Complexation-induced circular dichroism and circularly polarised luminescence of an aggregation-induced emission luminogen

Jason C. Y. Ng,[a] Jianzhao Liu,[a] Huimin Su,[b] Yuning Hong,[a] Hongkun Li,[a] Jacky W. Y. Lam,[a] Kam Sing Wong,[b] and Ben Zhong Tang*[acd]

[a] *Department of Chemistry, Institute for Advanced Study, Institute of Molecular Functional Materials, and Division of Biomedical Engineering, The Hong Kong University of Science & Technology (HKUST), Clear Water Bay, Kowloon, Hong Kong, China. Email: tangbenz@ust.hk*
[b] *Department of Physics, HKUST, Clear Water Bay, Kowloon, Hong Kong, China. Email: phkswong@ust.hk*
[c] *Guangdong Innovative Research Team, SCUT-HKUST Joint Research Laboratory, State Key Laboratory of Luminescent Materials and Devices, South China University of Technology (SCUT), Guangzhou 510640, China*
[d] *HKUST Shenzhen Research Institute, Nanshan, Shenzhen 518057, China*

Content

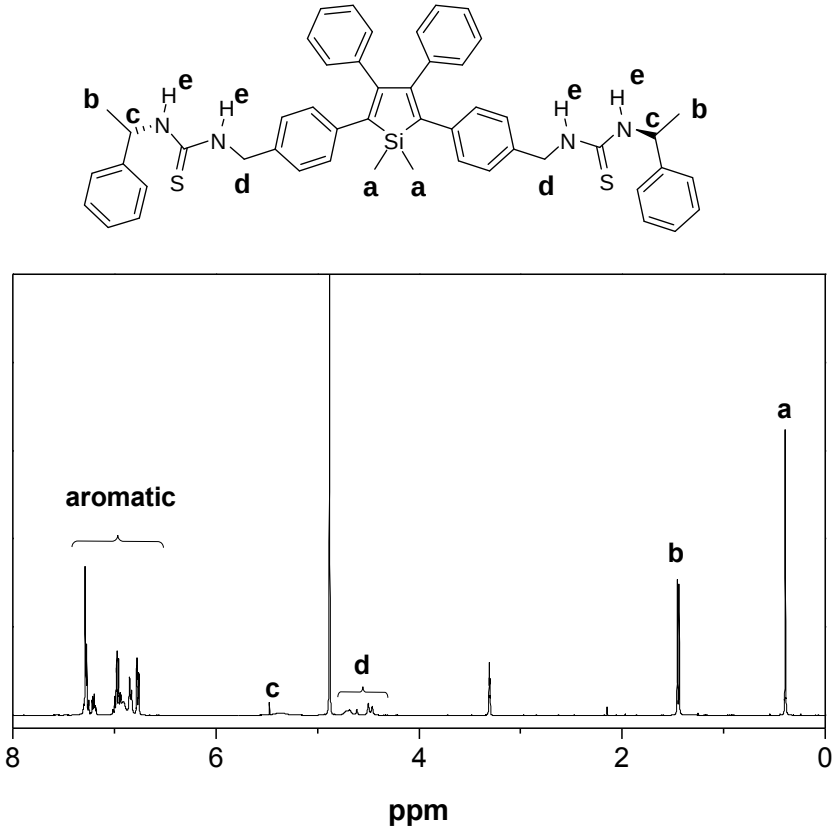

Fig. S1 ^{1}H NMR spectra of **1** in CD_3OD.

