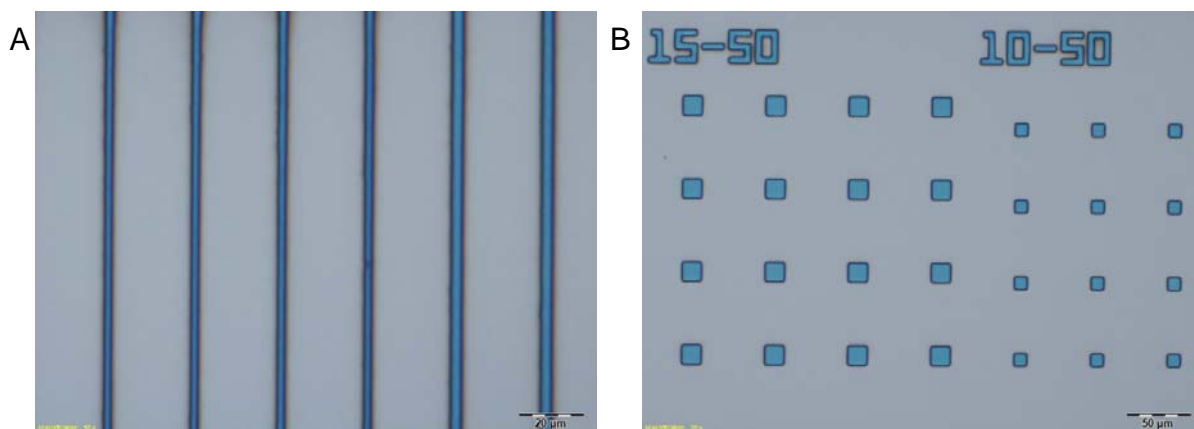
**Fig. S1** Variable temperature UV-Vis (A) and TGA (B) of precursor DM-PPV **3**. (Temperatures above 220 °C caused a hypochromic and hypsochromic shift of the UV-Vis  $\lambda_{\text{max}}$ ).



**Fig. S2** Variable temperature UV-Vis (A) and TGA (B) of precursor MH-PPV **7**. (Temperatures above 220 °C caused a hypochromic and hypsochromic shift of the UV-Vis  $\lambda_{\text{max}}$ ).



**Fig. S3** UV-Vis of xanthate precursor DM-PPV **3** with no PAG, with a 15 sec ( $463 \text{ mJ cm}^{-2}$ ) exposure, with 5% PAG-1 and a 15 sec exposure, and with no PAG and a 30 sec ( $919 \text{ mJ cm}^{-2}$ ) exposure. The 30 sec exposure shows the lowest intensity xanthate band and the highest intensity oligomeric band indicating a greater degree of xanthate elimination. However, a 30 sec exposure does not provide a solubility change sufficient such that the patterned area can be developed.



**Fig. S4** Optical images of xanthate precursor DM-PPV **3**, patterned using 4-(phenylthiophenyl)diphenylsulfonium triflate). The same conditions described in the main text were utilized, except the exposure times were slightly reduced (10 sec,  $313 \text{ mJ/cm}^2$  for large features sizes (mm), 3 sec,  $101 \text{ mJ/cm}^2$  for small feature sizes ( $\mu\text{m}$ )).