Supporting information for:

**UV light enhanced TiO$_2$/graphene device for oxygen sensing at room temperature**

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**Fig. S1** Current-voltage ($I$-$V$) characteristics of the TiO$_2$/graphene device in high vacuum (a) and in high purity N$_2$ atmosphere (b) with and without UV light.
Fig. S2 Characteristics of O\textsubscript{2} sensing performance of the pristine graphene and TiO\textsubscript{2} device. Optical image of the pristine graphene (a) and TiO\textsubscript{2} device (b). (c) $I$-$V$ curves of the pristine graphene device in O\textsubscript{2} with and without UV light, inset is enlarged curves. (d) $I$-$V$ curves of the TiO\textsubscript{2} device in O\textsubscript{2} with and without UV light. (e) Response of the pristine graphene device sequent exposure to N\textsubscript{2} and O\textsubscript{2} with UV light, $V_{\text{bias}}$=1 V. (f) Response of the TiO\textsubscript{2} device sequent exposure to N\textsubscript{2} and O\textsubscript{2} with UV light, $V_{\text{bias}}$=1 V.