

SO₂ sensing properties of SnO₂-based sensor promoted with Fe₂O₃ and TiO₂

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Fine dust emission is a big social problem in Korea. A considerable amount of Fine dust is generated by the photocatalytic reaction of SO₂. So, to supervise and regulate the fine dust emission, the sensor that can monitor SO₂ is preferentially required. In this experiment, we fabricated SnO₂-based thick film gas sensors by screen printing method. Basic requirements for gas sensor are response and recovery. This sensor showed response of 3.50 and recovery properties of 21% in 1 ppm SO₂ gas at 300°C. To compensate for the poor recovery property, 5 wt% Fe₂O₃ and TiO₂ were added, respectively. Experimental results show that the sensor calcinated at 400°C has a sensitivity of 2.75, a recovery property of 100% and an 80% recovery time of 97s, which is superior to that of the SnO₂ based thick-film sensor.