Electronic Supplementary Information

Photo-controlled bipolar absorption switches based on 5-dimethylamino substituted indoline spiropyrans with semipermanent merocyanines

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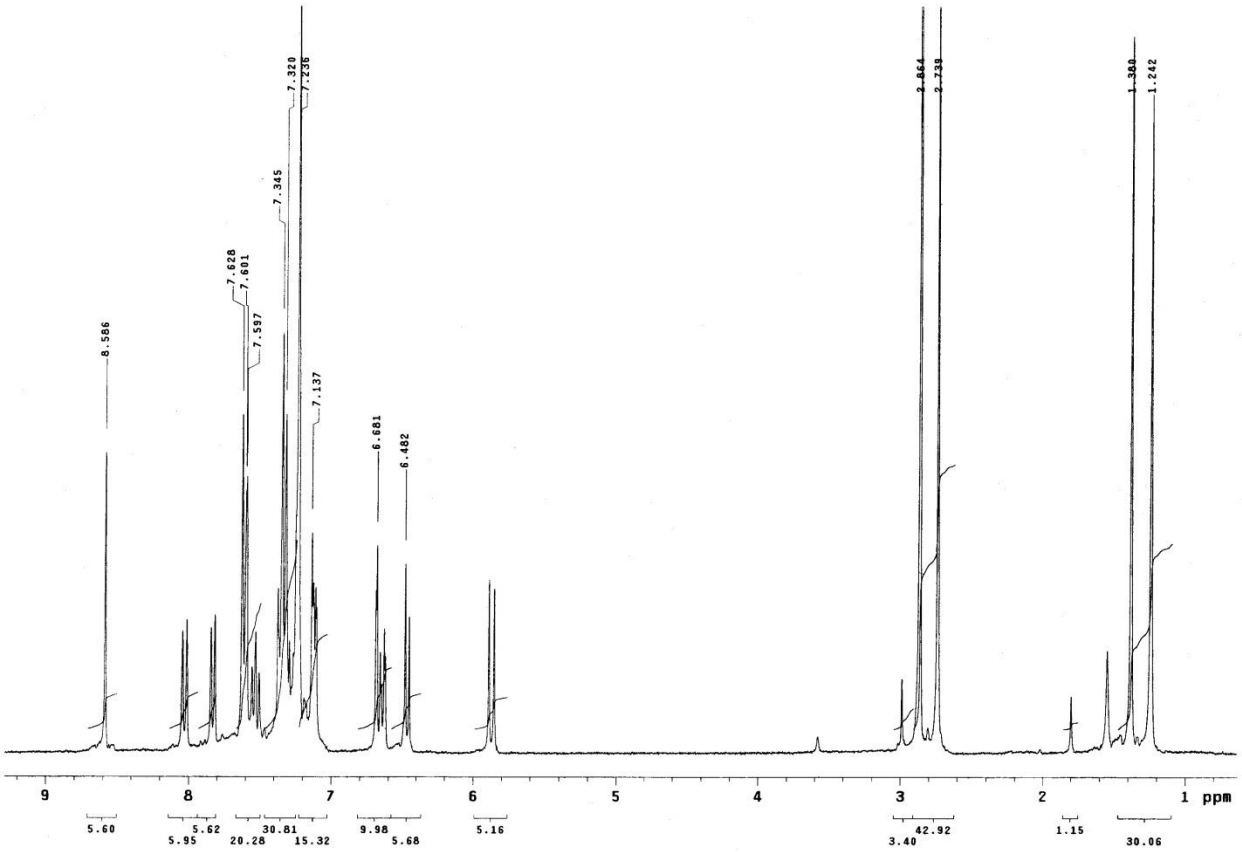

Fig. S1. ^{1}H NMR spectrum of SPP **1** in $CDCl_3$.

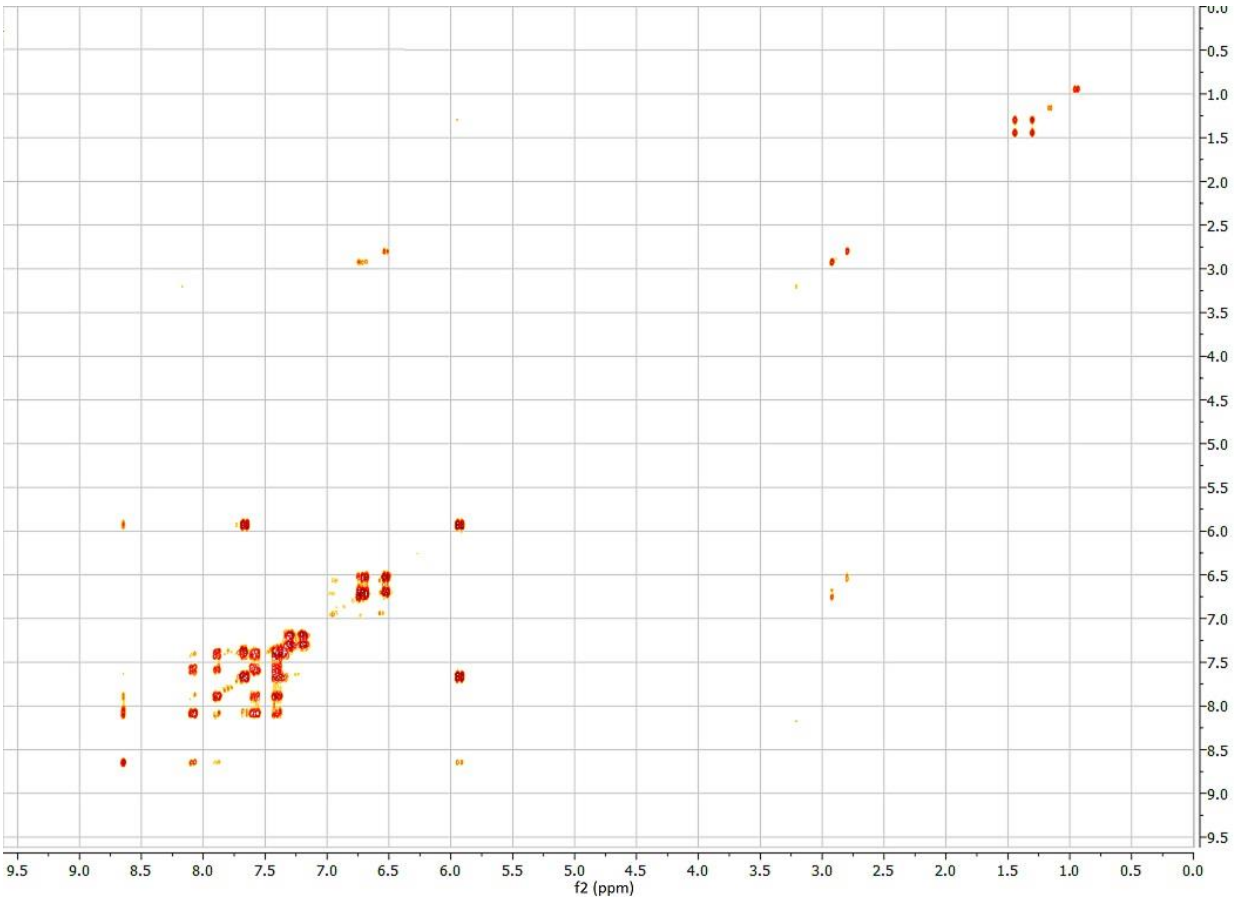

Fig. S2. 2D NMR ^{1}H-^{1}H COSY spectrum of SPP **1** in $CDCl_3$.

