Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information

Flexible room-temperature volatile organic compounds sensors based on reduced graphene oxide-$WO_3 \cdot 0.33H_2O$ nano-needles

*Tarcísio M. Perfecto[1], Cecilia A. Zito[1], Talita Mazon[2] and Diogo P. Volanti[1]**

[1]Laboratory of Materials for Sustainability (LabMatSus), Ibilce, São Paulo State University (Unesp), R. Cristóvão Colombo, 2265, S. J. Rio Preto, SP, Brazil 15054-000

[2]Center for Information Technology Renato Archer (CTI), Rod. D. Pedro I, KM 143,6, Campinas, SP, Brazil 13069-901

*E-mail: volanti@ibilce.unesp.br

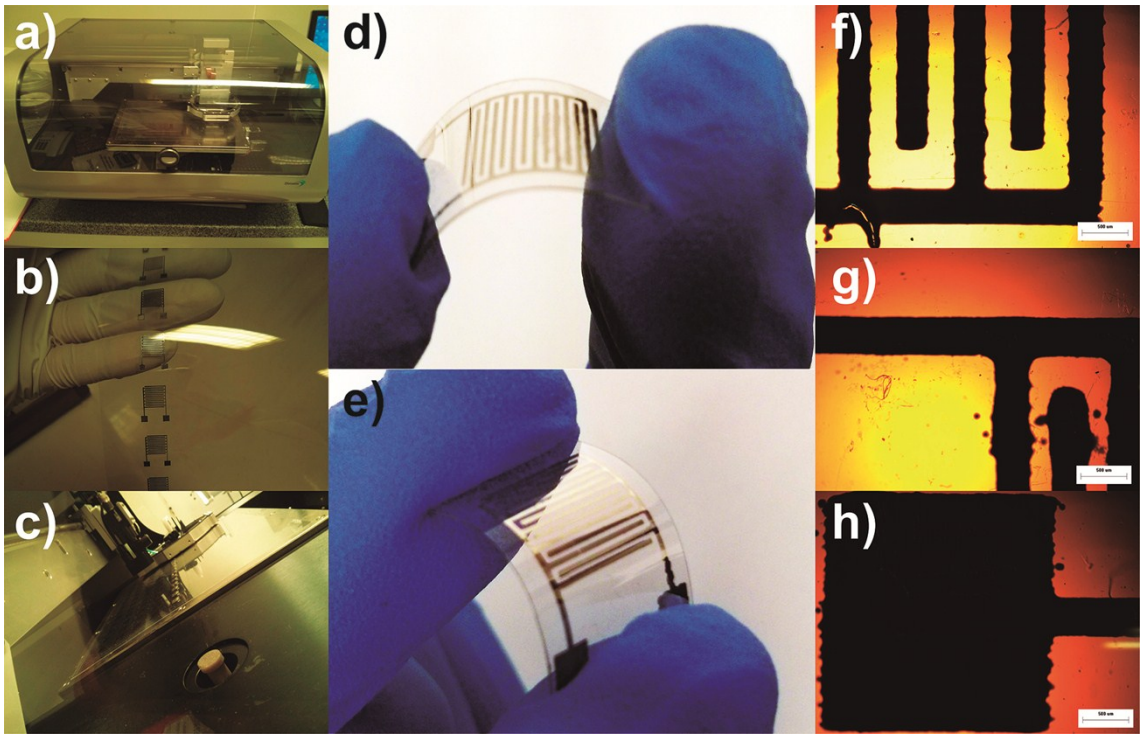

Fig. S1 (a – c) Photographs of electrode printing on PET, (d – e) Detailed photographs of electrodes on PET, (f – h) Optical microscopes of the electrode.

