

Electronic supplementary information

The First Solution Processable *n*-Type Phthalocyaninato Copper Semiconductor: Tuning the Semiconductor Nature *via* Peripheral Electron-withdrawing Octyloxycarbonyl Substituents

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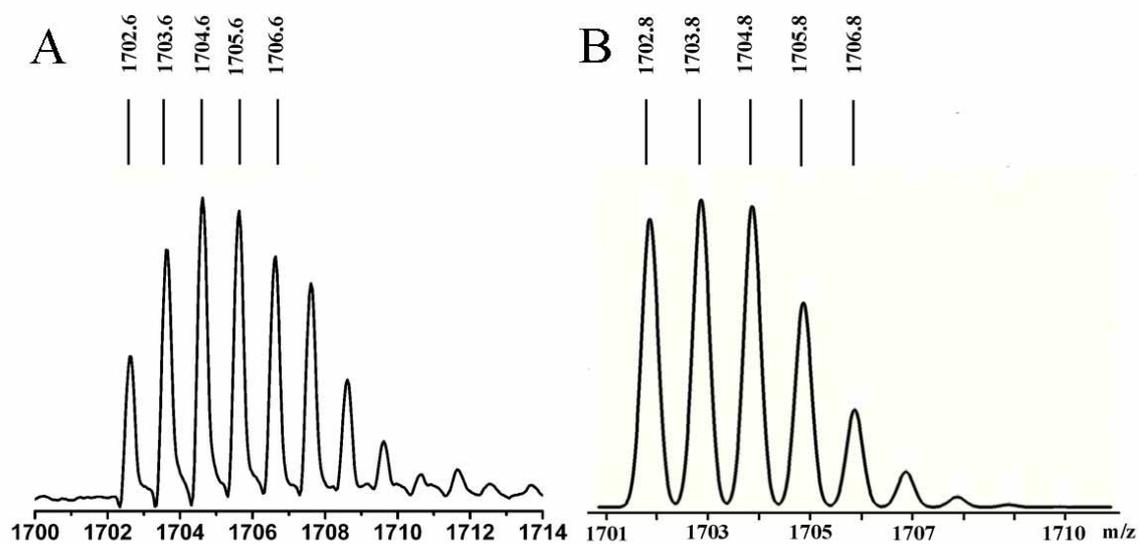


Figure S1. Experimental (A) and simulated isotopic patterns (B) for molecular ion of phthalocyaninato copper complex $\text{Cu}[\text{Pc}(15\text{C}5)(\text{COOC}_8\text{H}_{17})_6]$ (**2**).