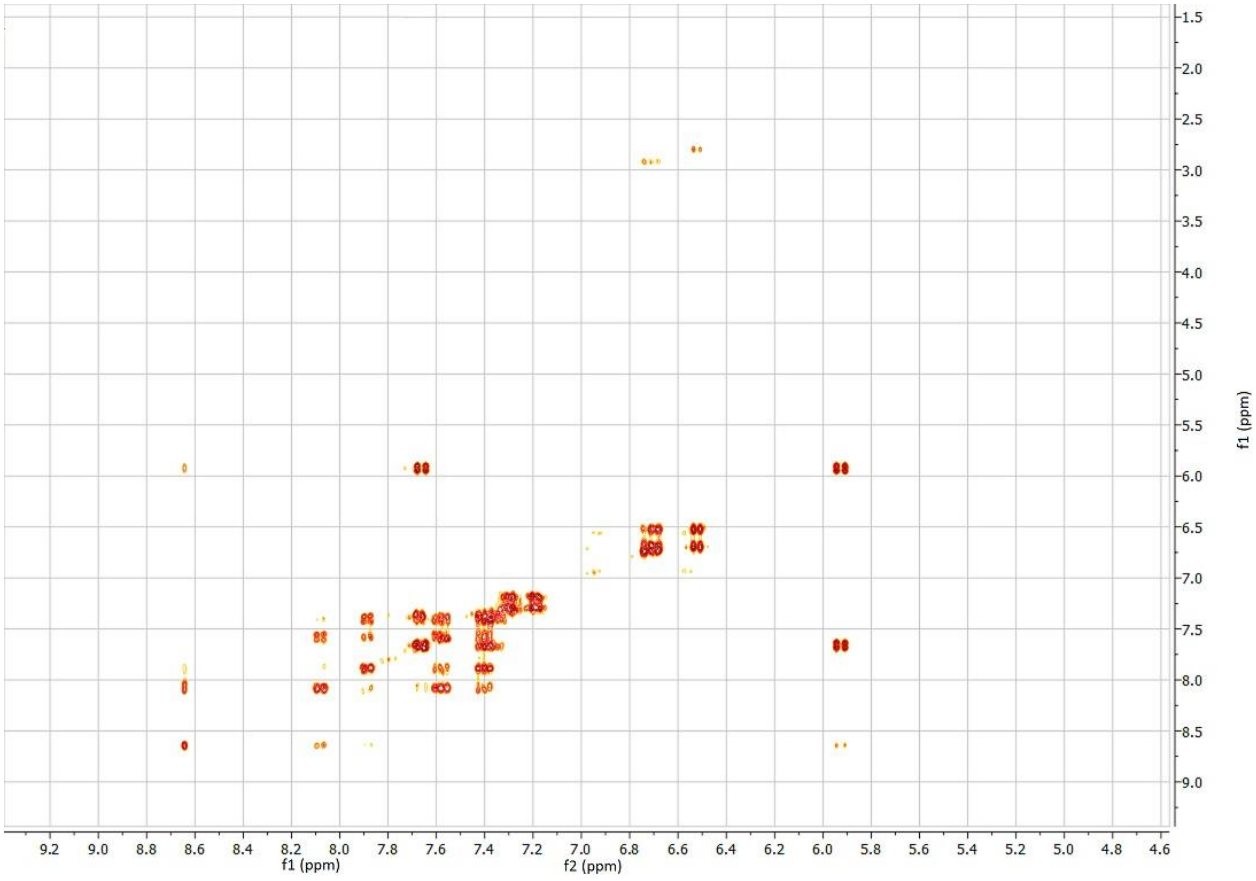

Fig. S3. 2D NMR ^{1}H-^{1}H COSY spectrum of SPP **1** in $CDCl_3$ (expansion 4.6 to 9.2 ppm).

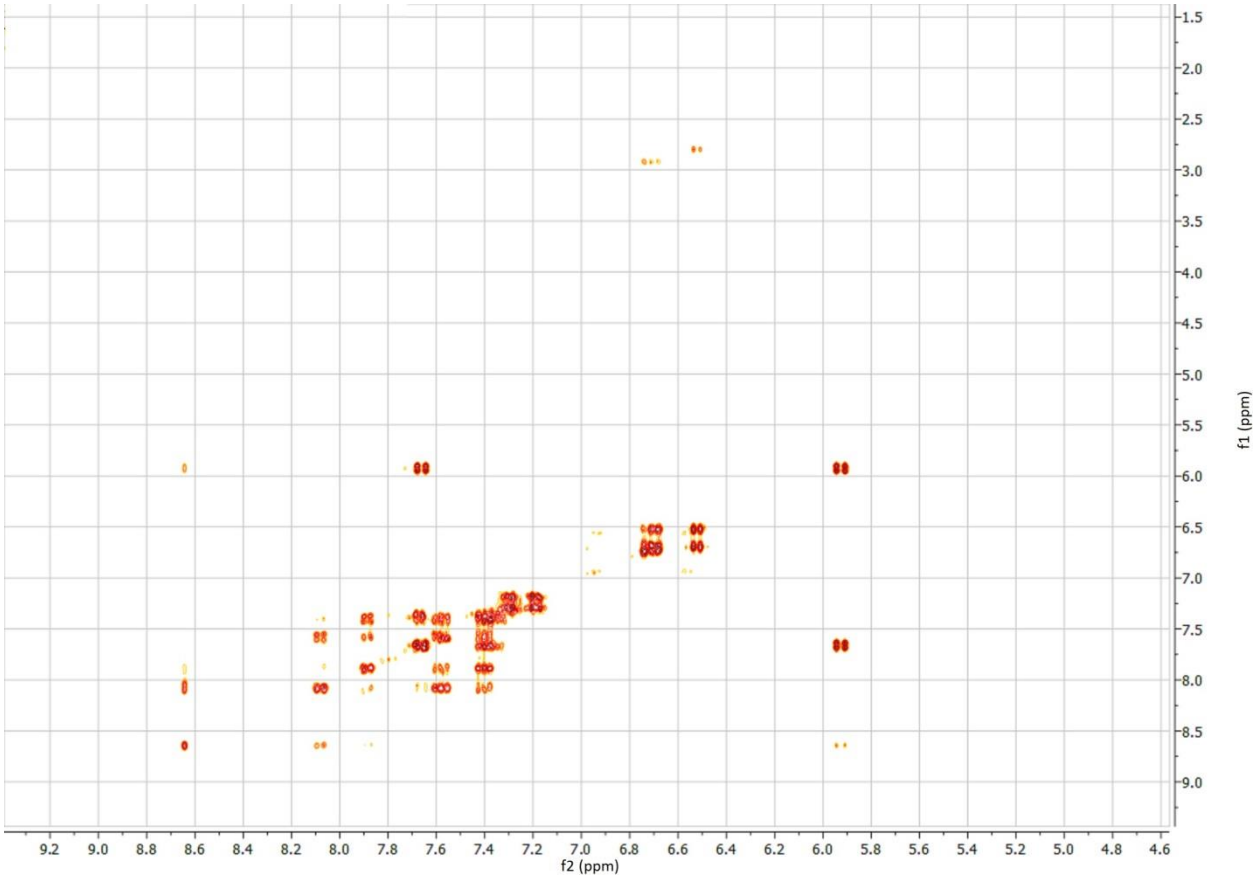

Fig. S4. 2D NMR HSQC ^{1}H-^{13}C spectrum of SPP **1** in $CDCl_3$ (expansion 4.6 to 9.2 ppm).

