

## Supplementary materials for the article

# Synthesis and Characterization of New Chiral Smectic Four-Ring Esters

### MASS SPECTRA OF CHIRAL FOUR-RING ESTERS

The purity of the liquid crystalline esters was recorded using a Shimadzu prominence chromatograph. The strong molecular ion without hydrogen atom  $[M - H]^-$  was observed; see Figures S1 and S2.

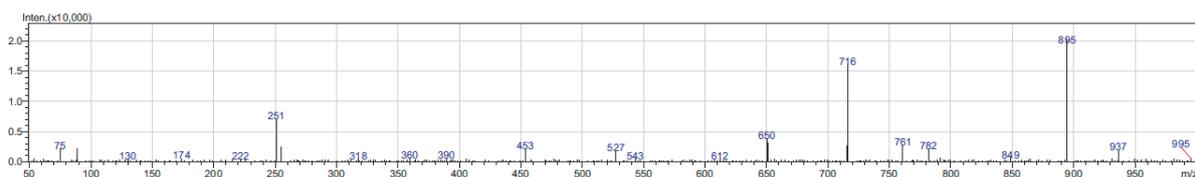


Figure S1. Mass spectrum of the compound 3PhPh.

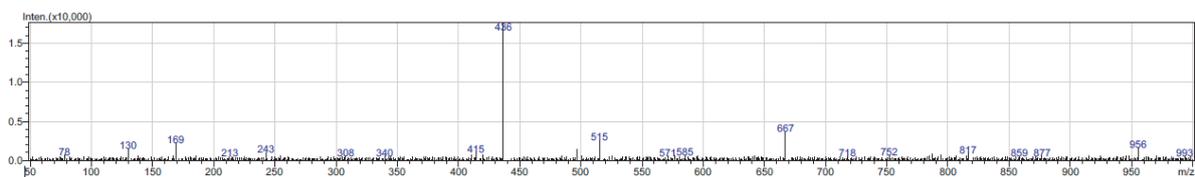


Figure S2. Mass spectrum of the compound 7PhPh.

### STRUCTURE CONFIRMATION OF CHIRAL FOUR-RING ESTERS

A comparison of the NMR spectra confirmed the compliance of real structures with the planned structures; see Figures S3-S6.

