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A Guide to Mastering Multi-Resonance Thermally Activated Delayed Fluorescence: From Challenges to Strategies for High-Performance OLEDs

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Table 1. Photophysical properties of Blue MR-TADF emitters

Compound	λ_{PL} (nm), (sol/film)	FWHM (sol/Flim)	Φ_F (sol/Film), %	$S_1/T_1/\Delta E_{ST}$ (eV)	τ_p (ns)/ τ_d (µs)	k_{RISC} (s^{-1})	Ref
DABNA-1	462/460	33/30	89/88	2.67/2.49/0.18	9.5/93.7	9.9×10^3	[71]
DABNA-2	470/469	34/28	85/90	2.61/2.47/0.14	6.0/65.3	14.8×10^3	[71]
υ-DABNA	468/467	14/18	74/90	2.66/2.62/0.017	4.1/4.1	2.0×10^5	[72]
υ-DABNA-O-Me	-/464	-/24	-/90	2.67/2.75/0.029	5.1/7.7	1.6×10^5	[73]
m-υ-DABNA	464/-	14/-	-/90.5	2.81/2.74/0.07	8.43/3.09	-	[74]
4F-υ-DABNA	457/-	14/-	-/90.2	2.84/2.79/0.05	8.72/3.12	-	[74]
4F-m-υ-DABNA	455/-	14/-	-/88.5	2.86/2.79/0.07	8.20/3.19	-	[74]
BOBO-Z	441/445	15/18	76/64	-/-/0.10	2.3/7.7	0.7×10^5	[75]
BOBS-Z	453/457	21/24	94/93	-/-/0.12	1.1/7.6	8.6×10^5	[75]
BSBS-Z	460/464	20/22	93/88	-/-/0.12	1.0/6.7	16×10^5	[75]
NBN	477/-	25/-	82/5	-/-0.13	7.0/44.8	0.2×10^5	[76]
tBuNBN	489/-	23/-	83/4	-/-/0.11	8.4/50.4	0.1×10^5	[76]
SeNBN	470/-	24/-	13/76	-/-/0.13	1.1/2.37	3.3×10^5	[76]
SetBuNBN	481/-	23/-	7/86	-/-/0.11	1.4/3.97	2.3×10^5	[76]
V-DABNA-Mes	-/484	-/16	-/80	2.56/2.60/0.04	6.9/2.39	4.4×10^5	[77]

mBP-DABNA-Me	464/467	28/-	-/97	-/-/0.12	7.64/64.5	1.95×10^4	[78]
t-DABNA	457/-	26/-	-/85	2.82/2.63/0.17	6.0/83.3	2.44×10^3	[79]
t-DABNA-dtB	465/-	22/-	97/-	2.77/2.58/0.19	7.1/109	-	[80]
IDAD-BNCz	489/492	23/27	96/95.3	2.73/2.39/0.34	5.7/20.2	4.32×10^5	[81]
TIDAD-BNCz	488/492	22/28	95/92.5	2.73/2.39/0.34	5.1/19.4	4.89×10^5	[81]
PAB	449/453	-/23	-/60	2.77/2.71/0.05	7.9/55.7	6.95×10^4	[82]
2tPAB	456/457	-/26	-/67	2.76/2.68/0.1	8.1/76.6	6.34×10^4	[82]
3tPAB	456/458	-/23	-/75	2.78/2.68/0.1	7.2/74.2	5.74×10^4	[82]
ADBNA-Me-Mes	-/482	-/33	-/88.9	-/-/0.20	6.90/165	7.6×10^3	[83]
ADBNA-Me-Tip	-/479	-/34	-/87.6	-/-/0.19	6.01/147	9.0×10^3	[83]
BSBS-N1	473/478	21/24	59/89	2.59/2.45/0.14	0.9/5.6	1.9×10^6	[84]
CzBO	445/448	26/29	98/99	-/-/0.16	6.7/120	0.9×10^4	[85]
CzBS	471/472	28/30	99/98	-/-/0.14	4.6/30	22×10^4	[85]
CzBSe	477/479	33/34	98/98	-/-/0.15	0.8/14	18×10^7	[85]
B-O-dpa	431/-	27/-	-/86	2.95/2.77/0.18	10/224	0.83×10^4	[86]
B-O-Cz	439/-	24/-	-/94	2.87/2.72/0.15	16/51	4.02×10^4	[86]
B-O-dmAc	432/-	38/-	-/91	2.77/2.66/0.11	9/123	1.82×10^4	[86]
B-O-dpAc	461/-	38/-	-/94	2.76/2.70/0.06	8/83	3.12×10^4	[86]

CzBNO	443/450	23/30	-/96	2.97/2.76/0.21	7.1/48	3.47×10^4	[87]
DMAcBNO	462/470	34/41	-/99	2.89/2.66/0.23	7.3/129.4	1.40×10^4	[87]
DPAcBNO	462/468	33/39	-/98	2.86/2.67/0.19	7.5/100.1	1.75×10^4	[87]
DPACzBN1	469/479	23/31	98/-	2.65/2.54/0.11	4.9/116	1.2×10^4	[88]
DPACzBN2	460/470	22/29	92/-	2.71/2.59/0.12	4.1/54	2.9×10^4	[88]
DPACzBN3	468/475	20/27	94/-	2.67/2.54/0.13	2.6/69	2.1×10^4	[88]
tCBNDADPO	466/470	26/47	-/99	2.62/2.59/0.04	2.67/1.9	2.43×10^4	[89]
PTZBN1	490/497	41/44	98/-	2.67/2.51/0.16	4.8/33.5	1.11×10^5	[90]
PTZBN2	483/487	41/42	95/-	2.71/2.56/0.15	4.5/22.4	4.51×10^5	[90]
PTZBN3	468/473	30/36	98/-	2.79/2.62/0.17	5.8/26.5	1.08×10^5	[90]
BN1	454/-	18/-	-/91	2.83/2.63/0.20	4.3/126.6	1.3×10^4	[91]
BN2	464/-	15/-	-/93	2.75/2.59/0.16	3.4/74.6	2.6×10^4	[91]
BN3	456/-	17/-	-/98	2.79/2.64/0.15	1.3/17.8	25.5×10^4	[91]
SF1BN	493/-	23/-	90/93	2.52/2.39/0.13	16.3/9.45	9.12×10^4	[92]
SF3BN	493/-	25/-	86/90	2.55/2.40/0.15	16.8/26.0	3.31×10^4	[92]
Cz-DABNA	459/469	24/30	-/92	2.84/2.63/0.21	-/-	-	[93]
mICZ-DABNA	461/465	22/26	-/92.6	2.81/2.61/0.20	-/17.5	2.65×10^4	[93]
BFCz-DABNA	456/462	22/26	-/93.1	2.86/2.66/0.20	-/18.5	2.78×10^4	[93]
NOBNacene	405/410	40/38	33/71	3.12/2.82/0.30	2.9/1.18 ms	3.74×10^3	[94]

***f*-DOBNA**	442/447	18/24	93/80	2.89/2.81/0.08	3.67/1.22	1.41×10^6	[95]
CFDBO	452/458	18/21	-/94	2.82/2.55/0.27	3.25/60.79	1.67×10^4	[96]
CFDBA	467/472	16/18	-/96	2.71/2.52/0.19	3.01/70.51	1.49×10^4	[96]
CFDBCz	479/487	18/21	-/96	2.67/2.50/0.17	4.49/32.66	3.12×10^4	[96]
TPD4PA	445/-	19/-	-/88.1	2.93/2.88/0.05	7.82/4.69	2.51×10^5	[97]
TBu-TPD4PA	451/-	19/-	-/90.3	2.90/2.84/0.06	8.07/5.55	2.44×10^5	[97]
o-BNPO	494/500	22/25	-/96	2.61/2.42/0.19	6.03/7.22	17.8×10^4	[98]
BNPO	492/497	22/25	-/93	2.62/2.40/0.22	7.47/32.36	2.21×10^4	[98]
DPMX-CzDABNA	471/481	22/29	-/94.2	2.62/2.51/0.11	4.3/14.8	6.6×10^4	[99]
Py-BN	440/446	14/23	-/93	2.87/2.69/0.18	5.8/222.9	6.4×10^3	[100]
Pm-BN	409/414	13/20	-/94	3.07/2.72/0.35	3.3/246.7	4.2×10^3	[100]
BNCz-SAF	478/484	23/25	-/85.5	2.66/2.51/0.15	0.22/0.78	7.36×10^5	[101]
BNCz-DMAc	478/484	22/26	-/82.7	2.65/2.52/0.13	0.2/0.79	12.0×10^5	[101]
BNCz-PXZ	477/482	23/34	-/83.6	2.64/2.52/0.12	0.38/0.62	3.11×10^5	[101]
DOBN	438/449	19/20	96/98	-/-/0.11	3.2/21.7	7.5×10^4	[102]
IPrBN	458/461	20/23	99/94	2.79/2.62/0.17	8.0/201	0.96×10^4	[103]
IPrBN-mCP	452/453	19/22	99/94	2.84/2.67/0.17	6.5/106	1.78×10^4	[103]
[B-N]N1	445/452	19/23	86/	-/-/0.26	4.8/956.9	0.65×10^4	[104]
[B-N]N2	438/442	16/18	93/	-/-/0.30	4.1/956.6	0.57×10^4	[104]