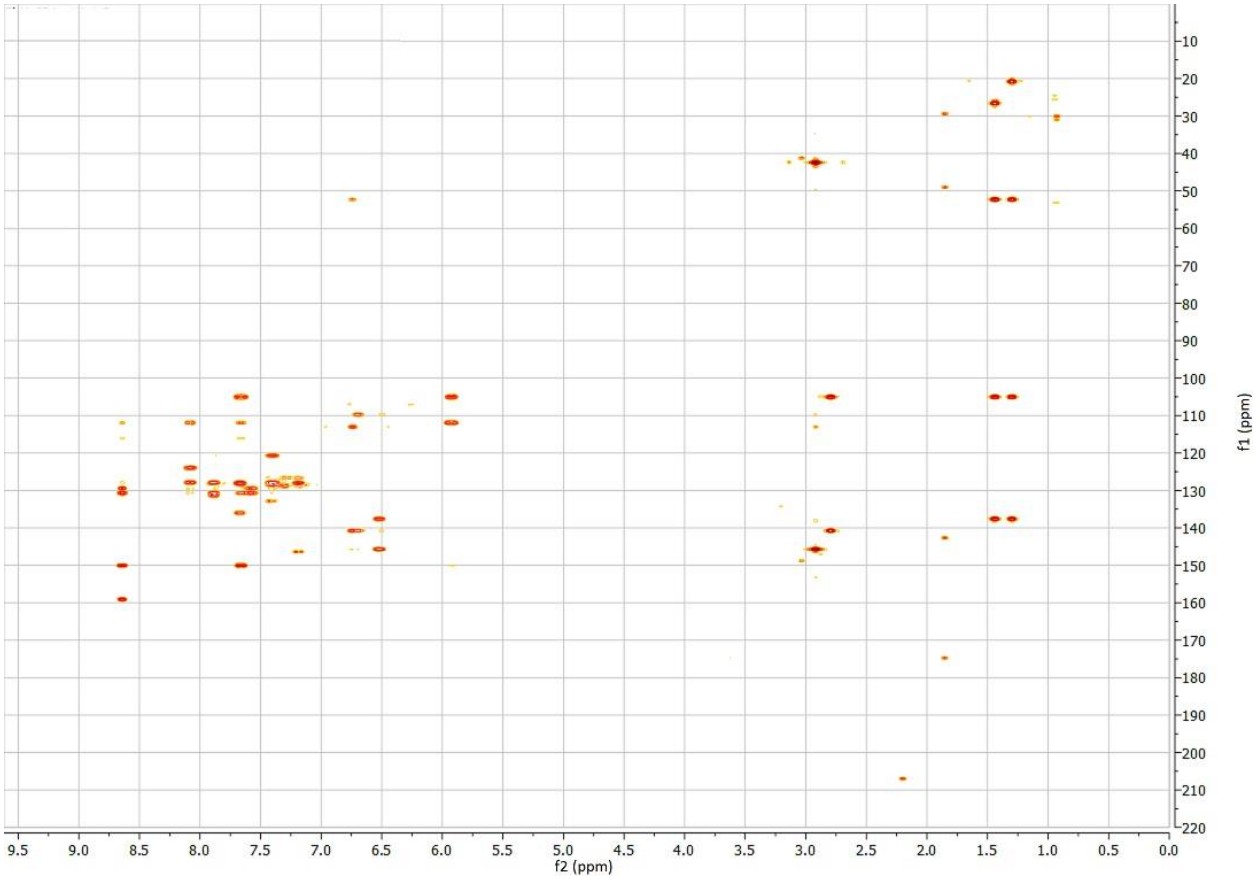

Fig. S5. 2D NMR HMBC ^{1}H-^{13}C spectrum of SPP **1** in $CDCl_3$.

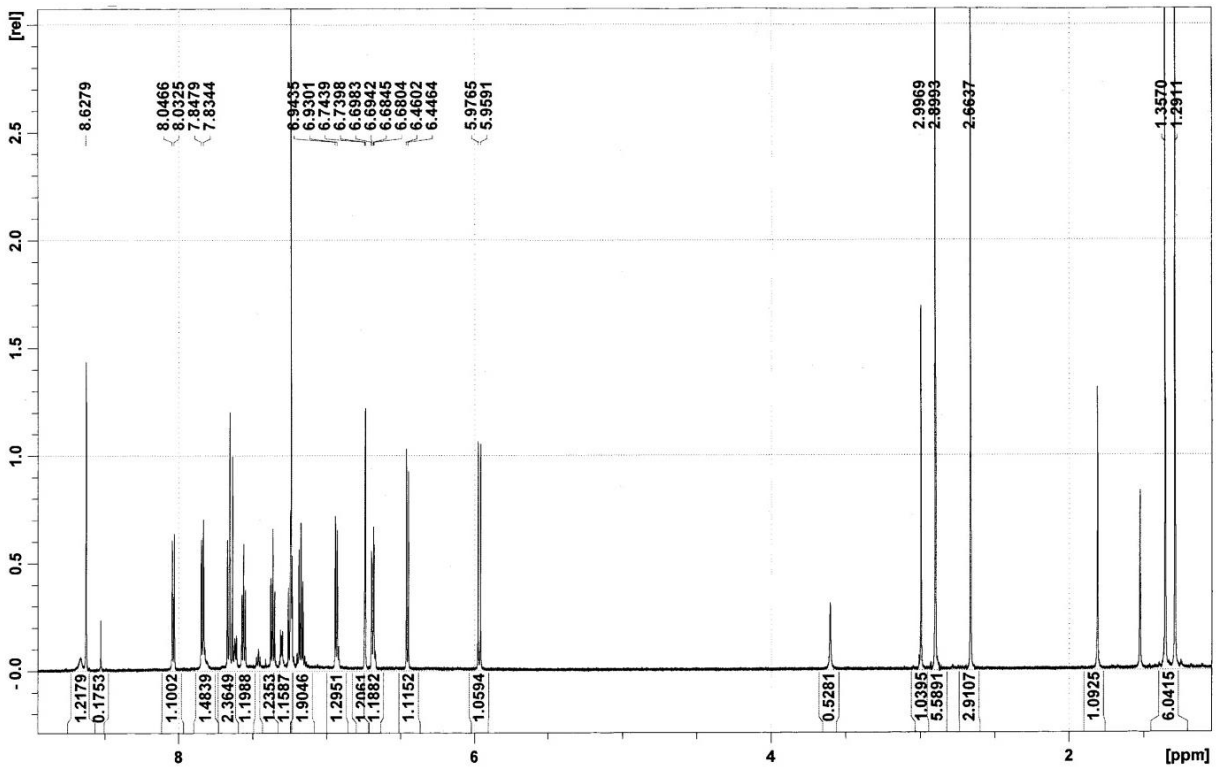

Fig. S6. ^{1}H NMR spectrum of SPP **2** in $CDCl_3$.

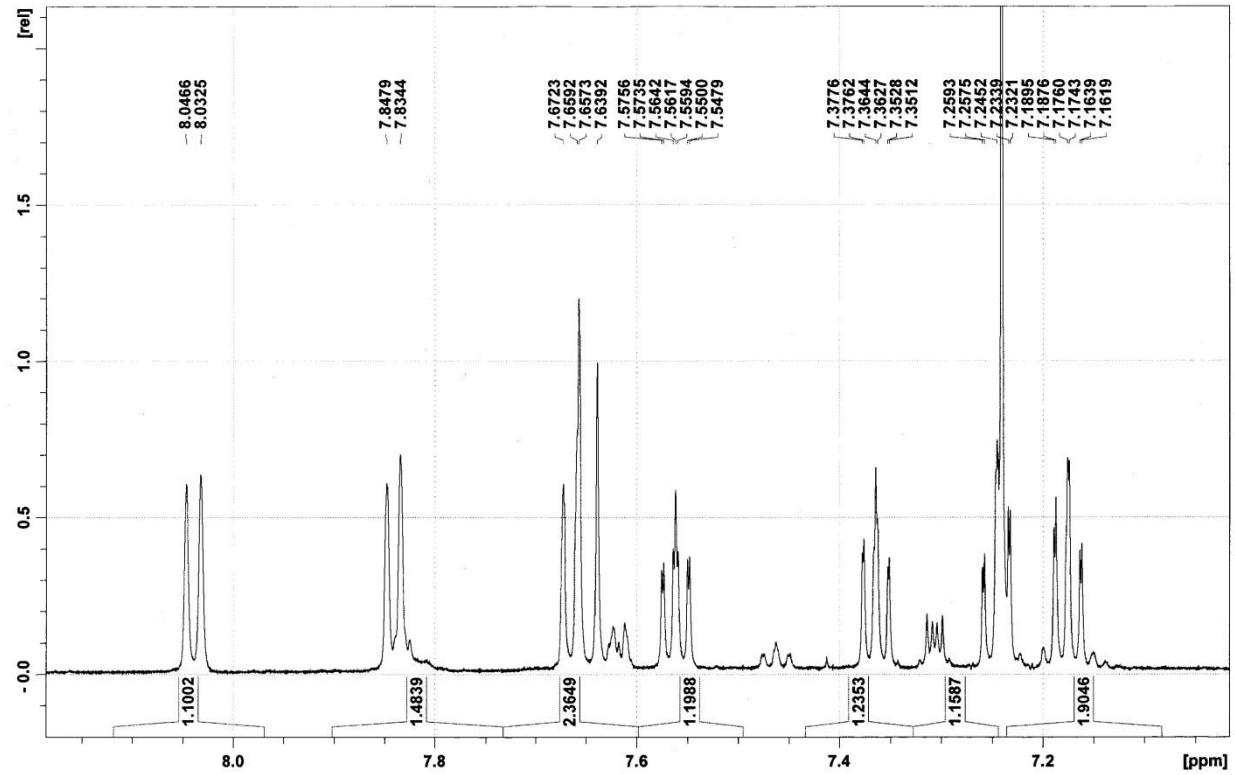

Fig. S7. ^{1}H NMR spectrum of SPP **2** in $CDCl_3$ (expansion 7.0 to 8.2 ppm).

