

White Light Emitting Diode with High colour Rendering Index of 98.3 by Blue Emissive Carbon Dots

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SI. Figures

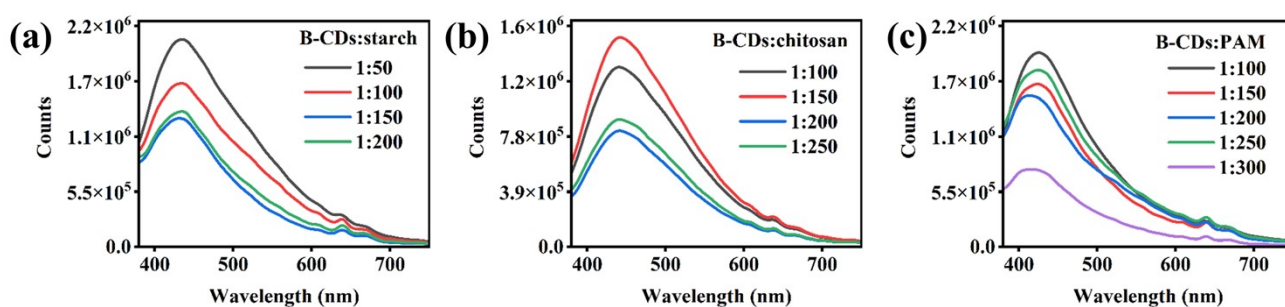


Fig. S1 Fluorescence spectra of CDs/starch, CDs/CTS and CDs/PAM phosphors.

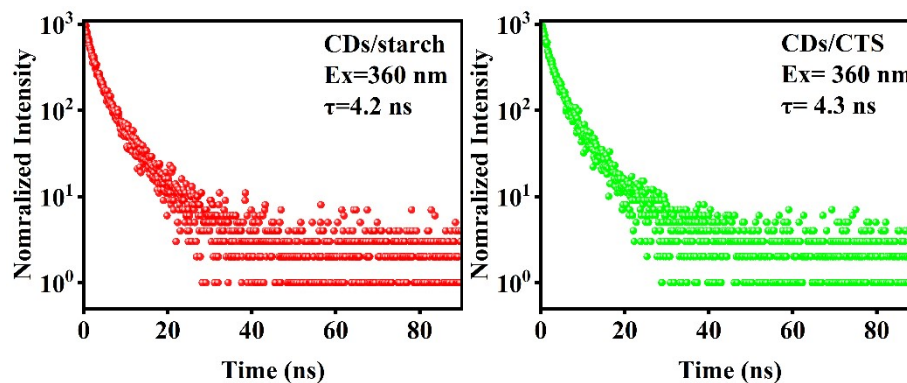


Fig. S2 Fluorescence-decay curves of B-CDs/starch and B-CDs/CTS phosphors.

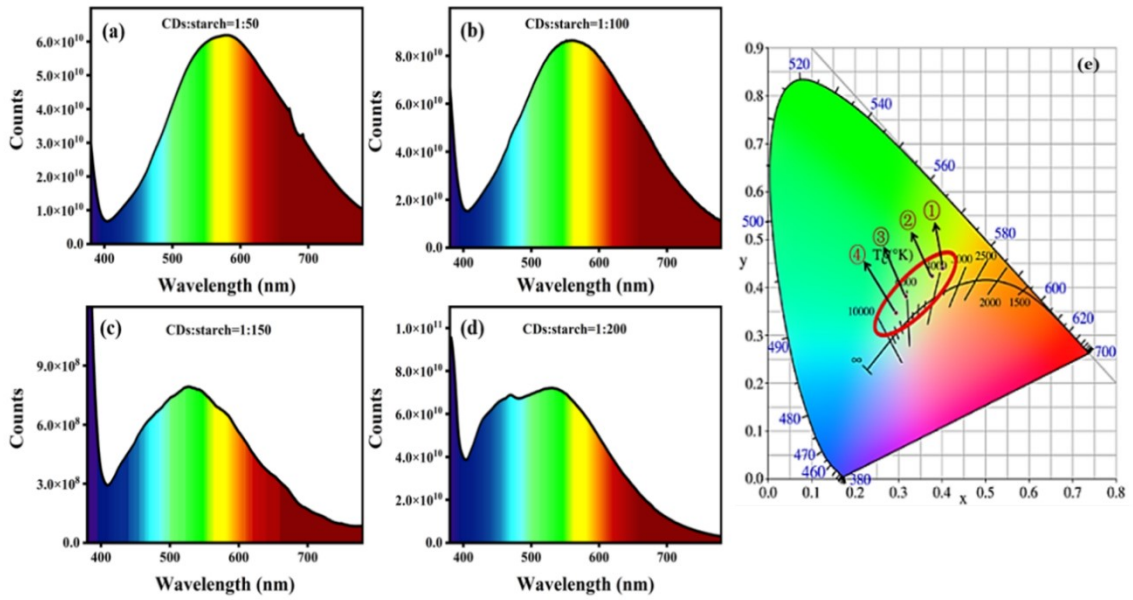


Fig. S3 Fluorescence spectra of B-CDs/starch-based WLED (a-d) at different proportions and corresponding CIE coordinates (e)

