Supporting Information

Enhanced Red Phosphorescence of Purely Organic Formyl Compounds via Host–Guest Doping

1H NMR (500 MHz, Chloroform-d) δ 10.08 (d, J = 1.8 Hz, 1H), 8.72 (q, J = 1.9 Hz, 2H), 8.04 – 7.93 (m, 2H), 7.84 – 7.72 (m, 2H), 7.59 – 7.48 (m, 2H)

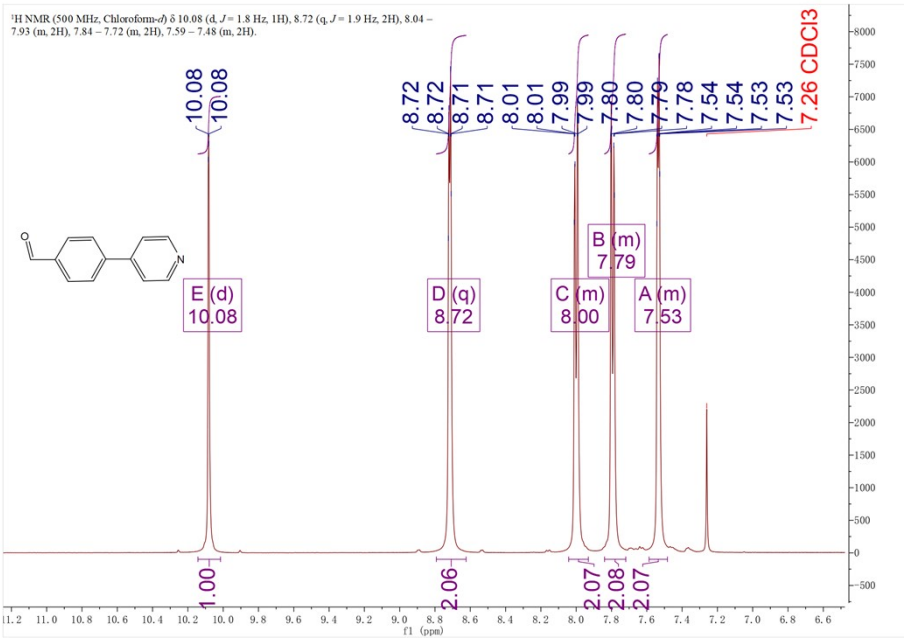

Figure S1. Nuclear Magnetic Resonance hydrogen spectrum(^{1}H NMR) of 4PB.

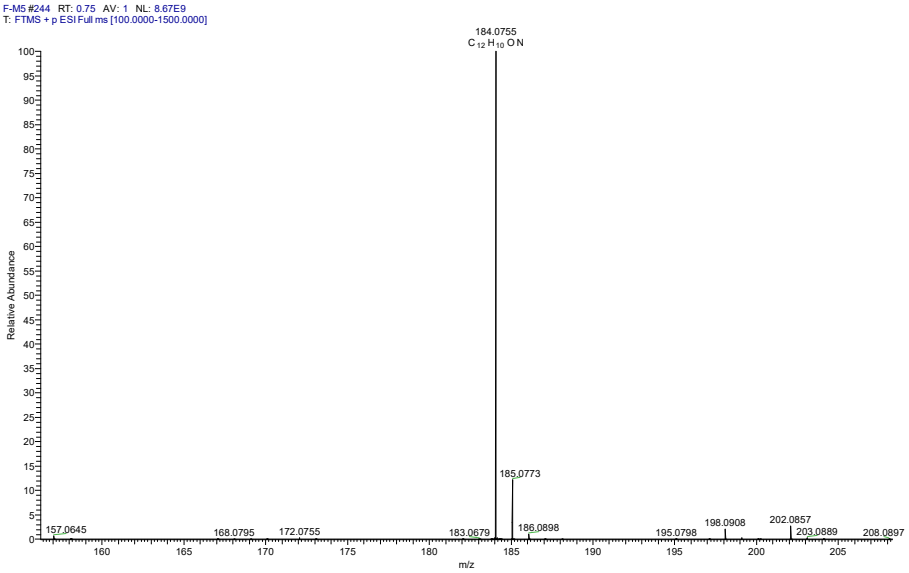

Figure S2. High Resolution Mass Spectrometry (HRMS) of 4PB (183).

^{1}H NMR (500 MHz, Chloroform-*d*) δ 13.17 (s, 2H), 10.81 (s, 2H), 8.34 (s, 1H), 7.98 (d, *J* = 9.1 Hz, 1H), 7.80 (d, *J* = 8.0 Hz, 1H), 7.64 – 7.60 (m, 1H), 7.43 (d, *J* = 7.5 Hz, 1H), 7.14 (s, 1H).