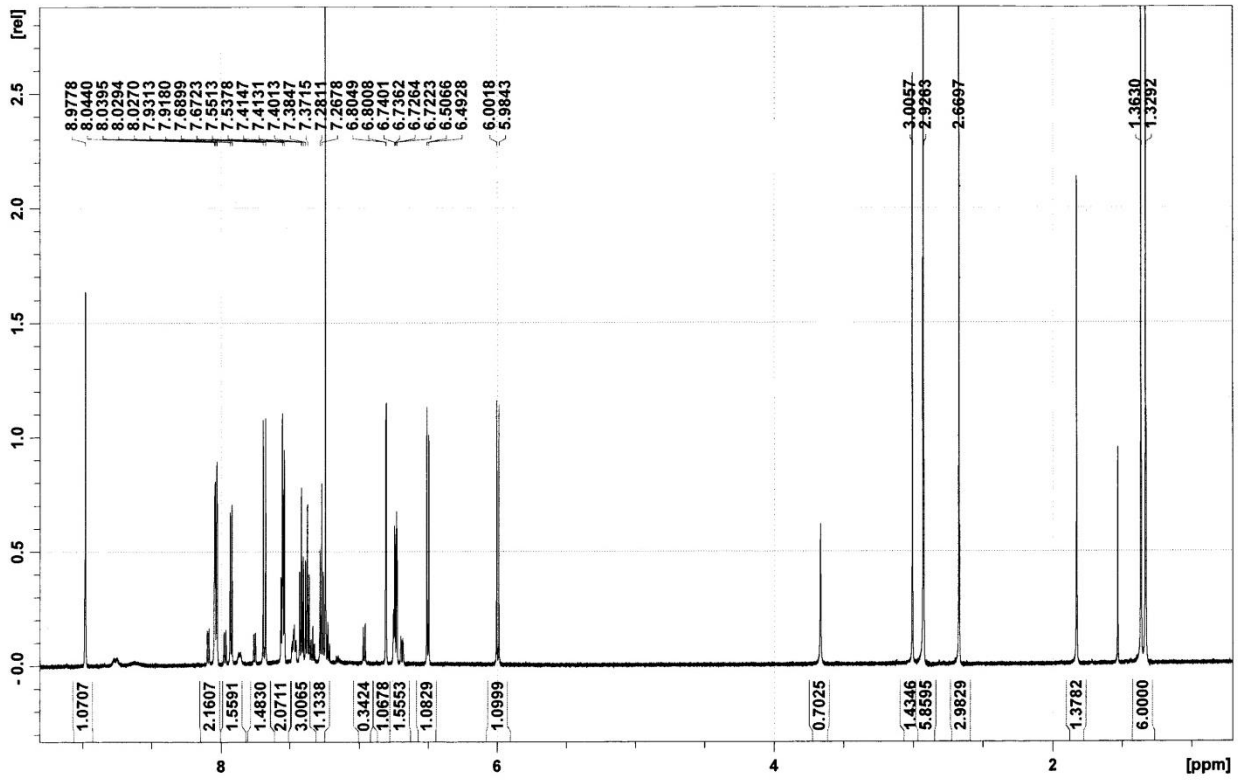

Fig. S8. ^{1}H NMR spectrum of SPP **3** in $CDCl_3$.

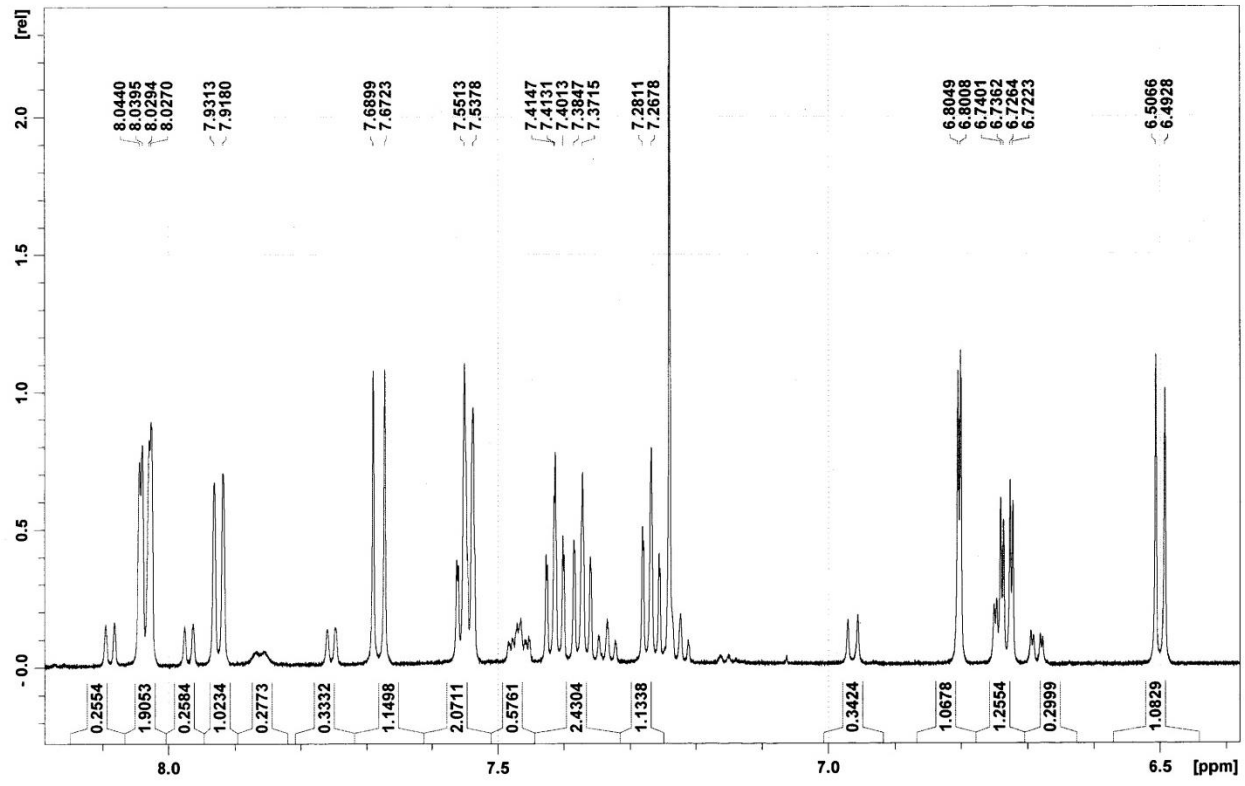

Fig. S9. ^{1}H NMR spectrum of SPP **3** in $CDCl_3$ (expansion 6.4 to 8.2 ppm).

