Reinforcement of Double Built-In Electric Fields in Spiro-MeOTAD/Ga$_2$O$_3$/Si p-i-n Structure for High Sensitivity Solar-blind UV Photovoltaic Detector

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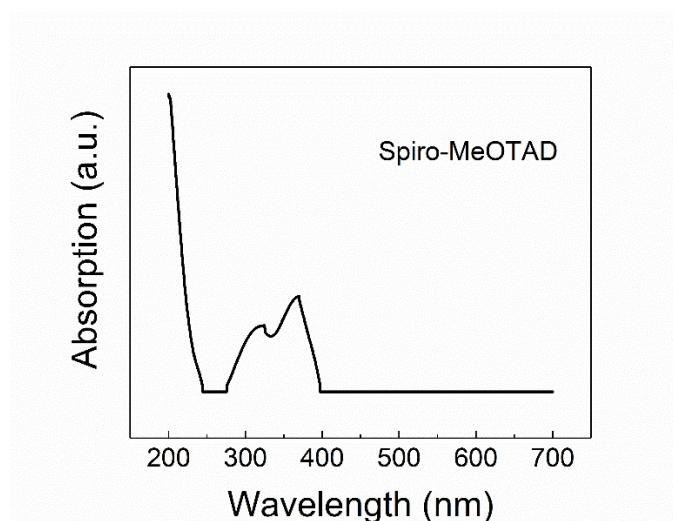
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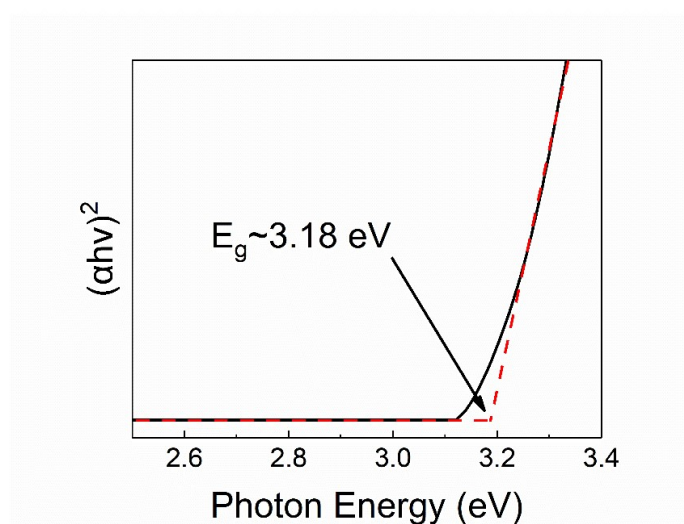
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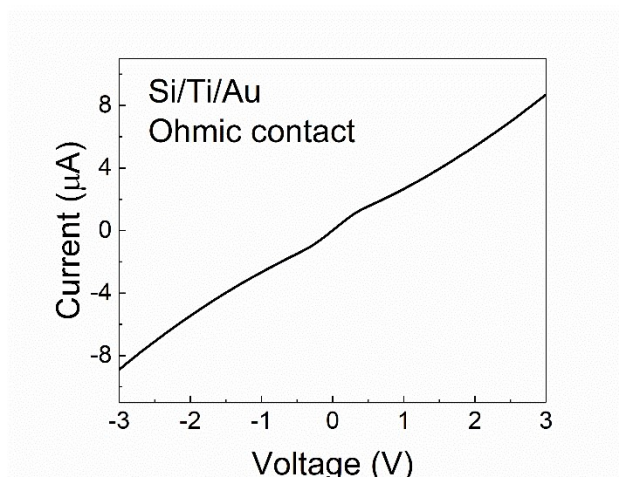
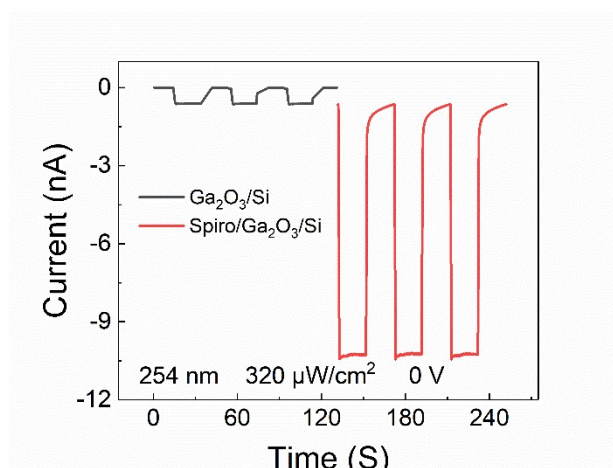***E-mail:** whtang@njupt.edu.cn**.**

Supporting Information

Figure S1. UV-*vis* absorption spectra of spiro-MeOTAD.

