

QCM Gas Sensor with Organic Nanowire Film as Molecular Recognition Membrane

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In this paper, we demonstrate a novel quartz crystal microbalance (QCM) gas sensor with nanowires of a molecular recognition membrane (MRM), which is fabricated by the nanosize particle-beam irradiation technique. It was found that the QCM sensor with poly-acrylic acid MRM exhibited an excellent selectivity for ammonia gas. It is confirmed that the sensitivity of the QCM sensor with nanowires of poly-acrylic acid MRM is higher than that of the sensor with a common poly-acrylic acid MRM. Furthermore, we investigate the influence of the functional group of MRM on the gas sensing characteristics of the QCM gas sensor.

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