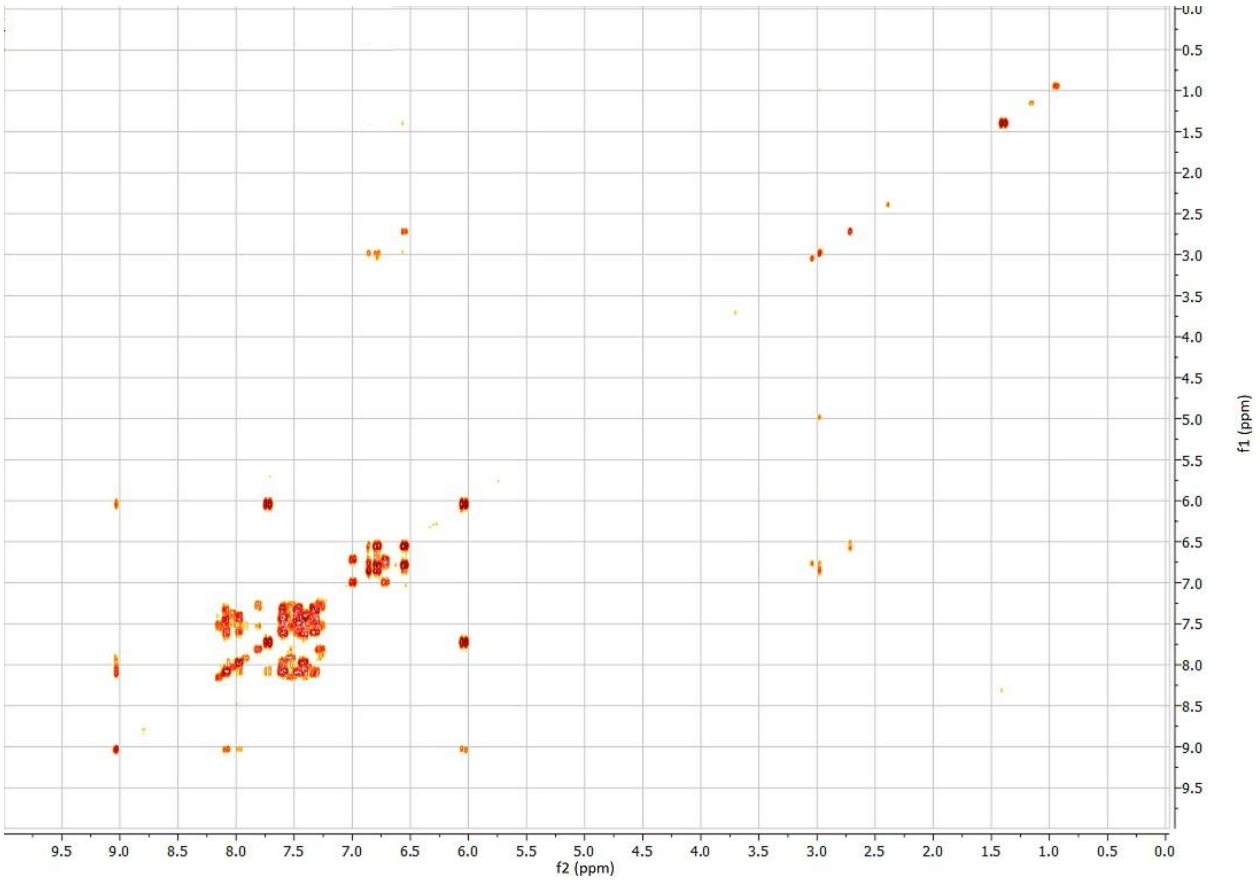

Fig. S10. 2D NMR ^{1}H-^{1}H COSY spectrum of SPP **3** in $CDCl_3$.

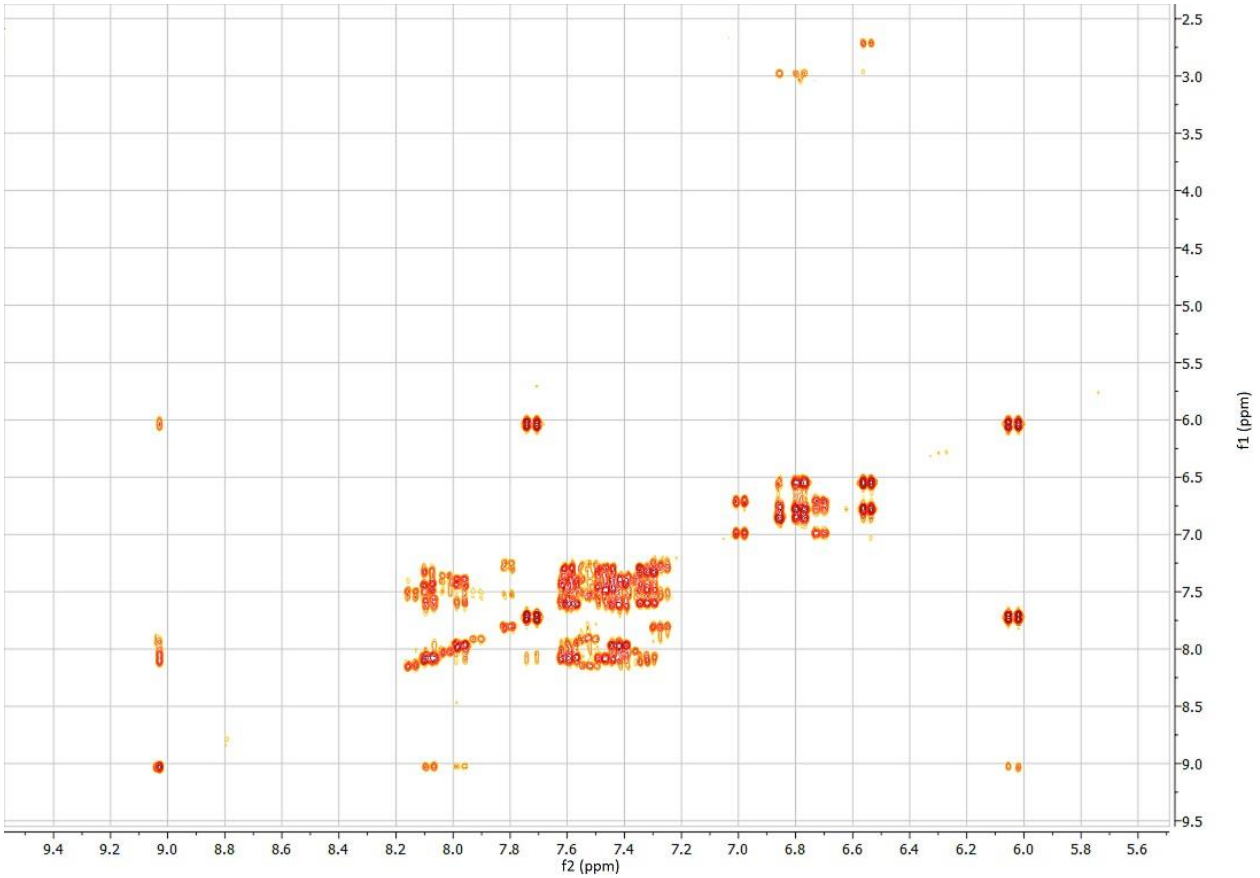

Fig. S11. 2D NMR ^{1}H-^{1}H COSY spectrum of SPP **3** in $CDCl_3$ (expansion 5.6 to 9.4 ppm).