[B-N]N3	458/458	37/38	93/	-/-/0.26	5.5/978.0	0.63×10^4	[104]
[B-N]N4	463/466	27/27	92/	-/-/0.27	5.0/973.1	0.63×10^4	[104]
TB-PB	473/-	12/-	99.0/-	2.74/2.71/0.03	3.9/0.53	2.6×10^5	[105]
DB-SF1	461/-	22/-	-/81	2.68/2.48/0.20	2.2/22.3	1.0×10^5	[106]
DB-SF2	457/-	21/-	-/95	2.72/2.55/0.17	2.2/10.1	2.4×10^5	[106]
NBO-mSAF	458/470	28/34	-/94.5	2.78/2.56/0.22	11.7/15.8	9.5×10^4	[107]
NBO-pSAF	446/452	28/31	-/90.4	2.83/2.64/0.19	11.3/15.5	14.8×10^4	[107]
CzBN1	471/-	78/-	95/-	-/-/0.13	33.2/1.4	206.5×10^4	[108]
CzBN2	477/-	75/-	97/-	-/-/0.14	21.8/2.7	78.2×10^4	[108]
CzBN3	478/-	21/-	99/-	-/-/0.15	10.3/4.7	32.7×10^4	[108]
DBNO	443/450	21/29	-/90	2.88/2.69/0.19	4.5/56.0	2.88×10^4	[109]
DMBNO	444/449	19/27	-/99	2.87/2.69/0.18	3.4/40.8	4.62×10^4	[109]
CzP2PO	374/370	28/40	-/19	-	2.54/4.93	3.52×10^4	[177]
tBCzP2PO	381/382	28/34	-/34	-	2.56/4.89	6.19×10^4	[177]

Table 2. EL properties of the Blue MR-TADF emitters

Compound	**Device structure**	**EQE (max/1000cd/m^2), %**	**CE, cd/A**	**PE, lm/W**	**λ_{EL}/FWHM (nm)**	**CIE(x,y)**	**Ref**

DABNA-1	ITO/NPD/TCTA/mCP/EML/TSPO1/LiF/Al	13.5/-	10.6	8.3	459/28	0.13,0.09	[71]
DABNA-2	ITO/NPD/TCTA/mCP/EML/TSPO1/LiF/Al	20.2/-	21.1	15.1	467/28	0.12,0.13	[71]
υ-DABNA	ITO/NPD/TCTA/mCP/1 wt% EML:DOBNA-Oar/TSPO1/LiF/Al	34.4/26.0	31	25.6	469/18	0.12,0.11	[72]
υ-DABNA-O-Me	ITO/NPD/TCTA/mCP/EML/TSPO1/LiF/Al	29.5/26.9	24.6	22.7	465/23	0.13,0.10	[73]
m-υ-DABNA	ITO/HATCN/TAPC/DCDPA/EML/DBFPO/TPBi/LiF/Al	36.2/-	32.1	-	471/18	0.12,0.12	[74]
4F-υ-DABNA	ITO/HATCN/TAPC/DCDPA/EML/DBFPO/TPBi/LiF/Al	35.8/-	26.8	-	464/18	0.13,0.08	[74]
4F-m-υ-DABNA	ITO/HATCN/TAPC/DCDPA/EML/DBFPO/TPBi/LiF/Al	33.7/-	24.9	-	461/18	0.13,0.06	[74]
BOBO-Z	ITO/HATCN/TAPC/mCP/EML/PPF/B3PyPB/LiF/Al	13.6/3.3	7.2	5.0	445/18	0.15,0.04	[75]
BOBS-Z	ITO/HATCN/TAPC/mCP/EML/PPF/B3PyPB/LiF/Al	26.9/15.0	16.7	12.9	456/23	0.14,0.06	[75]
BSBS-Z	ITO/HATCN/TAPC/mCP/EML/PPF/B3PyPB/LiF/Al	26.8/15.9	23.2	15.0	463/22	0.13,0.08	[75]
SeNBN	ITO/TAPC/TCTA/2 wt% EML:mCP/TSPO1/TmPyPB/LiF/Al	20.2/16.0	24.1	18.8	476/29	-	[76]
SetBuNBN	ITO/TAPC/TCTA/2 wt% EML:mCP/TSPO1/TmPyPB/LiF/Al	25.4/19.6	36.5	30.2	483/25	-	[76]
V-DABNA-Mes(Solution	ITO/NPD/TCTA/mCP/EML/TSPO1/LiF/Al	22.9/10.9	26.7	20.0	480/27	0.09,0.21	[77]

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mBP-DABNA-Me	ITO/HATCN/TAPC/TCTA/mCP/ mCP:DPEPO:5wt% EML/ DPEPO/TmPyPb/LiF/Al	24.3/16.0	24.4	21.3	468/28	0.124,0.140	[78]
t-DABNA	ITO/PEDOT:PSS/TAPC/mCP/EML/TSPO1/TPBi/LiF	31.4/19.8	13.0	9.1	-/31	0.13,0.15	[79]
t-DABNA-dtB	ITO/HTL/EBL/EML/HBL/ETL:Liq/Liq/Al	11.4/10.9	11.4	9.7	471/22	0.11,0.13	[80]
IDAD-BNCz	ITO/HATCN/TAPC/TCTA/PhCzBCz:20 wt%EML/TmPyPB/LiF/Al	34.3/14.0	90.5	82.7	498/34	0.12,0.51	[81]
TIDAD-BNCz	ITO/HATCN/TAPC/TCTA/PhCzBCz:20 wt%EML/TmPyPB/LiF/Al	30.0/16.3	78.5	72.5	498/36	0.13,0.55	[81]
PAB	ITO/MoO3/TAPC/mCP/EML/DPEPO/ TmPyPB /LiF/Al	14.7/-	10.4	7.1	456/31	0.14,0.07	[82]
2tPAB	ITO/MoO3/TAPC/mCP/EML/DPEPO/ TmPyPB /LiF/Al	16.8/-	11.8	8.0	456/27	0.14,0.07	[82]
3tPAB	ITO/MoO3/TAPC/mCP/EML/DPEPO/ TmPyPB /LiF/Al	19.3/-	34.4	10.2	460/26	0.14,0.07	[82]
ADBNA-Me-Mes	ITO/NPD/TCTA/mCP/1 wt% EML:DOBNA-Oar/TSPO1/LiF/Al	16.2/11.1	24.5	19.3	481/32	0.10,0.27	[83]
ADBNA-Me-Tip	ITO/NPD/TCTA/mCP/1 wt% EML:DOBNA-Oar/TSPO1/LiF/Al	21.4/15.4	34.7	28.7	480/33	0.11,0.29	[83]
BSBS-N1	ITO/HATCN/TAPC/mCBP/EML/PPF/ B3PyPB/LiF/Al	21.0/-	-	-	478/25	0.11,0.22	[84]

CzBO	ITO/HATCN/TAPC/mMCP/EML/PPF/ B3PyPB/LiF/A	13.4/3.5	7.4	5.7	448/30	0.15,0.05	[85]
CzBS	ITO/HATCN/TAPC/mMCP/EML/PPF/ B3PyPB/LiF/A	23.1/15.0	25.8	19.4	473/31	0.11,0.16	[85]
CzBSe	ITO/HATCN/TAPC/mMCP/EML/PPF/ B3PyPB/LiF/A	23.9/20.0	34.8	25.8	481/33	0.10,0.24	[85]
B-O-dpa	ITO/PEDOT:PSS/ TAPC/ TCTA/ PCzAc/ mCP/10 wt% EML/TSPO1/TPBi/LiF/Al	16.3/-	8.3	-	443/32	0.15,0.05	[86]
B-O-Cz	ITO/PEDOT:PSS/ TAPC/ TCTA/ PCzAc/ mCP/EML/TSPO1/TPBi/LiF/Al	13.4/-	20.3	-	481/63	0.13,0.22	[86]
B-O-dmAc	ITO/PEDOT:PSS/ TAPC/ TCTA/ PCzAc/ mCP/EML/TSPO1/TPBi/LiF/Al	16.2/-	23.1	-	475/44	0.12,0.22	[86]
B-O-dpAc	ITO/PEDOT:PSS/ TAPC/ TCTA/ PCzAc/ mCP/EML/TSPO1/TPBi/LiF/Al	17.0/-	22.8	-	473/42	0.12,0.20	[86]
CzBNO	ITO/HATCN/TAP/TCTA/mCBP/EML/ POT2T/ANT-BIZ/LiF/Al	13.6/5.0	14.7	-	454/36	0.14,0.08	[87]
DMAcBNO	ITO/HATCN/TAP/TCTA/mCBP/EML/ POT2T/ANT-BIZ/LiF/Al	20.4/8.6	31.2	-	472/41	0.13,0.19	[87]
DPAcBNO	ITO/HATCN/TAP/TCTA/mCBP/EML/ POT2T/ANT-BIZ/LiF/Al	23.0/9.1	28.0	-	468/37	0.13,0.14	[87]
DPACzBN1	ITO/HATCN/TAPC/TCTA/mCBP/EML/ POT2T/ANT-BIZ/LiF/Al	23.6/9.6	36.0	-	475/34	0.14,0.30	[88]
DPACzBN2	ITO/HATCN/TAPC/TCTA/mCBP/EML/ POT2T/ANT-BIZ/LiF/Al	24.0/14.3	31.6	-	469/28	0.13,0.16	[88]

