Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting information

Ideal blue thermally activated delayed fluorescent emission assisted by a thermally activated delayed fluorescent assistant dopant through a fast reverse intersystem crossing mediated cascade energy transfer process

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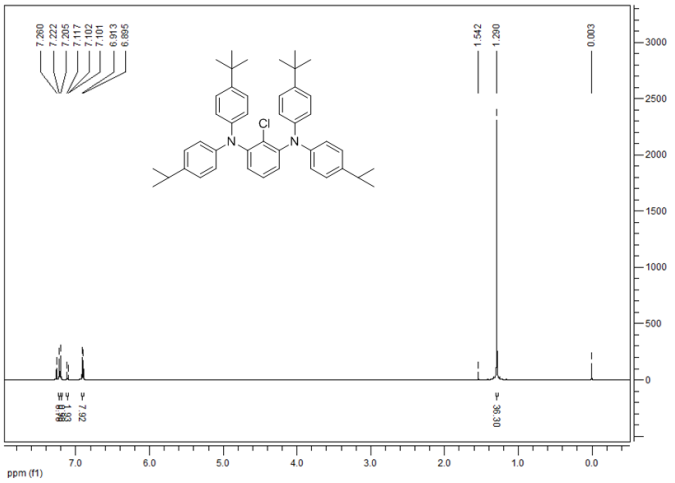
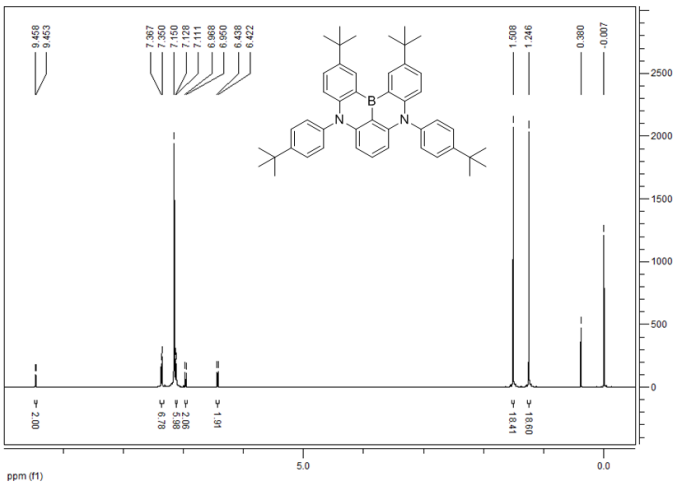
List of Figures

Figure S1.

(a)



(b)



(c)

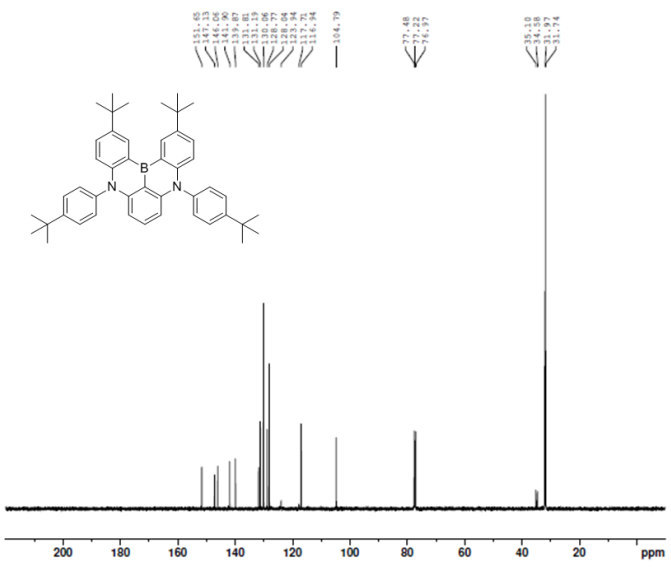


Figure S2.