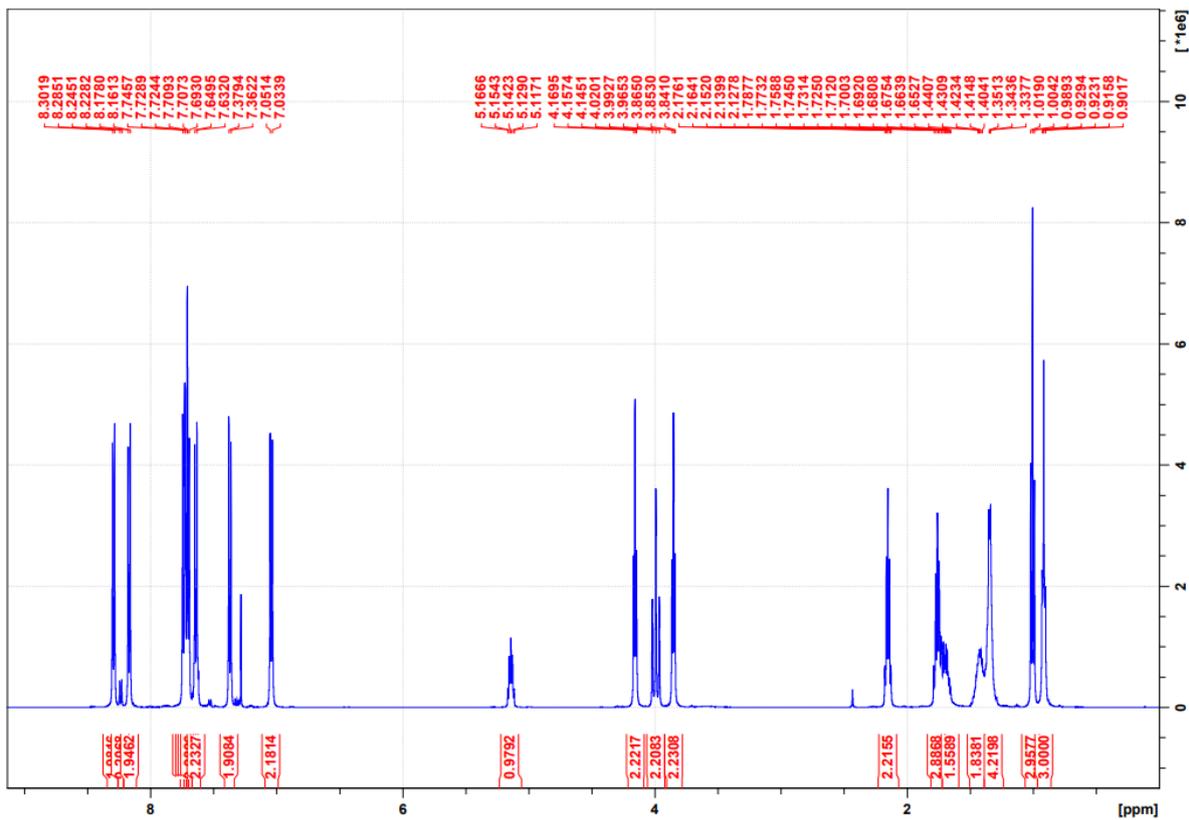


Figure S3.  $^1\text{H}$  NMR spectrum of the compound **3PhPh** in  $\text{CDCl}_3$ .

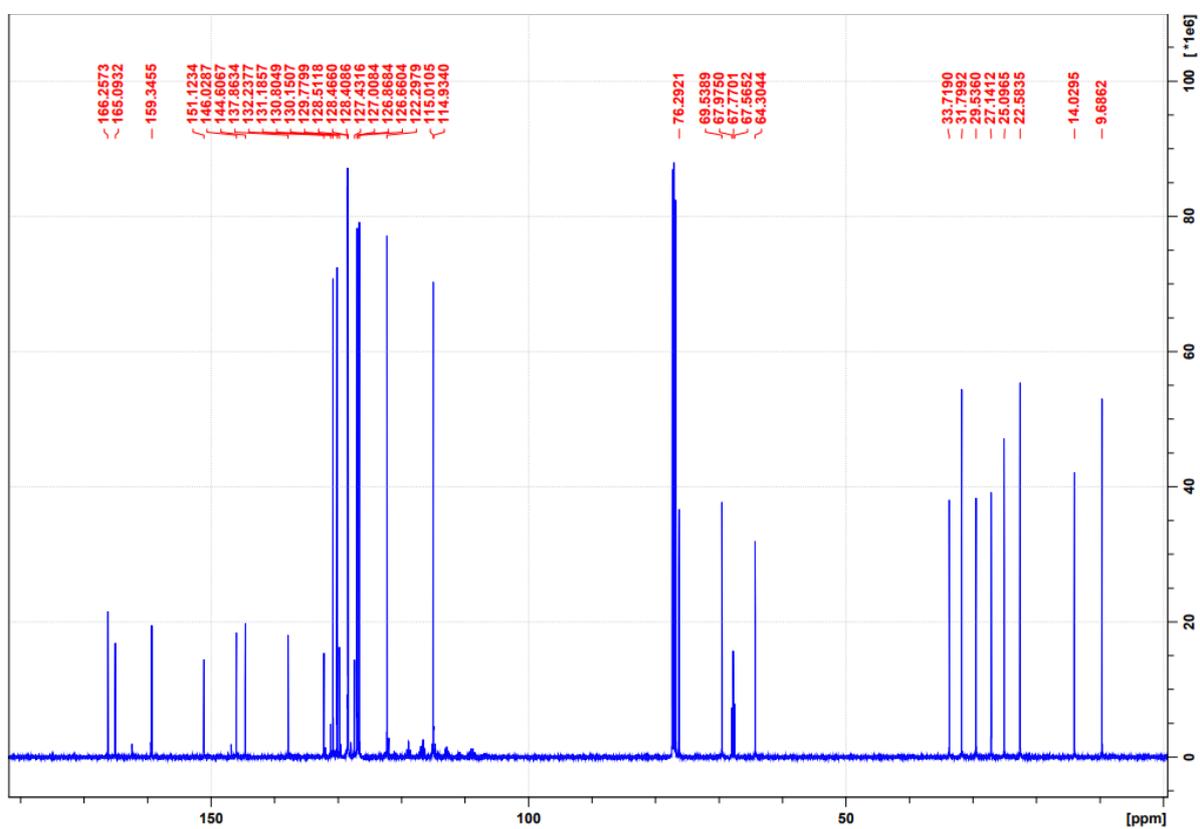


Figure S4.  $^{13}\text{C}$  NMR spectrum of the compound **3PhPh** in  $\text{CDCl}_3$ .

