Electronic Supplementary information

Crystalline architectures of C_{84} with tunable morphology and linearly polarized red emission

Feng Wang,[a,b] Botao Zhu,[a] Jie Xiong,[a] Shuo Wu,[a] Jiaxin Sun,[a] Hailin Cong,[b] and Lai Feng *[a]*

[a]*Soochow Institute for Energy and Materials Innovation (SIEMIS), School of Energy, Soochow University, Suzhou 215006, China*

[b]*Laboratory for New Fiber Materials and Modern Textile, Growing Base for State Key Laboratory, College of Chemical Engineering, Qingdao University, Qingdao 266071, China*

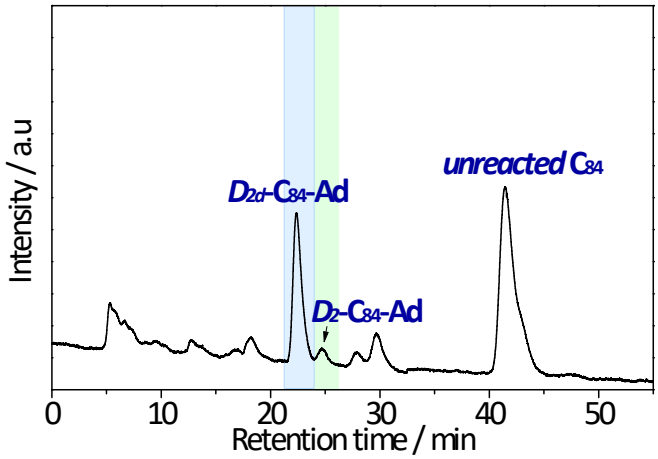


Figure S1. HPLC profiles of the reaction mixture of C_{84} isomers with cyclopentadiene.

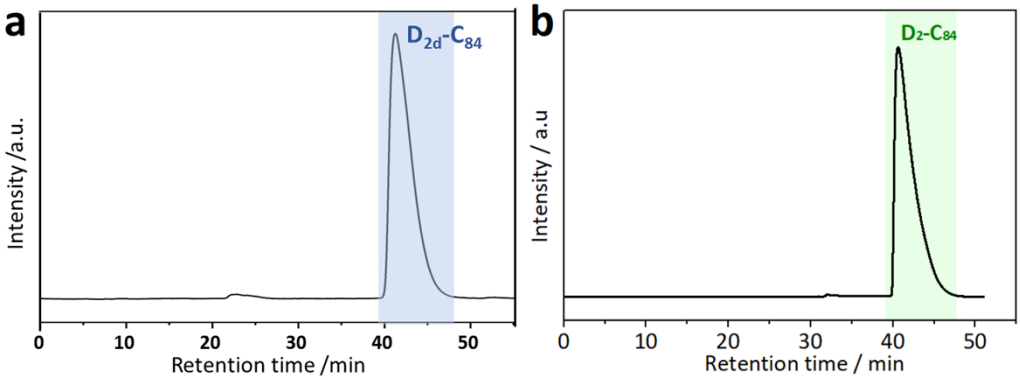


Figure S2. HPLC profiles of the isolated isomers: (a) D_{2d}-C_{84} and (b) D_2-C_{84}.