DPACzBN3	ITO/HATCN/TAPC/TCTA/mCBP/EML/ POT2T/ANT-BIZ/LiF/Al	27.7/6.7	34.5	-	472/24	0.12,0.18	[88]
tCBNDADPO	ITO/ MoO3/mCP/30 wt% EML/DBFDPO/LiF/Al	30.8/16.2	47.1	45.5	472/28	0.14,0.22	[89]
PTZBN1	ITO/HATCN/TAPC/TCTA/mCBP/EML/ POT2T/ANT-BIZ/LiF/Al	26.9/17.9	69.9	49.9	496/47	0.16,0.51	[90]
PTZBN2	ITO/HATCN/TAPC/TCTA/mCBP/EML/ POT2T/ANT-BIZ/LiF/Al	30.5/23.0	59.6	46.8	483/43	0.13,0.31	[90]
PTZBN3	ITO/HATCN/TAPC/TCTA/mCBP/EML/ POT2T/ANT-BIZ/LiF/Al	19.9/12.1	30.6	24.0	476/36	0.13,0.22	[90]
BN1	ITO/HATCN/TAPC/TCTA/mCBP/EML/ DBFPO/ANT-BIZ/LiF/Al	31.2/9.3	20.9	14.9	457/28	0.14,0.08	[91]
BN2	ITO/HATCN/TAPC/TCTA/mCBP/EML/ DBFPO/ANT-BIZ/LiF/Al	33.2/15.5	29.7	20.3	467/23	0.13,0.11	[91]
BN3	ITO/HATCN/TAPC/TCTA/mCBP/EML/ DBFPO/ANT-BIZ/LiF/Al	37.6/26.2	27.5	19.0	458/23	0.14,0.08	[91]
SF1BN	ITO/HATCN/TAPC/TCTA/mCBP/EML/PPF/ TmPyPB/LiF/Al	35.9/14.0	70.0	56.7	492/27.5	0.07,0.47	[92]
SF3BN	ITO/HATCN/TAPC/TCTA/mCBP/EML/PPF/ TmPyPB/LiF/Al	31.7/12.7	60.0	46.6	492/28	0.079,0.44	[92]
mICZ-DABNA	ITO/HATCN/TAPC/DCDPA/mCBP-CN:3 wt%/DBFPO/TPBi/LiF/Al	26.4/7.3	20.1	-	466/26	0.13,0.11	[93]
BFCz-DABNA	ITO/HATCN/TAPC/DCDPA/mCBP-CN:3 wt%/DBFPO/TPBi/LiF/Al	28.0/8.1	23.1	-	463/26	0.13,0.09	[93]

NOBNacene	ITO/HAT-CN/NPB/TCTA/CzSi/3.0 wt% EML:TSPO1/TSPO1/TmPyPB/LiF/Al	11.2/-	-	3.51	412/41	0.176,0.068	[94]
***f*-DOABNA**	ITO/TAPC/mCP/1 wt% EML:mCP/PPT/Bpy-TP2/LiF/Al	15.9/7.5	7.6	4.7	445/24	0.15,0.04	[95]
CFDBO	ITO/HAT-CN/TAPC/TcTa/mCBP:2 wt% EML/TmPyPb/LiF/Al	20.7/-	21.4	17.2	460/24	0.14,0.12	[96]
CFDBA	ITO/HAT-CN/TAPC/TcTa/mCBP:2 wt% EML/TmPyPb/LiF/Al	30.9/-	68.0	56.2	473/21	0.13,0.18	[96]
CFDBCz	ITO/HAT-CN/TAPC/TcTa/mCBP:2 wt% EML/TmPyPb/LiF/Al	32.4/-	75.8	59.5	488/22	0.12,0.43	[96]
TPD4PA	ITO/HATCN/TAPC/DCDPA/mCPB-CN:3 wt% EML/DBFPO/TPBi/LiF/Al	30.7/17.8	15.7	-	455/29	0.14,0.06	[97]
tBu-TPAD4PA	ITO/HATCN/TAPC/DCDPA/mCPB-CN:3 wt% EML/DBFPO/TPBi/LiF/Al	32.5/20.5	19.4	-	460/29	0.14,0.07	[97]
o-BNPO	ITO/TAPC/TCTA/mCP/PhCzBCz:8 wt% EML/TmPyPB/LiF/Al	36.0/14.8	73.9	68.3	496/26	0.09,0.48	[98]
BNPO	ITO/TAPC/TCTA/mCP/PhCzBCz:8 wt% EML/TmPyPB/LiF/Al	24.6/5.0	54.9	46.6	496/25	0.08,0.53	[98]
DPMX-CzDABNA	ITO/TAPC/TCTA/SF3-TRZ: 1 wt% EML/TmPyPB/LiF/Al	24.5/8.2	40.7	38.7	484/29	0.11,0.31	[99]
Py-BN	ITO/HATCN/TAPC/TCTA/mCBP/TDBA-PAS:EML/DPEPO/ANT-BIZ/Liq/Al	27.7/16.1	17.0	16.2	445/22	0.150,0.052	[100]
Pm-BN	ITO/HATCN/TAPC/TCTA/mCBP/EML/DPEPO/ANT-BIZ/Liq/Al	5.8/2.5	2.0	1.4	415/24	0.161,0.045	[100]

BNCz-SAF	ITO/PEDOT:PSS/TAPC/TCTA/mCP: 3wt% EML/TmPyPb/LiF/Al	25.3/-	33.89	31.30	480/24	0.10,0.24	[101]
BNCz-DMAc	ITO/PEDOT:PSS/TAPC/TCTA/mCP: 3wt% EML/TmPyPb/LiF/Al	23.8/-	33.09	31.97	482/25	0.10,0.26	[101]
BNCz-PXZ	ITO/PEDOT:PSS/TAPC/TCTA/mCP: 3wt% EML/TmPyPb/LiF/Al	20.9/-	44.84	44.0	482/23	0.21,0.41	[101]
DOBN(Solution)	ITO/PEDOT:PSS/EML/DPEPO/TmPyPb/LiF/Al	35.44/-	2.77	1.58	449/20	0.15,0.04	[102]
IPrBN	ITO/HATCN/TAPC/TCTA/DOBNA-OAr: 10 wt% EML/PPF/ANT-BIZ/Liq/Al	20.1/2.1	16.9	12.9	459/22	0.135,0.082	[103]
IPrBN-mCP	ITO/HAT-CN/TAPC/TCTA/DOBNA-OAr: 10 wt% EML/PPF/ANT-BIZ/Liq/Al	33.4/6.8	23.5	20.5	451/20	0.146,0.046	[103]
[B-N]N2	ITO/HATCN/NPB/SiCzCz/EML/SiTrCz2/DPPyA/LiF/Al	20.3/-	13.2	13.8	441/20	0.152,0.046	[104]
[B-N]N3	ITO/HATCN/NPB/SiCzCz/EML/SiTrCz2/DPPyA/LiF/Al	19.6/-	19.0	15.7	459/40	0.141,0.105	[104]
[B-N]N4	ITO/HATCN/NPB/SiCzCz/EML/SiTrCz2/DPPyA/LiF/Al	22.1/-	25.6	20.1	466/30	0.134,0.133	[104]
TB-PB	ITO/HATCN/NPB/SiCzCz/SiCzCz:SiTrzCz2:4tCzBN:1 wt% EML/SiTrzCz/DPPyA/LiF/Al	36.4/33.4	49.1	51.4	479/15	0.10,0.20	[105]
DB-SF1	ITO/HAT-CN/TAPC/TCTA/mCBP/EML/DPEPO/ANT-BIZ/Liq/Al	34.2/15.1	42.3	-	468/32	0.13,0.16	[106]
DB-SF2	ITO/HAT-CN/TAPC/TCTA/mCBP/EML/DPEPO/ANT-	40.4/28.4	45.1	-	462/29	0.13,0.13	[106]

	BIZ/Liq/Al						
NBO-mSAF	ITO/TAPC/TCTA/26DCzPPy: wt% EML/TmPyPb/LiF/Al	29.5/6.0	27.7	19.3	466/28	0.128,0.114	[107]
NBO-pSAF	ITO/TAPC/TCTA/26DCzPPy: wt% EML/TmPyPb/LiF/Al	20.5/5.7	11.0	7.7	451/26	0.147,0.048	[107]
CzBN1	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/Liq/Al	31.7/30.5	101.6	100.3	523/75	0.28,0.57	[108]
CzBN2	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/Liq/Al	32.4/30.2	87.4	89.0	481/75	0.23,0.49	[108]
CzBN3	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/Liq/Al	36.4/30.3	72.0	77.8	483/25	0.16,0.38	[108]
DBNO	ITO/HATCN/TAPC/TCTA/10 wt% EML: $SiTrzCz_2$/ANT-BIZ/Liq/Al	22.7/3.1	11.4	11.2	448/26	0.148,0.047	[109]
DMBNO	ITO/HATCN/TAPC/TCTA/10 wt% EML: $SiTrzCz_2$/ANT-BIZ/Liq/Al	32.3/5.5	16.2	14.2	449/25	0.148,0.046	[109]
CzP2PO	ITO/MoO3/mCP/mCP:10% EML/TmPyPb/LiF/Al	8.01/8.0	1.29	1.12	379/34	0.15,0.04	[177]
tBCzP2PO	ITO/MoO3/mCP/mCP:10% EML/TmPyPb/LiF/Al	15.1/14.7	2.46	1.70	381/26	0.14,0.04	[177]

Table 3. Photophysical properties of green MR-TADF emitters

Compound	**λ_{PL} (nm), (sol/film)**	**FWHM (sol/Flim)**	**Φ_F (sol/Film), %**	**$S_1/T_1/\Delta E_{ST}$ (eV)**	**τ_p (ns)/ τ_d (µs)**	**k_{RISC} (s^{-1})**	**Ref**