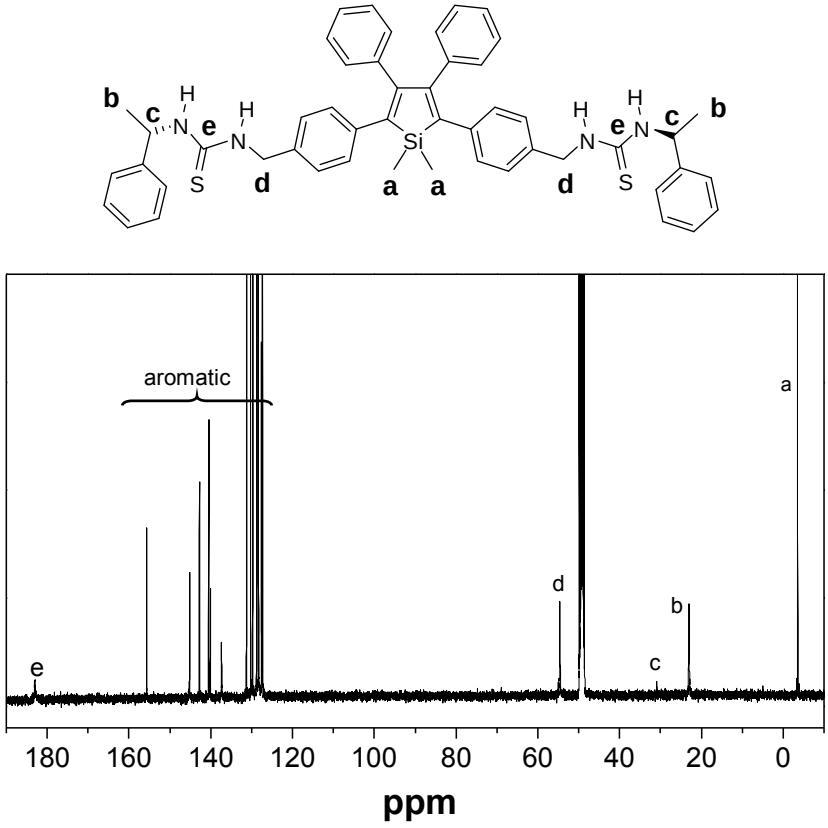

Fig. S2 ^{13}C NMR spectra of **1** in CD_3OD.

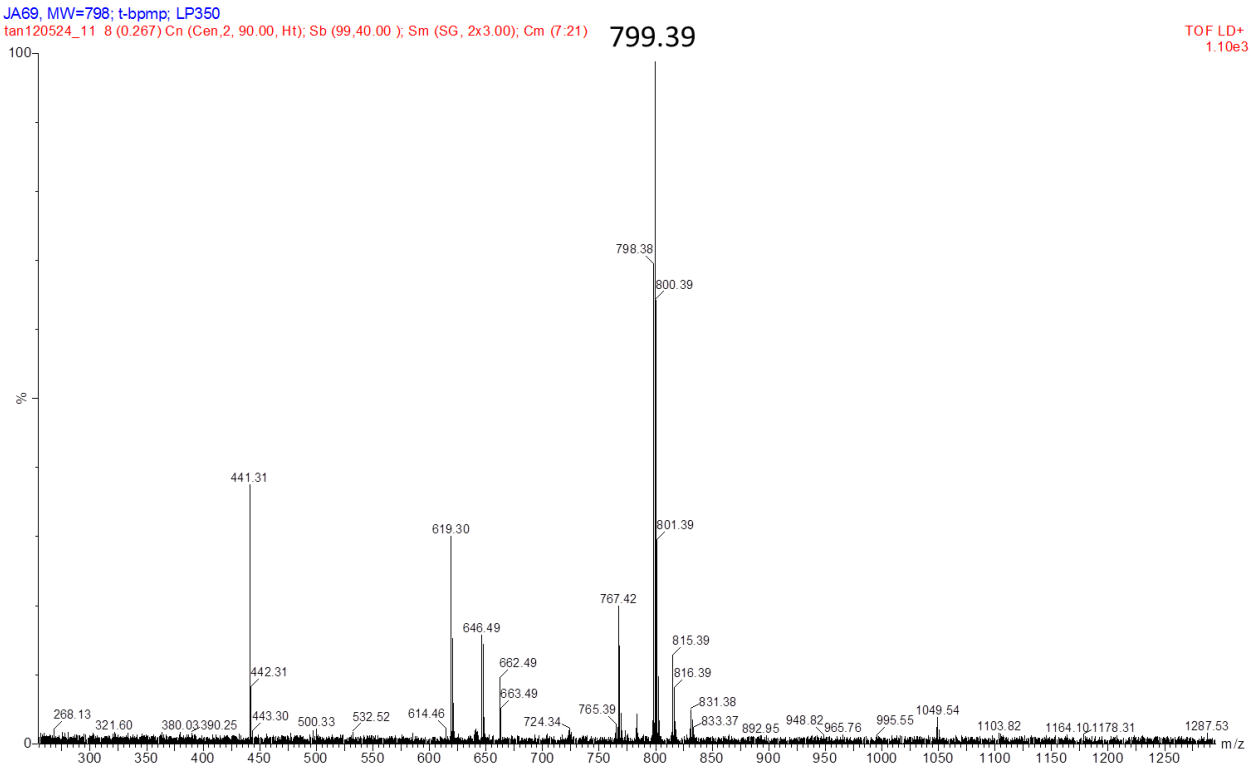

Fig. S3 Mass spectrum of compound **1**.