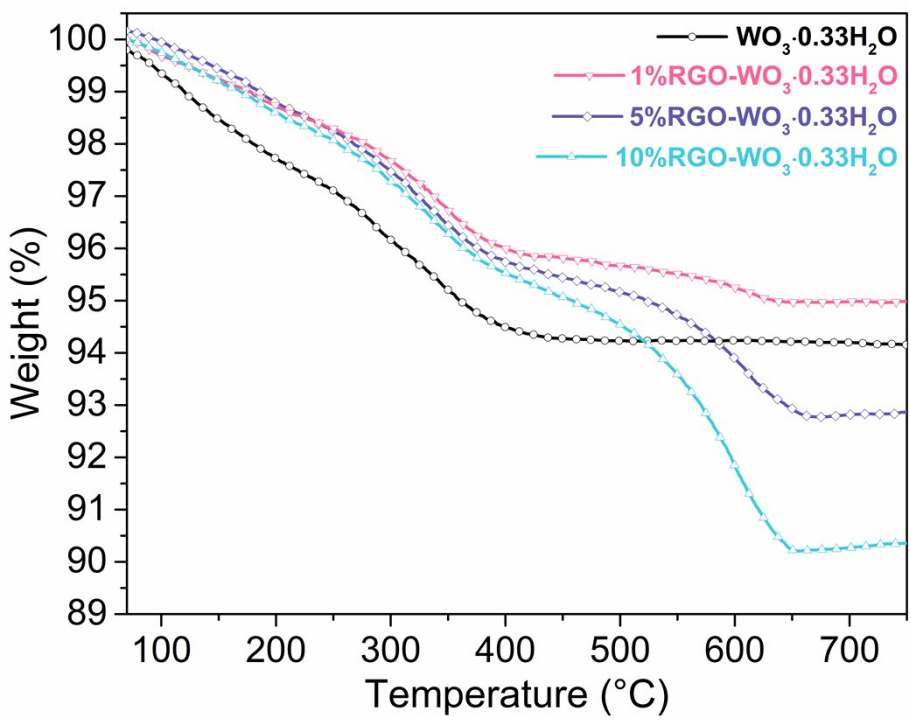

Fig. S2 TG curves of 1, 5 and 10% RGO-$WO_3 \cdot 0.33H_2O$ composites in comparison to the pure sample

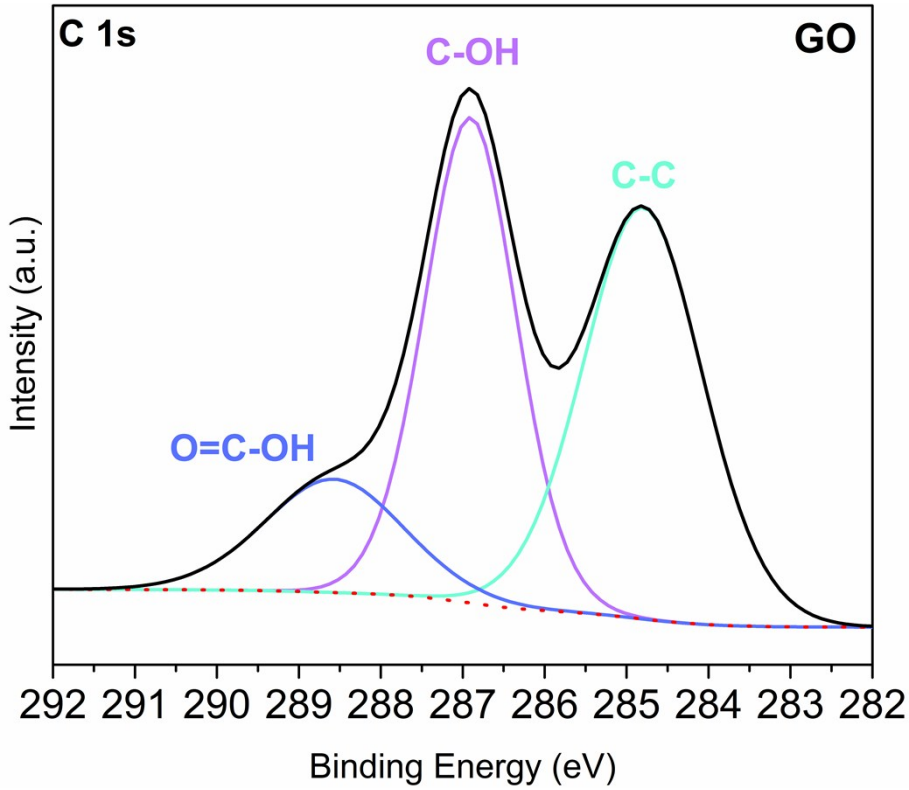

Fig. S3 High-resolution XPS spectrum of C 1s of Graphene Oxide (GO)