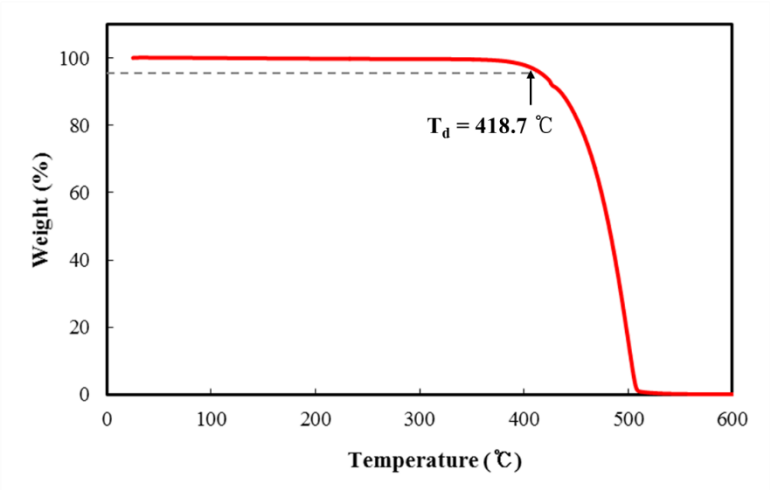

100
80
60
40
20
0
Weight (%)
T_d = 418.7 ℃
0
100
200
300
400
500
600
Temperature (℃)

Figure S3.

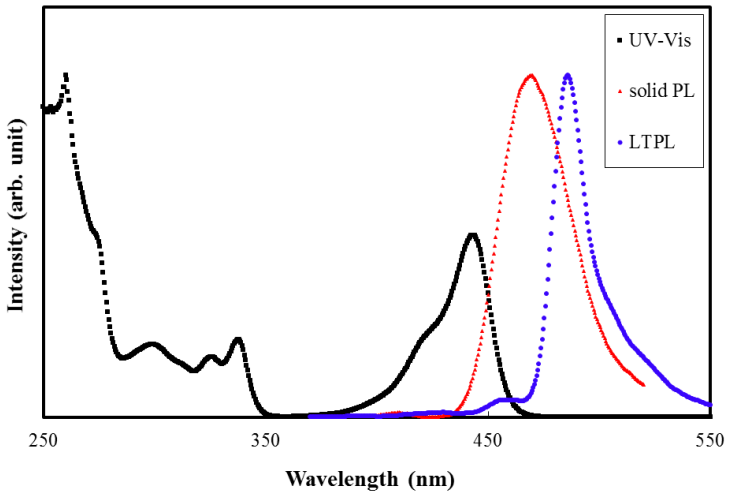

UV-Vis
solid PL
LTPL
Intensity (arb. unit)
250
350
450
550
Wavelength (nm)

Figure S4.

