Electronic Supplementary Material (ESI) for Nanoscale.

Electronic Supplementary Information for

High-Performance Deep Ultraviolet Photodetectors Based on Few-Layer Hexagonal Boron Nitride

Heng Liu,[a,b] Junhua Meng,[a,b] Xingwang Zhang,[*a,b] Yanan Chen,[a,b] Zhigang Yin,[a,b] Denggui Wang,[a,b] Ye Wang,[a,b] Jingbi You,[a,b] Menglei Gao,[a,b] and Peng Jin[a,b]

[a.] Key Laboratory of Semiconductor Materials Science, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, 100083, P. R. China

[b.] College of Materials Science and Opto-electronic Technology, University of Chinese Academy of Sciences, Beijing 100049, P. R. China

* E-mail: xwzhang@semi.ac.cn

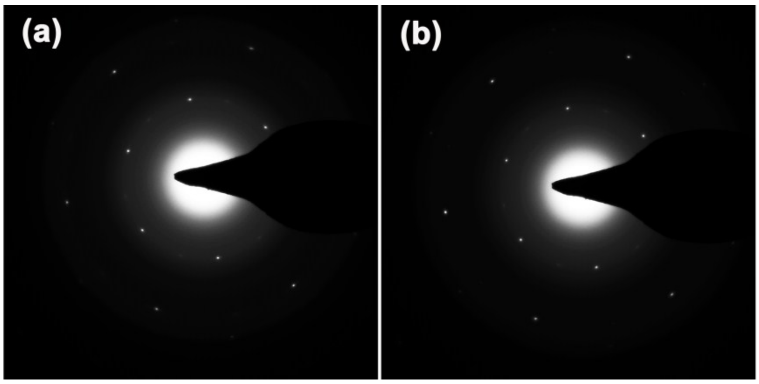

Figure S1. The SAED patterns recorded at different locations on the same h-BN domain have identical orientation, implying the single-crystal nature of h-BN domain.

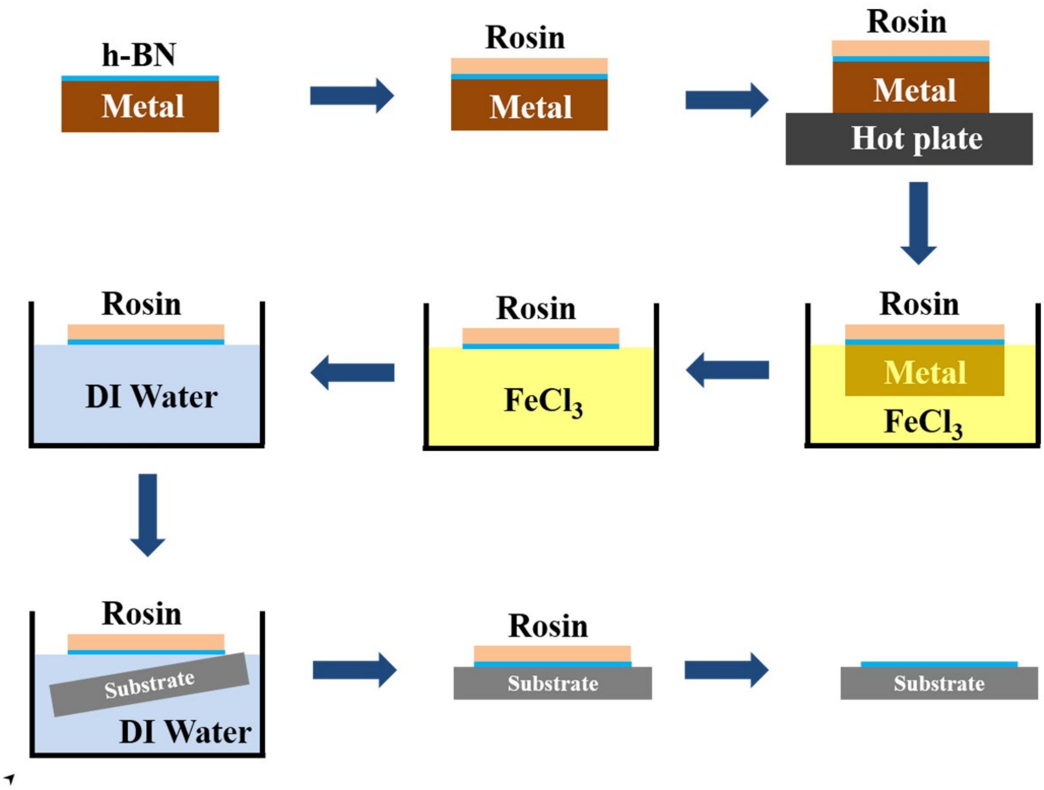

Figure S2. Schematic diagram of the h-BN transfer by a rosin-assisted wet-transfer method.