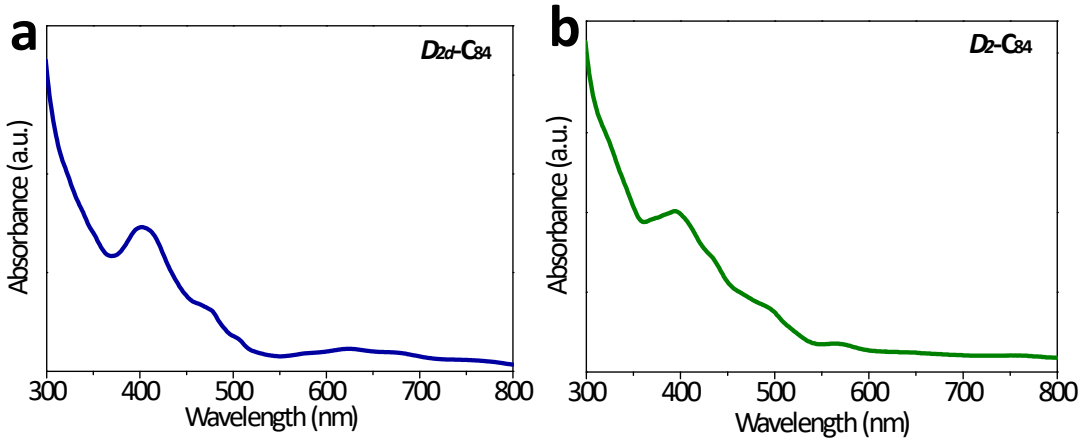
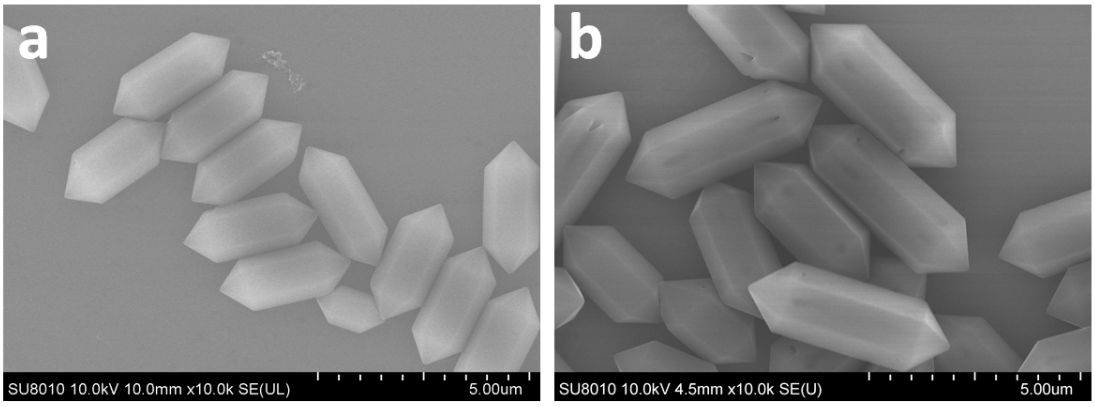
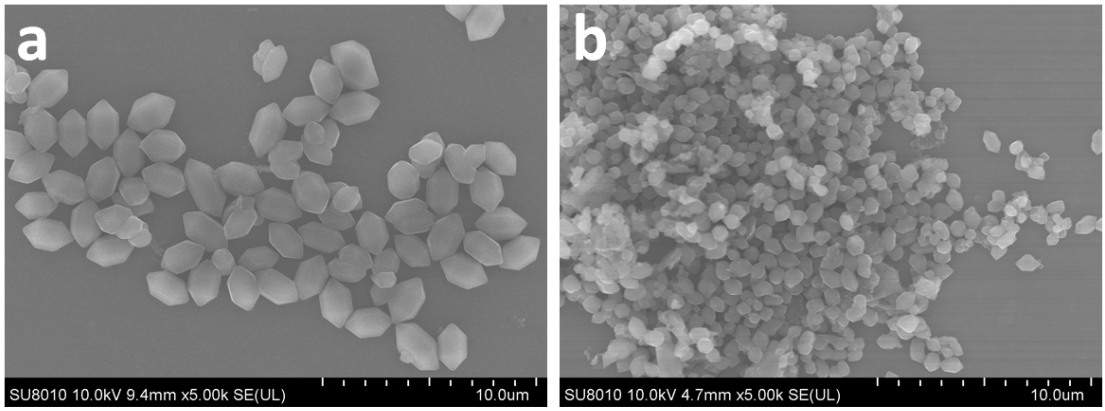


Figure S3. UV-vis spectra of isolated isomers: (a) D_{2d}-C_{84} and (b) D_2-C_{84}.



D_{2d}-C_{84} (0.2 mg mL^{-1})/MST:IPA = 1:1 D_{2d}-C_{84} (0.1 mg mL^{-1})/MST:IPA = 1:3

Figure S4. (a,b) SEM images of *r*-HPs of D_{2d}-C_{84} prepared under different conditions. Note: As seen in Figure S4, the size of *r*-HPs is increasing with the decreasing of C_{84} concentration, while their aspect ratio remains constant.



D_{2d}-C_{84} (0.2 mg mL^{-1})/MST:IPA = 1:2 D_{2d}-C_{84} (0.2 mg mL^{-1})/MST:IPA = 1:3

Figure S5. (a,b) SEM images of *r*-HPs of D_{2d}-C_{84} prepared under different conditions. Note: As seen in Figure S5, the size and aspect ratio of *r*-HPs are decreasing with the increasing of relative volume of IPA.