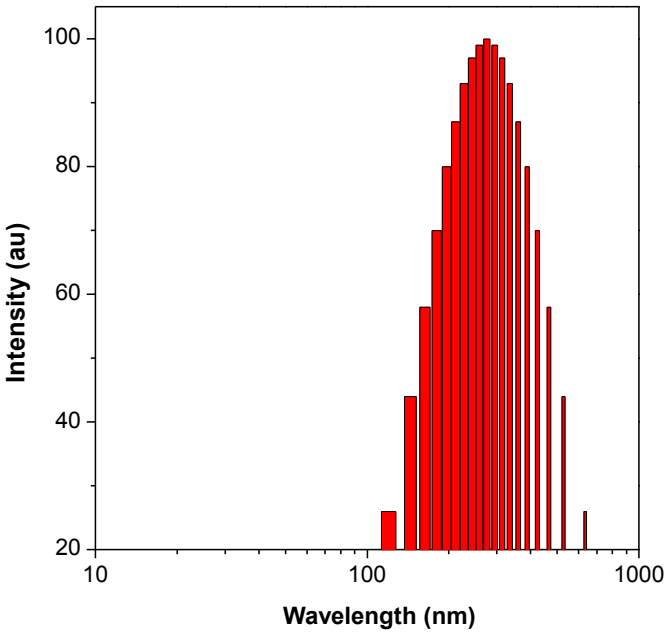

Fig. S4 Particle size distribution of **1** in THF/water mixture (1:95 v/v). Concentration of **1**: 10^{-5} M.

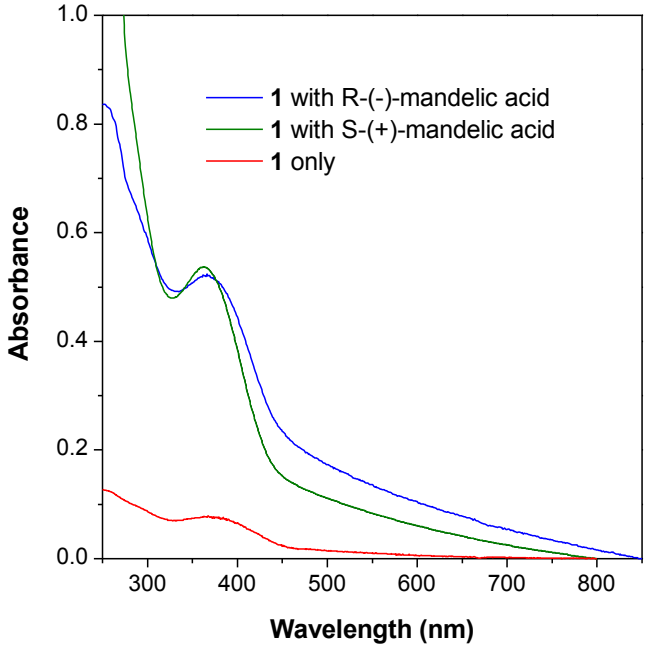

Fig. S5 UV spectra of **1** in the absence and presence of chiral acids in the solid film state. [**1**]/[acid] = 1:40 by mole.