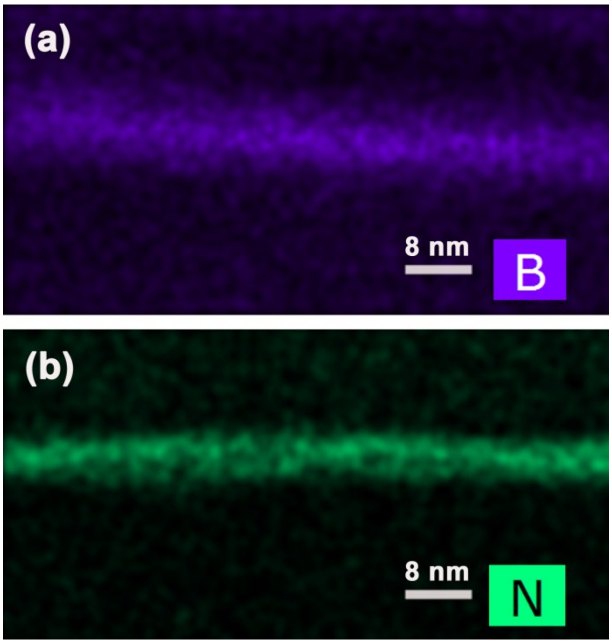

Figure S3. The EDX spectroscopy elemental mappings of B and N for the h-BN layer transferred onto a SiO_2/Si substrate.

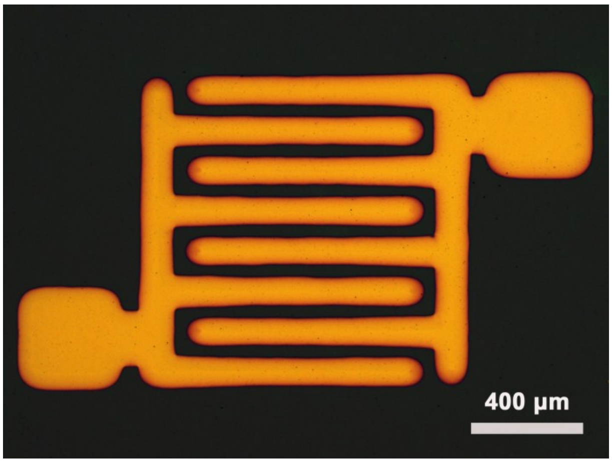

Figure S4. Optical micrograph of the h-BN DUV photodetector.

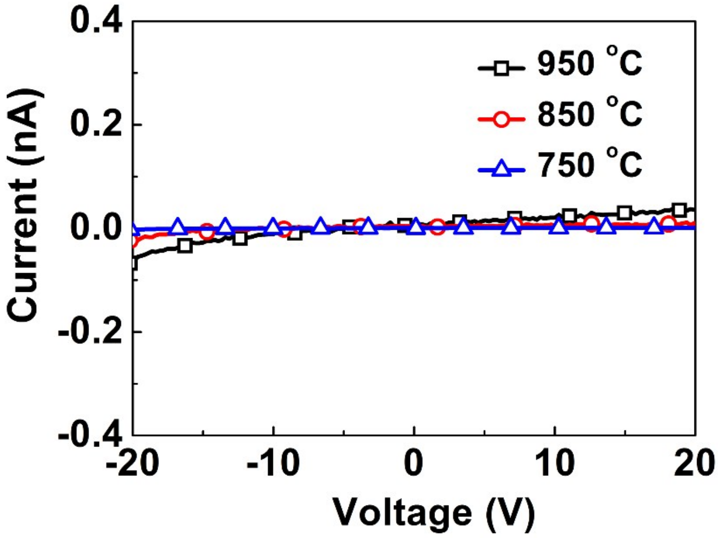

Figure S5. The I-V curves of h-BN photodetectors measured in the dark. The devices were fabricated from the h-BN layers grown at different temperatures.

Table S1. Comparison of the photoresponse parameters between the h-BN photodetectors and DUV photodetectors fabricated from other wide band gap semiconductors.

Materials	Cut off wavelength (nm)	Dark current	Responsivity (mA/W)	On/off ratio	Ref.
Diamond	225	1.1 pA/5 V	48	10^4	1
β-Ga_2O_3	250	1200 pA/10 V	37	10^3	2
$Mg_xZn_{1-x}O$	273	20 pA/15 V	0.1	10^4	3
AlN	240	0.1 pA/100 V	400	/	4
SiC	310	100 pA/100 V	70	10^3	5
h-BN	250	200 nA/4 V	1.5	<5	6
h-BN	250	4 nA/4 V	0.09	/	7
h-BN	225	20 pA/20 V	0.1	10^3	This Work

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