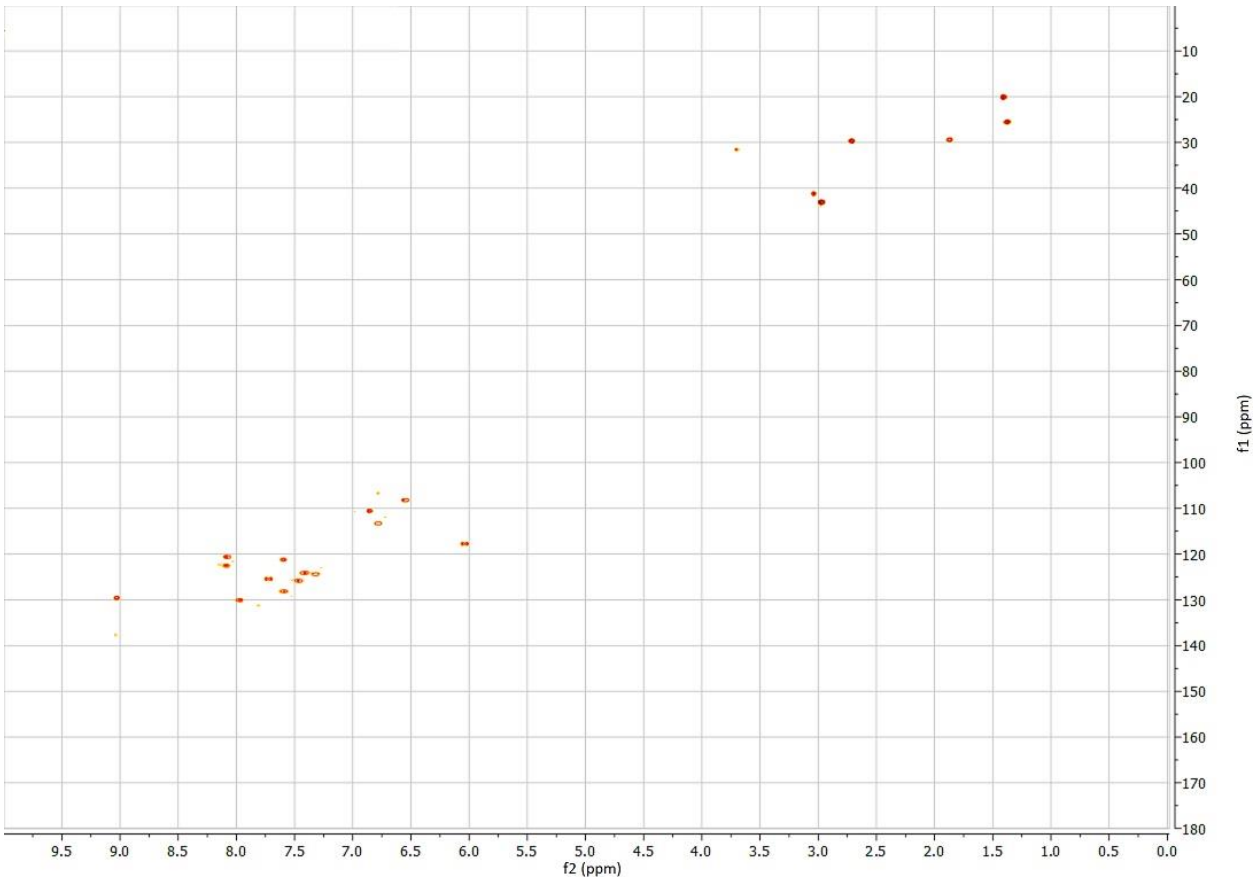

Fig. S12. 2D NMR HSQC ^{1}H-^{13}C spectrum of SPP **3** in $CDCl_3$.

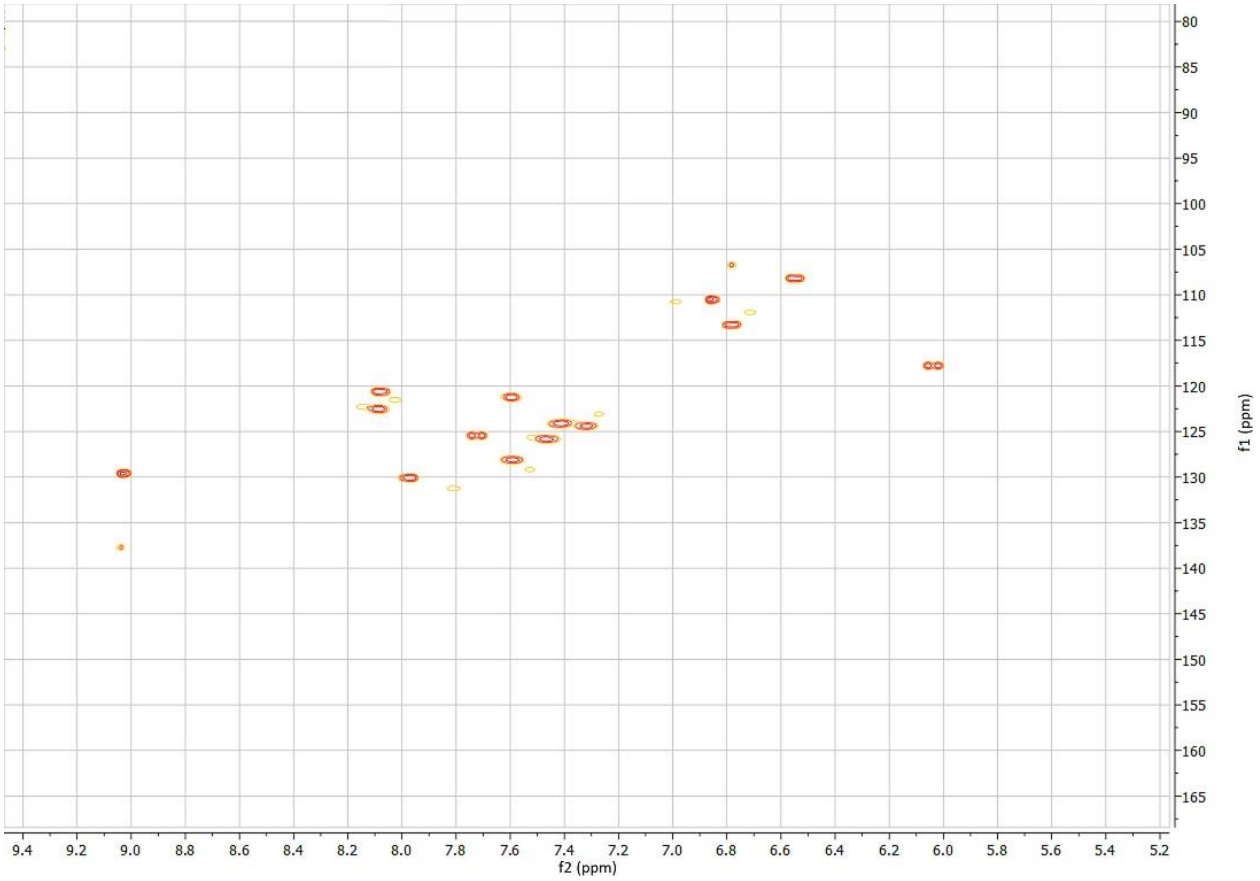

Fig. S13. 2D NMR HSQC ^{1}H-^{13}C spectrum of SPP **3** in $CDCl_3$ (expansion 5.2 to 9.4 ppm).

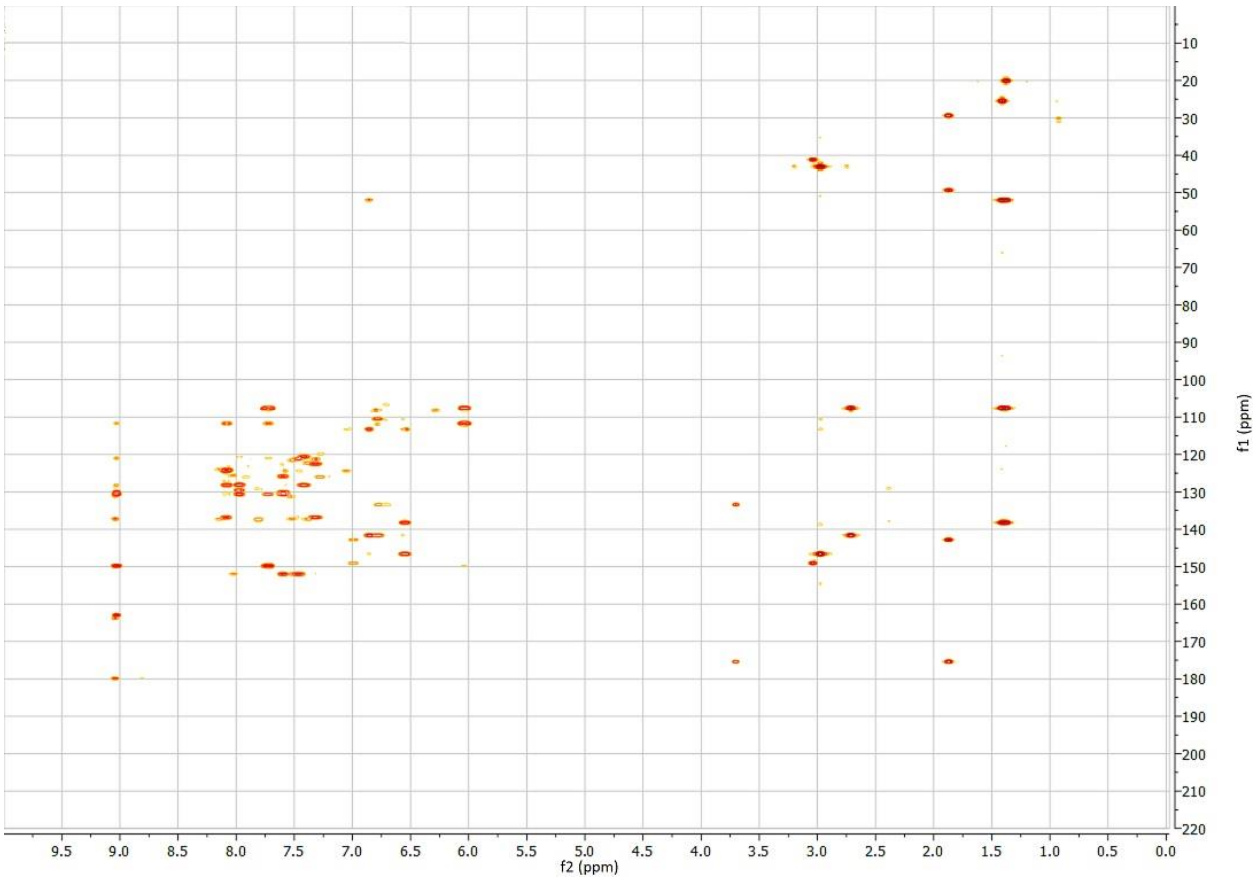

Fig. S14. 2D NMR HMBC ^{1}H-^{13}C spectrum of SPP **3** in $CDCl_3$.

