Electronic Supplementary Information

Efficient blue fluorescent organic light-emittingdiodes based on novel 9,10-diphenyl-anthracene derivatives

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1. ^{1}H, ^{13}C NMR, and HRMS and for all five materials

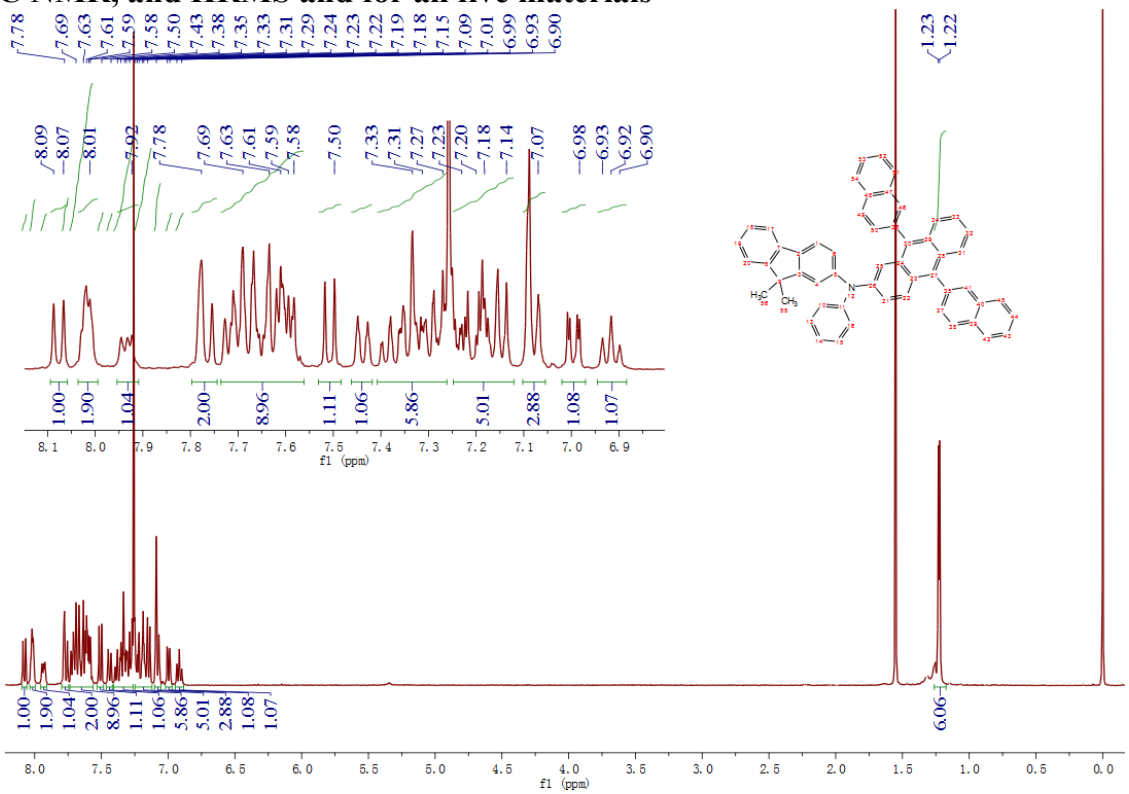


Fig. S1 ^{1}H NMR of FAADN

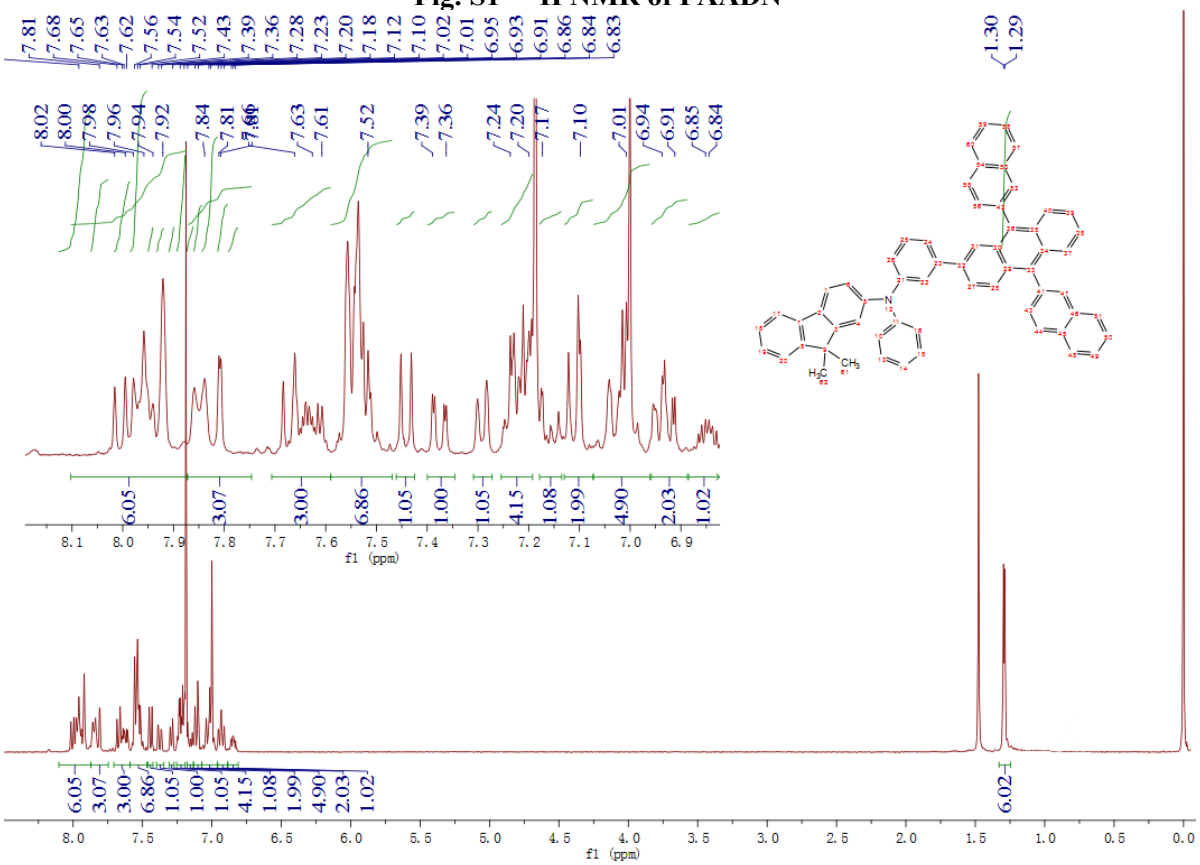


Fig. S2 ^{1}H NMR of FA3PADN

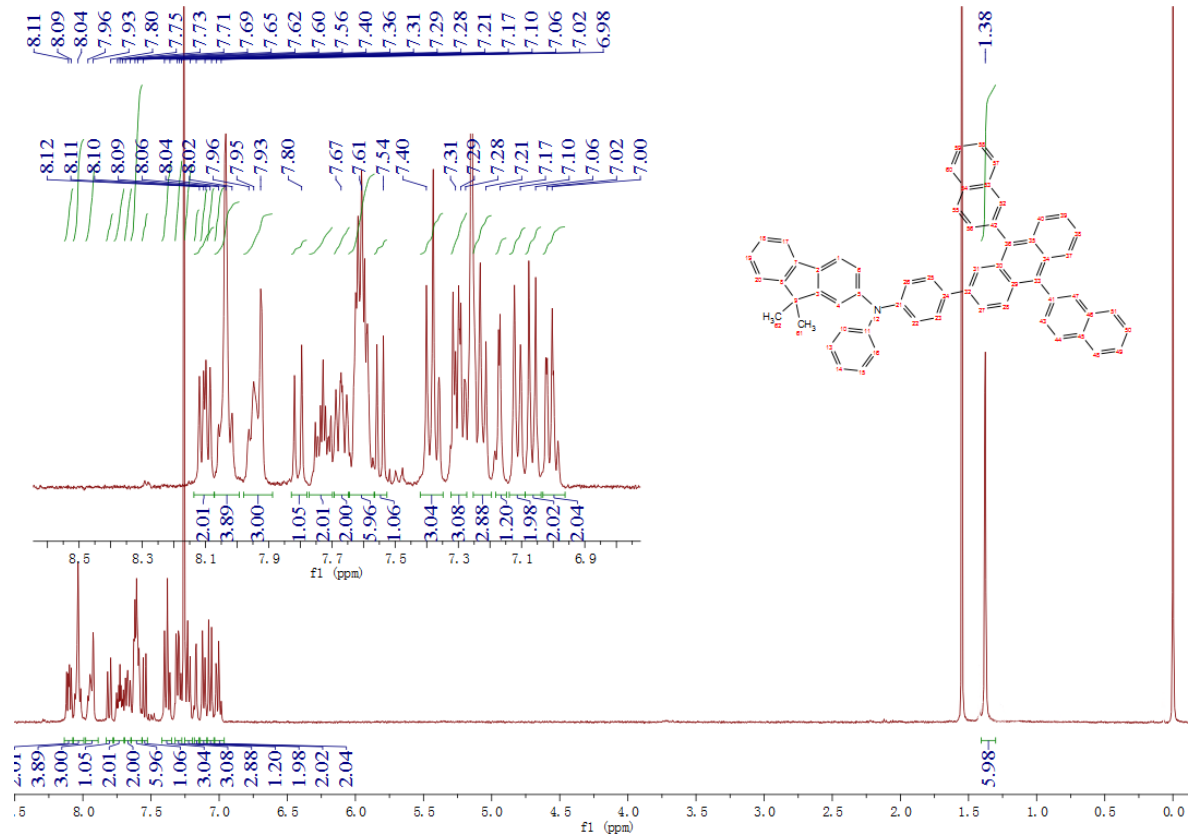


Fig. S3 ^{1}H NMR of FA4PADN

