Synthesis and Spectroscopic Properties of Novel N-N Linked Bis-(diphenylboron) Complexes

Lizhi Gai,[a] Jialiang Xu,[a] Yanping Wu,[b] Hua Lu[b]* and Zhen Shen[a]*

a State Key Laboratory of Coordination Chemistry, Nanjing National Laboratory of Microstructures, Nanjing University, Nanjing, 210093, P. R China. E-mail: zshen@nju.edu.cn.

b Key Laboratory of Organosilicon Chemistry and Material Technology, Ministry of Education, Hangzhou Normal University, Hangzhou, 311121, P. R. China. E-mail: hualu@hznu.edu.cn.

I. Materials and Instrumentations

II. Supporting Data

I. Materials and instrumentations

All reagents were obtained from commercial suppliers and used without further purification unless otherwise indicated. All reactions and manipulations of air-sensitive compounds were carried out under dry argon by using Schlenk techniques and/or vacuum line techniques. Solvents were dried prior to use by common methods in organometallic chemistry. Toluene was distilled over sodium. Chemicals were commercially obtained and used as received. ^{1}H and ^{13}C NMR spectra were recorded using Bruker DRX500 spectrometer instrument. Mass spectra were measured with a Bruker Daltonics AutoflexII TM MALDI–TOF spectrometer. Elemental analyses for C, H, and N were performed on a Vario MICRO elemental analyzer. Chemical shifts were reported in ppm relative to $Si(CH_3)_4$ (^{1}H, ^{13}C), and coupling constants (J) were given in Hz. Thin layer chromatography (TLC) was performed on plates coated with thick silica gel GF254 (Qingdao Haiyang Chemical Co., Ltd). Column chromatography was performed using silica gel (100-200 mesh, Qingdao Haiyang Chemical Co., Ltd).

II. Supporting Data

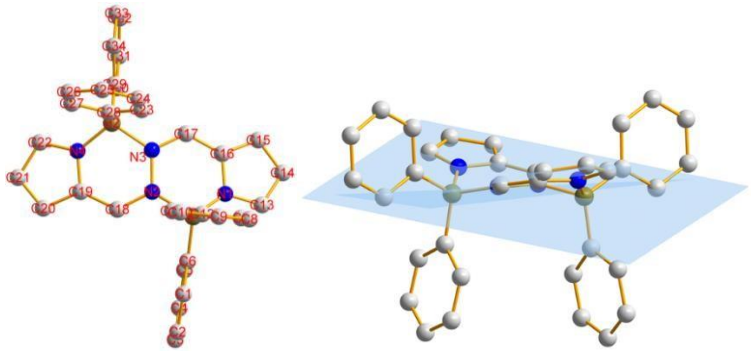


Figure S1. The conformation of dye **1.**

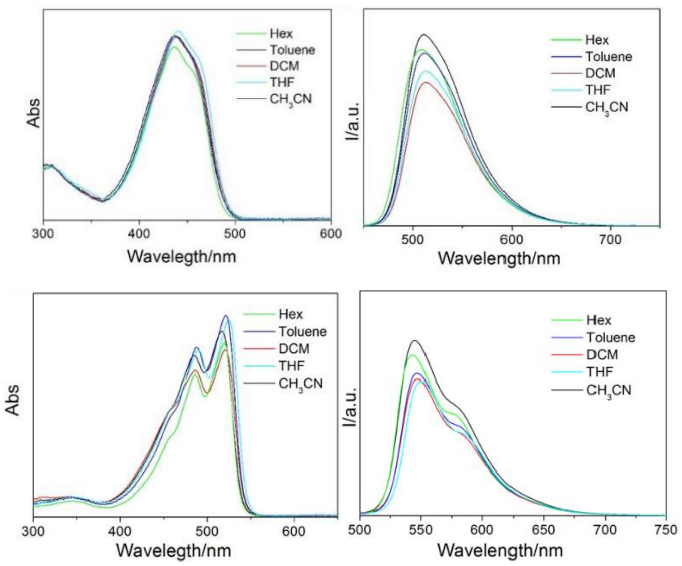


Figure S2. The absorption and emission spectra of **1**-**2** in hexane, toluene, DCM, THF, CH_3CN (top for **1**, bottom for **2**).

