

Synthesis WO₃/rGO Nanocomposite for NH₃ Gas Sensor



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In this project, WO₃/x% rGO nanocomposites (x=5%, 10%, 15%, and 20%) were synthesized using the solvothermal method. The structure of WO₃/x% rGO nanocomposites was studied by X-ray diffractometer (XRD). The result showed that structure of WO₃/x% rGO nanocomposites was a hexagonal. The results from Scherrer's equation determined that the crystallite sizes of all nanocomposites were similar. In addition, UV-Visible spectrometer used to study the optical property and the Energy Band Gap (Eg). The results showed that the Eg decreased with the increasing of rGO sheet. Scanning Electron Spectrometer (SEM) was used to study the surface morphology of WO₃/x% rGO. The result found that Tungsten oxide (WO₃) nanoparticles were distributed on the surface of rGO sheets. For NH₃ sensor, the WO₃/x% rGO nanocomposites can detect the NH₃ gas and it is suitable for making NH₃ sensor.

Biography:

My name is Warit Bunnruang. I hold a bachelor's degree in science from the Department of Physics at Kasetsart University. My passion for science and technology has driven me to explore the application of nanomaterials in gas detection, an area with significant potential and importance for future advancements, particularly in achieving precise gas detection at room temperature. After completing my undergraduate studies, I began my Master's degree, where I focused on researching and developing nanomaterials tailored for specialized gas sensors.