

Supporting Information

Helical Self-assembly and Nonlinear Optical Properties of Optically Active Phthalocyanine Derivatives Bearing Eight Optically Active Diethyleneglycol mono-(*S*)-2-methylbutyl Ether Moieties on the β -Position of the Phthalocyanine Ring

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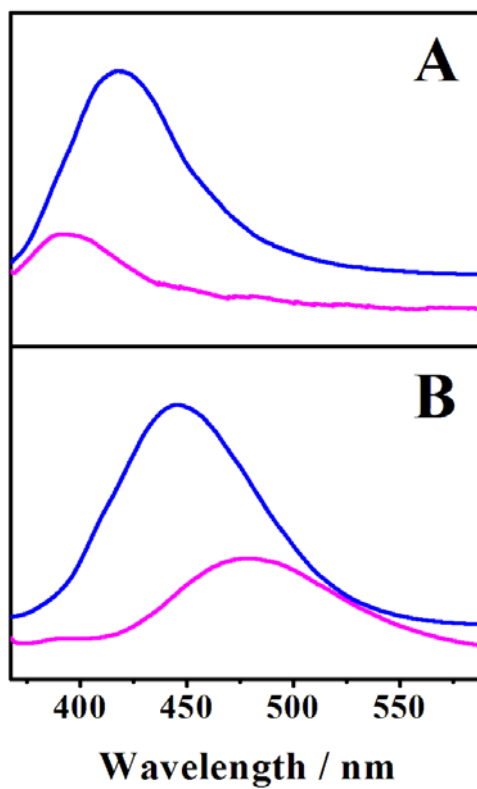


Figure S1. Fluorescence spectra of (A) **1** in CHCl_3 (blue line) and its aggregates formed in $\text{CHCl}_3/\text{MeOH}$ [1:3 (v/v)] (pink line); (B) **2** in CHCl_3 (blue line) and its aggregates formed in $\text{CHCl}_3/\text{MeOH}$ [1:3 (v/v)] (pink line).

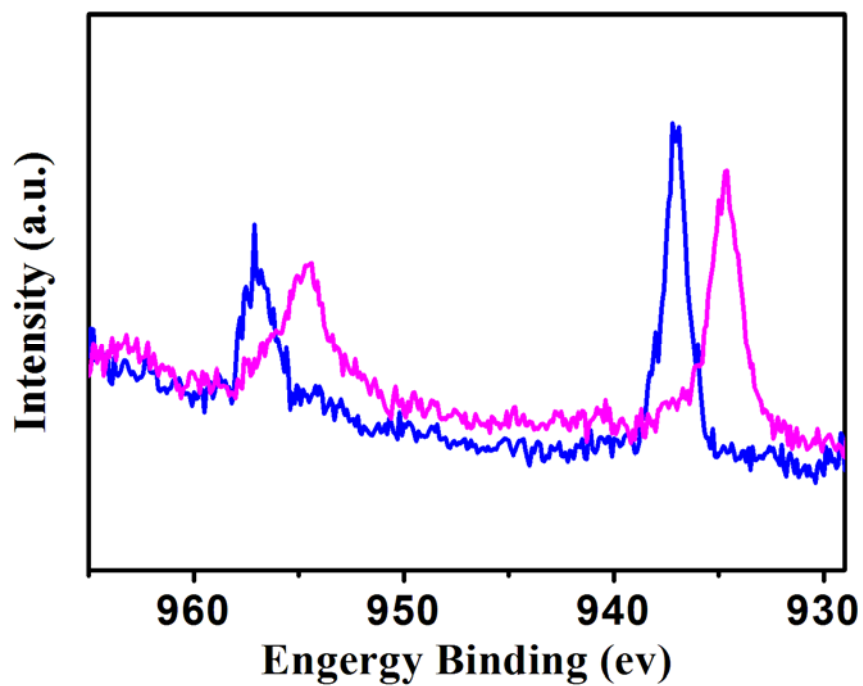


Figure S2. X-ray photoelectron spectra for (*S*)-CuPc (**2**) (blue line) and its aggregates formed in CHCl₃/MeOH [1:3 (v/v)] (pink line).