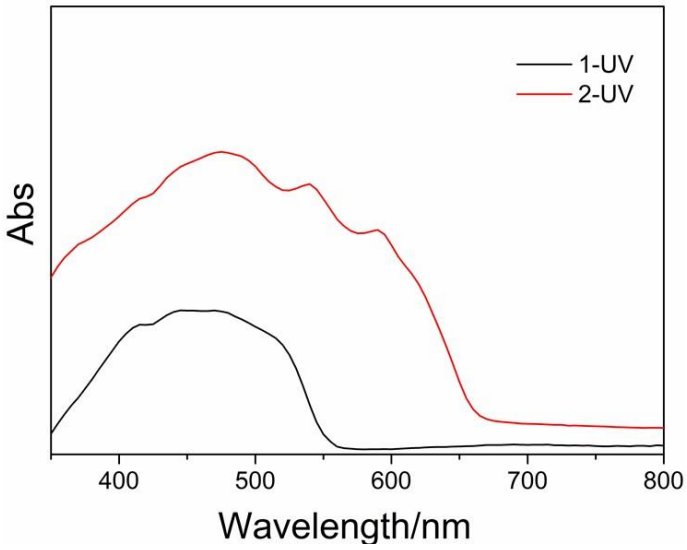
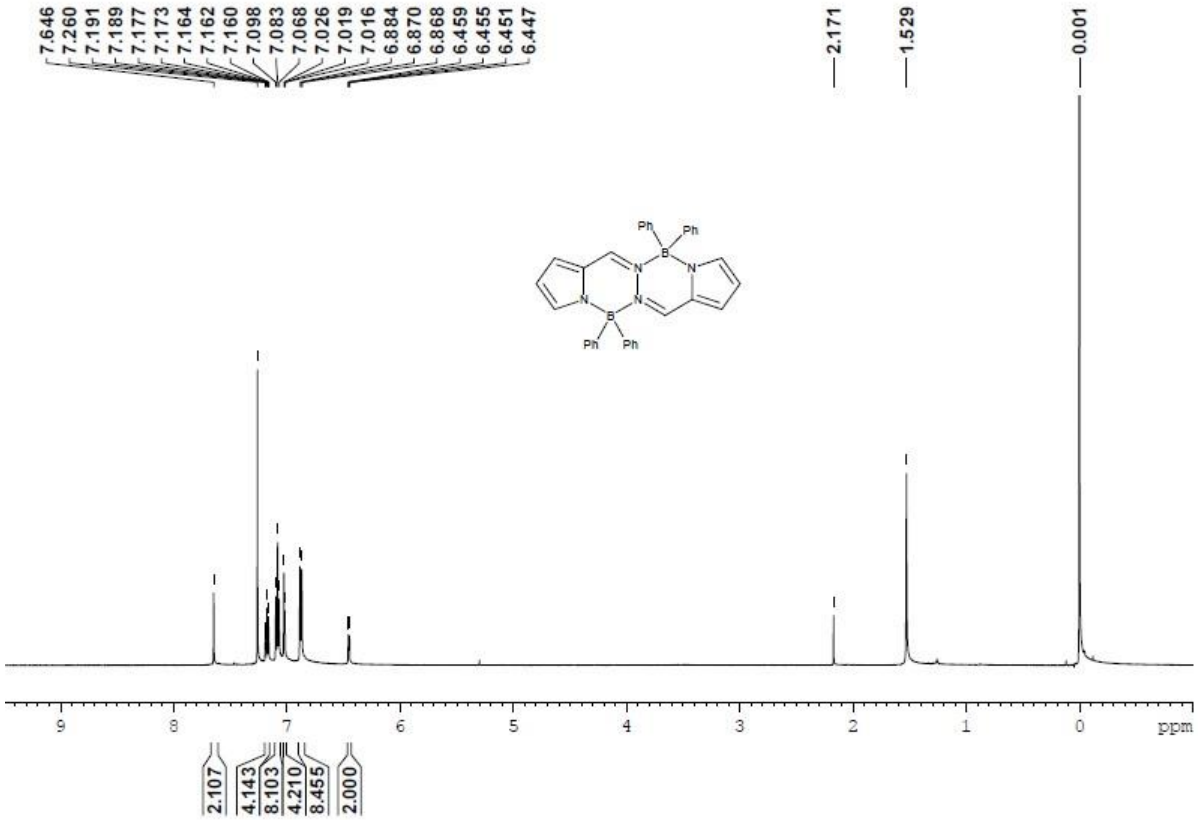