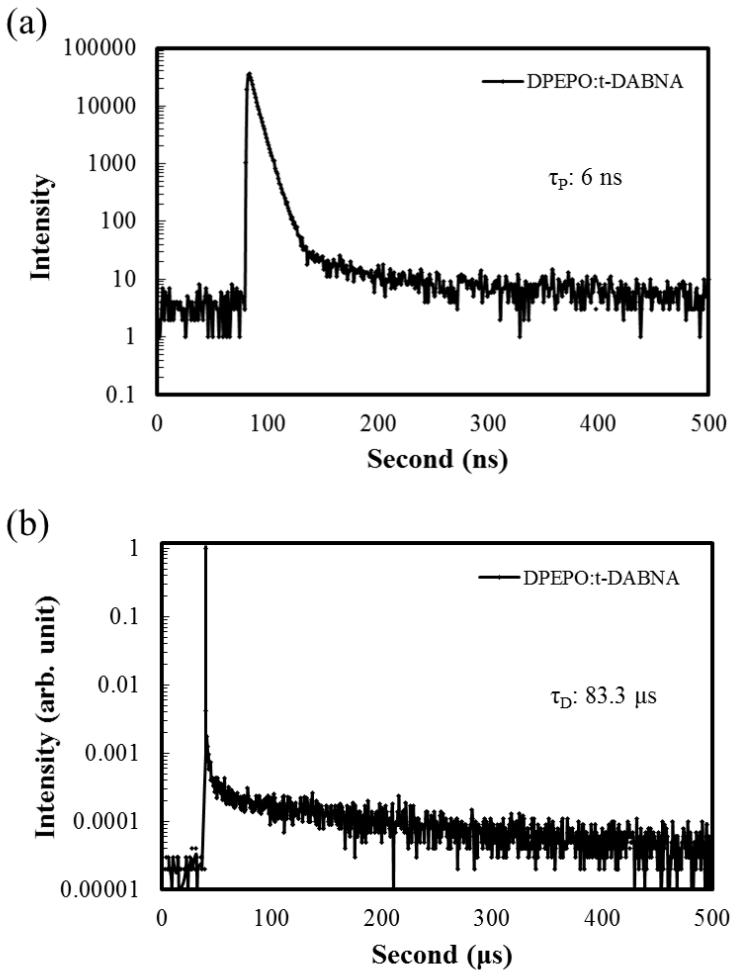

(a)
100000
10000
1000
100
10
1
0.1
Intensity
DPEPO:t-DABNA
τP: 6 ns
0
100
200
300
400
500
Second (ns)
(b)
1
0.1
0.01
0.001
0.0001
0.00001
Intensity (arb. unit)
DPEPO:t-DABNA
τD: 83.3 μs
0
100
200
300
400
500
Second (μs)

Figure S5.

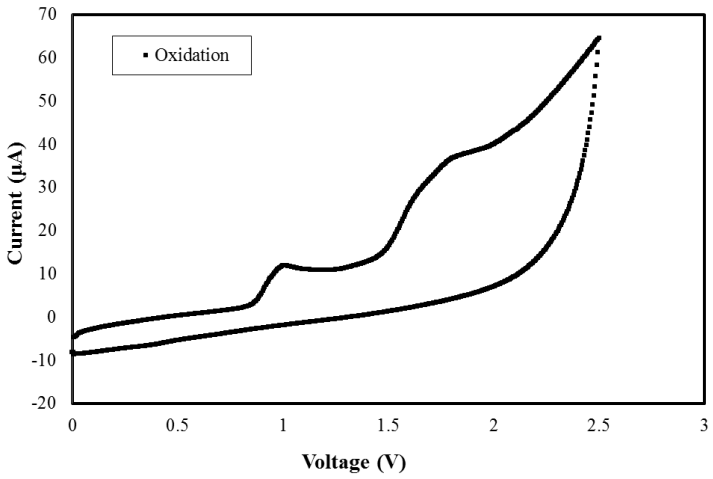

Oxidation
Current (µA)
Voltage (V)
70
60
50
40
30
20
10
0
-10
-20
0
0.5
1
1.5
2
2.5
3