2F-BN	494/502	24/32	95.4/88.7	2.51/2.35/0.16	-/25.9	0.22 ×10^5	[110]
3F-BN	499/503	24/33	90.2/83.4	2.48/2.40/0.08	-/16.7	0.39 × 10^5	[110]
4F-BN	496/501	25/31	98.7/91.4	2.50/2.39/0.11	-/19	0.44 × 10^5	[110]
AZA-BN	522/527	28/36	-/94	2.37/2.19/0.18	13.4/164	7.53 × 10^3	[111]
OAB-ABP-1	506/-	34/-	90/-	-/-/0.12	9.9/32	4.0 × 10^4	[112]
DtBuCzB	481/493	22/35	91/88	2.66/2.53/0.13	8.5/68.8	-	[113]
DtBuPhCzB	496/508	21/43	97/90	2.59/2.50/0.09	22.8/61.3	-	[113]
m-Cz-BNCz	519/521	38/39	97/94	2.50/2.42/0.08	-	~1.0 × 10^6	[114]
DtCzB-DPTRZ	521/-	24/-	94/87	2.33/2.15/0.18	13.1/78	0.10 × 10^4	[115]
DtCzB-TRTRZ	501/-	27/-	97/95	2.44/2.33/0.11	8.7/83.5	1.08 × 10^4	[115]
DtCzB-PPm	499/-	25/-	96/94	2.43/2.32/0.11	8.3/86.5	1.02 × 10^4	[115]
DtCzB-CNPm	515/-	36/-	93/87	2.28/2.13/0.15	14.2/52	0.14 × 10^4	[115]
DMAc-BN	484/-	33/-	88/-	-/-/0.16	6.2/32.9	2.4 × 10^4	[116]
PXZ-BN	502/-	38/-	90/-	-/-/0.17	8.2/90.7	0.9 × 10^4	[116]
TPXZBN	502/-	33/-	91/99	-/-/0.16	7.4/27.1	0.48 × 10^5	[117]
DPXZCZBN	500/-	32/-	90/94	-/-/0.13	10/15	1.11 × 10^5	[117]
BN-DMAc	485/-	29/-	63/-	-/-/0.14	5.1/13.9	0.96 × 10^5	[118]
BN-DPAc	490/-	30/-	86/-	-/-/0.11	4.4/11.6	1.26 × 10^5	[118]
2PXZBN	504/515	34/40	78/84	2.60/2.41/0.19	6.8/25.3	0.56 × 10^5	[119]

2PTZBN	510/519	39/44	58/80	2.59/2.44/0.15	4.8/16.1	1.17×10^5	[119]
S-Cz-BN	490/-	23/-	94/-	2.53/2.38/0.15	5.6/69.6	1.8×10^4	[120]
D-Cz-BN	490/-	22/-	98/-	2.53/2.40/0.13	5.8/76.0	1.8×10^4	[120]
BN-CP1	490/496	23/25	-/93	2.63/2.51/0.12	5.1/79.6	1.56×10^4	[121]
BN-CP2	490/496	23/26	-/91	2.62/2.49/0.13	5.0/83.6	1.43×10^4	[121]
NBO	487/-	27/-	92/-	2.55/2.43/0.12	6.7/5.9	9.3×10^5	[122]
NBNP	500/-	29/-	93/-	2.48/2.39/0.09	7.6/3.8	3.0×10^5	[122]
BN-ICz-1	516/-	21/-	99.2/-	2.38/2.16/0.22	6.4/342	2.9×10^4	[123]
BN-ICz-2	516/-	22/-	98.3/-	2.38/2.20/0.18	6.7/48.6	6.4×10^4	[123]
BN-TP	523/-	34/-	96/-	2.48/2.33/0.14	7.1/44.0	2.09×10^4	[124]
TW-BN	486/485	20/25	86/92	2.62/2.50/0.12	2.9/112	7.56×10^3	[125]
TPh-BN	492/495	21/28	91/94	2.59/2.50/0.09	4.9/62	14.3×10^3	[125]
pCz-BN	491/496	21/30	90/95	2.62/2.47/0.15	4.1/89	6.42×10^3	[125]
mCz-BN	495/494	21/29	85/88	2.56/2.42/0.14	6.7/95	16.4×10^3	[125]
DBNO	500/508	19/28	96/84	2.55/2.38/0.17	6.0/23.2	3.0×10^4	[126]
BO-N1	488/493	20/28	-/70	2.54/2.39/0.15	21.8/15.0	12.3×10^4	[127]
BO-N2	496/503	21/24	-/78	2.50/2.37/0.13	22.5/15.4	14.3×10^4	[127]
BNBO	500/-	25/-	-	2.25/2.41/0.14	12.3/27.9	3.46×10^4	[128]
FICzBN-BO	507/513	24/39	92/85	2.53/2.48/0.05	5.91/71.40	1.60×10^4	[129]
TCZBAC	492/-	35/-	-/84	2.56/2.41/0.15	6.0/38.8	1.3×10^5	[130]

TCZBAO	507/-	30/-	-/91	2.46/2.36/0.10	5.9/32.6	1.6×10^5	[130]
***p*-ICz-BNCz**	484/493	24/31	-/94.5	2.32/2.14/0.18	8.1/61.4	2.14×10^4	[131]
***m*-ICz-BNCz**	508/519	38/40	-/90.3	2.14/2.02/0.12	5.5/14.9	5.69×10^4	[131]
***dm*-ICz-BNCz**	526/535	41/46	-/93.6	2.03/1.90/0.13	5.3/19.0	6.81×10^4	[131]
3CzSF-BN	520/527	30/37	100/87.5	2.36/2.27/0.09	6.4/19.1	3.7×10^4	[132]
BpIC-DPA	527/-	25/-	-/87.9	2.35/2.18/0.17	44.9/31.9	2.49×10^4	[133]
BpIC-Cz	534/-	22/-	-/84.2	2.32/2.14/0.18	34.0/34.4	2.47×10^4	[133]
tCzBN-PQ	515/517	31/37	89/79	2.53/2.42/0.11	6.6/11.4	5.9×10^5	[134]
tCzBN-PQCz	511/530	30/48	95/81	2.55/2.46/0.09	5.4/8.6	7.3×10^5	[134]
BN-TPP	496/495	20/25	-/87	2.52/2.41/0.11	5.5/67.2	1.1×10^4	[135]
BN-DPBQ	539/539	32/35	-/67	2.43/2.26/0.17	8.2/30.6	1.4×10^4	[135]
D-BNDCN	505/-	27/-	-/90	2.57/2.51/0.06	3.2/16.0	0.8×10^5	[136]
TCzBN-BP	497/-	22/-	-/97.6	2.58/2.49/0.09	6.4/23.8	7.7×10^4	[137]
TCzBN-FP	516/-	37/-	-/75.3	2.48/2.34/0.14	32.3/32.9	5.1×10^4	[137]
DtCzBN-CNBT1	498/502	22/-	60/90	2.56/2.46/0.10	3.8/75.5	2.0×10^4	[138]
DtCzBN-CNBT2	492/500	21/-	60/97	2.56/2.44/0.12	5.1/15.3	10.6×10^4	[138]
PXZ-tCzBN	510/-	37/46	88/75	2.57/2.44/0.13	9.29/109.5	1.3×10^4	[139]
PhPXZ-tCzBN	518/-	43/47	80/94	2.50/2.43/0.07	8.62 μs/84.7	0.86×10^4	[139]
MeSPXZ-	514/-	41/45	85/96	2.53/2.48/0.05	9.19 μs/75.8	1.1×10^4	[139]

tCzBN							
Cz-CzBN	496/500	21/31	99/97	2.51/2.43/0.08	6.5/14.7	1.1×10^5	[140]
TPA-CNBN	493/502	23/33	100/98	2.50/2.44/0.06	5.4/11.4	1.4×10^5	[140]
PTZ-CNBN	495/504	26/35	96/92	2.51/2.45/0.06	5.5/14.9	1.0×10^5	[140]
Cz-2PTZ-BN	505/-	37/56	86/93	2.61/2.50/0.11	5.1/15.4	9.41×10^4	[141]
QB-DPA	495/504	15/19	-/98	-/-/0.10	5.8/6.8	2.5×10^5	[142]
QB-PXZ	508/519	15/20	-/97	-/-/0.09	6.3/9.7	2.0×10^5	[142]
m-CzDAZ-BNCz	504/506	28/39	98/95	2.56/2.42/0.14	6.6/44.2	2.04×10^4	[143]
SBNO	514/510	30/32	-/89	2.42/2.31/0.11	7.38/164.49	1.5×10^4	[144]
SBNOS	514/508	30/30	-/93	2.46/2.31/0.15	7.03/154.45	1.5×10^4	[144]
DBNDS-TPh	517/-	16/-	-/98.5	2.45/2.39/0.06	17.1/6.95	2.2×10^5	[145]
DBNDS-DFPh	518/-	16.6/-	-/97.7	2.43/2.35/0.08	20.0/8.36	1.7×10^5	[145]
DBNDS-CNPh	518/-	16.4/-	-/90.3	2.44/2.36/0.08	16.8/8.81	1.6×10^5	[145]
DMeSiB	493/-	21/-	-/92	2.60/2.40/0.20	3.8/89	1.4×10^4	[146]
DPhSiB	495/-	22/-	-/93	2.58/2.40/0.18	3.9/115	1.1×10^4	[146]
BNCz-2S	488/-	26/-	-/93	2.64/2.53/0.11	8.4/23.5	3.68×10^4	[147]
BNCz-4S	492/-	30/-	-/99	2.63/2.56/0.07	7.4/12.8	7.66×10^4	[147]
CNBN	501/508	14/16	-/99	-/-/0.12	4.2/30.2	4.7×10^4	[148]
MCNBN	510/519	15/17	-/97	-/-0.12	4.8/43.1	3.2×10^4	[148]

