

2D-graphene / 2D-NiO nanosheet hybrid  
구조기반 NO<sub>2</sub> 가스센서의 특성연구

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A highly sensitive gas sensor based on novel hybrid structures composed of 2D graphene and 2D NiO nanosheets (NSs) is fabricated using a low-cost, low temperature and large area scalable solution-based process. The highly developed hierarchically porous structures of 2D NiO sheets are grown on reduced graphene oxide (RGO) surfaces. Sensors fabricated with hybrid structures showed a responsivity and sensitivity two orders higher than that of a NiO NS alone toward NO<sub>2</sub> even at 1 ppm level. This is attributed to the effective carrier transfer from NiO NS to graphene and to the well developed 2D NiO structure.