Supporting information

Solution Processed Highly Responsive UV Photodetectors from Carbon Nanodot/Silicon Heterojunctions

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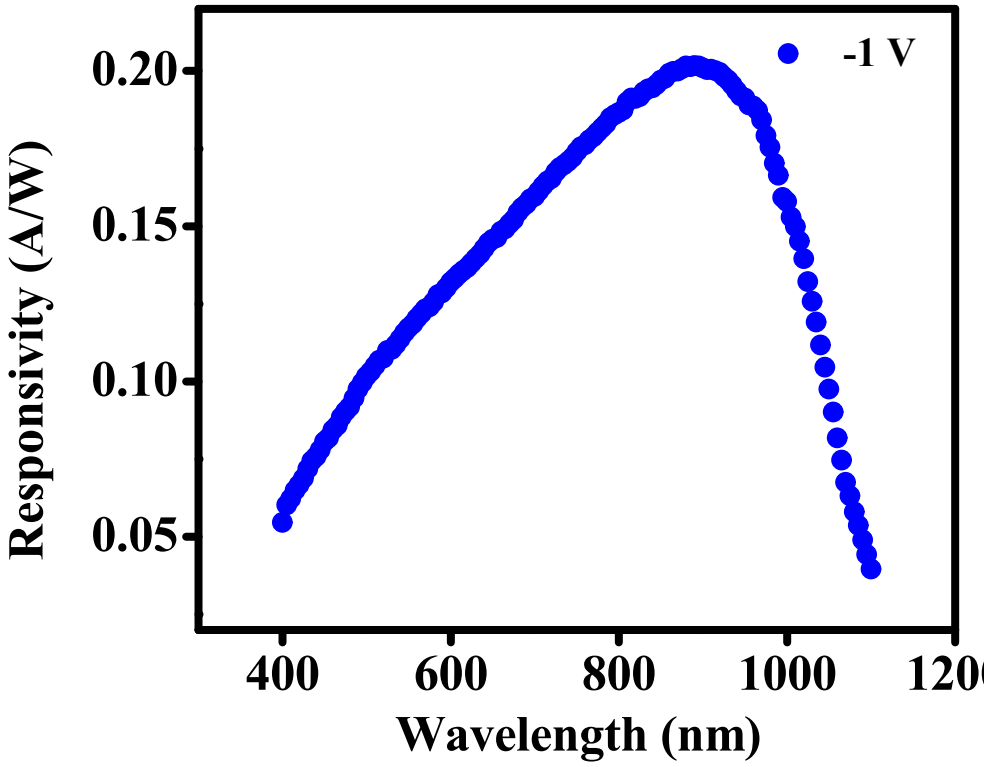

Figure S1: Responsivity curve of the control device (Au/n-Si/Al).

Table-S1

(Comparison of performance of the reported device with other materials and device structures)

Material	Device type	Spectral range	Peak Responsivity	Detectivity	Reference
Crossed ZnO nanofiber array	3-terminal field effect transistor (FET)	UV	1 mA/W	--	[1]
Organohalide perovskites and mixed lead halide semiconductors	2-terminal device on top of transparent electrode (ITO)	UV-Vis	--	$\sim 10^{11}$	[2]
Epitaxial GaN Growth on Graphene	2 terminal device on sapphire substrate	UV	2.5 A/W	--	[3]
GaN	Asymmetric electrode 2-terminal MSM type	UV	280 mA/W	--	[4]
GaN/MoS2	2 terminal p-n junction diode	DUV	187 mA/W	10^{13}	[5]
Indium−gallium−zinc-oxide (IGZO)	PEDOT:PSS/SnOx/IGZO heterojunction transistor	Visible blind UV	984 A/W	10^{14}	[6]
Mesoporous GaN	2 terminal MSM type	UV	10^4 A/W	5.3×10^{14}	[7]
GaN/ZnO	2 terminal MSM type	Visible blind UV	3.46 mA/W		[8]
Graphene Quantum Dots (GQDs)	2-terminal MSM diode Ag/GQD/Au	DUV (<300 nm)	2.1 mA/W	$\sim 10^{12}$	[9]
n-doped Graphene Quantum Dots (n-GQDs)	2-terminal MSM diode on IDE Au/n-GQD/Au	UV-NIR	325 V/W	--	[10]
Graphene Quantum Dots (GQDs)	2-terminal tunneling diode Graphene/GQD/ Graphene	UV-NIR	0.2-0.5 A/W	$>10^{11}$	[11]
Fullerene	2-terminal device on top of transparent electrode (ITO)	UV	0.2 A/W	$\sim 10^{11}$	[12]

PbS quantum dot	Solution processed PbS quantum dot on SiO2 substrate	NIR	30 A/W	~10^{11}	[13]
Carbon nitride quantum dot/ZnO nanowire	Dip-coating of ZnO NWs on flexible substrates followed by spin coating g-C3N4 QDs on ZnO NWs.	UV	355 mA/W	~	[14]
Perovskite Quantum Dots Embedded Composite Films	Perovskite quantum dots spin coated on top of silicon photodiodes	UV	EQ 50.6%@290 nm	~	[15]
Carbon Nano dots (CNDs)	***2- terminal p-n junction n-Si/p-CNDs heterojunction***	***300-1100 nm***	***0.5 A/W***	***~10^{14}***	***Our present work***

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