Figure S6

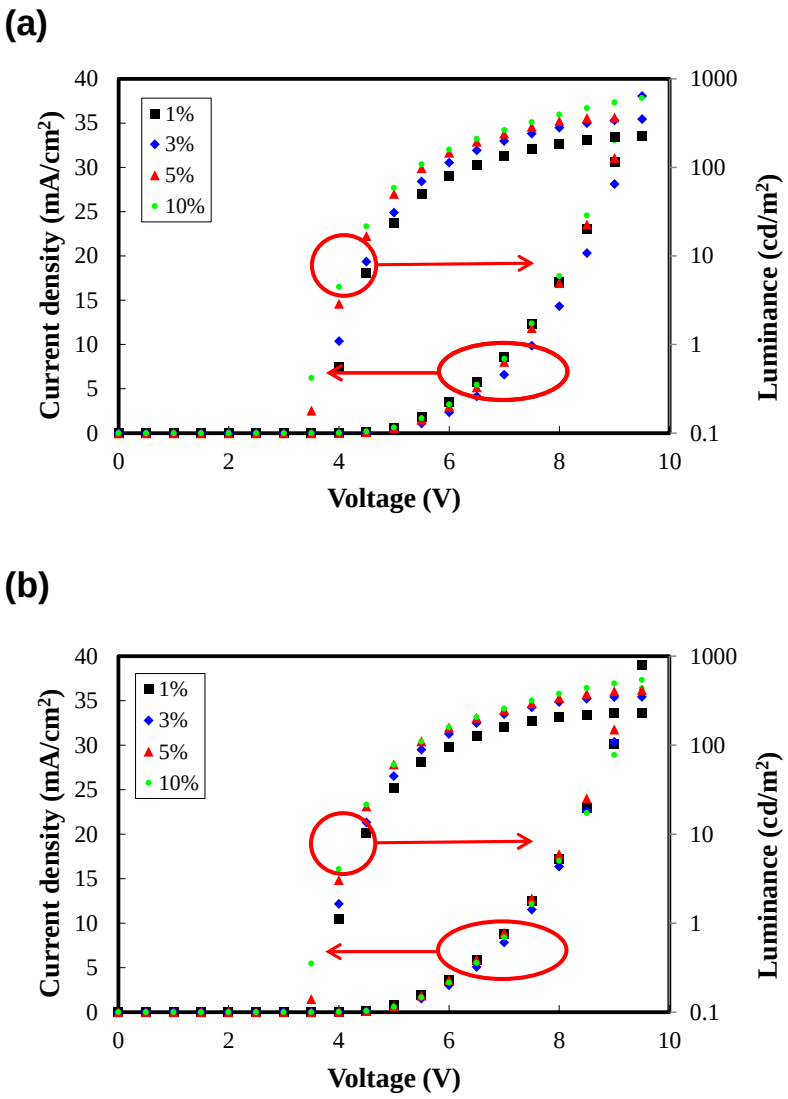

(a)
Current density (mA/cm²)
Luminance (cd/m²)
Voltage (V)
1%
3%
5%
10%
(b)
Current density (mA/cm²)
Luminance (cd/m²)
Voltage (V)
1%
3%
5%
10%

Figure S7

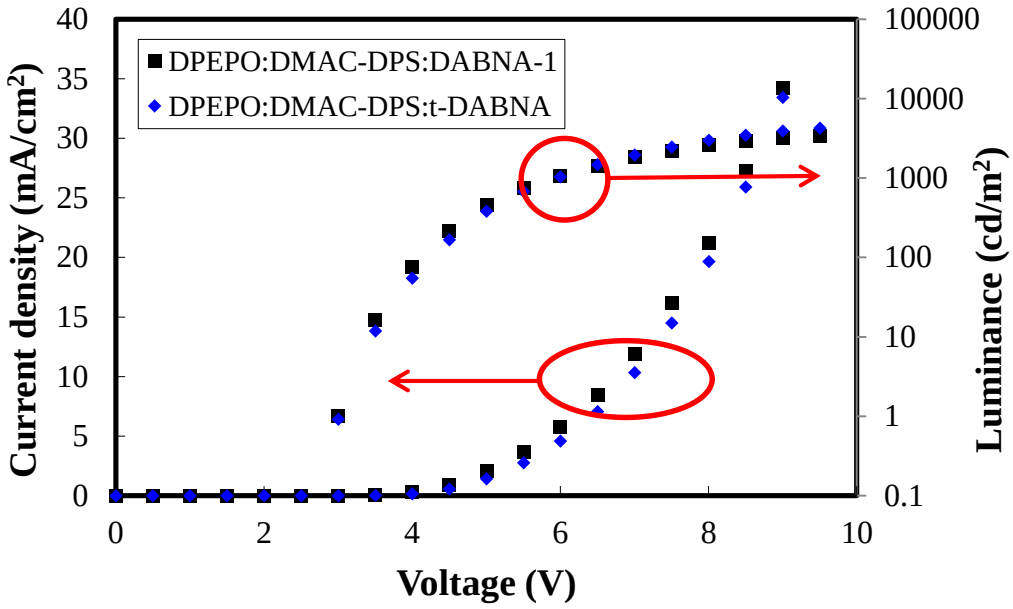

DPEPO:DMAC-DPS:DABNA-1
DPEPO:DMAC-DPS:t-DABNA
Current density (mA/cm²)
Luminance (cd/m²)
Voltage (V)
0
5
10
15
20
25
30
35
40
0.1
1
10
100
1000
10000
100000
0
2
4
6
8
10