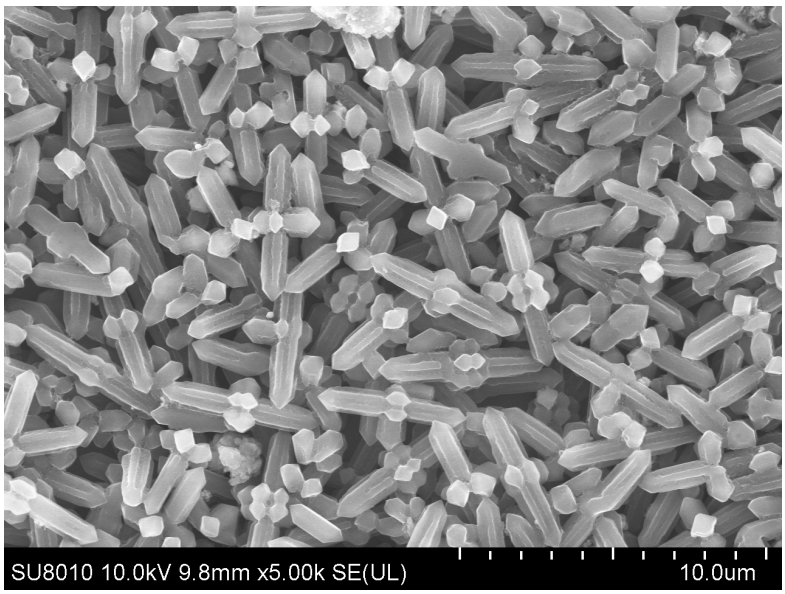


Figure S6. SEM images of *c*-HP of D_{2d}-C_{84} prepared under optimal conditions (D_{2d}-C_{84} (0.2 mg mL^{-1})/MST:IPA = 1:1).

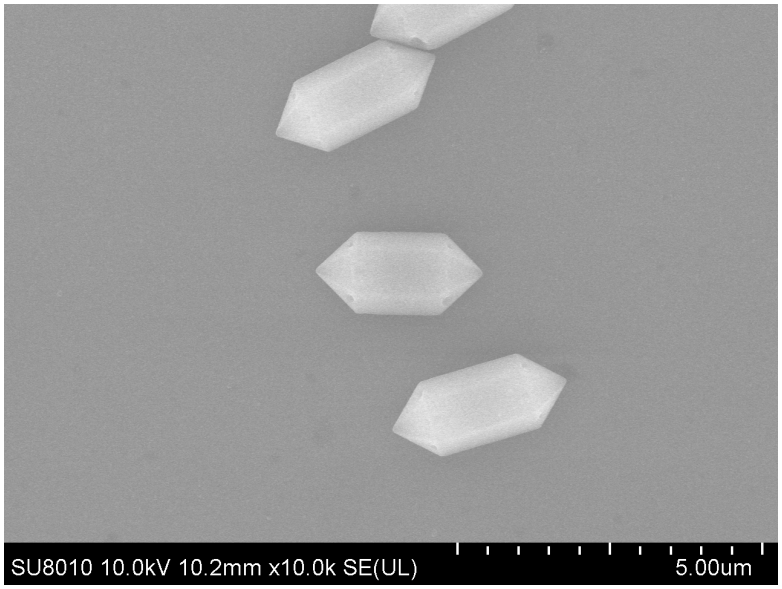


Figure S7. SEM images of *r*-HPs of D_2-C_{84} prepared under optimal conditions (D_2-C_{84} (0.2 mg mL^{-1})/MST:IPA = 1:1).