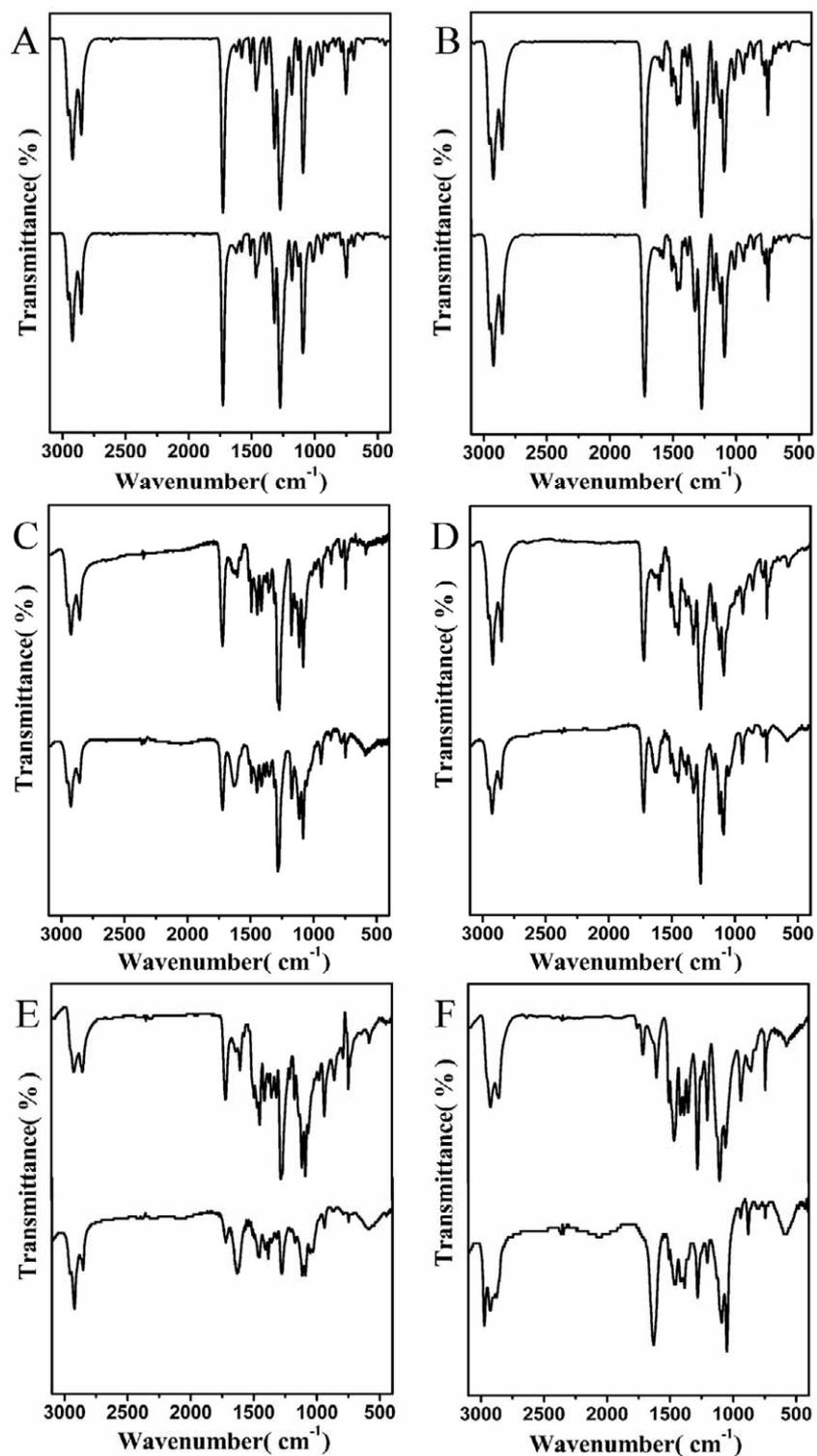


Figure S2. IR spectra of compounds (top one) and the aggregates (bottom one) of **1-6** (A-F) in the region of 400-3100 cm⁻¹ with 2 cm⁻¹ resolution.