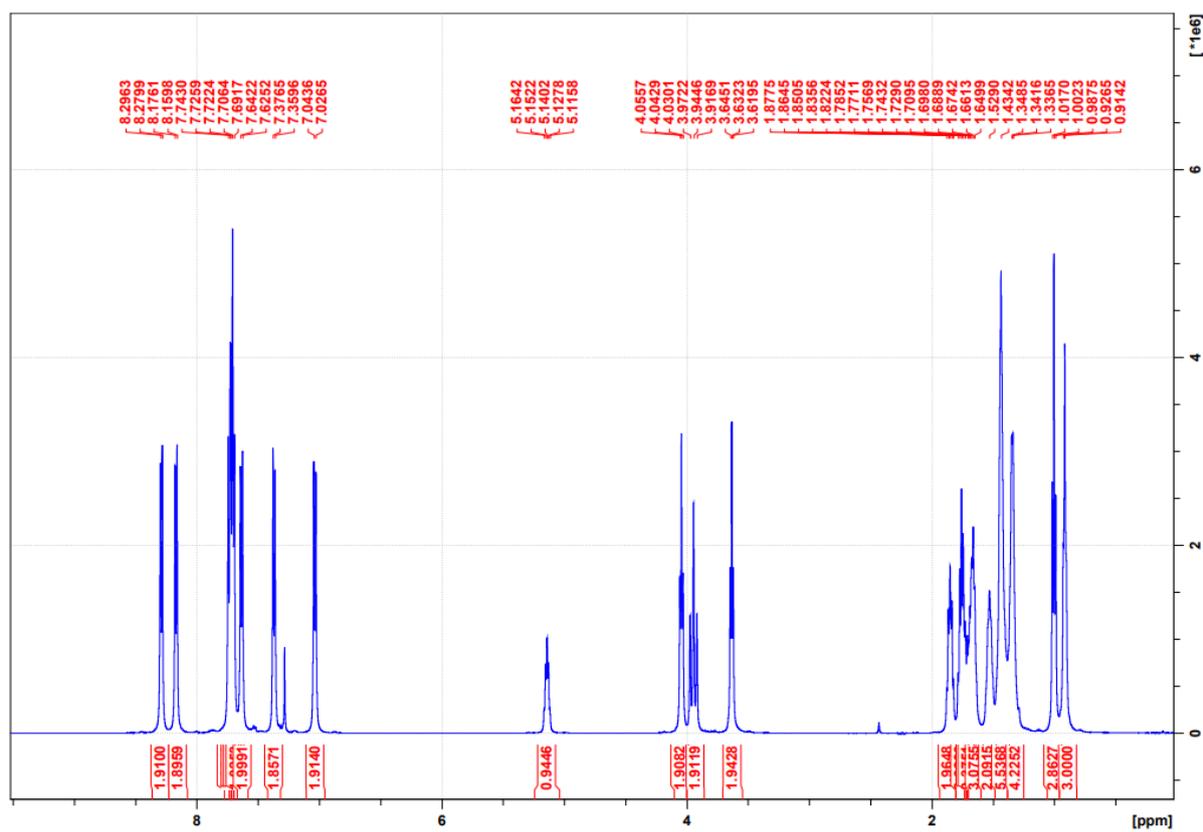


Figure S5.  $^1\text{H}$  NMR spectrum of the compound **7PhPh** in  $\text{CDCl}_3$ .