PCNBN	503/511	18/20	-/96	-/-/0.08	5.0/15.5	9.4×10^4	[148]
PMCNBN	512/522	19/22	-/94	-/-0.08	5.7/24.0	7.7×10^4	[148]
BNDBF	486/497	21/33	84/87	2.72/2.54/0.18	6.93/80.17	2.09×10^4	[149]
BNDBT	487/499	22/33	86/90	2.72/2.55/0.17	5.9/33.21	6.02×10^4	[149]

Table 4. EL properties of the green MR-TADF emitters

Compound	Device structure	EQE (max/1000cd/m^2), %	CE, cd/A	PE, lm/W	λ_{EL}/FWHM (nm)	CIE(x,y)	Ref
2F-BN	ITO/HATCN/NPB/BCzPh/EML/CzPhPy/DPPyA/LiF/Al	22..0/15.0	-	69.8	501/40	0.16,0.60	[110]
3F-BN	ITO/HATCN/NPB/BCzPh/EML/CzPhPy/DPPyA/LiF/Al	22.7/21.1	-	72.3	499/38.5	0.20,0.58	[110]
4F-BN	ITO/HATCN/NPB/BCzPh/EML/CzPhPy/DPPyA/LiF/Al	20.9/16.4	-	51.3	493/31.6	0.12,0.48	[111]
AZA-BN	ITO/HATCN/NPB/BCzPh/EML/CzPhPy/DPPyA/LiF/Al	28.2/19.1	-	121.7	527/30	0.27,0.69	[111]
OAB-ABP-1(Solution)	ITO/Plexcore OC AQ-1200/Polymer A/OAB-ABP-1:Polymer B/NaF/Al	21.8/17.4	53.2	45.3	505/33	0.12,0.63	[112]
DtBuCzB	ITO/TAPC/TCTA/EML/TmPyPB/LiF/Al	21.6/5.3	43.2	37.7	488/29	0.10,0.42	[113]
DtBuPhCzB	ITO/TAPC/TCTA/EML/TmPyPB/LiF/Al	23.4/5.7	66.2	54.7	504/34	0.15,0.61	[113]

m-Cz-BNCz	ITO/TAPC/TCTA/PhCzBCz:3wt%EML/TmPyPB/LiF/Al	27.0/14.4	99.2	103.9	520/44	0.23,0.69	[114]
DtCzB-DPTRZ	ITO/TAPC/TCTA/5tBuCzBN:3wt%EML/TmPyPB/LiF/Al	26.0/15.6	99.1	107.3	528/36	0.27,0.60	[115]
DtCzB-TRTRZ	ITO/TAPC/TCTA/5tBuCzBN:5wt%EML/TmPyPB/LiF/Al	30.6/16.4	105.8	116.2	520/41	0.23,0.68	[115]
PPm	ITO/TAPC/TCTA/5tBuCzBN:5wt%EML/TmPyPB/LiF/Al	29.8/21.7	93.3	103.3	508/35	0.17,0.67	[115]
CNPm	ITO/TAPC/TCTA/5tBuCzBN:3wt%EML/TmPyPB/LiF/Al	28.1/10.7	102.1	114.5	540/44	0.35,0.63	[115]
DMAc-BN	ITO/TPBI/TAPC/mCBP/EML:mCBP/PO9/B3PyPB/LiF/Al	20.3/-	57.0	49.7	503/49	0.18,0.60	[116]
PXZ-BN	ITO/TPBI/TAPC/mCBP/EML:mCBP/PO9/B3PyPB/LiF/Al	23.3/-	83.8	70.1	516/47	0.22,0.67	[116]
TPXZBN	ITO/HATCN/TAPC/mCP/EML/TmPyPB/LiF/Al	21.3/17.4	64.8	37.0	506/37	0.16,0.65	[117]
DPXZCZBN	ITO/HATCN/TAPC/mCP/EML/TmPyPB/LiF/Al	19.2/17.2	61.6	43.2	505/36	0.15,0.64	[117]
BN-DMAc	ITO/HATCN/TAPC/mCP/mCBP:EML/PO-T2T/TmPyPB/LiF/Al	21.1/12.5	55.2	43.4	502/48	0.14,0.54	[118]
BN-DPAc	ITO/HATCN/TAPC/mCP/mCBP:EML/PO-T2T/TmPyPB/LiF/Al	28.2/19.2	77.3	56.5	504/48	0.14,0.56	[118]
2PXZBN	ITO/HATCN/TAPC/mCP/EML/PO-T2T/TmPyPB/LiF/Al	17.7/7.4	64.9	58.3	522/60	0.28,0.64	[119]

2PTZBN	ITO/HATCN/TAPC/mCP/EML/PO-T2T/TmPyPB/LiF/Al	25.5/17.2	96.5	86.6	528/58	0.28,0.65	[119]
s-Cz-BN	ITO/HATCN/NPB/BCzPh/EML/CzPhPy/DPPyA/LiF/Al	30.5/26.2	-	-	488/26	0.12,0.43	[120]
d-Cz-BN	ITO/HATCN/NPB/BCzPh/EML/CzPhPy/DPPyA/LiF/Al	37.2/34.3	-	-	488/24	0.11,0.43	[120]
BN-CP1	ITO/HATCN/TAPC/TCTA/mCBP/5 wt% EML/PO-T2T/ANT-BIZ /LiF/Al	40.0/18.5	83.8	109.7	496/25	0.09,0.50	[121]
BN-CP2	ITO/HATCN/TAPC/TCTA/mCBP/5 wt % EML/PO-T2T/ANT-BIZ /LiF/Al	36.4/19.2	82.6	108.1	497/26	0.10,0.53	[121]
NBO	ITO/HATCN/TAPC/mCP/EML/TmPyPB/LiF/Al	26.1/9.7	48.3	20.2	491/29	0.09,0.041	[122]
NBNP	ITO/HATCN/TAPC/mCP/EML/TmPyPB/LiF/Al	28.0/18.8	76.6	45.4	502/33	0.12,0.62	[122]
BN-ICz-1	ITO/HATCN/NPB/TCTA/EML/CzPhPy/DPPyA/LiF/Al	30.5/12.8	-	84.2	523/23	0.22,0.74	[123]
BN-ICz-2	ITO/HATCN/NPB/TCTA/EML/CzPhPy/DPPyA/LiF/Al	29.8/26.1	-	102	523/23	0.21,0.73	[123]
BN-TP	ITO/TAPC/TCTA/EML/TmPyPB/LiF/Al	35.1/20.8	139.3	139.3	528/36	0.26,0.70	[124]
TW-BN	ITO/HATCN/TAPC/TCTA/mCP/EML/TmPyPB/LiF/Al	27.8/10.7	45.3	33.1	488/26	0.14,0.36	[125]
TPh-BN	ITO/HATCN/TAPC/TCTA/mCP/EML/TmPyPB/LiF/Al	28.9/15.6	54.8	43.1	492/28	0.10,0.46	[125]
pCz-BN	ITO/HATCN/TAPC/TCTA/mCP/EML/TmPyP	27.2/12.2	64.6	50.8	496/30	0.13,0.54	[125]

	B/LiF/Al						
mCz-BN	ITO/HATCN/TAPC/TCTA/mCP/EML/TmPyPB/LiF/Al	25.9/14.0	61.2	44.7	496/31	0.15,0.55	[125]
DBNO	ITO/TAPC/TCTA/1 Wt% EML: 15 Wt% 5TCzBN:PhCzBCz/TmPyPB/LiF/Al	37.1/20.6	100.1	105.6	504/27	0.14,0.53	[126]
BO-N1	ITO/MoO_3/NPB/CzAcSF:0.3 Wt% EML/DPEPO/TmPyPB/LiF/Al	18.6/-	28.2	32.1	494/45	0.16,0.38	[127]
BO-N2	ITO/MoO_3/NPB/CzAcSF:0.8 Wt% EML/DPEPO/TmPyPB/LiF/Al	20.1/-	36.4	41.9	502/29	0.17,0.50	[127]
BNBO	ITO/TAPC/TCTA/PhCzBcZ: 5 Wt% EML/TmPyPB/LiF/Al	24.3/20.8	-	62.3	508/36	0.17,0.65	[128]
FICzBN-BO(Solution)	ITO/PEDOT:PSS/PX2Cz/ EML/BmPyPB/LiF/Al	16.26/10.35	43.89	31.98	504/31	0.11,0.60	[129]
TCZBAC	ITO/TAPC/mCP/DPEPO:30 wt% DspiroAc-TRZ:1 wt% EML/DPEPO/TmPyPB/LiF/Al	32.4/26.8	88.2	92.3	502/46	0.16,0.56	[130]
TCZBAO	ITO/TAPC/mCP/DPEPO:30 wt% DspiroAc-TRZ:1 wt% EML/DPEPO/TmPyPB/LiF/Al	36.1/29.2	131.8	143.9	522/39	0.22,0.69	[130]
***p*-ICz-BNCz**	ITO/HAT-CN/TAPC/mCP/EML/TmPyPB/LiF/Al	32.5/6.9	77.8	90.3	494/31	0.11,0.47	[131]
***m*-ICz-BNCz**	ITO/HAT-CN/TAPC/mCP/EML/TmPyPB/LiF/Al	28.0/13.0	107.0	81.9	516/40	0.20,0.70	[131]
***dm*-ICz-BNCz**	ITO/HAT-CN/TAPC/mCP/EML/TmPyPB/LiF/Al	32.9/17.7	138.2	105.8	534/46	0.30,0.67	[131]
3CzSF-	ITO/PEDOT:PSS:PFI/PhCzBCz:2 wt%	20.3/4.8	76.2	88.7	522/36	0.214,0.716	[132]