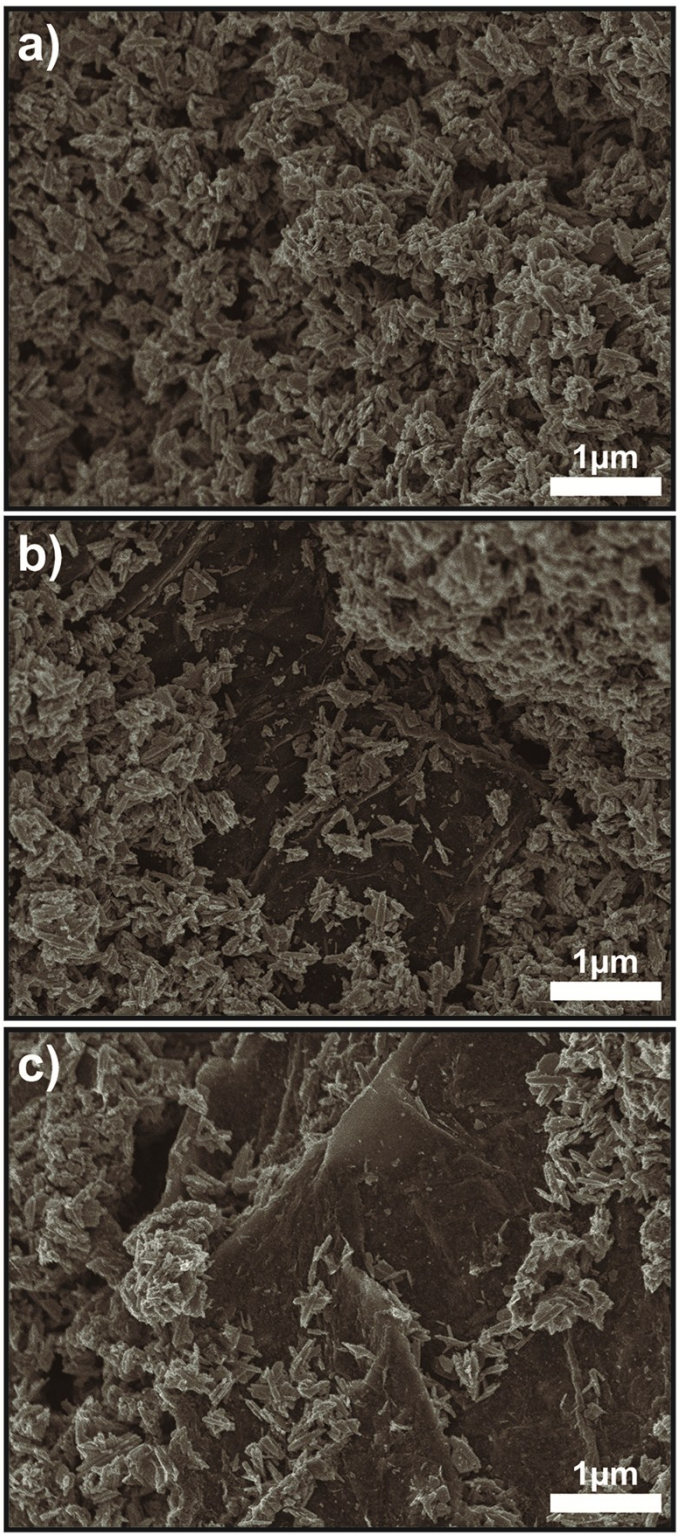

Fig. S4 FESEM images of the (a) $WO_3 \cdot 0.33H_2O$, (b) 1%RGO-$WO_3 \cdot 0.33H_2O$, and (c) 10%RGO-$WO_3 \cdot 0.33H_2O$ samples deposited on interdigited electrode.

