

Particle Size Sorting of TiO₂ Powders Synthesized via Ultrasonic Atomization–Pyrolysis and Its Influence on Gas Sensing Properties

Shanabhau D. Bagul *

Nanomaterials Research Laboratory, Department of Physics, Pratap College, Amalner, Maharashtra, India

Editor's note: Air quality is vital for the health of humans and ecosystems. Pollutants like NO₂, produced by fossil fuel combustion, pose serious health risks and environmental challenges. This is the reason for the great global interest in effective sensors for detecting NO₂. Bagul synthesized titanium dioxide (TiO₂) powders using ultrasonic atomization and pyrolysis. The resulting powders were characterized using X-ray diffraction and scanning electron microscopy. Sensor testing showed that the optimum TiO₂-based sensor exhibited high sensitivity to NO₂ gas at an optimal temperature of 250°C, with a quick response time of 2 seconds and recovery in 23 seconds.

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