Electronic Supplementary Information

Highly efficient triazine/carbazole-based host material for green phosphorescent organic light-emitting diodes with low efficiency roll-off

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1. ^{1}H, ^{13}C NMR and HRMS

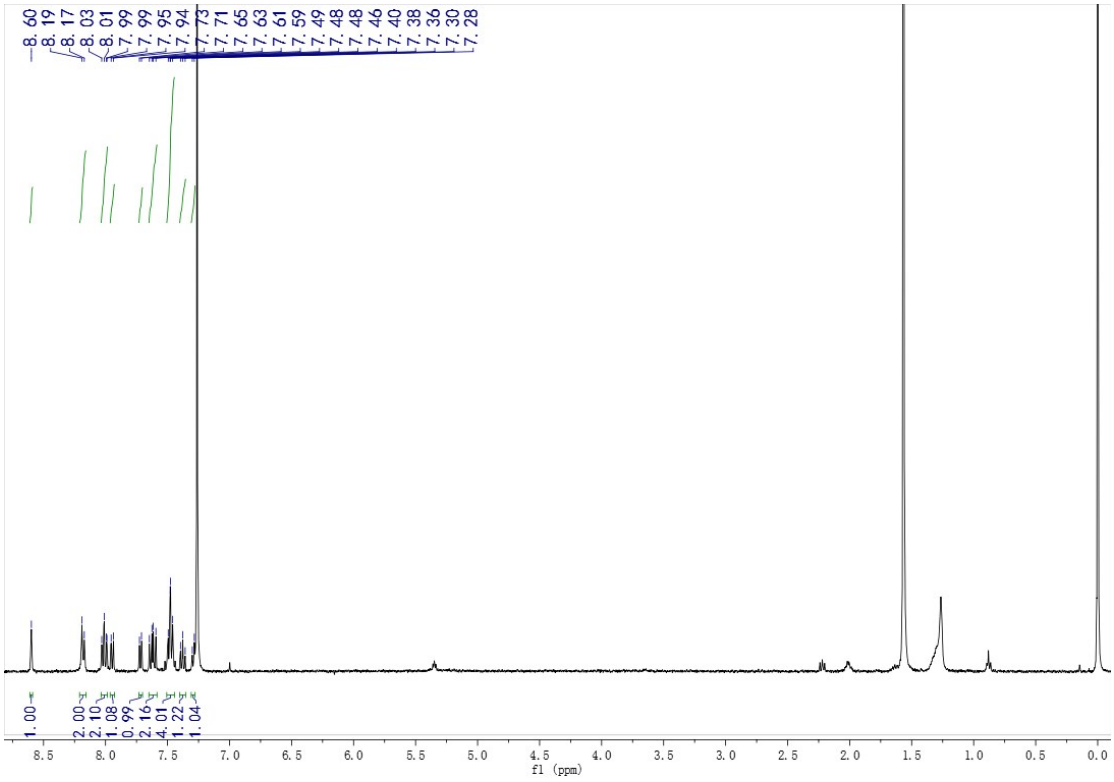


Fig. S1 ^{1}H NMR of (3)