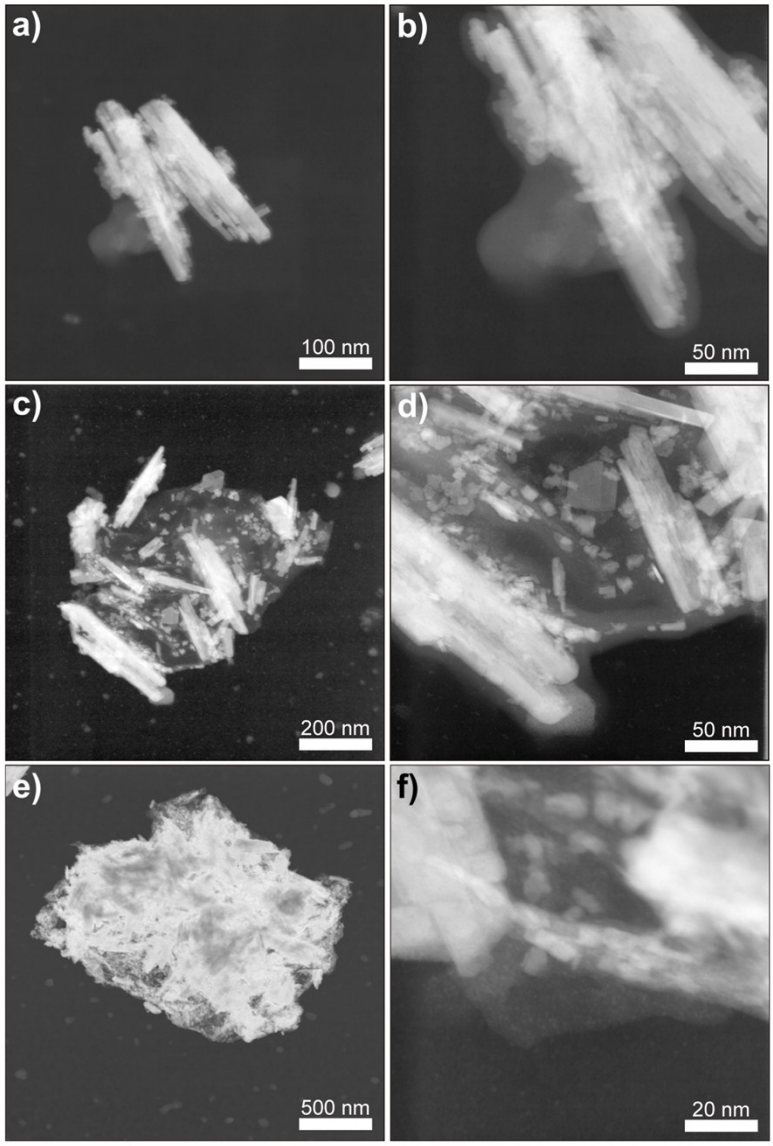

Fig. S5 Dark-field TEM images of (a-b) 1%RGO-$WO_3 \cdot 0.33H_2O$, (c-d) 5%RGO-$WO_3 \cdot 0.33H_2O$ and (e-f) 10%RGO-$WO_3 \cdot 0.33H_2O$

