

Supporting Information

Azobenzene-Containing Supramolecular Side-Chain Polymer Films for Laser -Induced Surface Relief Gratings

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To test the thermal properties of the resulting azobenzene-containing supramolecular side-chain polymer, thermal gravimetric analysis (TGA) and differential scanning calorimetry (DSC) were employed. As shown in Figure S 1, C1-N-Azo starts decomposition when the sample is heated above 180 °C; and the decomposition becomes seriously at 220 °C. Glass transition temperature (T_g) of this azobenzene-containing supramolecular side-chain polymer is about 88 °C, which is lower than P4VP around 146 °C as seen in Figure S 2.

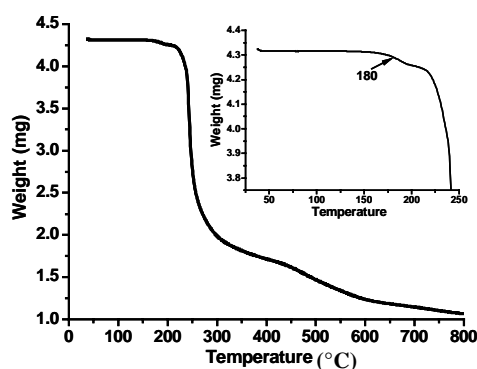


Figure S 1. TGA of C1-N-Azo.

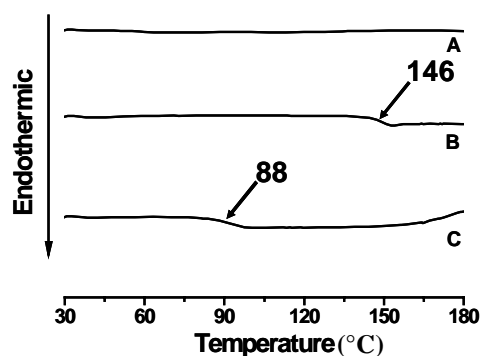


Figure S 2. DSC of C1-N-Azo(A), P4VP(B) and the mixture of P4VP:C1-N-Azo (1:1) (C).

Figure S 3 presents the surface profile observed by scanning electron microscopy (SEM), revealing a regular surface pattern. Such results are in accordance with AFM images, indicating that we have obtained the SRGs with good quality.

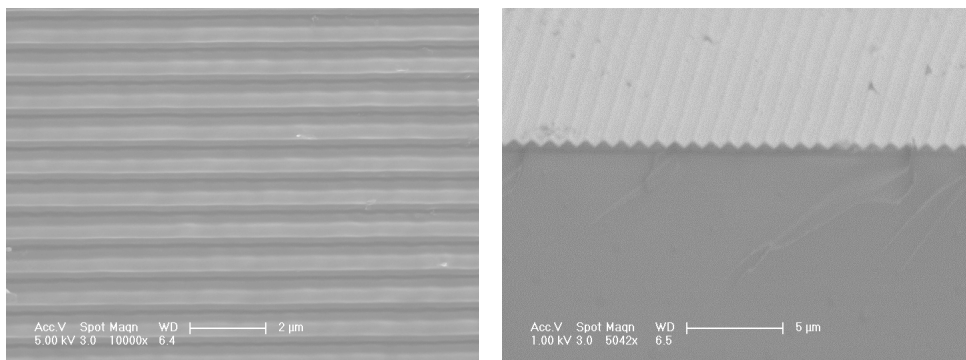


Figure S 3. SEM images of the SRGs formed on azobenzene-containing supramolecular polymer film. Top-view (left), side-view (right).

Figure S 4 shows the original NMR data of C0-O-Azo, C1-O-Azo, C1-N-Azo and C2-N-Azo.

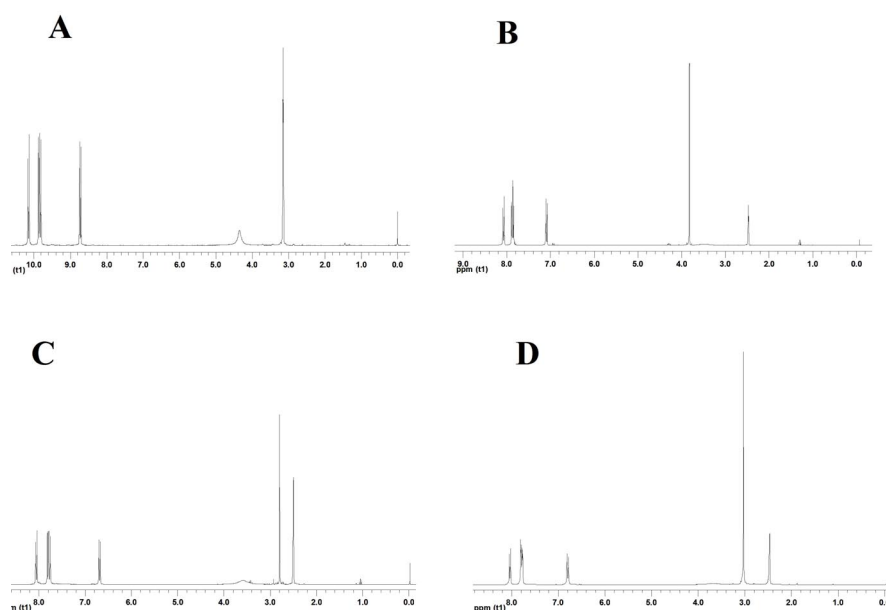


Figure S 4. Original NMR data of C0-O-Azo(A), C1-O-Azo(B), C1-N-Azo(C) and C2-N-Azo(D).