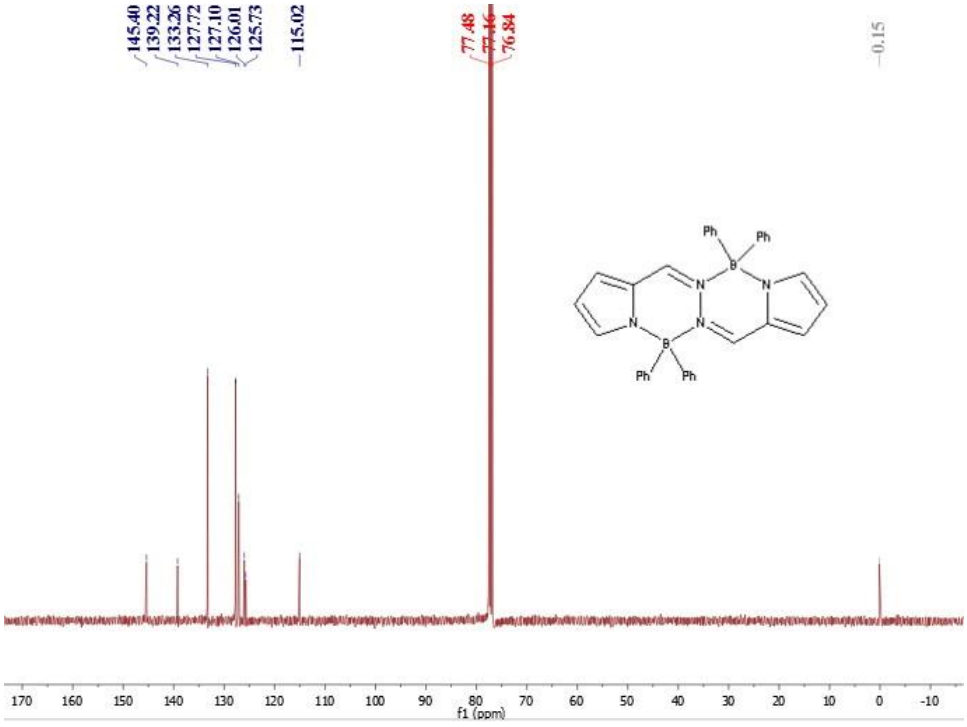
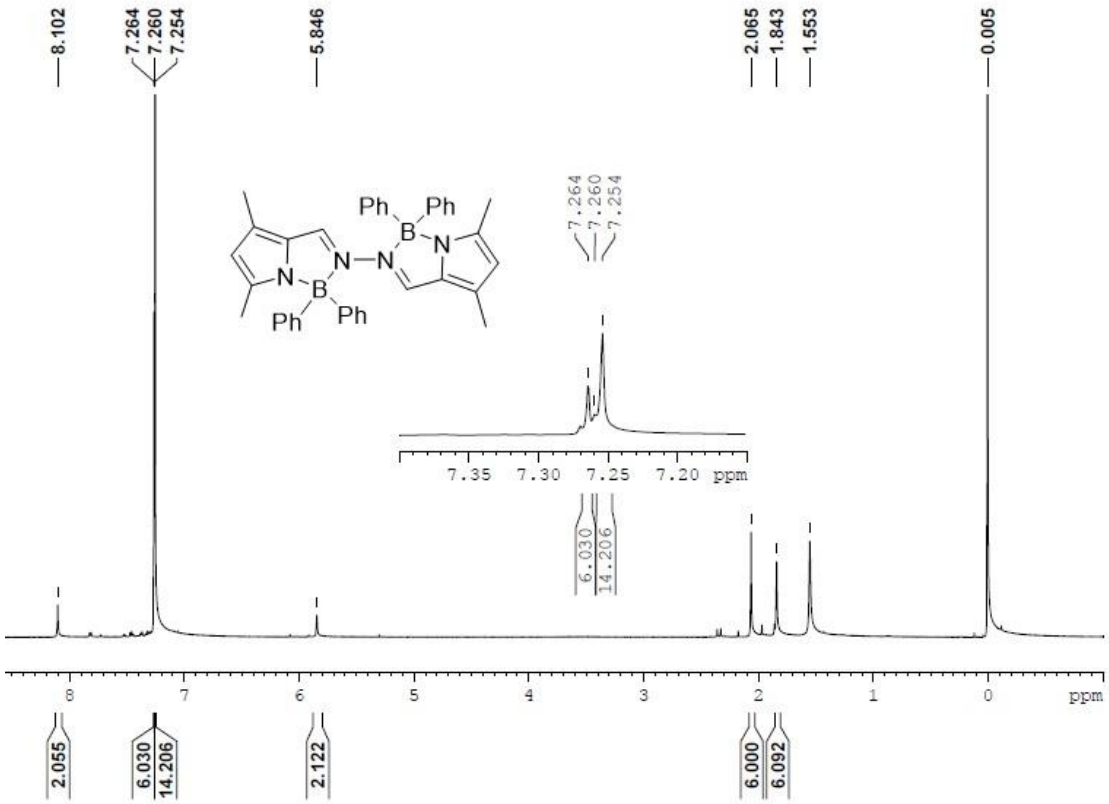