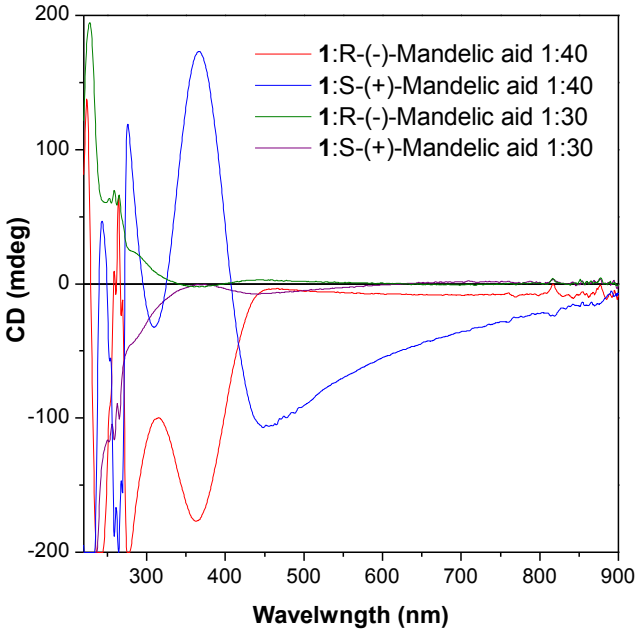

Fig. S6 CD spectra of thin film of **1** containing *R*-(-) or *S*-(+) mandelic acid at different molar ratio fabricated by natural evaporation of their THF/hexane mixture (8:2 v/v) at room temperature. [**1**] = 1 mM; [acid] = 40 mM.

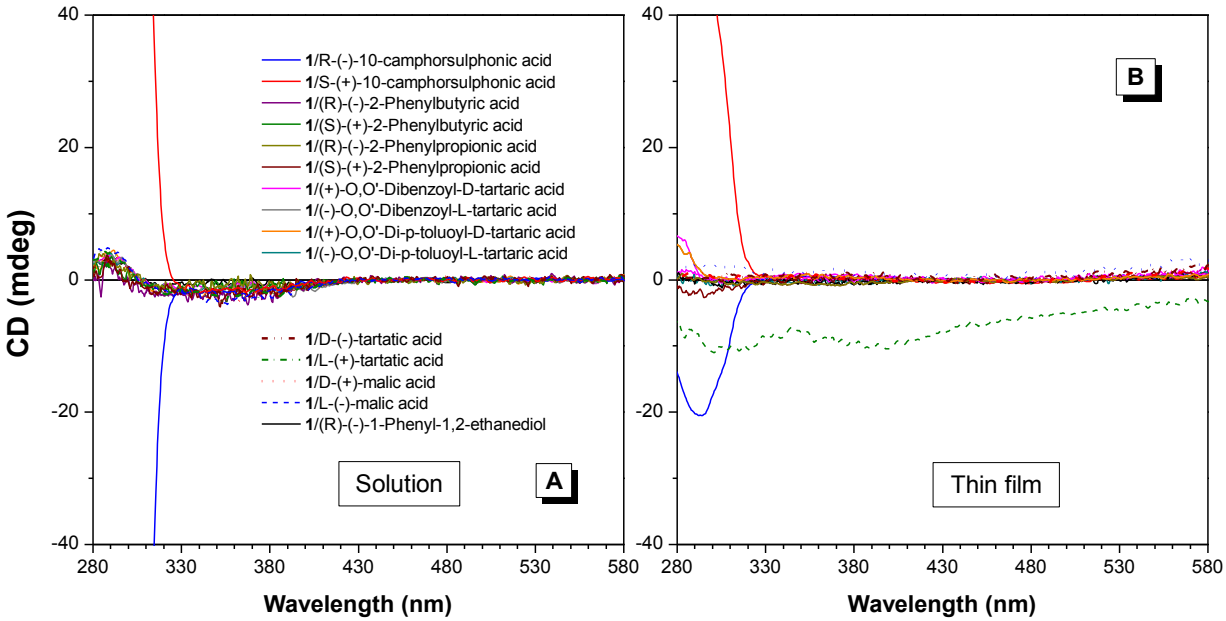

Fig. S7 CD spectra of **1** with different chiral carboxylic acids in (A) solution and (B) solid film states. [**1**] = 1 mM; [acid] = 40 mM.