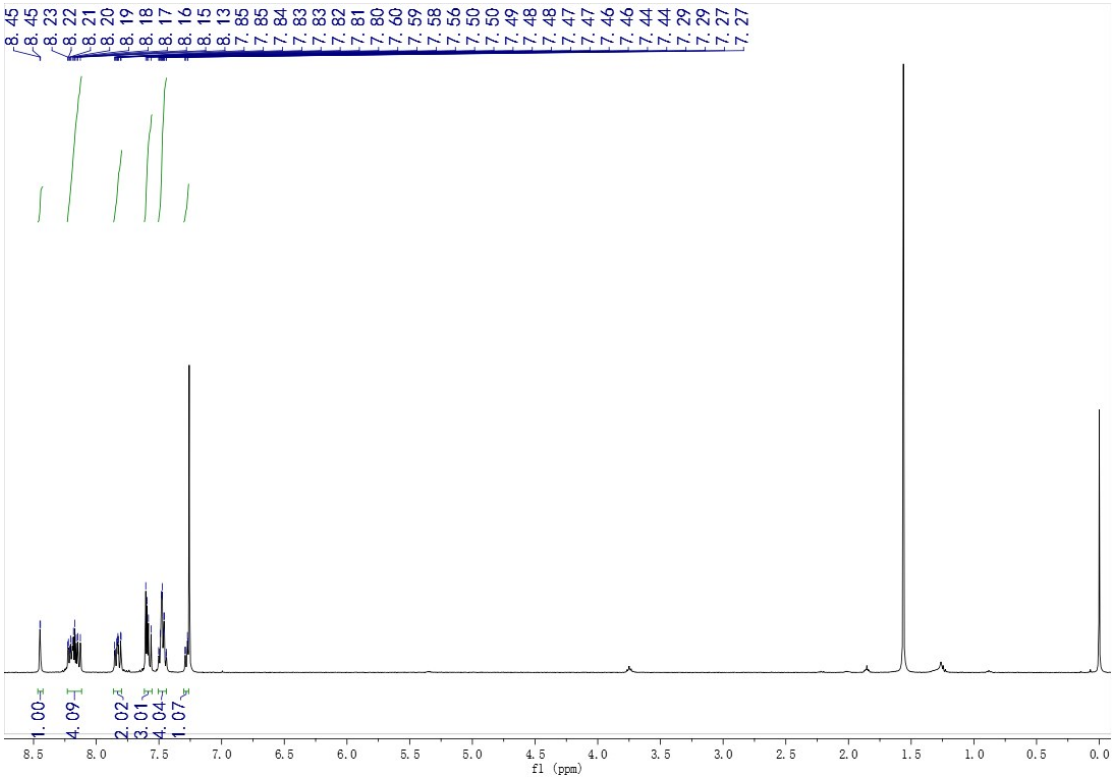


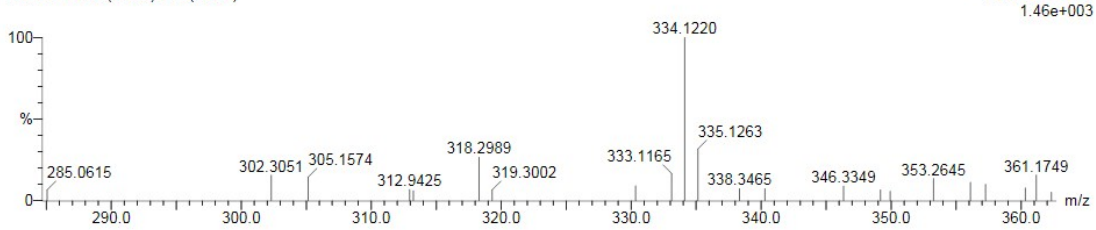
Fig. S2 ^{1}H NMR of (5)

Elemental Composition Report **Page 1**

Single Mass Analysis
Tolerance = 500.0 PPM / DBE: min = -1.5, max = 100.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions
1 formula(e) evaluated with 1 results within limits (up to 1 best isotopic matches for each mass)
Elements Used:
C: 0-24 H: 0-20 N: 0-1 O: 0-1

H-TIAN ECUST institute of Fine Chem 01-Dec-2016 23:29:32
TH-HMM-1 26 (0.890) Cm (25:27) 1: TOF MS ES+ 1.46e+003



Minimum:				-1.5			
Maximum:		300.0	500.0	100.0			
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	i-FIT (Norm)	Formula
334.1220	334.1232	-1.2	-3.6	17.5	20.3	0.0	C24 H16 N O

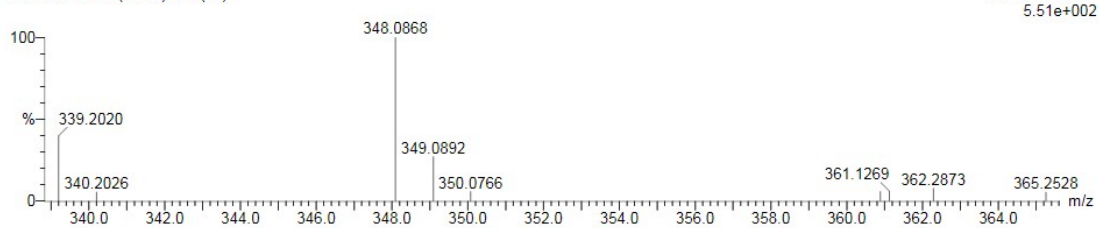
Fig. S3 Mass spectrometry of (3)

Elemental Composition Report **Page 1**

Single Mass Analysis
Tolerance = 500.0 PPM / DBE: min = -1.5, max = 100.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions
1 formula(e) evaluated with 1 results within limits (up to 1 best isotopic matches for each mass)
Elements Used:
C: 0-24 H: 0-14 N: 0-1 S: 0-1

H-TIAN ECUST institute of Fine Chem 29-Nov-2016 15:54:19
TH-HMM-88 47 (1.105) Cm (47) 1: TOF MS ES- 5.51e+002



Minimum:				-1.5			
Maximum:		300.0	500.0	100.0			
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	i-FIT (Norm)	Formula
348.0868	348.0847	2.1	6.0	18.5	9.9	0.0	C24 H14 N S

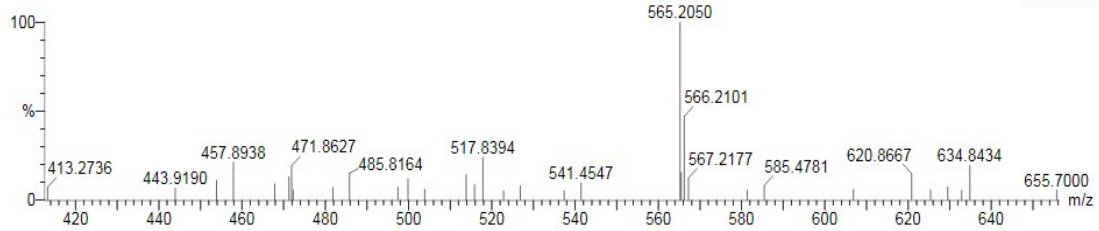
Fig. S4 Mass spectrometry of (5)