BN(Solution)	EML/DMFBD-TRZ/Na-An-BI:Liq/Liq/Al						
BpIC-DPA	ITO/HATCN/PCBBiF/DIC-TRZ:2% EML/DDBFT/BPPB/LiQ/Al	22.0/16.2	81.8	-	536/29	0.30,0.67	[133]
BpIC-Cz	ITO/HATCN/PCBBiF/DIC-TRZ:4% EML/DDBFT/BPPB/LiQ/Al	25.7/22.6	94.0	-	544/32	0.34,0.64	[133]
tCzBN-PQ	ITO/TAPC/TCTA/3 wt% EML:2,6-DCzPPY/TmPyPB/Liq/Al	30.2/-	115.6	94.3	524/37	0.25,0.67	[134]
tCzBN-PQCz	ITO/TAPC/TCTA/3 wt% EML:2,6-DCzPPY/TmPyPB/Liq/Al	35.1/-	131.0	106.9	516/34	0.20,0.69	[134]
BN-TPP	ITO/TAPC/TCTA/PhCzBCz:2 wt % EML/TmPyPB/Liq/Al	23.6/7.8	46.8	49.0	494/25	0.080,0.443	[135]
BN-DPBQ	ITO/TAPC/TCTA/PhCzBCz:2 wt % EML/TmPyPB/Liq/Al	20.3/11.3	86.8	90.9	538/34	0.321,0.660	[135]
D-BNDCN	ITO/TAPC/TCTA/5 wt% EML:2,6-DCzPPY/TmPyPB/LiF/Al	32.3/12.2	104.3	76.2	507/30	0.13,0.65	[136]
TCzBN-BP	ITO/TAPC/TCTA/ EML/TmPyPB/LiF/Al	35.6/16.0	110.7	96.5	512/35	0.16,0.68	[137]
TCzBN-FP	ITO/TAPC/TCTA/ EML/TmPyPB/LiF/Al	27.2/9.7	106.1	106.1	544/56	0.37,0.61	[137]
DtCzBN-CNBT1(Solution)	ITO/HATCN/TAPC/mCBP/EML:PhCzBCz/TmPyPB/LiF/Al	37.1/11.9	-	-	508/38	0.17,0.66	[138]
DtCzBN-CNBT2(Solution)	ITO/HATCN/TAPC/mCBP/EML:PhCzBCz/TmPyPB/LiF/Al	40.2/20.7	-	-	508/37	0.17,0.67	[138]
PXZ-tCzBN	ITO/Polymer buffer/NPD/4DBFHPB/DIC-	20.7/18.8	77.1	102.0	524/60	0.31,0.64	[139]

	TRZ:20 wt% Ir(ppy)3: 5 wt% EML/DBF-TRZ/Liq:T3PyTRZ/Liq/Al						
PhPXZ-tCzBN	ITO/Polymer buffer/NPD/4DBFHPB/DIC-TRZ:20 wt% Ir(ppy)3: 5 wt% EML/DBF-TRZ/Liq:T3PyTRZ/Liq/Al	27.6/25.7	110.6	150.3	528/54	0.35,0.63	[139]
MeSPXZ-tCzBN	ITO/Polymer buffer/NPD/4DBFHPB/DIC-TRZ:20 wt% Ir(ppy)3: 5 wt% EML/DBF-TRZ/Liq:T3PyTRZ/Liq/Al	27.6/25.5	106.1	145.4	536/52	0.31,0.65	[139]
Cz-CzBN	ITO/HATCN/TAPC/TCTA/EML/TPBi/LiF/Al	35.7/18.5	98.6	91.1	504/31	0.13,0.62	[140]
TPA-CNBN	ITO/HATCN/TAPC/TCTA/EML/TPBi/LiF/Al	37.9/21.8	102.5	94.7	504/31	0.18,0.62	[140]
PTZ-CNBN	ITO/HATCN/TAPC/TCTA/EML/TPBi/LiF/Al	33.7/12.7	102.0	99.4	504/35	0.13,0.61	[140]
Cz-2PTZ-BN	ITO/HATCN/TAPC/TCTA/mCP/EML/TmPyPB/LiF/Al	25.4/13.0	84.1	61.6	520/64	0.30,0.59	[141]
QB-DPA	ITO/HATCN/TBBD/BiCar/DMIC-TRZ: 1 wt % EML/PO-T2T/ANT-BIZ/Liq/Al	36/30.4	78.6	89.1	502/17	0.10,0.61	[142]
QB-PXZ	ITO/HATCN/TBBD/BiCar/DMIC-TRZ: 1 wt % EML/PO-T2T/ANT-BIZ/Liq/Al	36.6/31.8	134.8	151.3	516/20	0.18,0.74	[142]
m-CzDAZ-BNCz	ITO/TAPC/TCTA/PhCbBCz:25 wt % 5tBuCzBN: 1 wt % EML/TmPyPB/LiF/Al	32.9/278	83.2	95.1	504/30	0.12,0.59	[143]
SBNO	ITO/HATCN/TAPC/TCTA/mCBP: 1 wt% EML/TmPyPB/LiF/Al	25.7/7.3	86.4	71.4	524/40	0.26,0.68	[144]
SBNOS	ITO/HATCN/TAPC/TCTA/mCBP: 1 wt% EML/TmPyPB/LiF/Al	32.7/10.9	99.7	80.3	522/40	0.25,0.69	[144]
DBNDS-TPh	ITO/HATCN/TAPC/TCTA/PhCzBCz:Ir(mppy)	37.5/-	139.0	-	523/20.3	0.20,0.73	[145]

	3:1 wt% EML/PPF/TmPyPB/LiF/Al						
DBNDS-DFPh	ITO/HATCN/TAPC/TCTA/PhCzBCz:Ir(mppy) 3:1 wt% EML/PPF/TmPyPB/LiF/Al	35.5/-	133.7	-	523/20.2	0.19,0.75	[145]
DBNDS-CNPh	ITO/HATCN/TAPC/TCTA/PhCzBCz:Ir(mppy) 3:1 wt% EML/PPF/TmPyPB/LiF/Al	33.1/-	125.7	-	521.5/21.8	0.21,0.71	[145]
DMeSiB	ITO/HATCN/TAPC/mCP/26DCzPPy:5 wt% EML/TmPyPB/LiF/Al	27.2/6.0	56.6	40.4	495/25	0.07,0.50	[146]
DPhSiB	ITO/HATCN/TAPC/mCP/26DCzPPy:5 wt% EML/TmPyPB/LiF/Al	28.6/6.9	62.4	40.1	496/24	0.08,0.53	[146]
BNCz-2S(Solution)	ITO/PEDOT:PSS/PVK/EML-CzAcSF-mCPCN/TmPyPB/LiF/Al	19.39/2.03	16.30	33.20	492/34	0.11,0.46	[147]
BNCz-4S(Solution)	ITO/PEDOT:PSS/PVK/EML-CzAcSF-mCPCN /TmPyPB/LiF/Al	24.06/8.66	20.94	46.88	496/43	0.14,0.51	[147]
CNBN	ITO/HATCN/TAPC/TCTA/mCBP/DMIC-TRZ:EML/POT2T/ANT-BIZ/Liq/Al	34.4/23.3	98.3	128.7	506/16	0.12,0.68	[148]
MCNBN	ITO/HATCN/TAPC/TCTA/mCBP/DMIC-TRZ:EML/POT2T/ANT-BIZ/Liq/Al	30.8/20.4	111.4	145.8	517/17	0.17,0.74	[148]
PCNBN	ITO/HATCN/TAPC/TCTA/mCBP/DMIC-TRZ:EML/POT2T/ANT-BIZ/Liq/Al	29.1/24.4	85.2	95.6	508/20	0.14,0.67	[148]
PMCNBN	ITO/HATCN/TAPC/TCTA/mCBP/DMIC-TRZ:EML/POT2T/ANT-BIZ/Liq/Al	27.2/20.3	99.6	111.8	519/22	0.19,0.73	[148]
BNDBF	ITO/HATCN/TAPC/TCTA/mCP/PhCzBCz:EML/TmPyPb/LiF/Al	32.6/10.2	89.2	80.1	500/31	0.14,0.55	[149]
BNDBT	ITO/HATCN/TAPC/TCTA/mCP/PhCzBCz:E	35.5/16.0	97.5	85.1	500/2	0.15,0.54	[149]