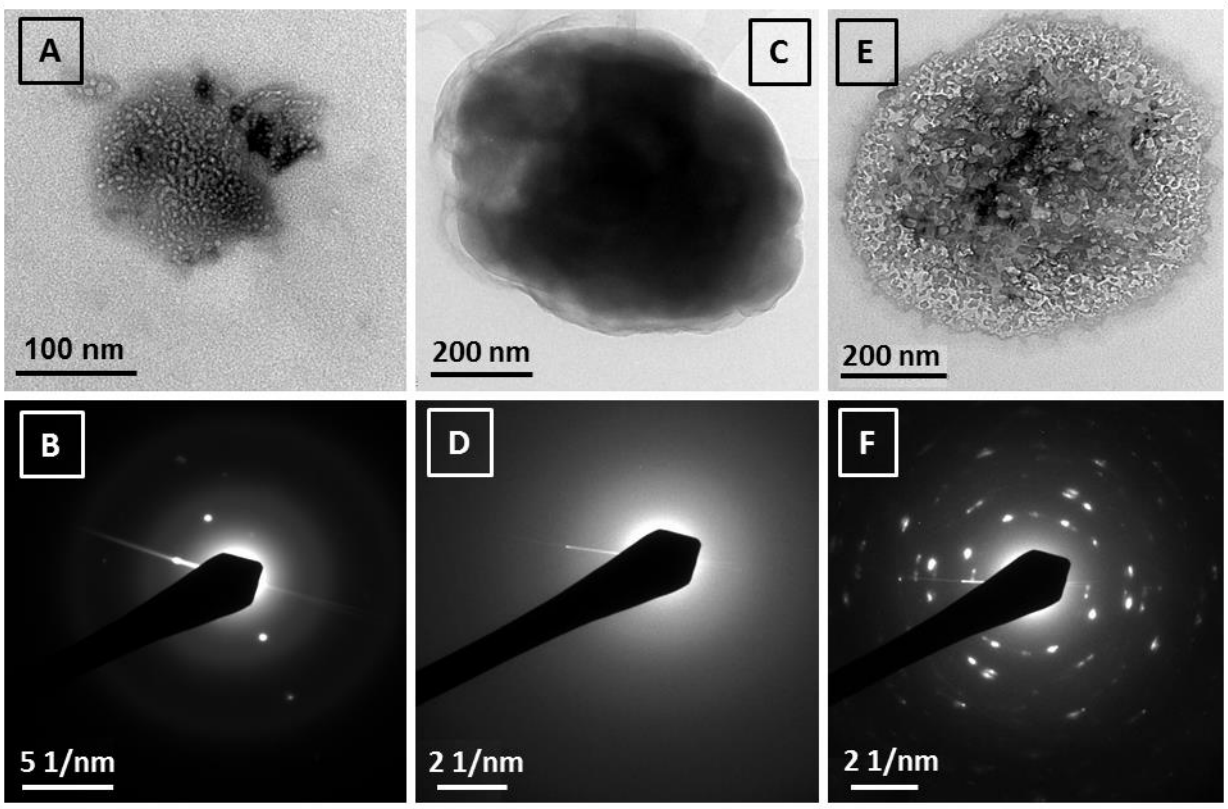

Fig. S8 (A,C,E) TEM images and (B,D,F) ED patterns of (A,B) **1**, (C,D) pure *R*-(−)-mandelic acid and (E,F) pure *S*-(+)-Mandelic acid (bottom).