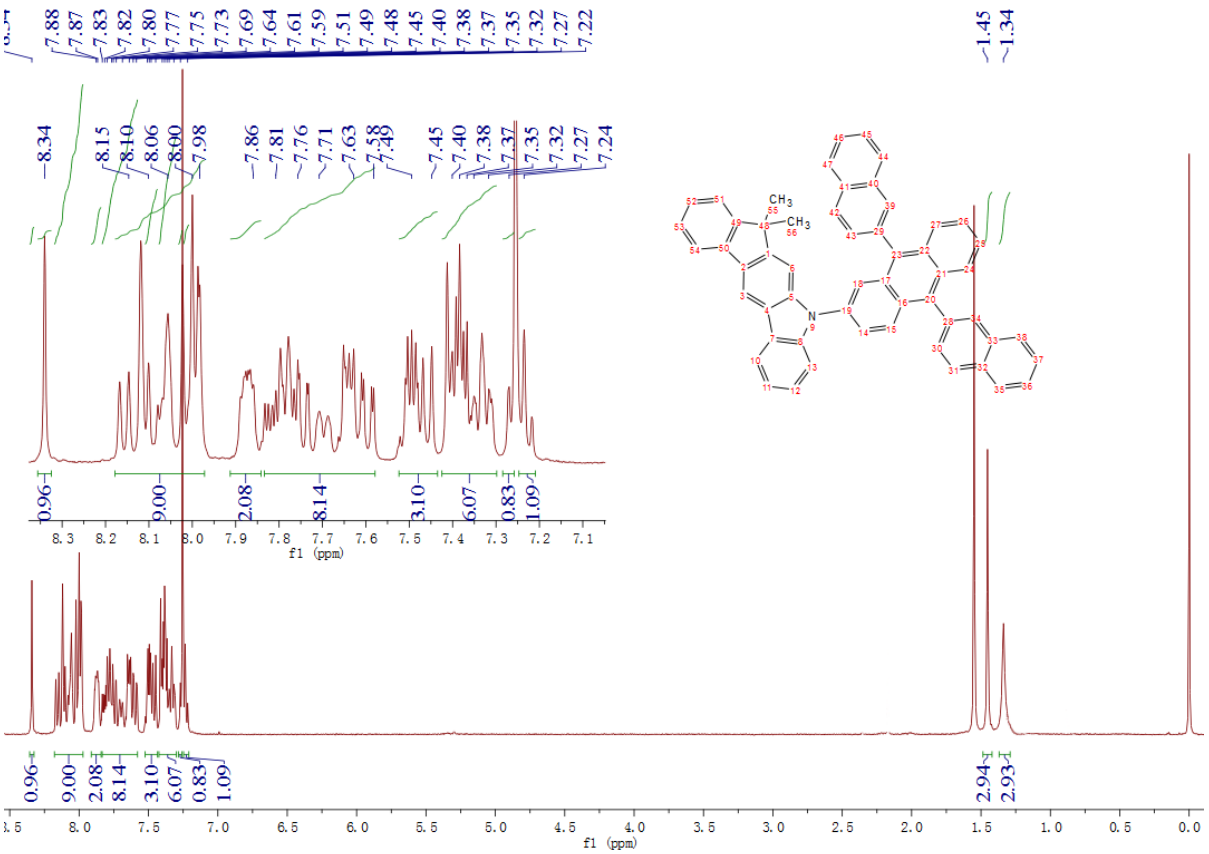


Fig. S4 ^{1}H NMR of OCADN

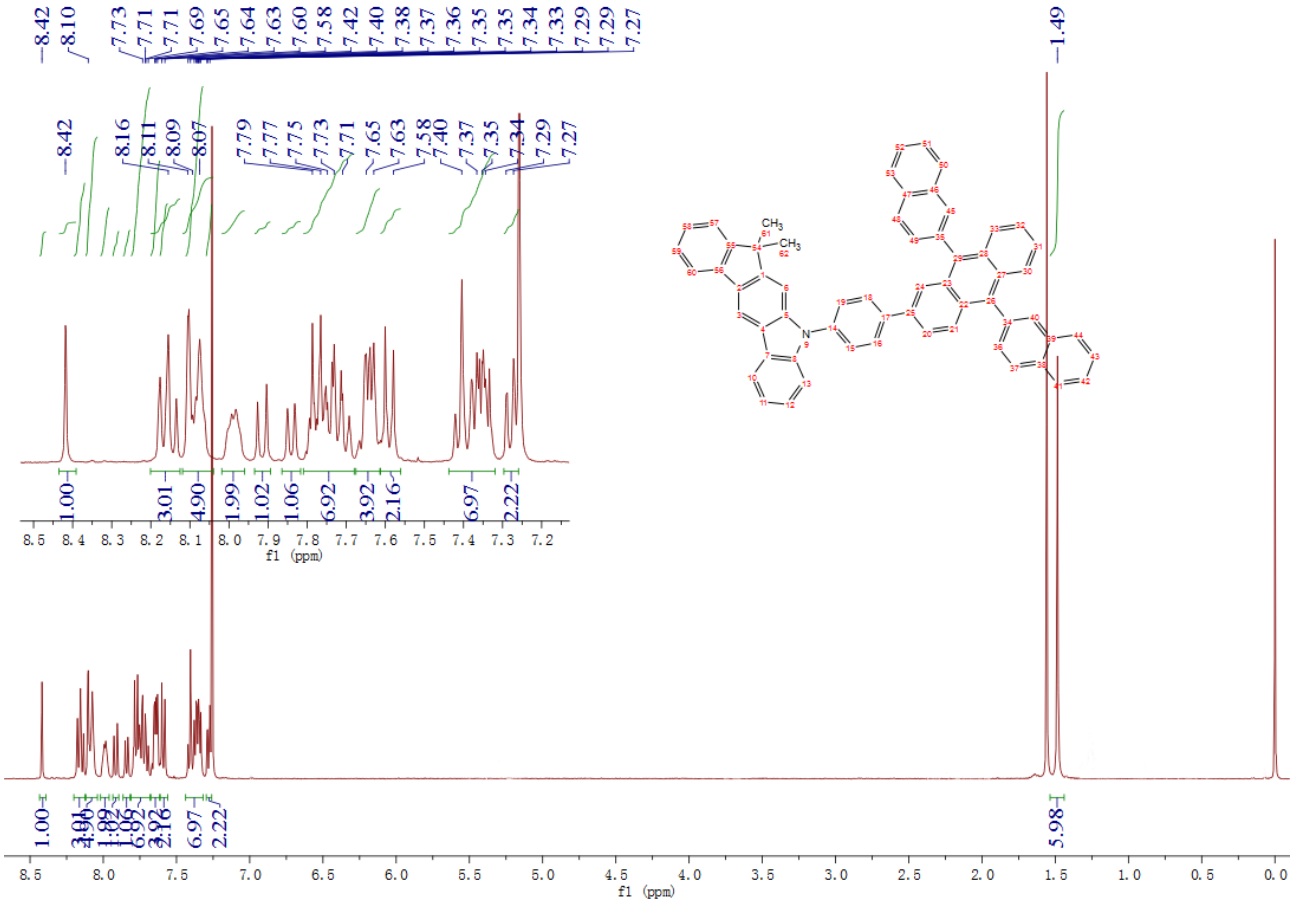


Fig. S5 ^{1}H NMR of OC4PADN

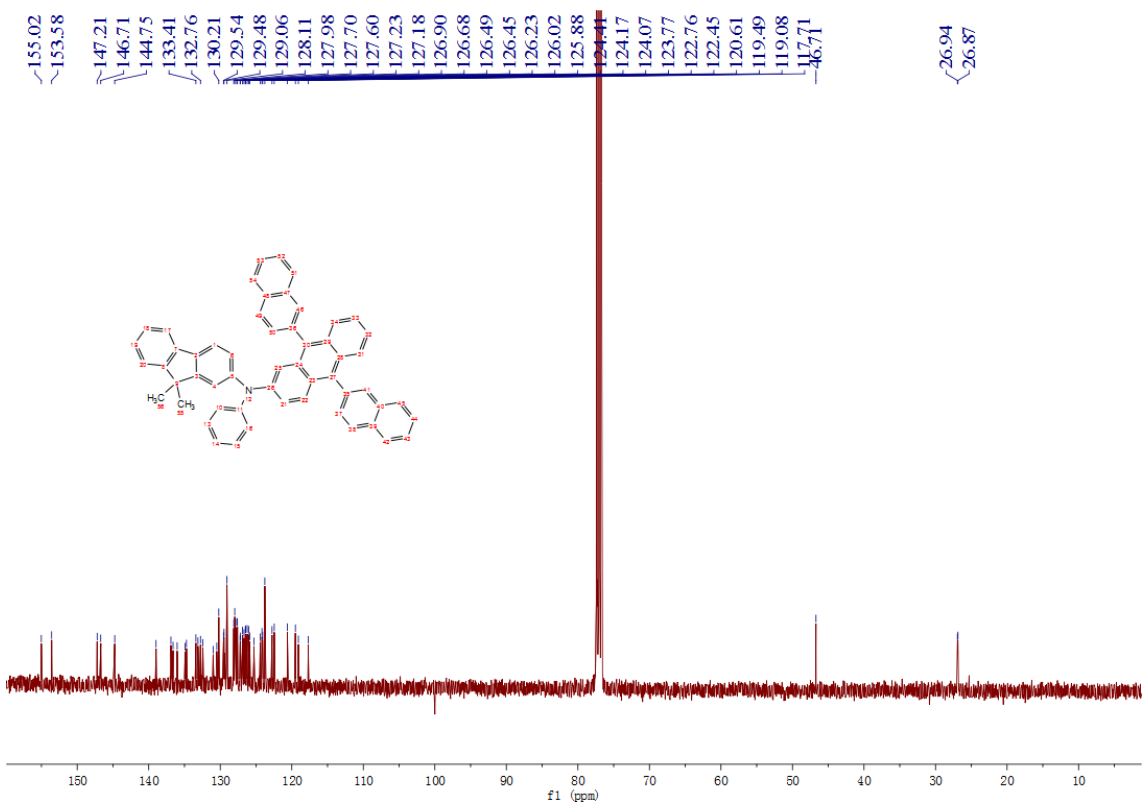


Fig. S6 ^{13}C NMR of FA3PADN

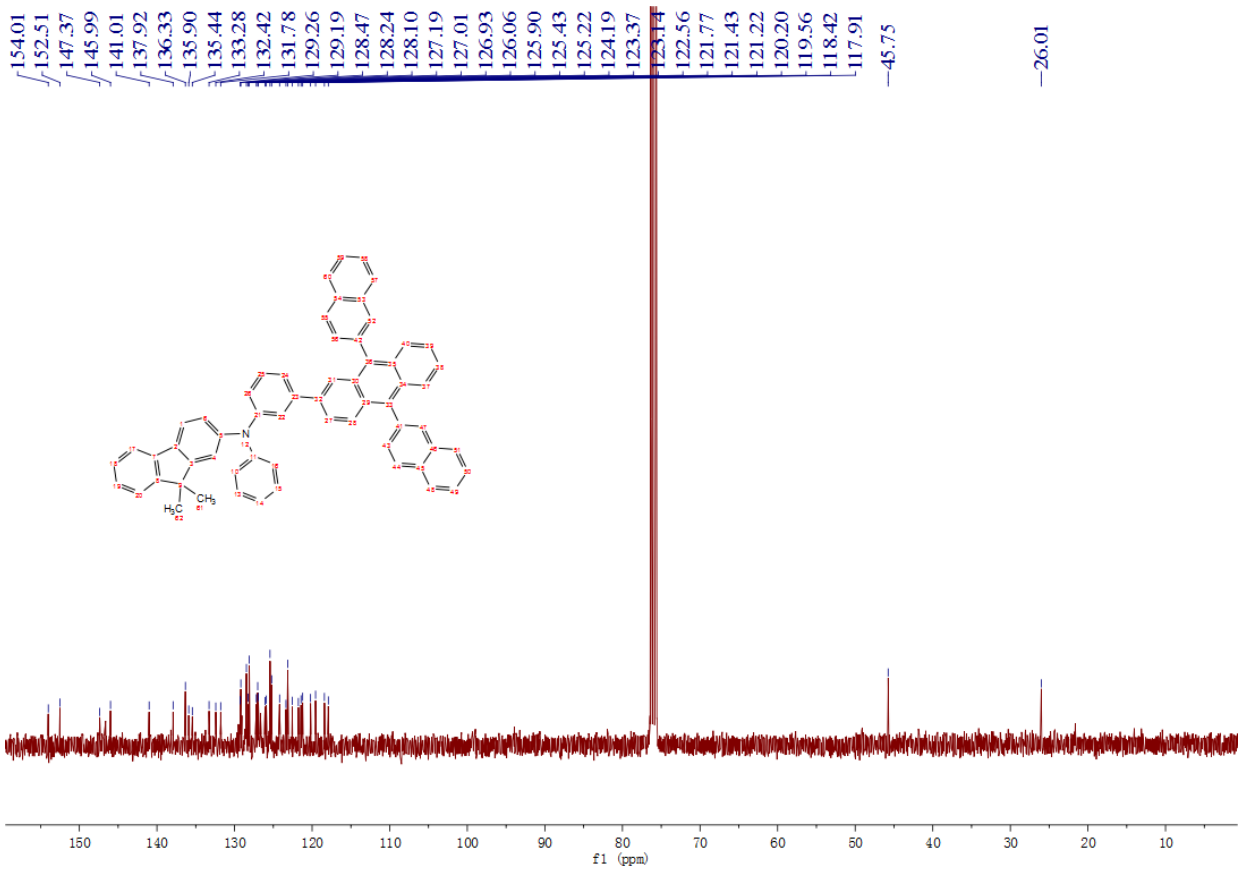


Fig. S7 ^{13}C NMR of FAADN

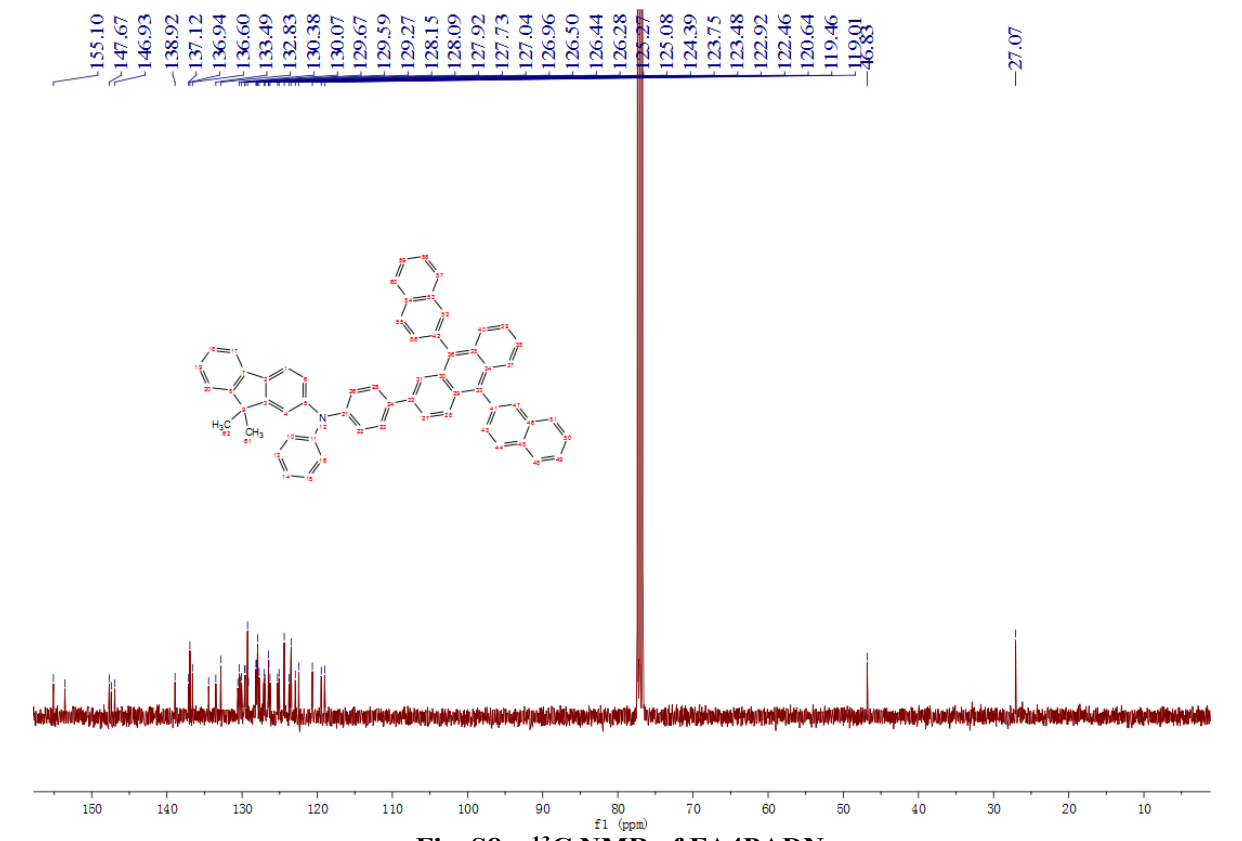


Fig. S8 ^{13}C NMR of FA4PADN

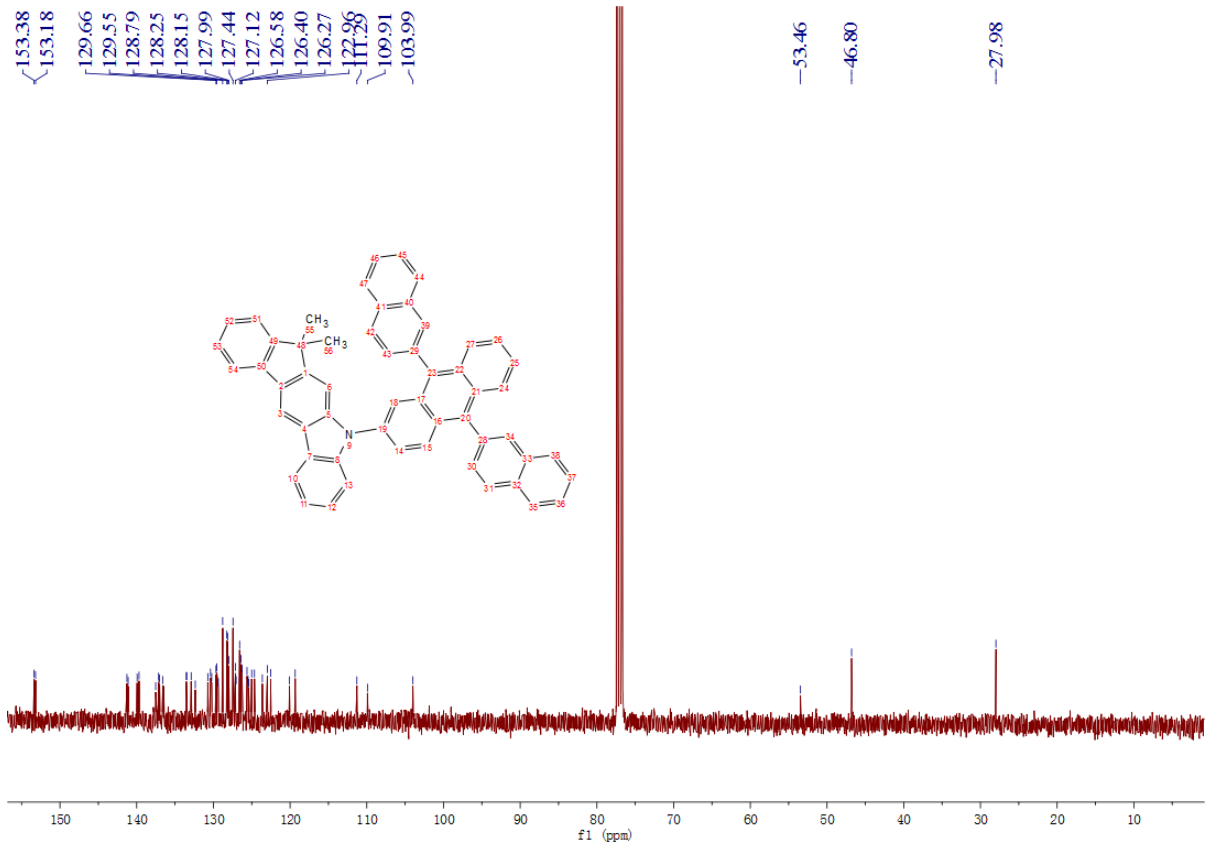


Fig. S9 ^{13}C NMR of OCADN

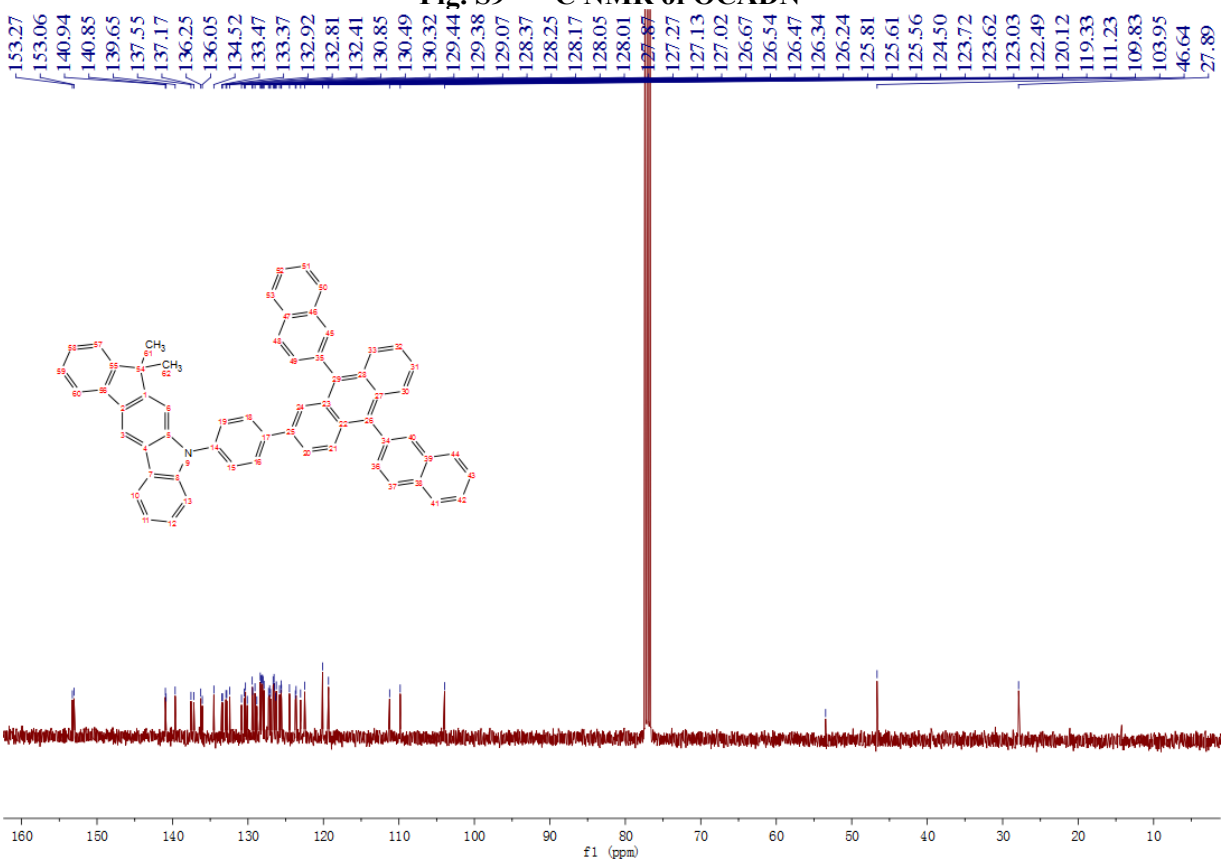