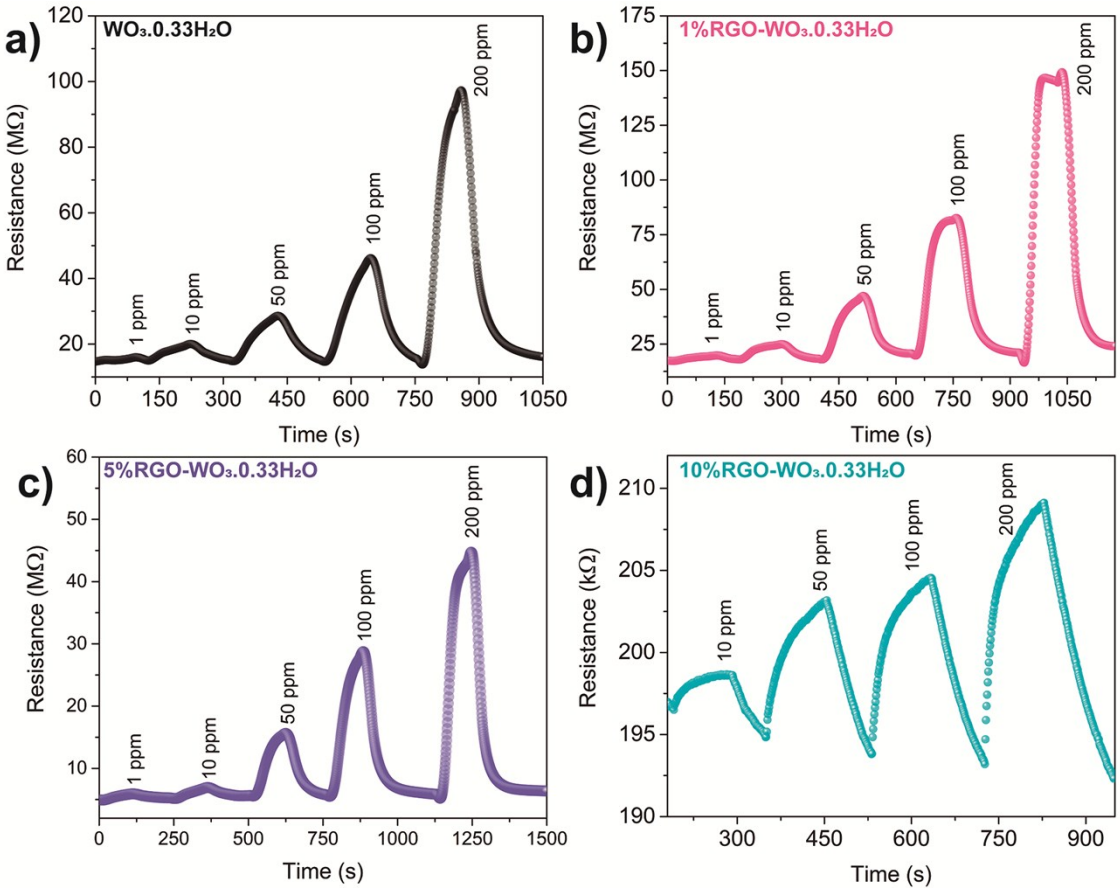

Fig. S6 Resistance versus time plot of the (a) $WO_3 \cdot 0.33H_2O$, (b) 1%RGO-$WO_3 \cdot 0.33H_2O$, (c) 5%RGO-$WO_3 \cdot 0.33H_2O$, and (d) 10%RGO-$WO_3 \cdot 0.33H_2O$ samples.

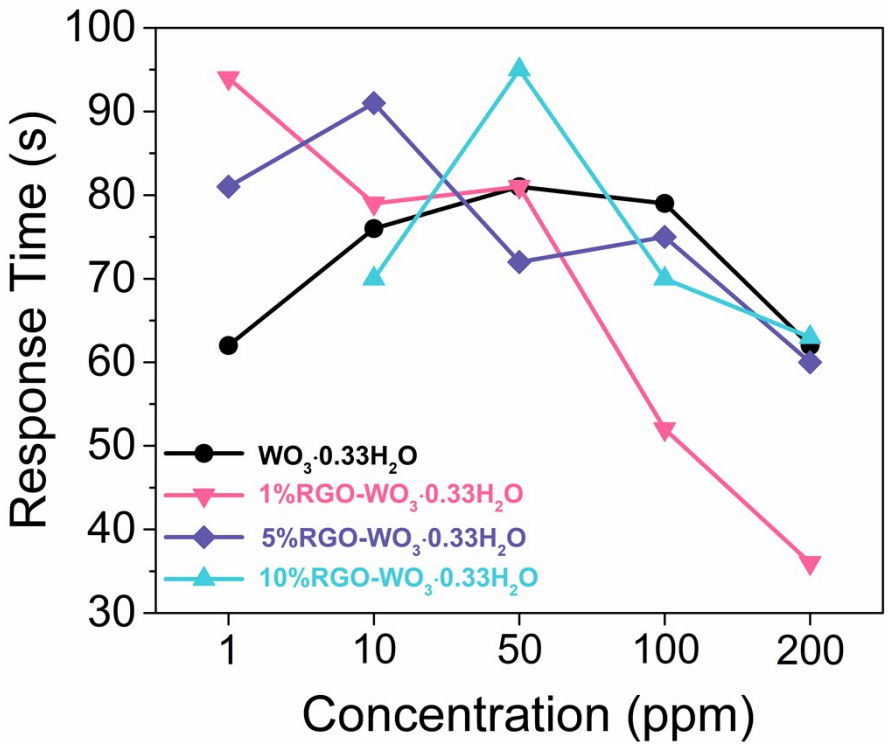

Fig. S7 Response time of the (a) $WO_3 \cdot 0.33H_2O$, (b) 1%RGO-$WO_3 \cdot 0.33H_2O$, (c) 5%RGO-$WO_3 \cdot 0.33H_2O$, and (d) 10%RGO-$WO_3 \cdot 0.33H_2O$ samples.