ML/TmPyPb/LiF/Al

Table 5. Photophysical properties of Yellow MR-TADF emitters

Compound	λ_{PL} (nm), (sol/film)	FWHM (sol/Flim)	Φ_F (sol/Film), %	$S_1/T_1/\Delta E_{ST}$ (eV)	τ_p (ns)/ τ_d (μs)	k_{RISC} (s^{-1})	Ref
CzCzB	558/559	47/48	89/87	2.22/2.02/0.20	8.8/307	5.0×10^3	[150]
BN-Cz	551/561	49/52	97/91	2.35/2.18/0.17	9.4/340	0.24×10^4	[151]
BN-Cb	551/559	41/47	95/82	2.36/2.14/0.22	10.1/115	0.06×10^4	[151]
DBN-ICZ	545/553	23/26	98.6/-	2.29/2.09/0.20	6.1/48.0	0.7×10^4	[152]
BN-DICz	534/542	32/31	99.4/-	2.33/2.07/0.26	7.9/155.9	7.8×10^4	[152]
DG7	552/568	20/30	100/4	2.94/2.85/0.09	6/1400	0.43×10^2	[153]
TCZ-F-DABNA	558/-	38/-	-/99	2.21/2.09/0.12	7.90/20.2	7.80×10^4	[154]
HBN	572/581	17/20	-/82	-/-/0.22	10.4/48.7	2.48×10^4	[155]

Table 6. EL properties of the Yellow MR-TADF emitters

Compound	Device structure	EQE (max/1000cd/m^2),	CE, cd/A	PE, lm/W	λ_{EL}/FWHM	CIE(x,y)	Ref

		%			(nm)		
CzCzB	ITO/HATCN/TAPC/mCBP/1 wt% EML:mCBP/B3PyPB/LiF/Al	19.0/6.7	74.8	36.3	559/48	0.43,0.56	[150]
BN-Cz	ITO/TAPC/TCTA/PhCzBCz: 25 wt% DACT-II:3 wt% EML/TmPyPB/LiF/Al	32.9/18.4	114.0	130.8	560/49	0.44,0.55	[151]
BN-Cb	ITO/TAPC/TCTA/PhCzBCz: 25 wt% DACT-II:3 wt% EML/TmPyPB/LiF/Al	29.7/17.1	113.1	131.6	556/45	0.43,0.56	[151]
DBN-ICZ	ITO/HATCN/NPB/TCTA/mCBP:30 wt% 3CTF: 3 wt% EML/CzPhPy/DPPyA/LiF/Al	37.4/23.6	136.6	119.2	551/23	0.36,0.59	[152]
BN-DICz	ITO/HATCN/NPB/TCTA/mCBP:30 wt% 3CTF: 3 wt% EML/CzPhPy/DPPyA/LiF/Al	31.5/17.8	123.3	88.6	541/27	0.30,0.58	[152]
DG7	ITO/MoO3/TCTA/mCP: 5 wt%/TPBi/BPhen:Cs/Al	2.8/1.8	-	7	559/23	0.41,0.55	[153]
TCZ-F-DABNA	ITO/TAPC/TCTA/NPB/BCzPh/8 wt% EML/CzPhPy/DPPyA/LiF/Al	39.2/7.84	106.7	108.1	588/61	0.54,0.44	[154]
HBN	ITO/HATCN/TAPC/mCBP: 2 wt% EML: 30 WT% Bt2Ir(acac)/TmPyPB/LiF/Al	36.1/14.1	114.13	96.85	581/25	0.52,0.48	[155]

Table 7. Photophysical properties of orange MR-TADF emitters

Compound	**λ_{PL} (nm), (sol/film)**	**FWHM (sol/Flim)**	**Φ_F (sol/Film), %**	**$S_1/T_1/\Delta E_{ST}$ (eV)**	**τ_p (ns)/ τ_d (µs)**	**k_{RISC} (s^{-1})**	**Ref**

CNCzBNCz	581/582	42/-	90/96	2.28/2.10/0.18	77/60	4.2×10^5	[156]
BNIP-tBuCz	564/570	60/61	96/-	2.35/2.27/0.08	13.0/146.7	0.9×10^4	[157]
BNIP-tBuDPAc	544/557	43/53	98/-	2.41/2.27/0.14	13.9/116.4	1.2×10^4	[157]
BNIPCzDPAc	583/585	49/57	95/-	2.28/2.22/0.06	12.0/132.8	0.9×10^4	[157]
BNDIP	558/584	38/61	96/-	2.34/2.21/0.13	10.2/60.0	2.3×10^4	[157]
BN-R1	608/608	43/46	94/92	2.21/2.10/0.11	15.3/90.9	3.0×10^4	[158]
BN-R2	595/597	36/42	94/92	2.25/2.13/0.12	17.3/77.5	2.4×10^4	[158]
BN-R3	585/585	40/44	93/92	2.27/2.16/0.11	20.2/42.1	6.8×10^4	[158]

Table 8. EL properties of the orange MR-TADF emitters

Compound	**Device structure**	**EQE (max/1000cd/m^2), %**	**CE, cd/A**	**PE, lm/W**	**λ_{EL}/FWHM (nm)**	**CIE(x,y)**	**Ref**
CNCzBNCz	ITO/TAPC/TCTA/EML/TmPyPb/LiF/Al	33.7/16.4	-	117.8	583/49	0.54, 0.46	[156]
BNIP-tBuCz	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/Liq	32.8/29.6	104.2	116.9	566/69	0.48,0.51	[157]
BNIP-tBuDPAc	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/Liq	39.4/23.3	145.3	163	544/58	0.41,0.56	[157]
BNIPCzDPA	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-	32.4/15.2	82.9	93	584/62	0.54,0.45	[157]

c	T2T/ANT-BIZ/Liq						
BNDIP	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/Liq	34.1/25.5	97.9	108.1	582/67	0.53,0.47	[157]
BN-R1 (Solution)	ITO/PEDOT:PSS/vNPB/1 wt% EML/DMFBD-TRZ/Na-An-BI/Liq/Al	20.7/6.3	33.5	39.0	610/44	0.640,0.358	[158]
BN-R2 (Solution)	ITO/PEDOT:PSS/vNPB/1 wt% EML/DMFBD-TRZ/Na-An-BI/Liq/Al	21.1/5.5	44.4	54.5	601/40	0.616,0.382	[158]
BN-R3 (Solution)	ITO/PEDOT:PSS/vNPB/1 wt% EML/DMFBD-TRZ/Na-An-BI/Liq/Al	19.9/10.1	57.1	68.3	585/43	0.546,0.451	[158]

Table 9. Photophysical properties of red/NIR MR-TADF emitters

Compound	λ_{PL} (nm), (sol/film)	FWHM (sol/Flim)	Φ_F (sol/Film), %	$S_1/T_1/\Delta E_{ST}$ (eV)	τ_p (ns)/ τ_d (μs)	k_{RISC} (s^{-1})	Ref
R-BN	662/672	38/48	100/-	1.87/1.69/0.18	12/16.6	6.7×10^4	[159]
R-TBN	692/698	38/49	100/-	1.79/1.63/0.16	14.2/46.4	2.5×10^4	[159]
PXZ-R-BN	688/697	49/55	-/78	1.87/1.68/0.19	13.7/0.65	0.30×10^4	[160]
BCz-R-BN	715/718	43/52	-/71	1.82/1.66/0.16	14.2/1.49	0.12×10^4	[160]
BNO1	605/610	32/35	96/-	2.15/1.90/0.25	-	-	[161]

BNO2	609/618	32/37	95/-	2.13/1.86/0.27	-	-	[161]
BNO3	616/624	33/38	96/-	2.11/1.85/0.26	-	-	[161]
RBNO1	631/629	39/-	95/-	2.08/1.83/0.25	-/26 ms	-	[162]
RBNO2	645/645	39/-	98/-	2.03/1.77/0.30	-/29 ms	-	[162]
BN-Y	567/-	34/-	95/-	2.35/2.23/0.12	-	1.3×10^4	[163]
BN-R	624/620	46/49	94/-	2.16/2.05/0.11	17.8/71.8	1.1×10^4	[163]
PTZBNO	612/614	47/51	97/-	2.10/1.83/0.27	-/26 ms	-	[164]
PXZBNO	627/630	45/50	94/-	2.03/1.77/0.30	-/60 ms	-	[164]
DBNS	631/-	40/-	80/-	2.05/1.85/0.20	14.4/11.2	2.1×10^5	[165]
DBNS-tBu	641/-	39/-	85/-	2.02/1.83/0.19	19.1/10.2	2.2×10^5	[165]
BNNO	637/-	32/-	95/-	2.04/1.95/0.09	13.8/69.5	1.4×10^4	[166]
B4N6-Me	580/-	19/-	98/-	2.20/2.01/0.19	14.6/138.3	7.6×10^3	[167]
PPZ-BN	613/619	48/58	88/82	2.02/1.77/0.25	20.0/46.2	2.2×10^4	[168]
FBN	508/507	25/30	97/94	2.50/2.41/0.09	7.35/197.2	0.53×10^4	[169]
FSBN	621/630	55/59	98/98	2.13/2.08/0.05	12.5/51.6	1.86×10^4	[169]
Δ-DABNA-TB	635/-	52.9/-	68/74	-/-/0.23	13.8/491	0.85×10^4	[170]
BNTPA	613/-	42/-	94/-	2.15/2.05/0.10	-/28.28	1.61×10^5	[171]
***h*-BNC0-3**	582/-	45/-	92/-	2.39/2.32/0.07	12.02/5.81	7.35×10^7	[172]