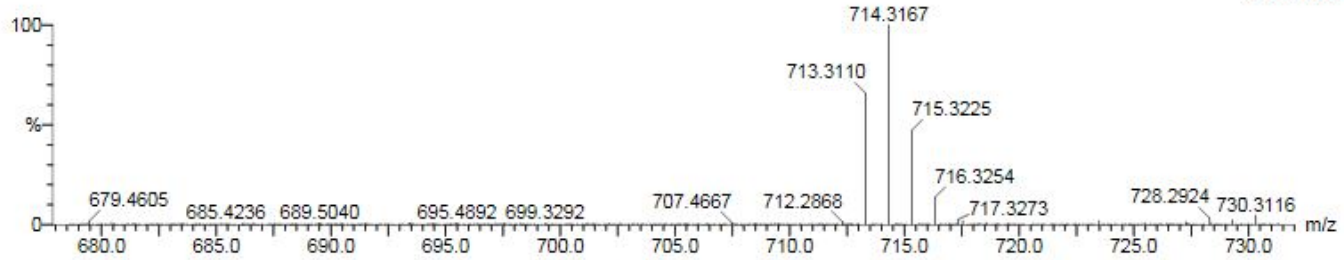
Fig. S10 ^{13}C NMR of OC4PADN

Elemental Composition Report **Page 1**

Single Mass Analysis
Tolerance = 30.0 mDa / DBE: min = -1.5, max = 100.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 2

Monoisotopic Mass, Even Electron Ions
45 formula(e) evaluated with 2 results within limits (up to 1 best isotopic matches for each mass)
Elements Used:
C: 0-61 H: 0-105 N: 0-4

TIAN-H ECUST institute of Fine Chem 23-Jan-2015 18:00:03