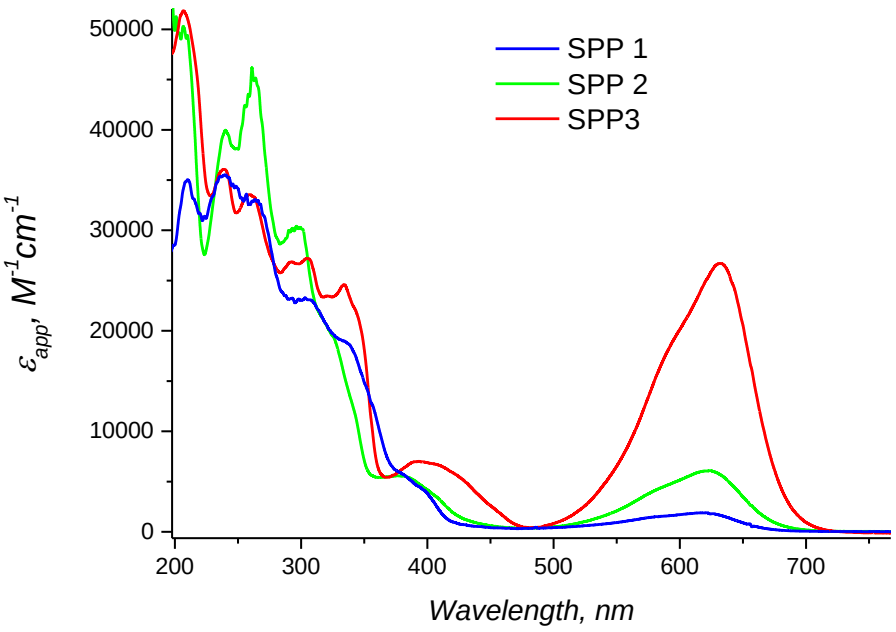

Fig. S15. Absorption spectra of the equilibrium mixture of cyclic forms **A** and merocyanine isomers **B** of SPPs **1-3** in acetonitrile at 293 K.

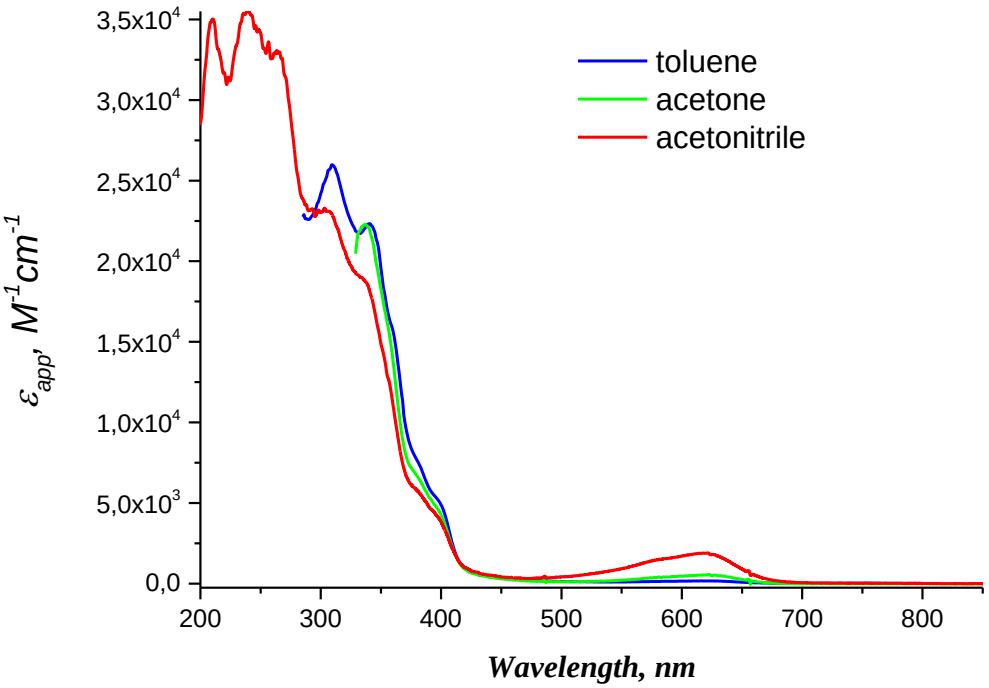

Fig. S16. Absorption spectra of the equilibrium mixture of cyclic isomers **A** and merocyanines **B** of SPP **1** in different solvents: toluene, acetone and acetonitrile at 293 K.

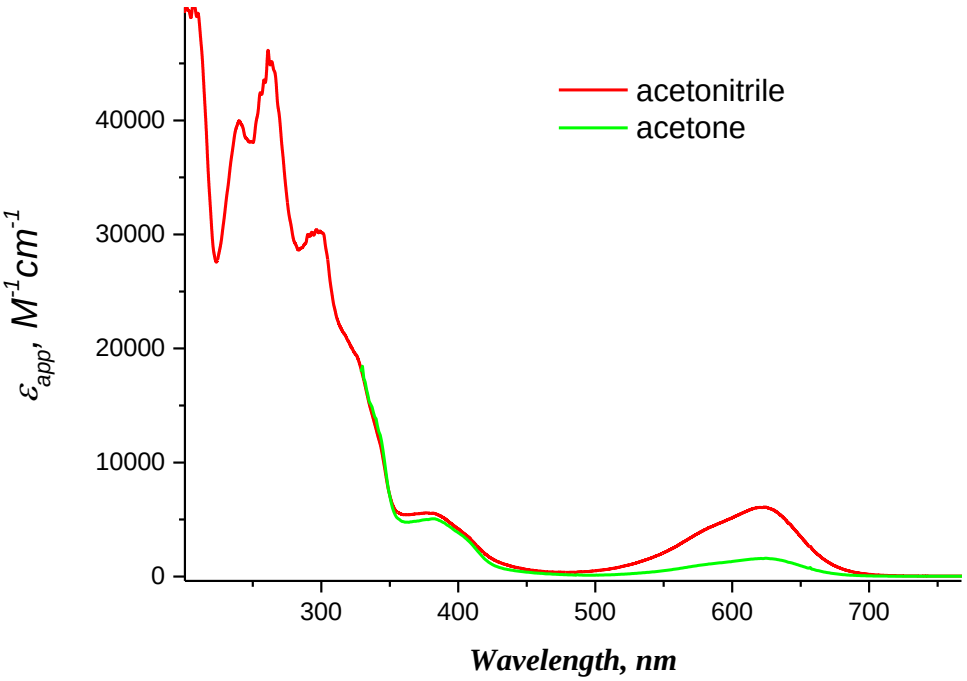

Fig. S17. Absorption spectra of the equilibrium mixture of cyclic isomers **A** and merocyanines **B** of SPP **2** in different solvents: toluene, acetone and acetonitrile at 293 K.

