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환경모니터링용 NO₂ 가스 센서의 감지 물질 특성에 관한 연구

A Study on the Characteristics of NO₂ Sensing Materials
for Environment monitoring

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NO₂ gas sensors for environment monitoring using 1mm×1.2mm device with Pt heater and Au electrode were fabricated by screen-printing method and NO₂ sensing characteristics of sensing materials were tested. NO₂ sensing materials were WO₃, WO₃-3wt%ITO, WO₃-3wt%In₂O₃ and In₂O₃-3wt%WO₃.

WO₃-3wt%ITO and WO₃-3wt%In₂O₃ showed unstable R_{gas} because of high R_{air}. When operating temperature was about 315°C, WO₃ and In₂O₃-3wt%WO₃ sintered at 700°C had high sensitivities to NO₂, fast response & recovery time and high selectivities to H₂ 928ppm, CO 500ppm and C₂H₅OH 85ppm.

Especially, WO₃ and In₂O₃-3wt%WO₃ were suited for NO₂ sensing material for environment monitoring because the sensitivities to NO₂ 1ppm of these were 2.6 and 4.5 respectively.