TH-CHW-004 8 (0.323) Cm (7:10) 1: TOF MS ES+ 3.06e+003



Minimum:				-1.5			
Maximum:		30.0	50.0	100.0			
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	i-FIT (Norm)	Formula
714.3167	714.3161	0.6	0.8	36.5	51.4	0.0	C55 H40 N

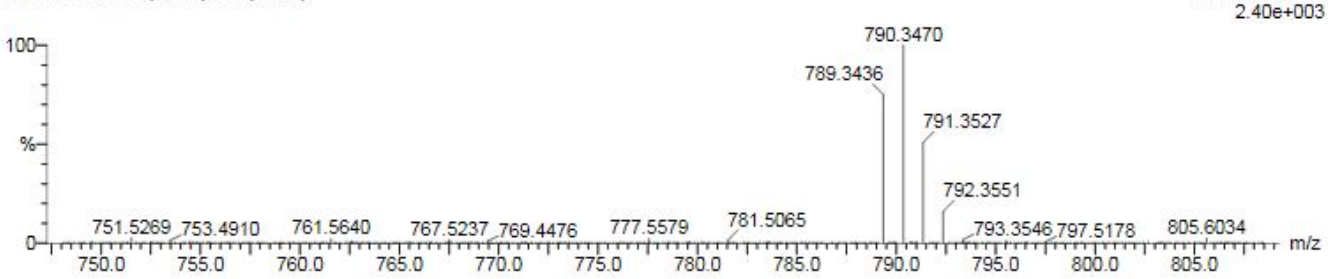
Fig. S11 Mass spectrometry of FAADN

Elemental Composition Report **Page 1**

Single Mass Analysis
Tolerance = 30.0 mDa / DBE: min = -1.5, max = 100.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 2