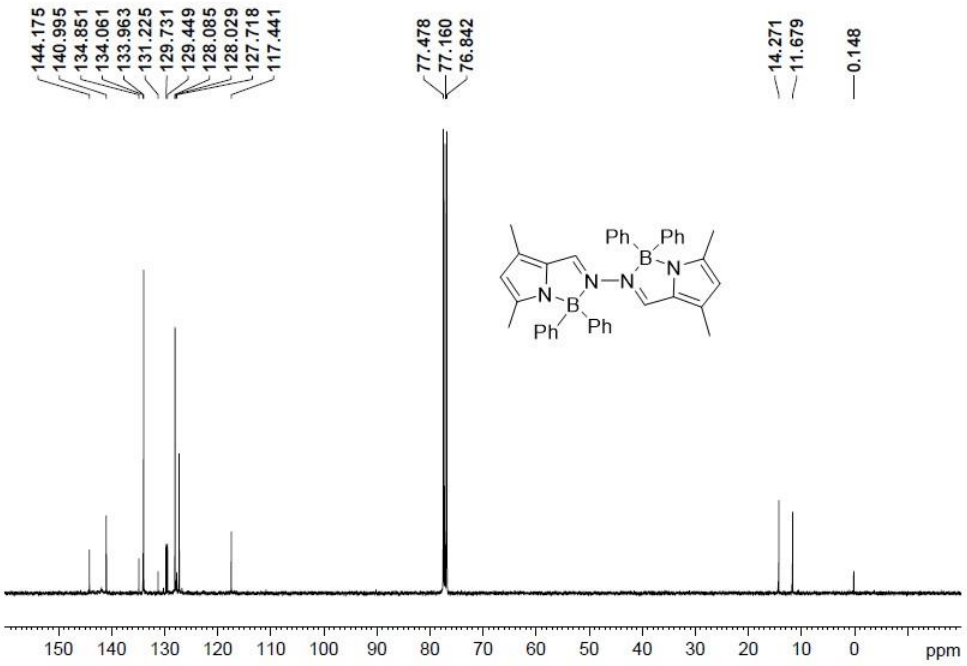
Figure S3. The UV-vis absorption spectra in solid-state for **1**, **2** at room temperature.

^{1}H and ^{13}C NMR of **1**, **2**






8.102
7.264
7.260
7.254
5.846
2.065
1.843
1.553
0.005
Ph
Ph
B
N
N
N
B
Ph
Ph
7.264
7.260
7.254
7.35 7.30 7.25 7.20 ppm
6.030
14.206
8 7 6 5 4 3 2 1 0 ppm
2.055
6.030
14.206
2.122
6.000
6.092


144.175
140.995
134.851
134.061
133.963
131.225
129.731
129.449
128.085
128.029
127.718
117.441
77.478
77.160
76.842
14.271
11.679
0.148
Ph
Ph
B
N
N
N
B
Ph
Ph
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm