

## عنوان مقاله:

Acetone sensing properties of hierarchical WO<sub>3</sub> core-shell microspheres in comparison with commercial nanoparticles

## محل انتشار:

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## خلاصه مقاله:

In this work, hierarchical WO<sub>3</sub> core-shell microspheres were synthesized via a facile template-free precipitation method. Gas sensing properties of the synthesized powder to acetone and some other volatile organic compounds were comparatively investigated with commercial WO<sub>3</sub> nanoparticles. The synthesized and commercial powders were characterized by X-ray diffraction, scanning electron microscopy, particle size distribution analysis, Brunauer–Emmett–Teller and Barrette-Joyner-Halenda techniques. Gas sensors were fabricated by deposition of powders between/on interdigitated electrodes via sedimentation approach. The results show that both sensors are sufficiently sensitive to detect ۱.۸ ppm of acetone; diabetes diagnosis threshold in human exhaled breath. Indeed, the hierarchical based one is highly sensitive and more selective to acetone.

## کلمات کلیدی:

Acetone, Core-shell microspheres, Diabetes, Gas sensor, Nanoparticles, WO<sub>3</sub>

## لینک ثابت مقاله در پایگاه سیویلیکا:

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