Monoisotopic Mass, Even Electron Ions
34 formula(e) evaluated with 2 results within limits (up to 1 best isotopic matches for each mass)
Elements Used:
C: 0-61 H: 0-105 N: 0-4

TIAN-H ECUST institute of Fine Chem 23-Jan-2015 17:41:08
TH-CHW-001 15 (0.544) Cm (12:15) 1: TOF MS ES+ 2.40e+003



Minimum:				-1.5			
Maximum:		30.0	50.0	100.0			
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	i-FIT (Norm)	Formula
790.3470	790.3474	-0.4	-0.5	40.5	54.0	0.0	C61 H44 N

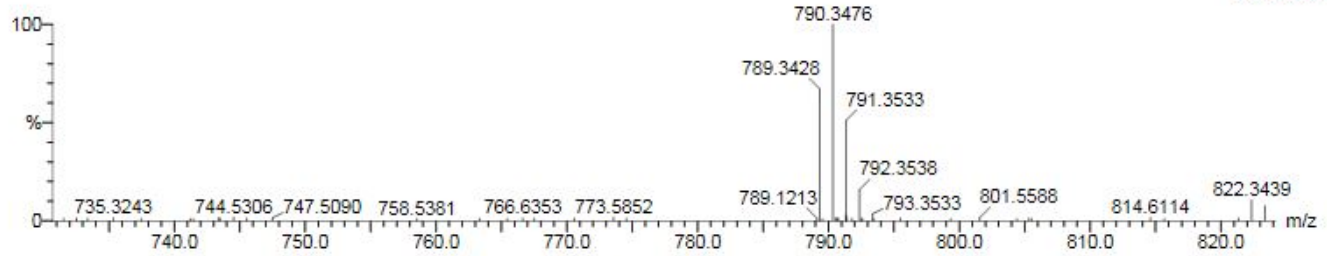
Fig. S12 Mass spectrometry of FA3PADN

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 = 2

Monoisotopic Mass, Even Electron Ions
10 formula(e) evaluated with 2 results within limits (up to 1 best isotopic matches for each mass)
Elements Used:
C: 0-61 H: 0-60 N: 0-3

TIAN-H ECUST institute of Fine Chem 10-Apr-2015 17:32:31
TH-CHW-H02 16 (0.569) Cm (13:24) 1: TOF MS ES+ 2.47e+003



