Supplementary materials

Tailorable boron-doping carbon nanotubes as high-efficiency counter electrodes for quantum dot sensitized solar cells

Wenhua Li, Shule Zhang, Qianqiao Chen*, Qin Zhong*

* Corresponding author: Nanjing University of Science and Technology, Nanjing, People's Republic of China, 210094

E-mail: cqq@njust.edu.cn (Qianqiao Chen); zq304@njust. edu.cn (Qin Zhong)

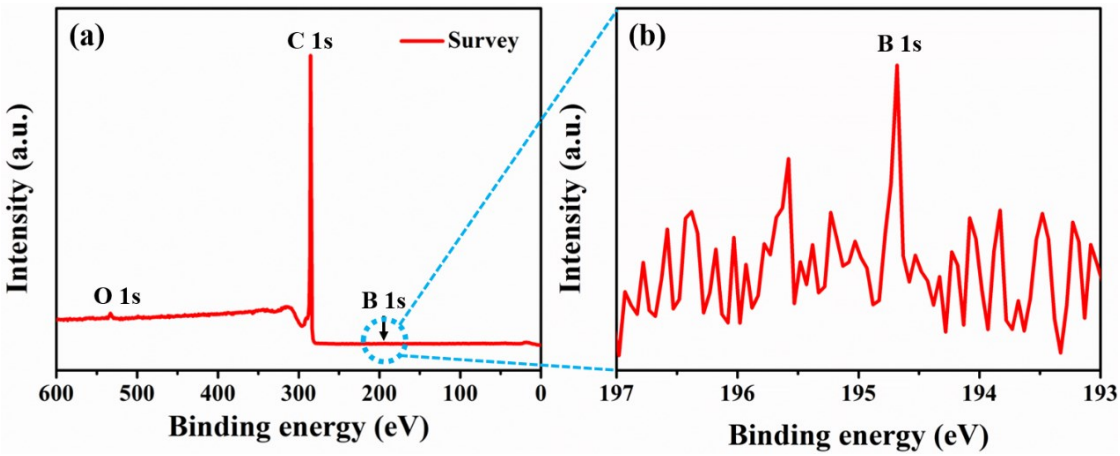

Figure S1 (a) XPS survey spectrum of BCNT1 and (b) high-resolution XPS spectrum of B 1s.

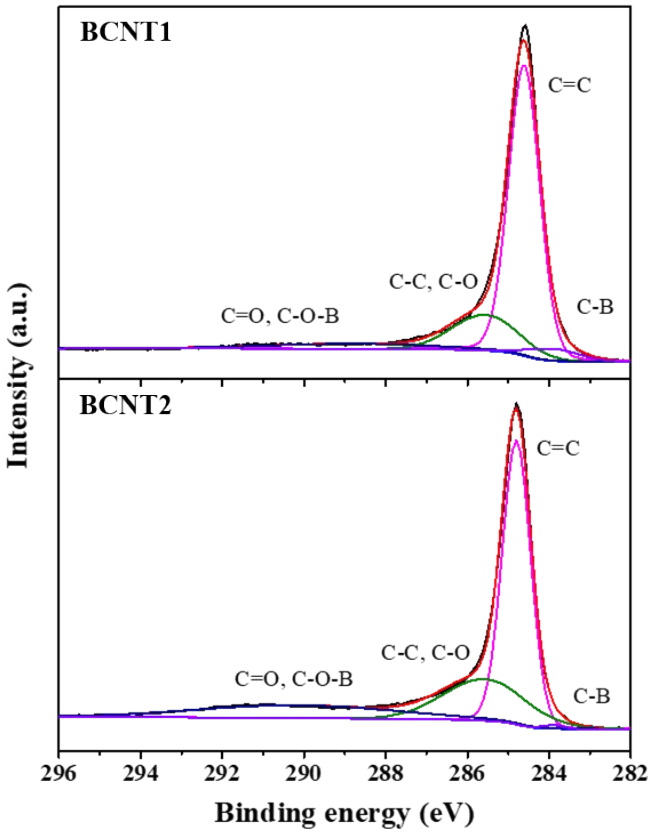

Figure S2 High-resolution C1s spectra of BCNT1 and BCNT2.

Table S1 C species content calculated based on XPS spectrum area.

Samples	BCNT1	BCNT2
C=C	0.710	0.574
C-C, C-O	0.177	0.240
C-B	0.045	0.005
C=O, C-O-B	0.068	0.181

Table S2 Comparison of photoelectrochemical performances of CdS/CdSe/ZnS co-sensitized QDSSCs with different counter electrodes, and the EIS results (R_{ct}) for the symmetrical dummy cells.

CEs	J_{sc} (mA ▪ cm^{-2})	V_{oc} (V)	FF	PCE (%)	Active Area (cm^2)	R_{ct} (Ω ▪ cm^2)	Refs
BCNT1	17.40	0.52	0.52	4.55	0.16	0.35	Present work
Iron sulfide/carbon	19.57	0.45	0.64	5.61	-	2.86	[1]
CB/Cu_XS-3	16.55	0.58	0.57	5.50	0.16	3.35	[2]
Double-shelled $Cu_{2-x}Se$ nanocages	16.42	0.67	0.43	4.76	0.20	2.94	[3]
CoS/NC-30	14.68	0.55	0.55	4.46	0.25	14.47	[4]
DW-$Cu_{2-x}Se$/Cu_7S_4-HNB	23.02	0.52	0.36	4.38	0.16	7.10	[5]
CuS2h	15.52	0.61	0.45	4.29	0.27	1.18	[6]
PACuS4	13.35	0.59	0.53	4.20	-	-	[7]
Cu_3Se_2-2h	11.52	0.56	0.62	3.99	0.13	-	[8]
CoS	11.62	0.60	0.53	3.67	0.25	6.45	[9]
PbS	15.11	0.57	0.41	3.49	0.20	352.80	[10]
NiS120	11.67	0.60	0.47	3.25	0.27	7.96	[11]
CISe-20min	14.74	0.55	0.36	2.92	0.20	440	[12]
Cu_2S	6.89	0.57	0.25	1.01	0.16	-	[13]

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