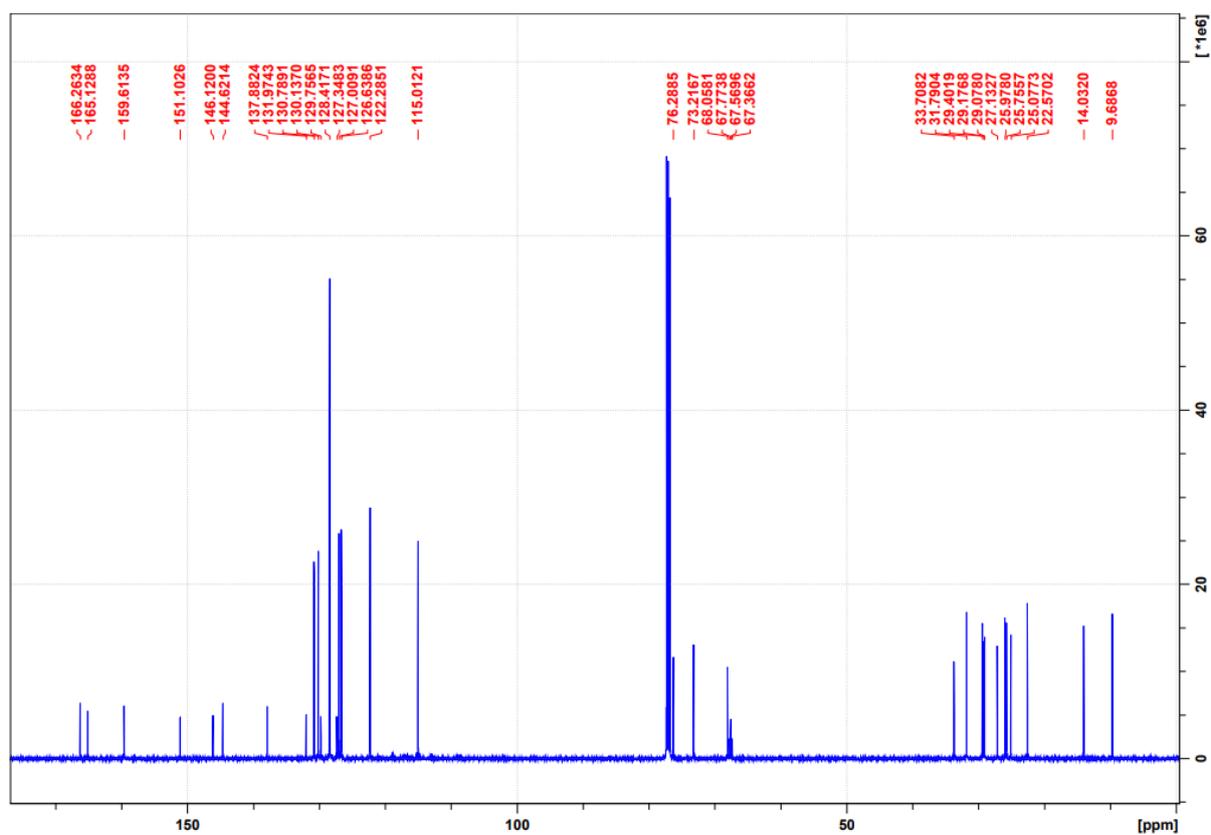
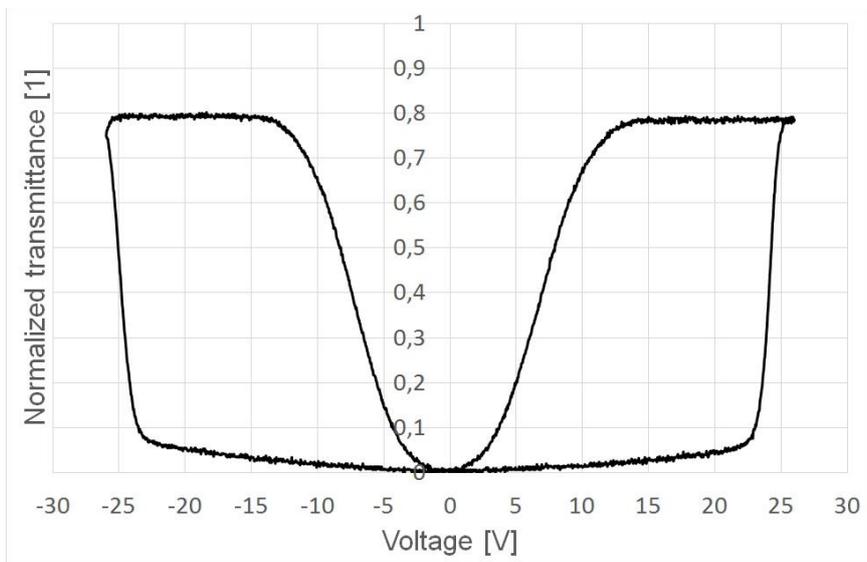


Figure S6.  $^{13}\text{C}$  NMR spectrum of the compound **7PhPh** in  $\text{CDCl}_3$ .

### DOUBLE HYSTERESIS CURVE OF DOPED MIXTURE



**Figure S7.** Quasistatic electro-optical response for the mixture W-450A, under application of a triangular waveform at 0.1 Hz.