E_g~3.18 eV

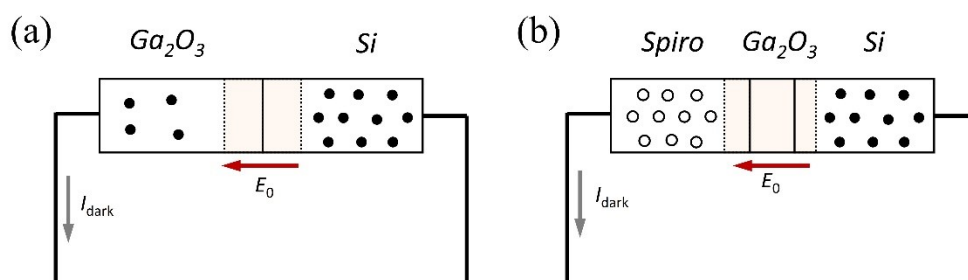**Figure S2** The estimated band gap of the spiro-MeOTAD film.

Si/Ti/Au
Ohmic contact

Figure S3 The *I-V* characteristic curve of Au/Ti contact on the Si substrate.

Figure S4 The time-dependent response of Ga_2O_3/Si device and spiro/Ga_2O_3/Si device under 254 nm UV illumination with power intensity of 320 $\mu W/cm^2$ at zero bias.

Figure S5 Schematic diagrams for (a) Ga_2O_3/Si device and (b) spiro/Ga_2O_3/Si device under zero bias.
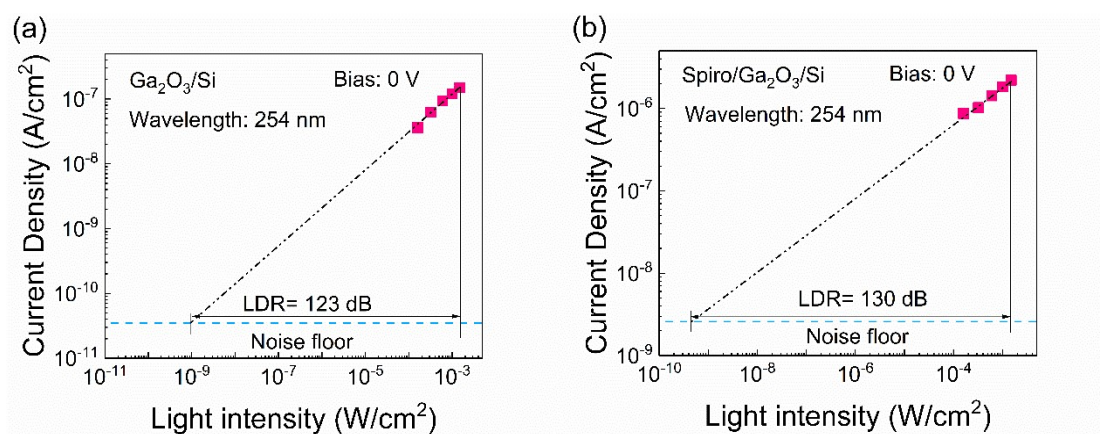
Figure S6 Linear dynamic ranges of the spiro/Ga_2O_3/Si and Ga_2O_3/Si devices. The noise floors are the dark current densities of the corresponding devices which are measured without any light illumination.
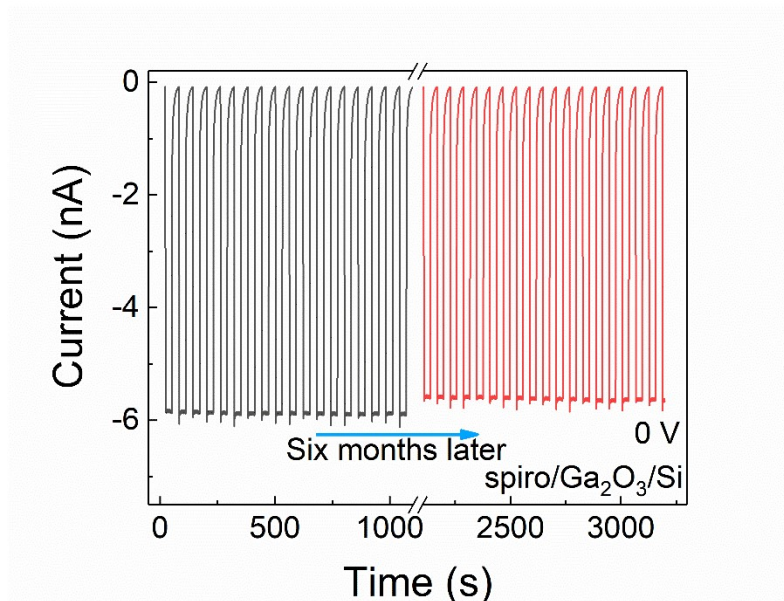
Figure S7 Temporal responses of the Spiro/Ga$_2$O$_3$/Si PD tested before and after storage in air for 6 months.