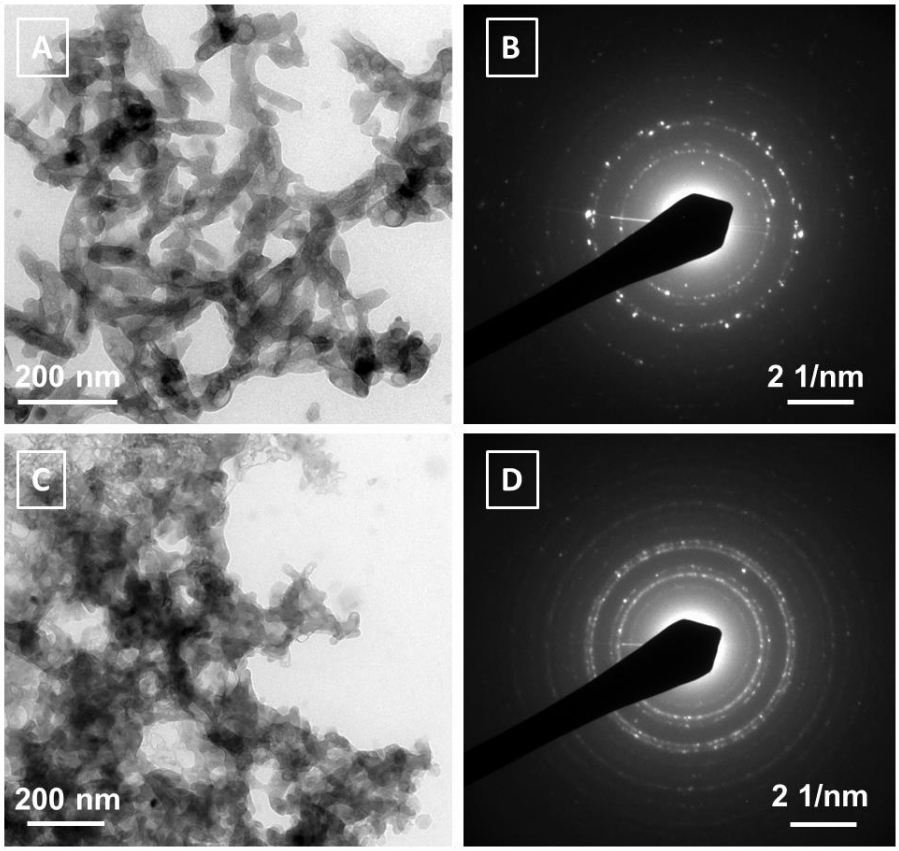

Fig. S9 (A,C) TEM images and (B,D) ED patterns of the aggregates of **1** complexed with (A,B) *R*-(–)-mandelic acid and (C,D) *S*-(+)-mandelic acid. [**1**]:[acid] = 1:40 by mole.

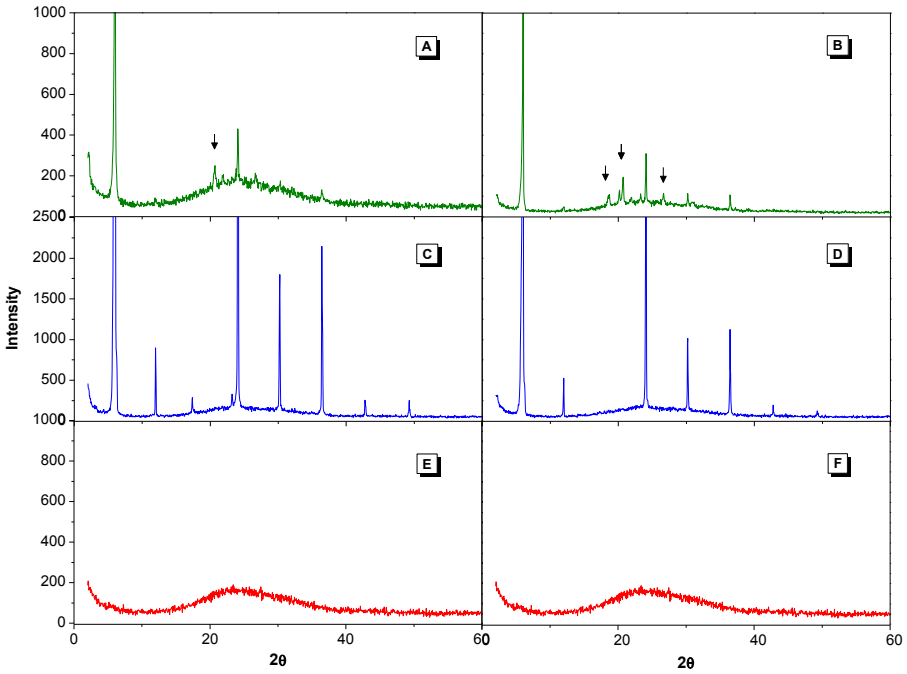

Fig. S10 XRD patterns of (A) **1** with *R*-(–)-mandelic acid and (B) **1** with *S*-(+)-mandelic acid (1:40 by mole) obtained by natural evaporation of their THF/hexane mixture (8:2 v/v) at room temperature. (C) *R*-(–)-mandelic acid, (D) *S*-(+)-mandelic acid, and (E, F) **1** alone are shown for comparison.