Minimum:				-1.5			
Maximum:		300.0	50.0	100.0			
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	i-FIT (Norm)	Formula
790.3476	790.3474	0.2	0.3	40.5	58.0	0.0	C61 H44 N

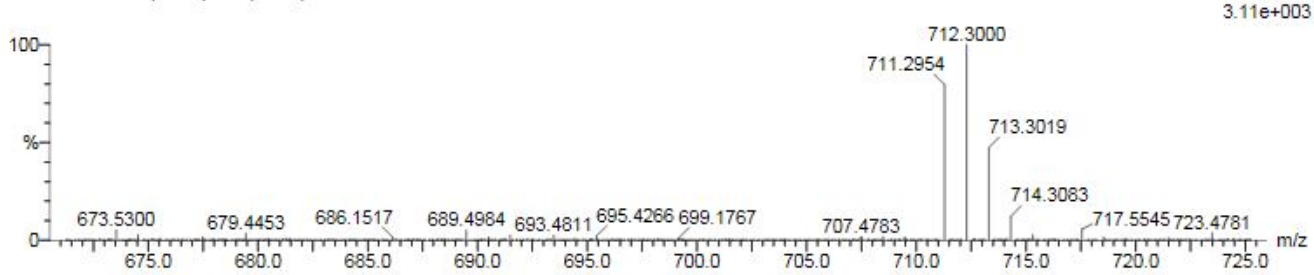
Fig. S13 Mass spectrometry of FA3PADN

Elemental Composition Report **Page 1**

Single Mass Analysis
Tolerance = 30.0 mDa / DBE: min = -1.5, max = 100.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 2

Monoisotopic Mass, Even Electron Ions
45 formula(e) evaluated with 2 results within limits (up to 1 best isotopic matches for each mass)
Elements Used:
C: 0-61 H: 0-105 N: 0-4

TIAN-H ECUST institute of Fine Chem 23-Jan-2015 17:50:29
TH-CHW-003 27 (0.913) Cm (27:33) 1: TOF MS ES+ 3.11e+003



Minimum:				-1.5			
Maximum:		30.0	50.0	100.0			
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	i-FIT (Norm)	Formula
712.3000	712.3004	-0.4	-0.6	37.5	90.6	0.0	C55 H38 N

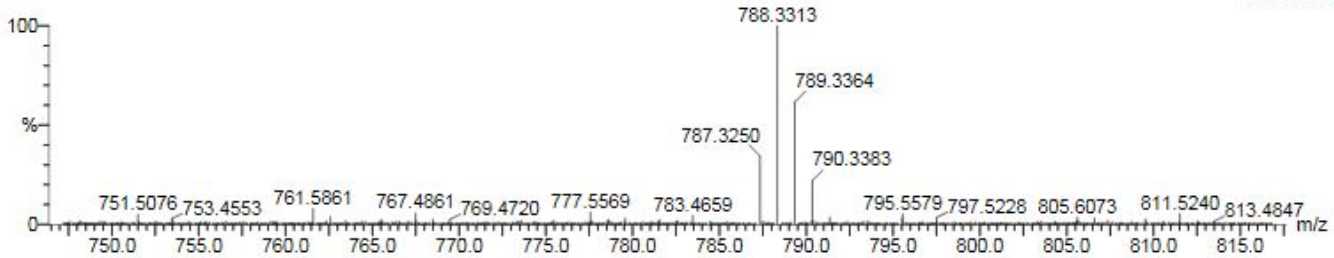
Fig. S14 Mass spectrometry of OCADN

Elemental Composition Report **Page 1**

Single Mass Analysis
Tolerance = 30.0 mDa / DBE: min = -1.5, max = 100.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 2

Monoisotopic Mass, Even Electron Ions
35 formula(e) evaluated with 2 results within limits (up to 1 best isotopic matches for each mass)
Elements Used:
C: 0-61 H: 0-105 N: 0-4

TIAN-H ECUST institute of Fine Chem 23-Jan-2015 17:55:36
TH-CHW-005 18 (0.645) Cm (12:20) 1: TOF MS ES+ 1.39e+003



Minimum:				-1.5			
Maximum:		30.0	50.0	100.0			
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	i-FIT (Norm)	Formula
788.3313	788.3317	-0.4	-0.5	41.5	71.0	0.0	C61 H42 N