Elemental Composition Report **Page 1**

Single Mass Analysis
Tolerance = 50.0 PPM / DBE: min = -1.5, max = 100.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions
24 formula(e) evaluated with 2 results within limits (up to 1 closest results for each mass)
Elements Used:
C: 0-44 H: 0-33 N: 0-4 O: 0-1

H-TIAN ECUST institute of Fine Chem 26-Sep-2016 20:24:27
TH-HMM-15 169 (1.129) Cm (164:169) 1: TOF MS ES+ 1.45e+003



Minimum:				-1.5			
Maximum:		300.0	50.0	100.0			
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	i-FIT (Norm)	Formula
565.2050	565.2028	2.2	3.9	29.5	20.7	0.0	C39 H25 N4 O

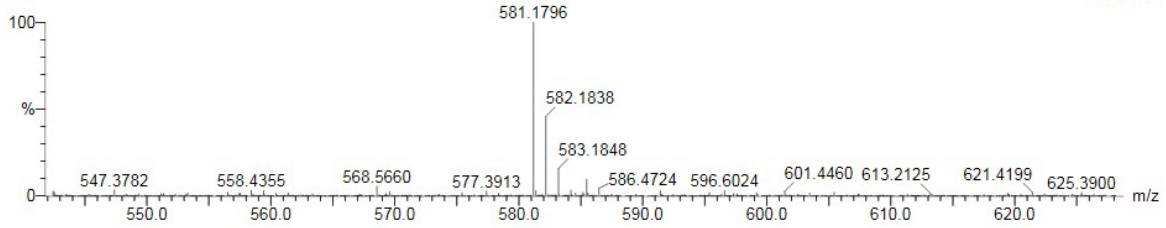
Fig. S5 Mass spectrometry of BFTC

Elemental Composition Report **Page 1**

Single Mass Analysis
Tolerance = 500.0 PPM / DBE: min = -1.5, max = 100.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions
13 formula(e) evaluated with 6 results within limits (up to 1 best isotopic matches for each mass)
Elements Used:
C: 0-39 H: 0-68 N: 0-4 S: 0-1

H-TIAN ECUST institute of Fine Chem 19-Nov-2016 17:14:17
TH-HMM-1 46 (0.666) Cm (45:49) 1: TOF MS ES+ 1.07e+004



Minimum:				-1.5			
Maximum:		300.0	500.0	100.0			
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	i-FIT (Norm)	Formula
581.1796	581.1800	-0.4	-0.7	29.5	190.8	0.0	C39 H25 N4 S

Fig. S6 Mass spectrometry of BTTC

2. EL spectra of four materials under different driving voltages

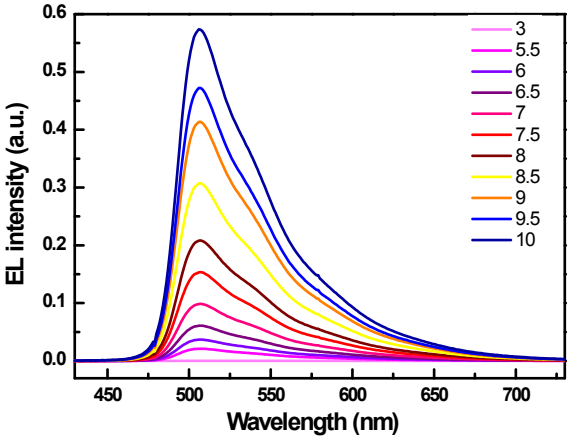


Fig. S7 EL spectra of BFTC under different driving voltages

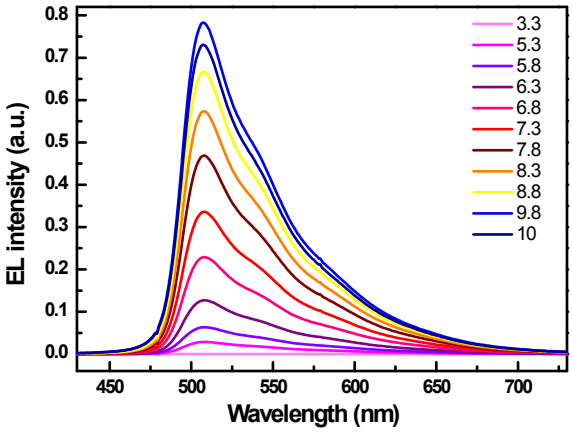


Fig. S8 EL spectra of BTTC under different driving voltages