Table 10. EL properties of the red/NIR MR-TADF emitters

Compound	Device structure	EQE (max/1000cd/m^2), %	CE, cd/A	PE, lm/W	λ_{EL}/FWHM (nm)	CIE(x,y)	Ref
R-BN	ITO/HATC/TAPC/TCTA/CzPhPy/B4PyMPM/LiF/Al	28.1/-	-	-	664/48	0.71, 0.28	[159]
R-TBN	ITO/HATC/TAPC/TCTA/CzPhPy/B4PyMPM/LiF/Al	27.6/-	-	-	686/49	0.72, 0.27	[159]
PXZ-R-BN	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/Al	29.3/12.0	-	-	693/59	-	[160]
BCz-R-BN	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/Al	24.2/8.0	-	-	713/56	-	[160]
BNO1	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/LiF/Al	35.6/27.7	59.4	66.7	610/39	0.64, 0.34	[161]
BNO2	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/LiF/Al	34.4/26.9	46.5	52.2	618/39	0.65, 0.35	[161]
BNO3	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/LiF/Al	36.1/28.6	43.4	48.7	625/40	0.66, 0.34	[161]
RBNO1	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/LiF/Al	33.1/16.7	26.5	34.8	632/55	0.68,0.31	[162]
RBNO2	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/LiF/Al	34.7/24.2	18.6	20.7	645/48	0.70,0.30	[162]
BN-R (Solution)	ITO/PEDOT:PSS):PF1/vNPB/1 wt% EML/DMFBD-TRZ/Na-AN-BI/LiQ/Al (without sensitizer)	22.0/7.1	30.2	31.2	617/47	0.65, 0.34	[163]

BN-R	With sensitizer	20.1/16.4	25.5	26.7	618/47	0.66, 0.33	[163]
PTZBNO	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/LiF/Al	34.5/27	50.1	62.6	618/58	0.64,0.36	[164]
PXZBNO	ITO/HATCN/TAPC/TCTA/mCBP/EML/PO-T2T/ANT-BIZ/LiF/Al	28.1/21.6	25.1	28.2	632/54	0.67,0.33	[164]
DBNS	ITO/HATCN/NPB/tTCTA/EML/ CzPhPy/DPPyA/LiF/Al	5.8/-	5.2	-	613/-	0.63, 0.35	[165]
DBNS-tBu (Solution)	ITO/HATCN/NPB/tTCTA/EML/ CzPhPy/DPPyA/LiF/Al	7.8/-	9.2	-	616/-	0.65, 0.34	[165]
BNNO	ITO/HATCN/NPB/ TCTA/EML/ CzPhPy/DPPyA/LiF/Al	34.4/31	25.5	24.1	643/42	0.70, 0.29	[166]
B4N6 -Me	ITO/TAPC/TCTA/mCBP/EML/PO-T2T/TmPyPB/LiF/Al	35.8/28.4	108	100	588/27	0.57,0.43	[167]
PPZ-BN	ITO/HATCN/NPB/BCzPh/EMLs/CzPhPy/DPPyA/LiF/Al	26.9/-	34.5	34.6	613/55	0.66,0.34	[168]
FSBN	ITO/TAPC/TCTA/1 wt% EML:DMIC-TRZ/TmPyPB/LiF/Al	37.5/21.3	43.3	50.1	624/58	0.67,0.33	[169]
Δ-DABNA-TB	ITO/TAPC/Tris-PCz/mCBP/mCBP:4CzTPN:EML/SF3-TRZ/SF3-TRZ:Liq/Al	23.3/16.3	30.1	24.7	624/42	0.661,0.339	[170]
BNTPA	ITO/HATCN/α-NPD/TCTA/EML/PPF/BPPB/Liq/Al	35.2/-	59.6	64.5	617/48	0.657,0.343	[171]
***h*-BNCO-3**	ITO/HAT-CN/TAPC/TCTA/mCP/PhCzBCz:5 wt% EML/TmPyPB/LiF/Al	26.4/4.7	52.1	54.5	600/55	0.60,0.40	[172]

Table 11. Photophysical properties of Full color MR-TADF emitters

Compound	λ_{PL} (nm), (sol/film)	FWHM (sol/Flim)	Φ_F (sol/Film), %	$S_1/T_1/\Delta E_{ST}$ (eV)	τ_p (ns)/ τ_d (µs)	k_{RISC} (s^{-1})	Ref
BBCz-DB	446/-	16/-	93/-	2.74/2.59/0.15	4.5/86	1.9 x 10^4	[173]
BBCz-SB	489/-	23/-	98/-	2.63/2.48/0.15	4.7/102	1.4 ×10^4	[173]
BBCz-G	517/-	34/-	90/-	2.50/2.36/0.14	5.0/17	18 × 10^4	[173]
BBCz-Y	549/-	42/-	85/-	2.41/2.27/0.14	5.6/29	10 × 10^4	[173]
BBCz-R	615/-	21/-	89/-	2.09/1.90/0.19	6.1/89	1.2 × 10^4	[173]
Cb-B	460/461	23/30	83/89	2.70/2.58/0.12	5.0/39.0	5.8 × 10^4	[174]
Cz-B	477/484	25/30	98/97	2.60/2.46/0.14	5.2/106	2.7 × 10^4	[174]
TCz-B	512/517	27/31	100/89	2.42/2.33/0.09	5.4/60	1.3 × 10^4	[174]
DACz-B	572/576	34/44	87/87	2.17/2.03/0.14	7.9/316	1.0 × 10^4	[174]
BN1	496/499	23/28	99/93	2.50/2.39/0.11	6.2/68.6	1.9 × 10^5	[175]
BN2	534/538	30/41	98/89	2.32/2.19/0.13	7.1/107.6	1.5 × 10^5	[175]
BN3	562/563	30/44	98/86	2.23/2.14/0.09	6.3/127.9	1.4 × 10^5	[175]
SBON	463/-	24/-	-/74	2.68/2.52/0.16	9.2/11.5	0.5 × 10^5	[176]
SBSN	489/-	27/-	-/76	2.54/2.44/0.10	8.9/32.2	1.5 × 10^5	[176]
DBON	505/-	20/-	-/98	2.46/2.33/0.13	3.7/24.6	0.8 × 10^5	[176]
DBSN	553/-	28/-	-/98	2.24/2.11/0.13	4.3/25.7	1.9 × 10^5	[176]

Table 12. EL properties of the full color MR-TADF emitters

Compound	Device structure	EQE (max/1000cd/m^2), %	CE, cd/A	PE, lm/W	λ_{EL}/FWHM (nm)	CIE(x,y)	Ref
BBCz-DB	ITO/HATCN/TAPC/mCBP/EML/PPF/B3PyPB /LiF/Al	29.3/-	-	-	469/27	0.12,0.18	[173]
BBCz-SB	ITO/HATCN/TAPC/mCBP/EML/PPF/B3PyPB /LiF/Al	27.8/-	-	-	487/26	0.09,0.40	[173]
BBCz-G	ITO/HATCN/TAPC/mCBP/EML/PPF/B3PyPB /LiF/Al	31.8/-	-	-	515/54	0.26,0.68	[173]
BBCz-Y	ITO/HATCN/TAPC/mCBP/EML/PPF/B3PyPB /LiF/Al	29.3/-	-	-	549/48	0.39,0.59	[173]
BBCz-R	ITO/HATCN/TAPC/mCBP/EML/PPF/B3PyPB /LiF/Al	22.0/-	-	-	616/26	0.67,0.33	[173]
Cb-B	ITO/HATCN/TAPC/mCBP/EML/PPF/B3PyPB /LiF/Al	19.0/7.7	17.8	19.0	461/28	0.13,0.13	[174]
Cz-B	ITO/HATCN/TAPC/mCBP/EML/PPF/B3PyPB /LiF/Al	22.6/6.9	34.7	24.7	482/30	0.11,0.31	[174]
TCz-B	ITO/HATCN/TAPC/mCBP/EML/PPF/B3PyPB /LiF/Al	29.2/9.4	100.7	72.4	515/30	0.16,0.71	[174]
DACz-B	ITO/HATCN/TAPC/mCBP/EML/PPF/B3PyPB	19.6/4.8	81.6	58.2	571/44	0.47,0.51	[174]

	/LiF/Al						
BN1	ITO/HATCN/TAPC/mCP/EML/POT2T/TmPyPB/LiQ/Al	24.3/12.9	72.8	65.3	506/36	0.15,0.63	[175]
BN2	ITO/HATCN/TAPC/mCP/EML/POT2T/TmPyPB/LiQ/Al	24.5/7.6	101.8	83.1	545/46	0.38,0.61	[175]
BN3	ITO/HATCN/TAPC/mCP/EML/POT2T/TmPyPB/LiQ/Al	24.7/8.9	92.6	106.4	568/43	0.47,0.52	[175]
SBON	ITO/HATCN/TAPC/mCBP/EML/PO-T2T/TmPyPB/LiF/Al	13.7/6.7	16.1	11.4	466/28	0.13,0.13	[176]
SBSN	ITO/HATCN/TAPC/mCBP/EML/PO-T2T/TmPyPB/LiF/Al	17.6/12.0	40.4	25.4	492/31	0.10,0.44	[176]
DBON	ITO/HATCN/TAPC/mCBP/EML/PO-T2T/TmPyPB/LiF/Al	26.7/12.0	94.1	75.8	510/29	0.17,0.68	[176]
DBSN	ITO/HATCN/TAPC/mCBP/EML/PO-T2T/TmPyPB/LiF/Al	21.8/16.9	84.7	71.9	556/43	0.42,0.57	[176]

Solution Solution Processed OLEDs and rest of the devices are Vacuum processed.