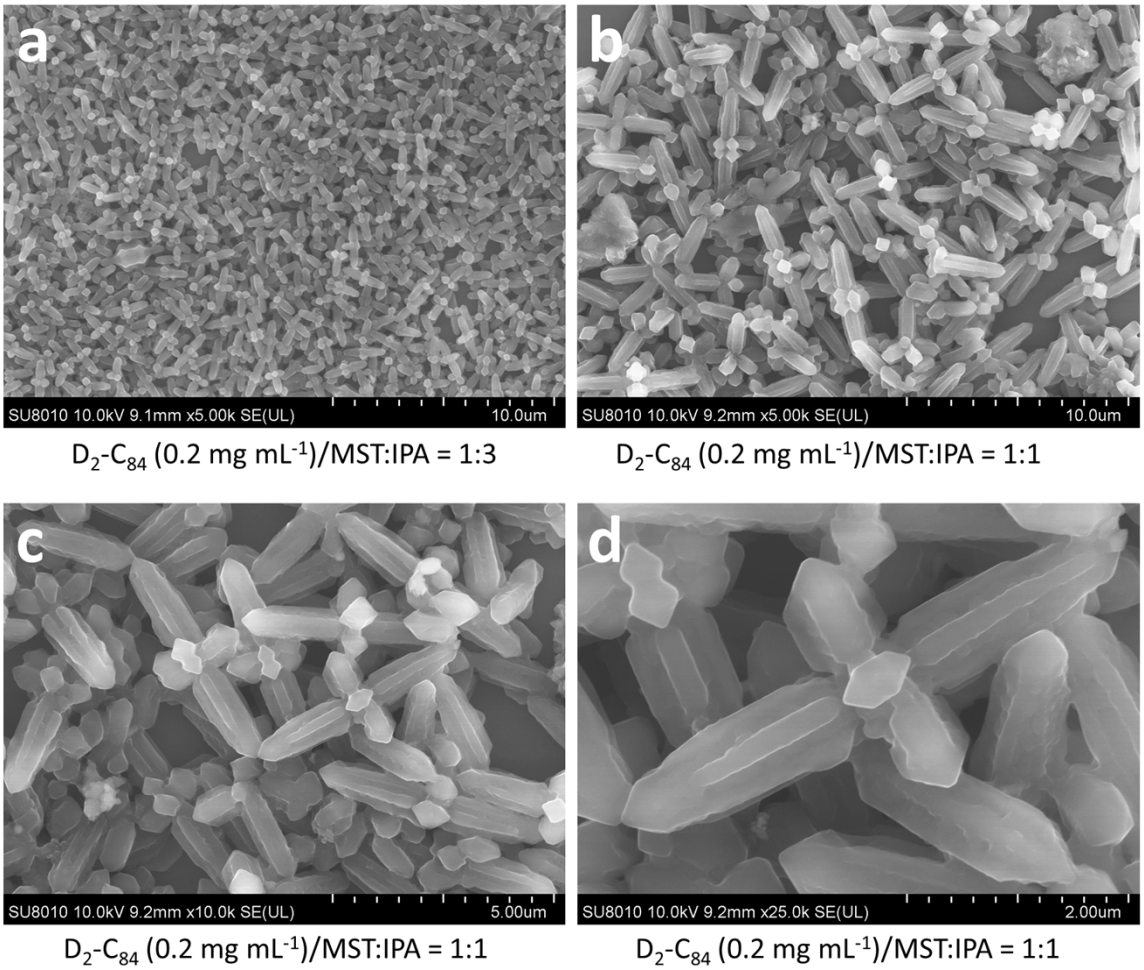


Figure S8. (a and b,c,d) SEM images of *c*-HPs of D_{2d}-C_{84} prepared under different conditions.

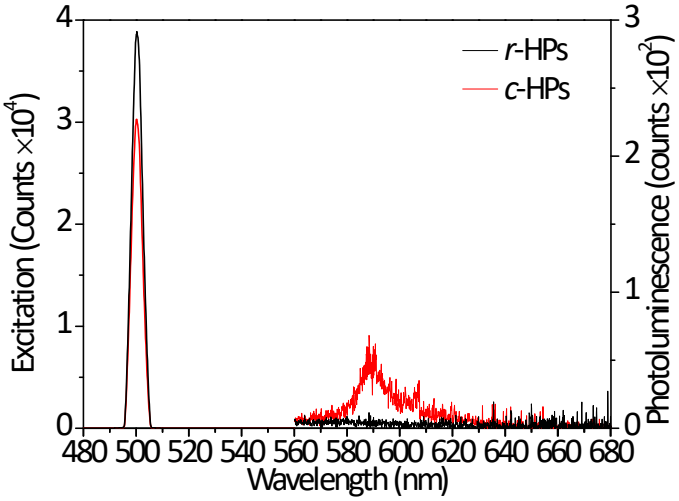


Figure S9. Absolute PL quantum yields measured for *r*-HPs and *c*-HPs of D_{2d}-C_{84} (both dispersed in cyclohexane solution at room temperature).

Table S1. Fitting results based on the biexponential equation of

$I(t) = A_1 \exp(\frac{-t}{\tau_1}) + A_2 \exp(\frac{-t}{\tau_2})$ for the transient PL spectra of the *r*-HP and *c*-HP.

Device	τ_1(ns)	A_1(%)	τ_2(ns)	A_2(%)	τ_{avg}(ns)[a]	R^2
r-HP	4.38	10.74	0.46	89.26	2.56	0.992
c-HP	3.85	6.57	0.44	93.43	1.74	0.993

$\tau_{avg} = \frac{\sum A_i \tau_i^2}{\sum A_i \tau_i}$