Fig. S15 Mass spectrometry of OC4PADN

2. EL spectra of four materials under different driving voltages

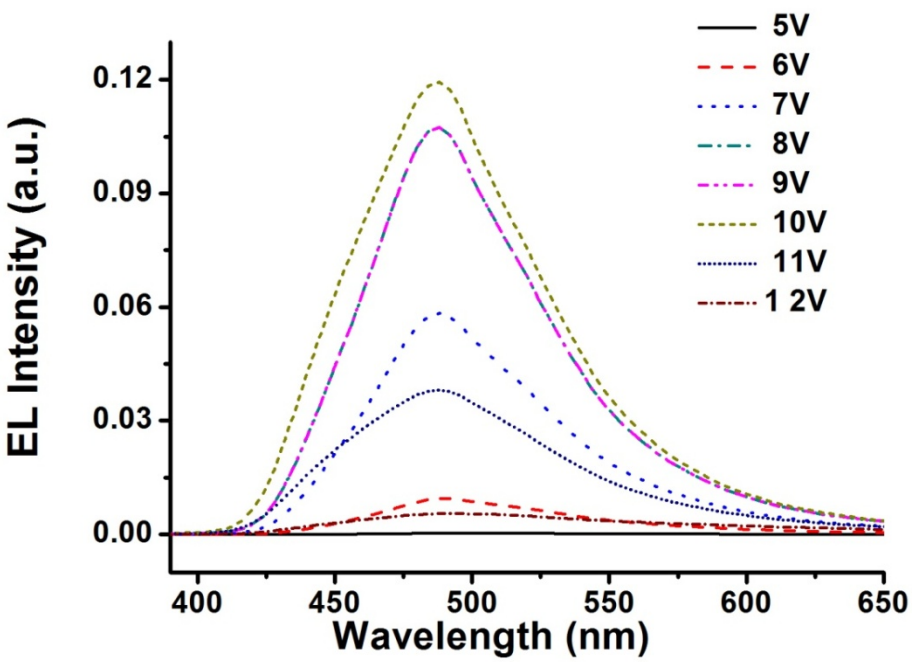


Fig. S16 EL spectra of FA3PADN under different driving voltages

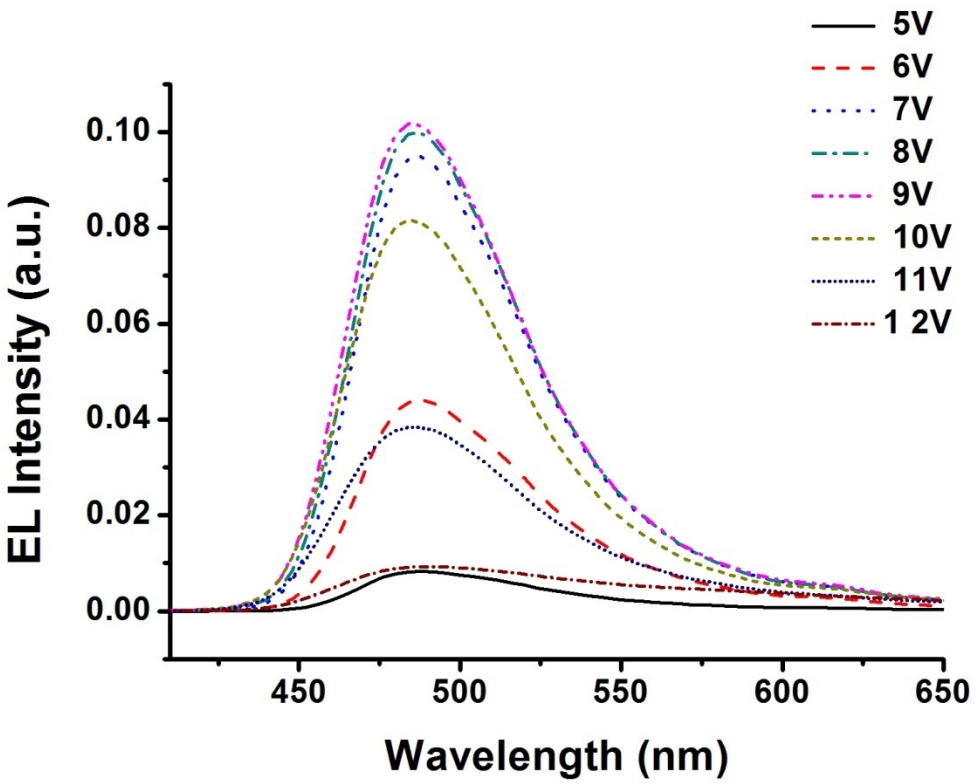


Fig. S17 EL spectra of FA4PADN under different driving voltages

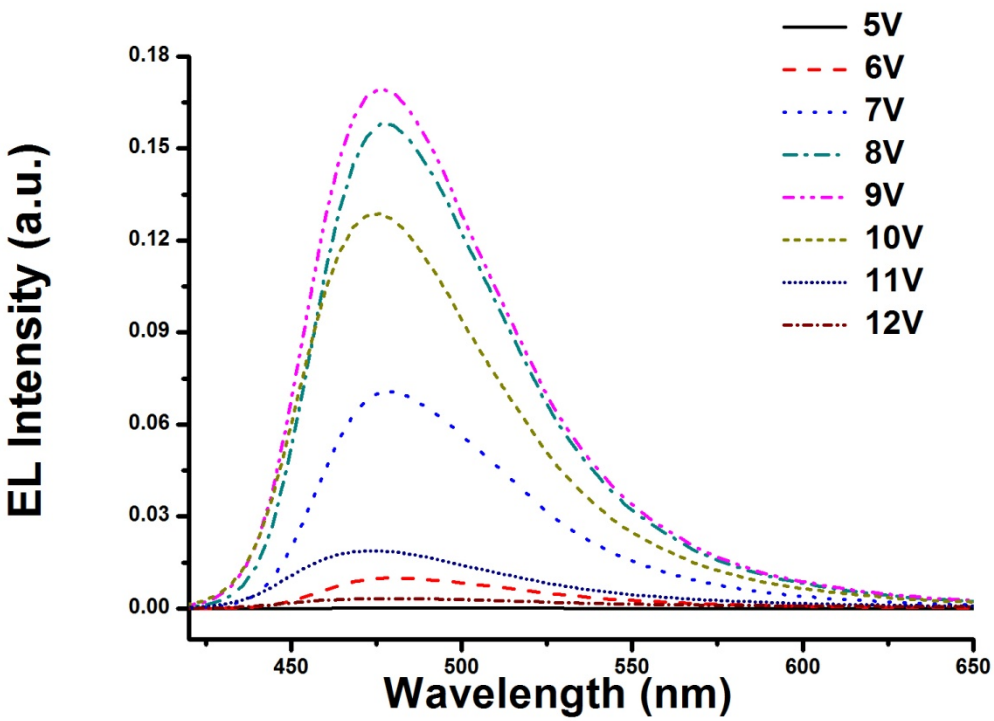


Fig. S18 EL spectra of OCADN under different driving voltages

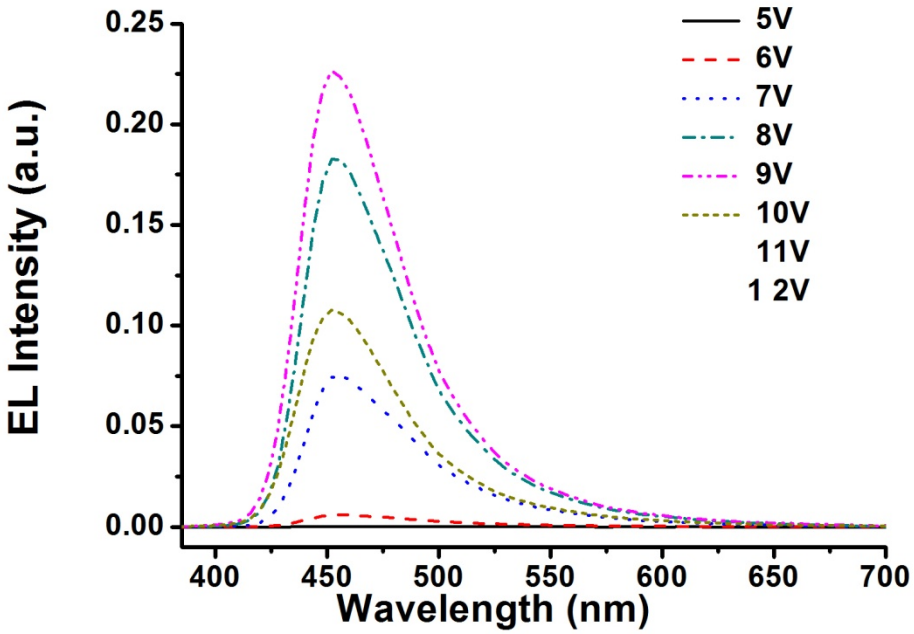


Fig. S19 EL spectra of OC4PADN under different driving voltages