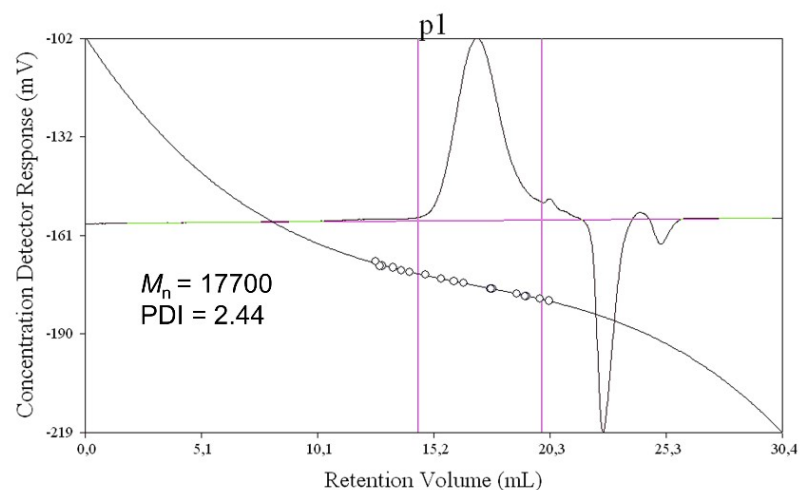


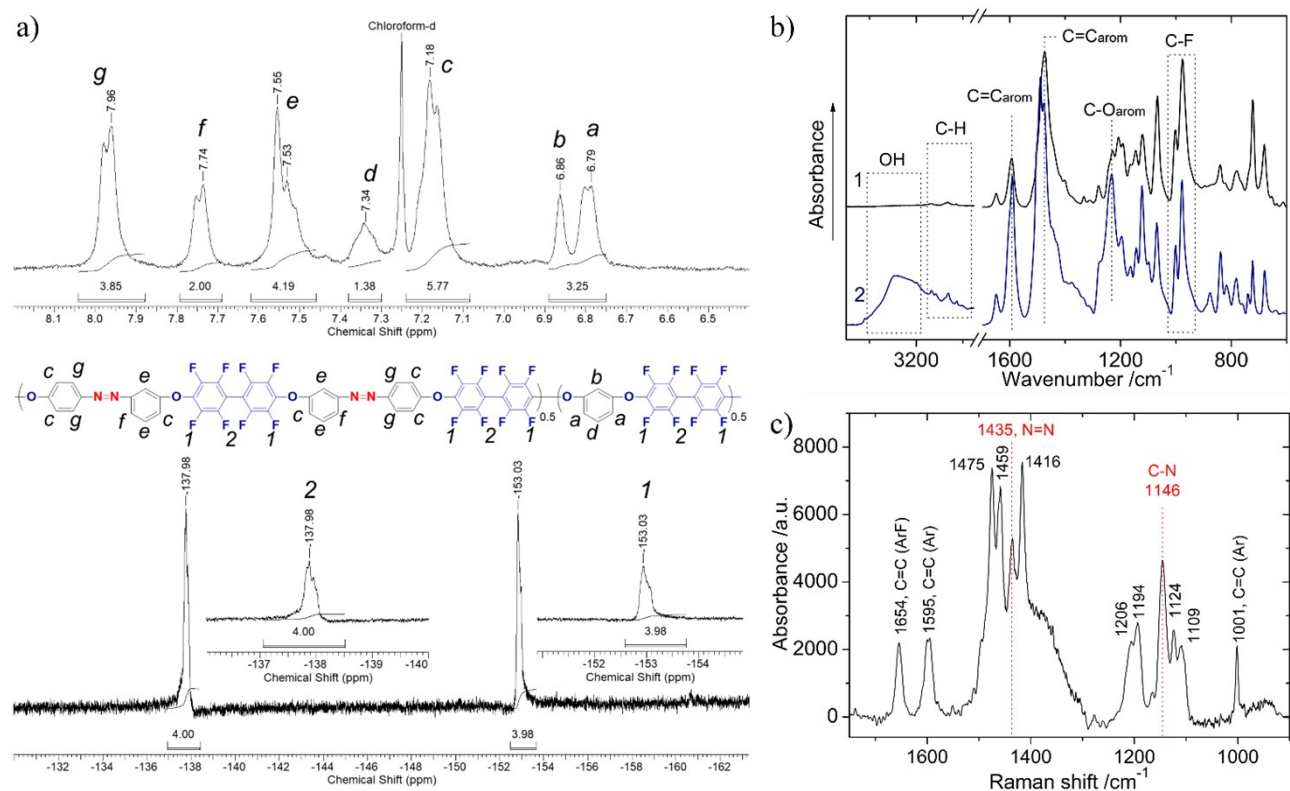
Supplementary Information

**Development of a light-responsive fluorinated poly(arylene ether) copolymer containing azobenzene groups in the main polymer chain**

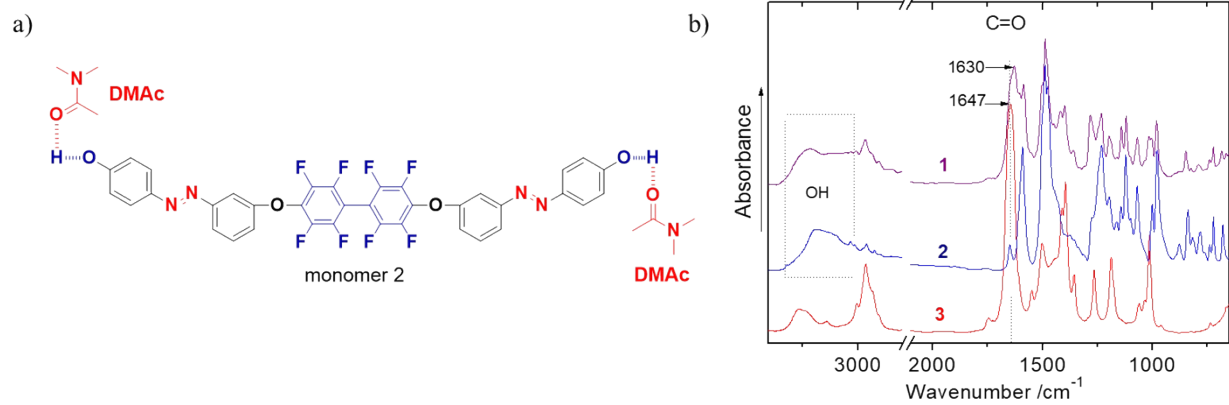
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**Figure S1.** The GPC curve of Azo-coFPAE.



**Figure S2.** (a)  $^1\text{H}$  NMR (top) and  $^{19}\text{F}$  NMR (bottom) spectra of Azo-coFPAE; (b) FTIR spectra of Azo-coFPAE (spectrum 1) and azo-based monomer (spectrum 2); (c) Raman spectrum of Azo-coFPAE.



**Figure S3.** a) Hydrogen-bonded complex of monomer **2** and dimethylacetamide (DMAC); b) FTIR spectra of the monomer **2**/DMAC mixture (spectrum 1), azo-based monomer **2** in the solid state (spectrum 2) and pure DMAC (spectrum 3).