

## Response to oxidising and reducing gases of 2D materials: Graphene oxide, MoS<sub>2</sub> and WS<sub>2</sub>

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2D materials are inherently "all-surface-materials", therefore they offer the ultimate surface/mass ratio among low dimensional materials. For this reason they are excellent candidates for the fabrication of gas sensing devices. In this paper we review the gas sensing response of various 2D materials (graphene oxide [1,2], chemically exfoliated MoS<sub>2</sub> [3], WS<sub>2</sub> [4] and phosphorene [5]). The gas sensing response, is discussed on the basis of a thorough study of the morphological and chemical properties of the 2D materials used.

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[2] M. Donarelli et al., *2D materials* **2**, 035018 (2015).

[3] M. Donarelli et al. , *Sensors & actuators* **207**, 602 (2015).

[4] F. Perrozzi et al. , *unpublished*. —, — (2017).

[5] M. Donarelli et al., *2D materials* **3**, 025002 (2016).