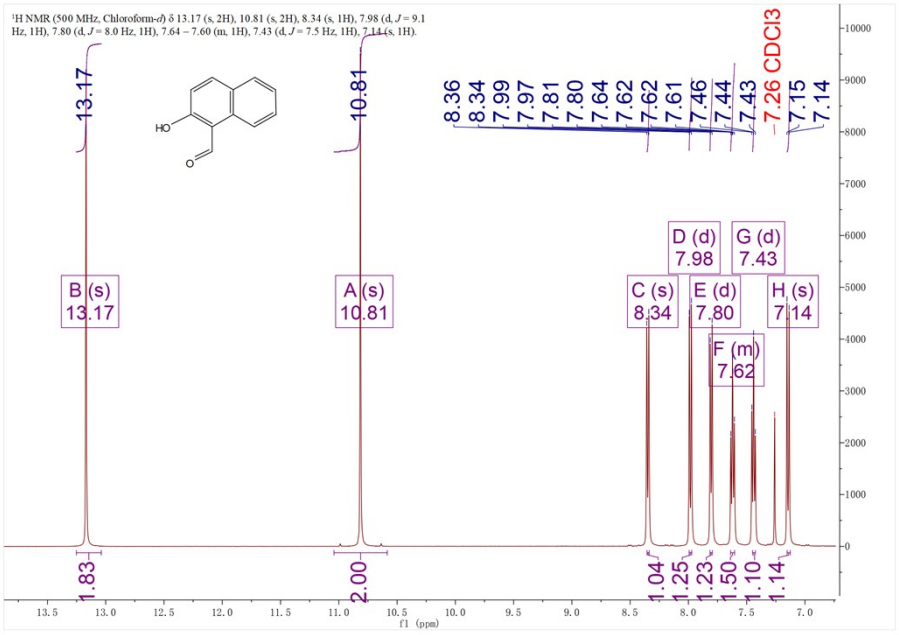

Figure S3. Nuclear Magnetic Resonance hydrogen spectrum (1H NMR) of 2HN.

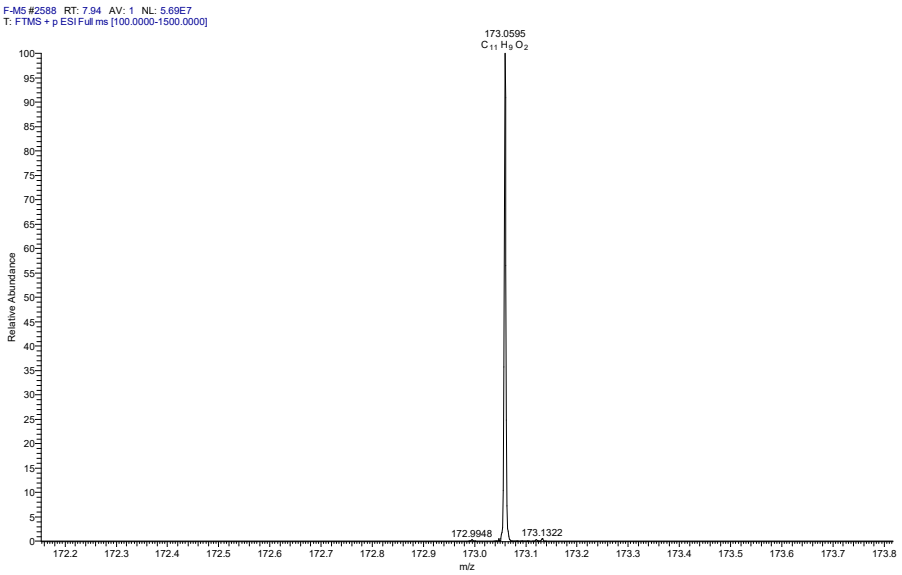

Figure S4. High Resolution Mass Spectrometry (HRMS) of 2HN (172).