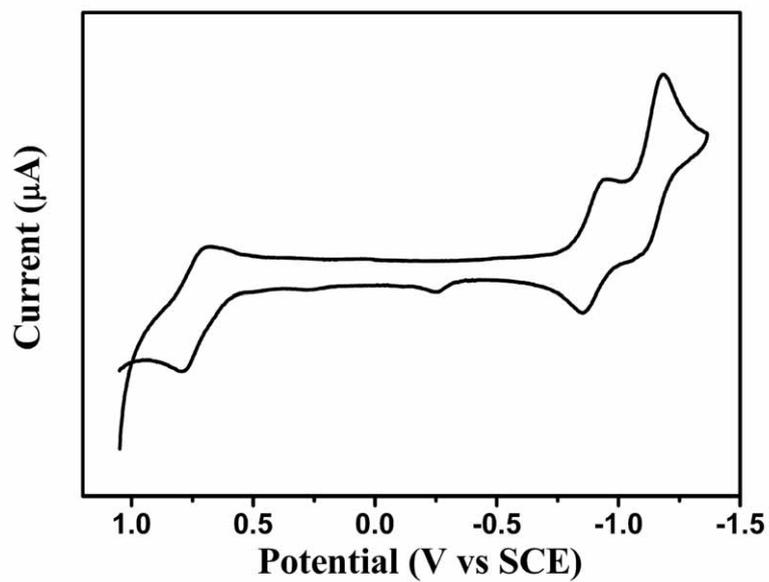


Figure S3. Cyclic voltammogram of compounds **2** in CH_2Cl_2 containing 0.1 M $[\text{NBu}_4][\text{ClO}_4]$ at a scan rate of $20 \text{ mV} \cdot \text{S}^{-1}$.

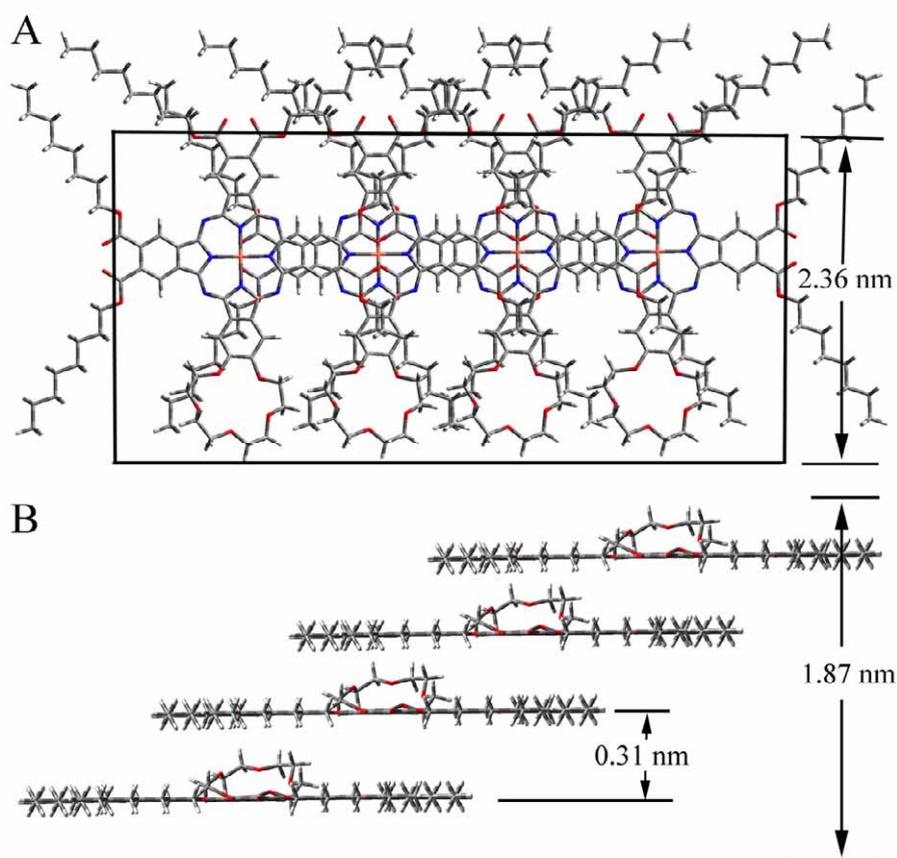


Figure S4. Schematic representation of the unit cell in the aggregates of compound **2** formed in methanol: top view (A) and side view (B). Hydrogen atoms are omitted for clarity.