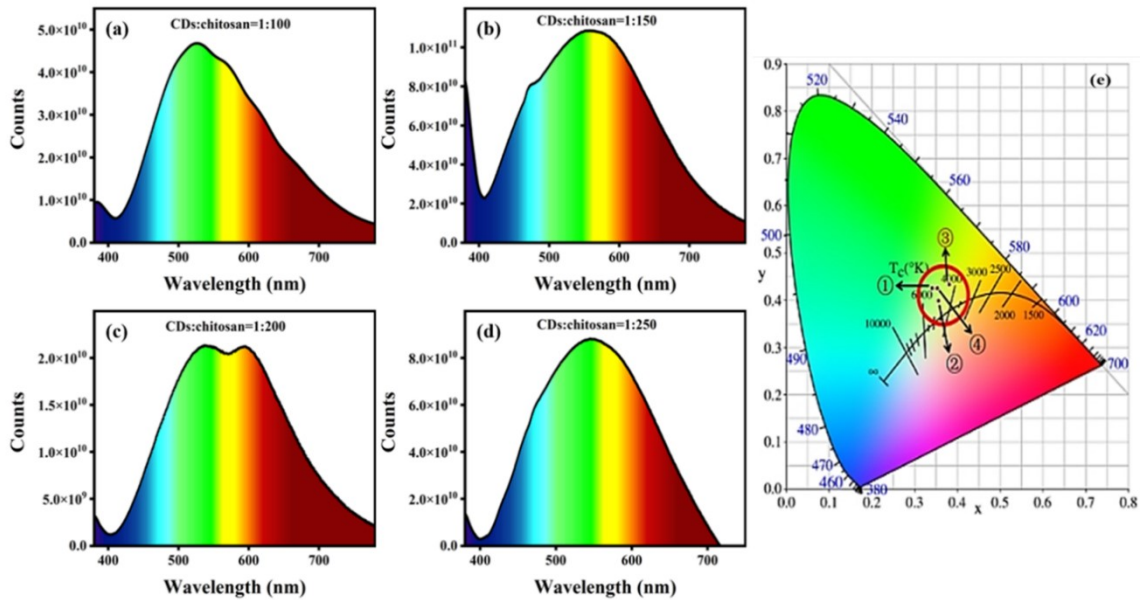


Fig. S4 Fluorescence spectra of B-CDs/CTS-based WLED (a-d) at different proportions and corresponding CIE coordinates (e)

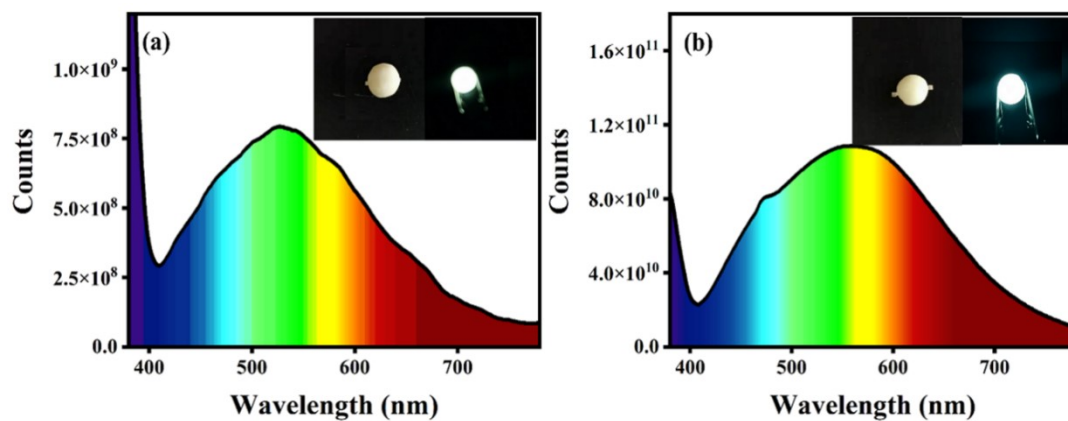


Fig. S5 The fluorescence spectra and images of B-CDs/matrix-based WLED (a) B-CDs/starch and (b) B-CDs/CTS.

SII. Tables

Table S1. Comparison of lifetime with other CDs applied in WLED

Name	Lifetime (ns)	Ref.
BCDs@PS	3.8	1
OCDs@PS	4.9	1
o-CDs	8.98	2
G-SiCDs	6.63	3
R-SiCDs	6.85	3
S,N-C-dots	3.66	4
R-CDs	6.6	5
P-CDs	3.73	6
R-CDs	3.84	6
CyCDs	7.7	7
SW-CPDs	3.96	8
O-CDs	5.03	9
G-CDs	5.74	9
B-CDs	1.28	9
pm-CDs@DCDA	4.12 - 4.51	10
SSF-CDs	4.85	11
B-SiCDs	4.33	12
R-SiCDs	3.03	12
B-CDs/PAM	6.6	This work

Table S2 Indices of B-CDs/starch-based WLED in different proportions

NO.	B-CDs: starch	WLED indicators		
		CIE	CCT(K)	CRI
1	1:50	(0.4014,0.4399)	3903	80.8
2	1:100	(0.3770,0.4246)	4348	82.7
3	1:150	(0.3169,0.3817)	6067	80.7
4	1:200	(0.2950,0.3463)	7295	82.0

Table S3 Indices of B-CDs/CTS-based WLED in different proportions

NO.	B-CDs: CTS	WLED indicators		
		CIE	CCT(K)	CRI
1	1:100	(0.3417,0.4254)	5246	77.0
2	1:150	(0.3564,0.3991)	4779	84.2
3	1:200	(0.3818,0.4331)	4283	82.9
4	1:250	(0.3529,0.4260)	4948	75.4

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