Highly sensitive CO sensing properties of multilayered TiO2 thin films by colloidal templating

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Abstract : We investigate CO gas sensing properties of multilayered TiO2 thin film gas sensors fabricated by colloidal templating of 300 nm of polymer spheres. Compared with plain films, the multilayered films show enhanced gas sensing with higher sensitivity and faster response. Also, colloidal templating by using smaller spheres (300 nm in diameter) leads to close-packed multilayered TiO2 thin films with very large-scale. This result suggest that understanding and control of the structures on the sensing properties of multilayered TiO2 thin films by colloidal templating is important in developing the films for real applications.

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