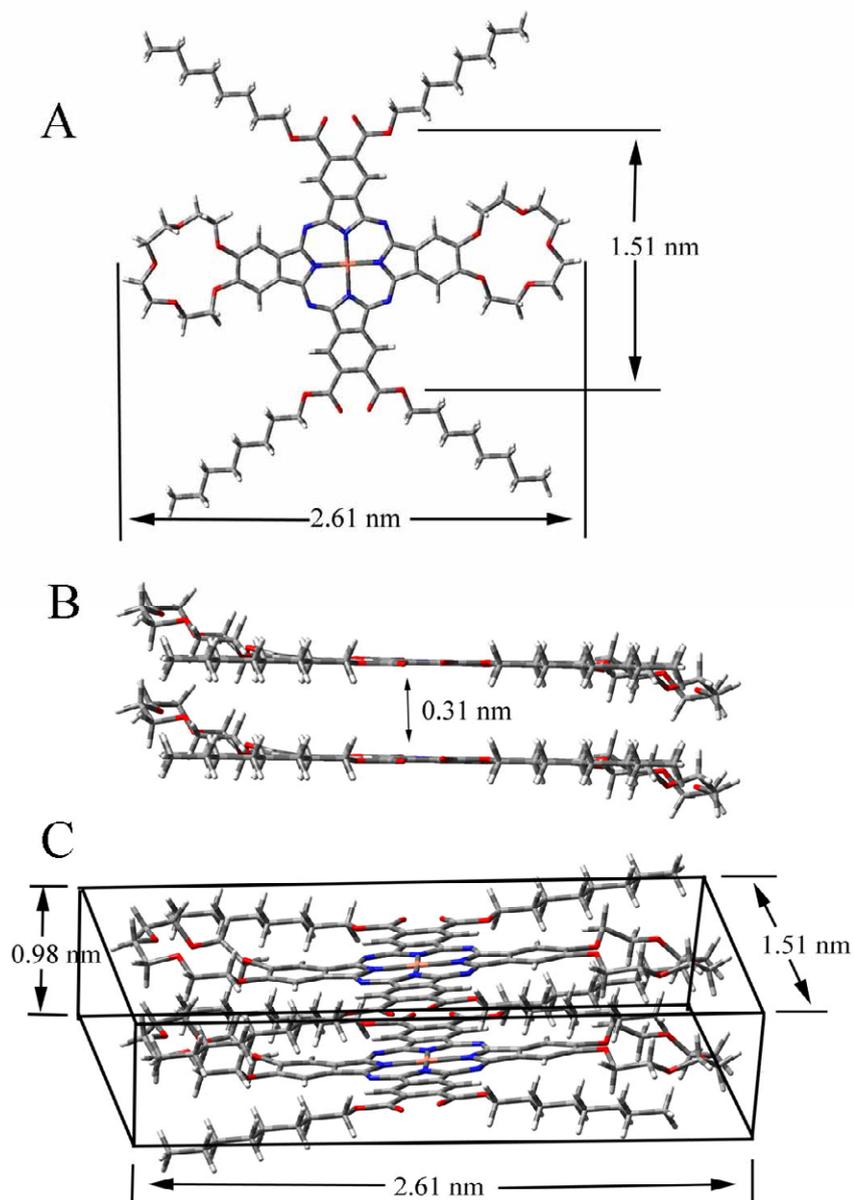


Figure S5. Schematic representation of the unit cell in the aggregates of compound **3** formed in methanol: top view (A) and side view (B). Hydrogen atoms are omitted for clarity.

