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The structural and sensing properties of cobalt and indium doped zinc oxide nanopowders synthesised through high energy ball milling technique

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The high energy ball milling technique was employed to synthesise the undoped ZnO, 5% Co and In single doped and Co-In double doped ZnO nanoparticles. The x-ray diffraction (XRD) was used to probe the structural properties. It was found that the diffraction pattern for In-ZnO nanoparticles display an additional peak which was associated with In+3 dopant. Now, incorporating Co and In into ZnO nanoparticles resulted in the reduction of the average grain sizes. The scanning electron microscopy (SEM) images shows that the nanoparticles have a spherical shape. The kenosistec station equipment was used to characterise the prepared samples for gas sensing application. Ammonia (NH₃) gas is being probed in the present work. In all the diffraction patterns observed, the undoped and double doped ZnO nanoparticles are being favoured at a temperature range 200 – 350 °C.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD, N/A)?

MSc

Main supervisor (name and email) and his / her institution

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Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

Yes

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