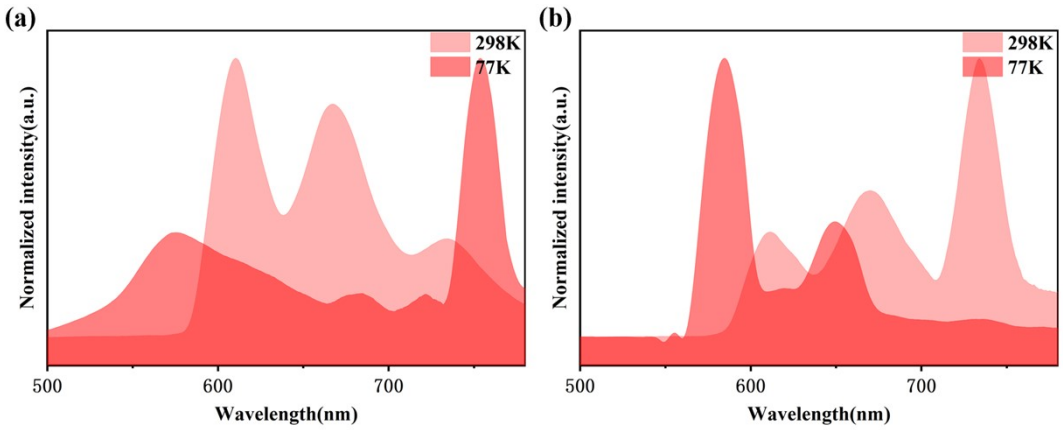

Figure S5. Phosphorescence spectra comparison of different systems at room temperature and low temperature: (a) PA-4PB and (b) PA-2HN.

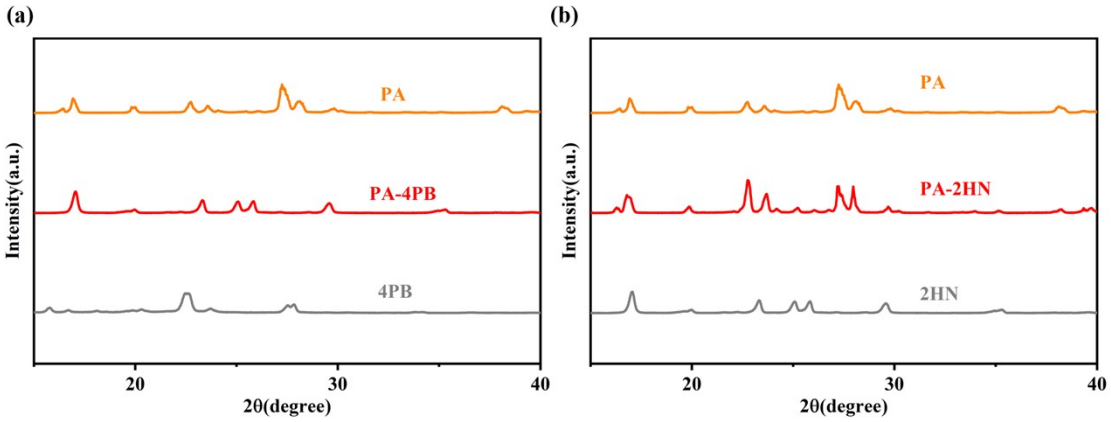

Figure S6. XRD patterns of the host-guest doped systems (a) PA-4PB and (b) PA-2HN.

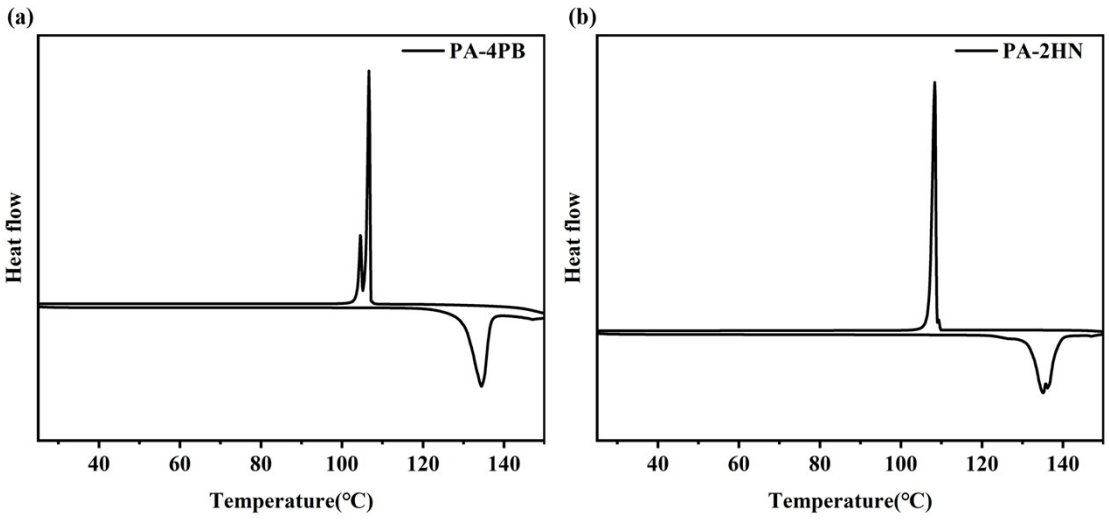

Figure S7. DSC curve for (a) PA-4PB and (b) PA-2HN.