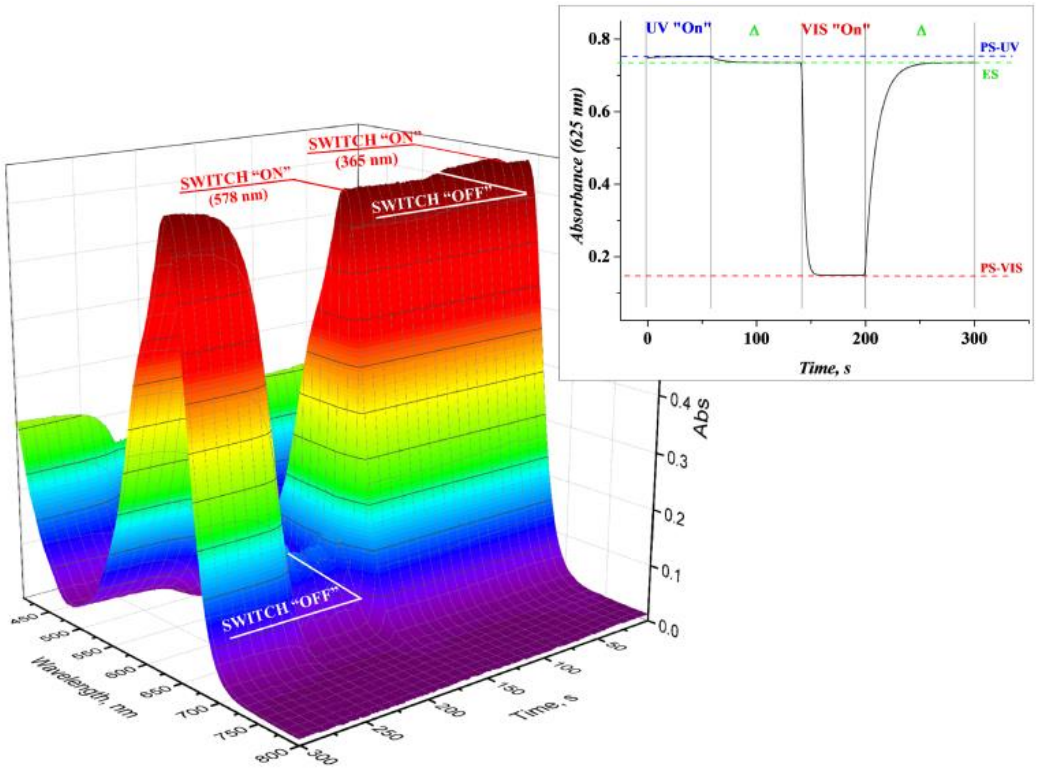

Fig. S18 Spectral and kinetic profile of the operating cycle of the bipolar absorption switch based on SPP **3** in acetone (insert: Kinetic profile at the maximum of the absorption band of the MC isomer).

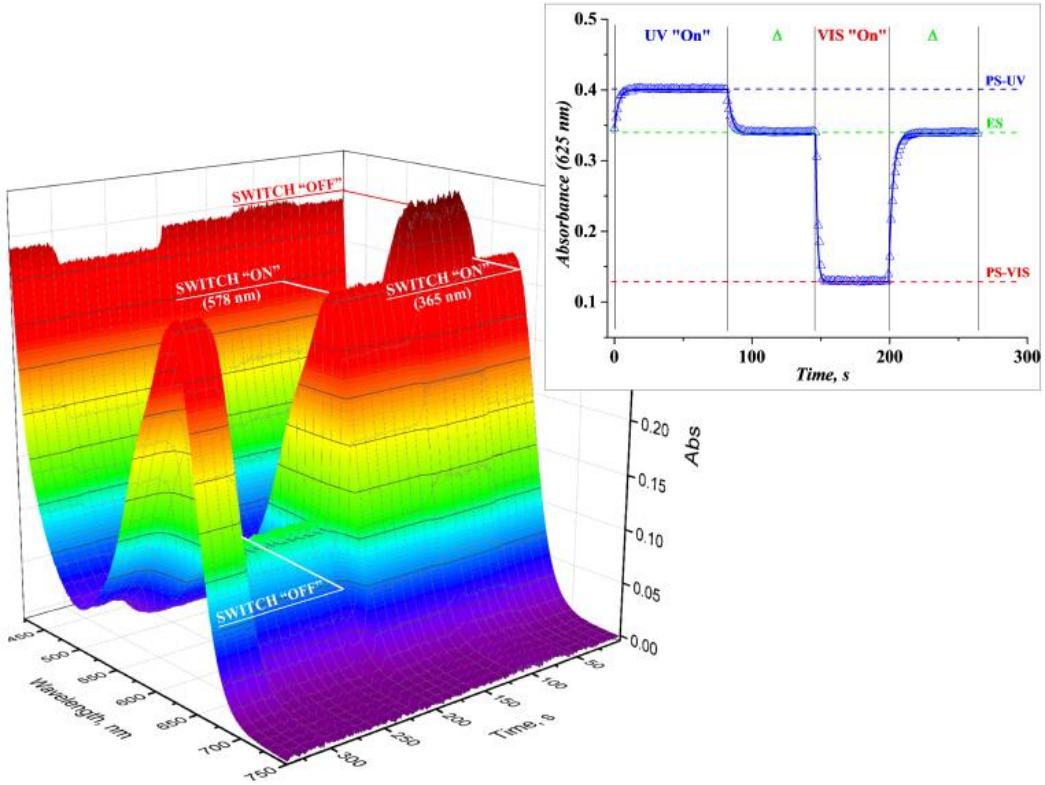

Fig. S19 Spectral and kinetic profile of the operating cycle of the bipolar absorption switch based on SPP **2** in acetone (insert: Kinetic profile at the maximum of the absorption band of the MC isomer).

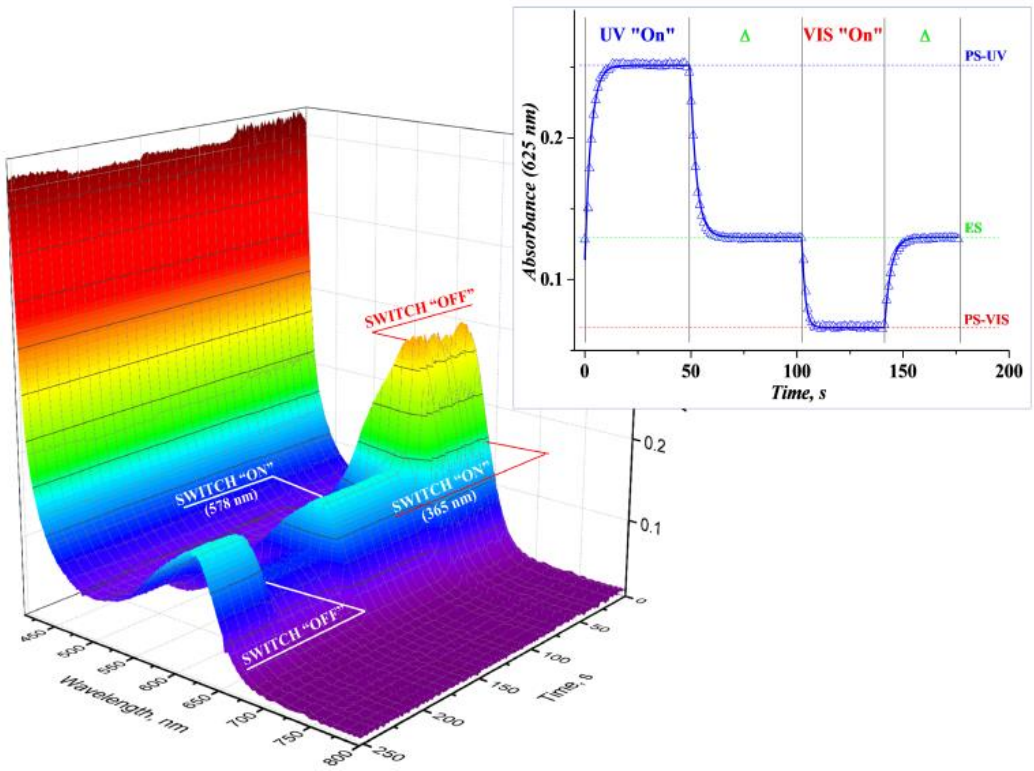

Fig. S20 Spectral and kinetic profile of the operating cycle of the bipolar absorption switch based on SPP **1** in acetone (insert: Kinetic profile at the maximum of the absorption band of the MC isomer).