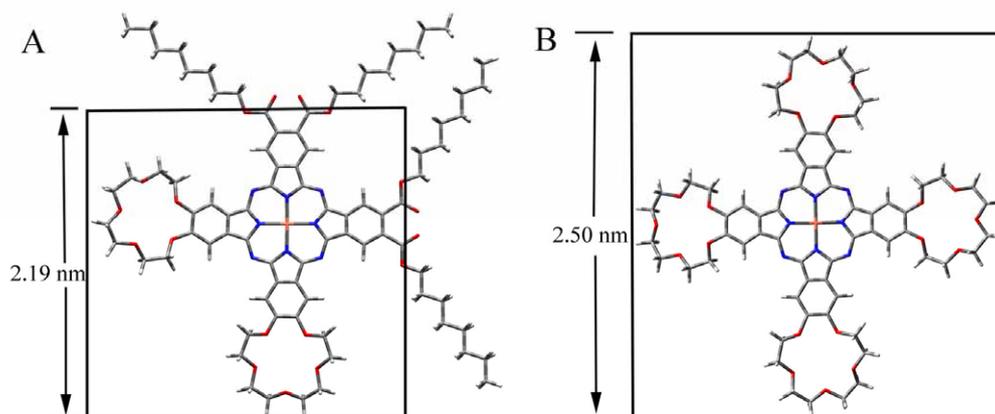


Figure S6. Schematic representation of the unit cell in the aggregates of compound **4**

(A) and compound **6** (B). Hydrogen atoms are omitted for clarity.

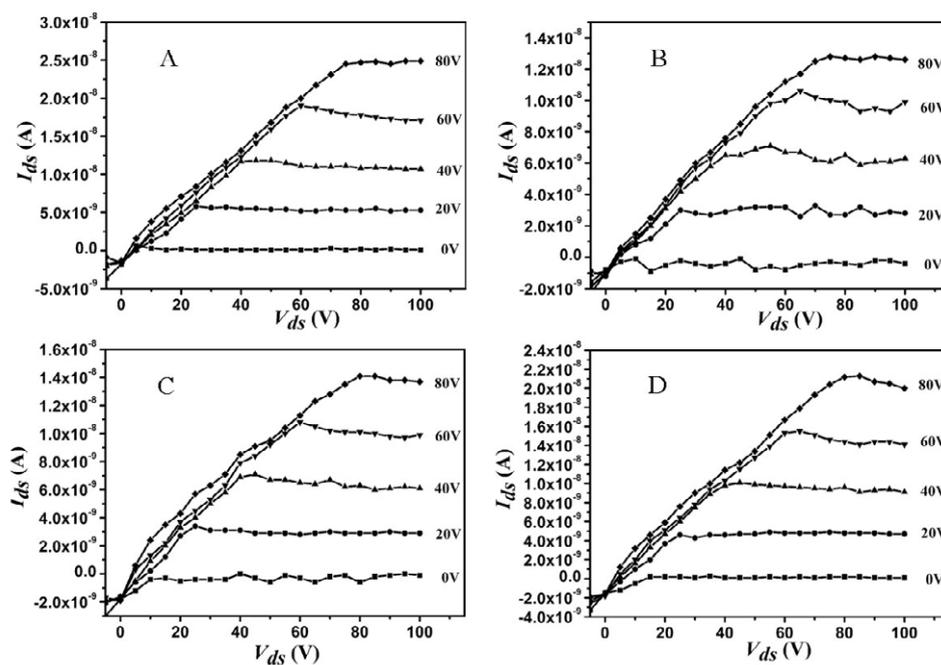


Figure S7. Drain-source current (I_{ds}) versus drain-source voltage (V_{ds}) characteristic at different gate voltage for the OFET of compound **2** (A), **3** (B), **4** (C) and **5** (D) on the HMDS-treated SiO_2/Si substrate.

Table S1. Electronic absorption data for the self-assemblies in methanol (**1-5**) or *n*-hexane (**6**).

Compound	Nanostructures in corresponding solvent
Cu[Pc(COOC ₈ H ₁₇) ₈] (1)	380, 660, 754
Cu[Pc(15C5)(COOC ₈ H ₁₇) ₆] (2)	359, 642, 684
Cu[Pc(adj-15C5) ₂ (COOC ₈ H ₁₇) ₄] (3)	337, 483, 644
Cu[Pc(opp-15C5) ₂ (COOC ₈ H ₁₇) ₄] (4)	335, 472, 635
Cu[Pc(15C5) ₃ (COOC ₈ H ₁₇) ₂] (5)	334, 434, 640
Cu[Pc(15C5) ₄] (6)	333, 402, 623, 672