Figure S8

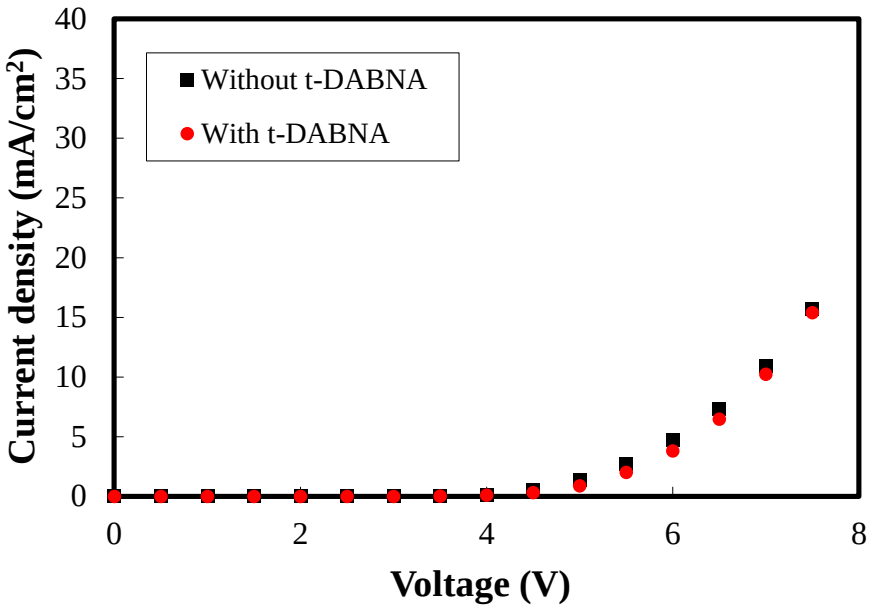
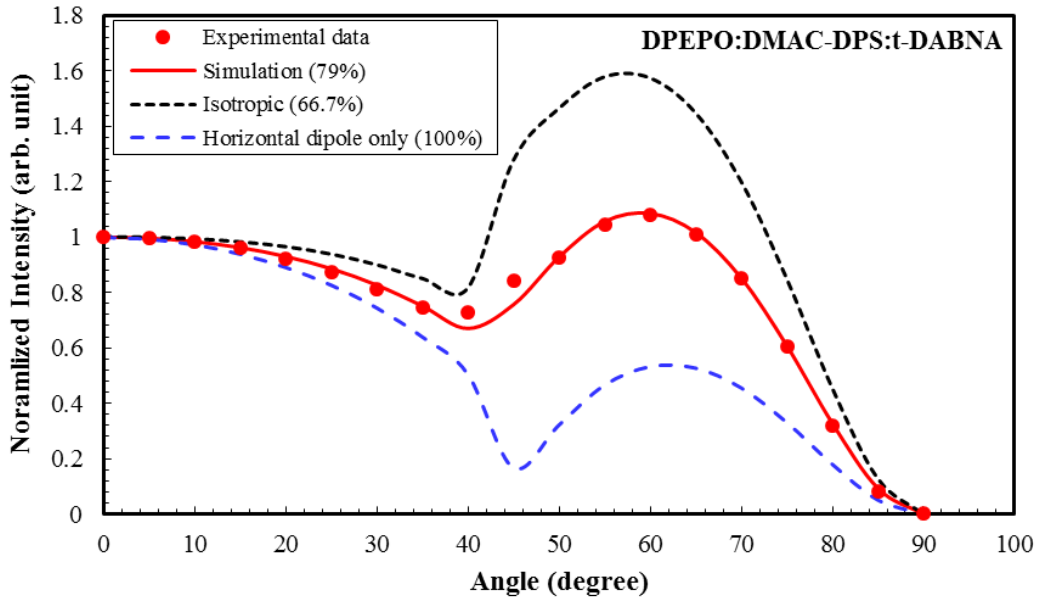

Without t-DABNA
With t-DABNA
Current density (mA/cm²)
Voltage (V)
0
5
10
15
20
25
30
35
40
0
2
4
6
8

Figure S9


DPEPO:DMAC-DPS:t-DABNA
Experimental data
Simulation (79%)
Isotropic (66.7%)
Horizontal dipole only (100%)
Noramlized Intensity (arb. unit)
Angle (degree)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
0
10
20
30
40
50
60
70
80
90
100