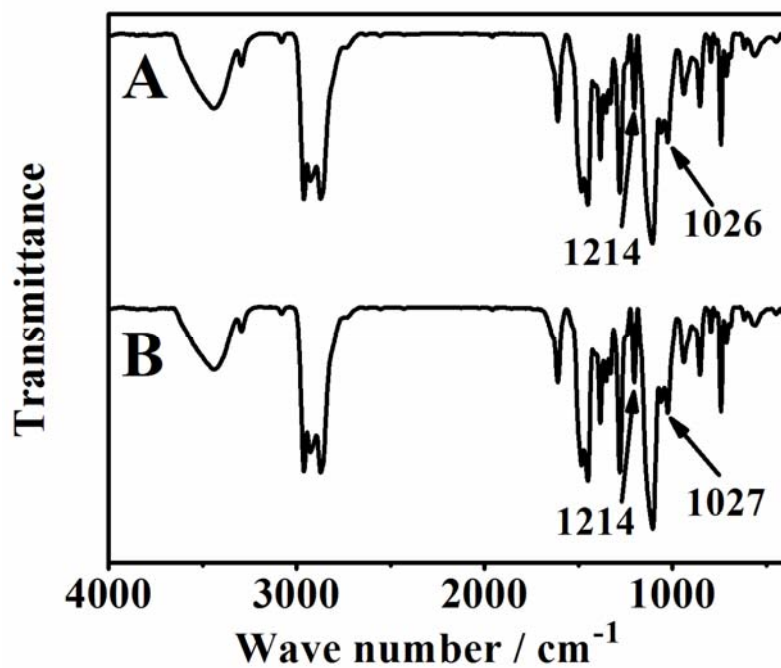


Figure S3. IR spectra of (*S*)-H₂Pc (**1**) (A) and its aggregates formed in CHCl₃/MeOH [1:3 (v/v)] (B) in the region of 400-4000 cm⁻¹ with 2 cm⁻¹ resolution.

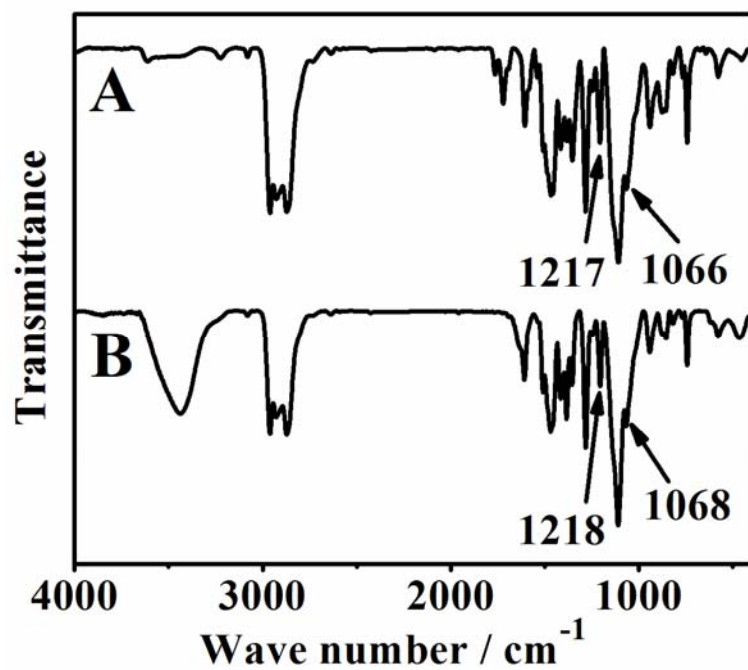


Figure S4. IR spectra of (*S*)-CuPc (**2**) (A) and its aggregates formed in CHCl₃/MeOH [1:3 (v/v)] (B) in the region of 400-4000 cm⁻¹ with 2 cm⁻¹ resolution.

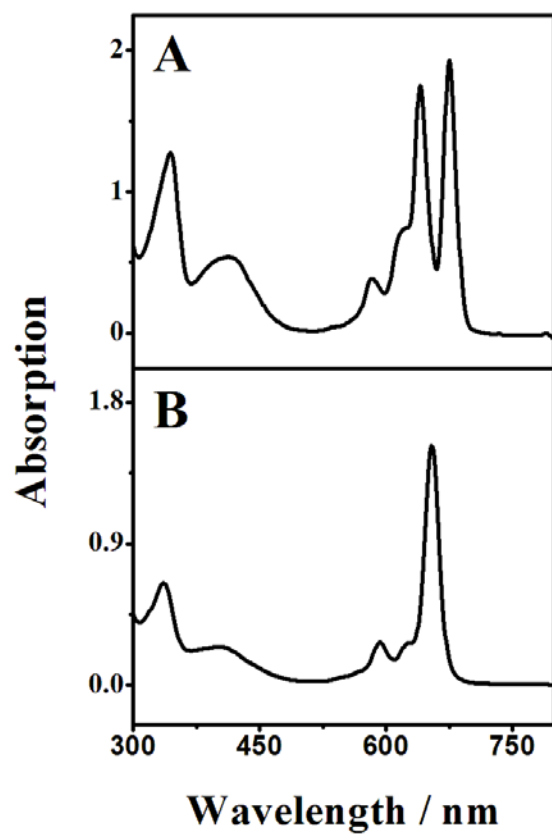


Figure S5. Electronic absorption spectra of (A) (*S*)-H₂Pc (**1**) in dilute chloroform solution (4×10^{-5} mol/L); (B) (*S*)-CuPc (**2**) in dilute chloroform solution (4×10^{-5} mol/L).

Table S1. Electronic absorption spectral data for (*S*)-H₂Pc (**1**) and (*S*)-CuPc (**2**) dissolved in CHCl₃ and their aggregates fabricated from **1** and **2** in CHCl₃/MeOH [1:3 (v/v)].

Compound	in chloroform	in CHCl ₃ /MeOH [1:3 (v/v)]
(<i>S</i>)-H ₂ Pc (1)	344, 413, 580, 618, 639, 674	342, 397, 598
(<i>S</i>)-CuPc (2)	337, 405, 590, 625, 652	358, 629, 682