**FORMATION OF SILVER OXIDE PARTICLES BY ELECTROCHEMICAL DEPOSITION**

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**Abstract**

Silver oxide particles were electrochemically deposited on conductive substrates and the correlation between deposition parameters and physical features of AgxO films was studied. Silver oxide thin films were deposited on ITO and FTO glass substrates by electrochemical deposition technique from acetate-containing AgNO3 aqueous solutions. The pH of the solution was adjusted by adding NH3 solution and the deposition were conducted under different applied potentials at room temperature. The x-ray diffraction showed the peaks of Ag2O and AgO in the structure. The morphological features obtained from SEM showed that the AgXO structures varied as the pH value and potentials change. In addition, the AgXO structures showed different morphologies deposited on different substrates. Ag2O and AgO are the predominant phases confirmed from x-ray diffraction analysis. Pure AgO thin films were obtained with high pH value and high potentials. The oxygen content and the band gap of the films were measured using XPS technique and UV-Vis spectroscopy, respectively. The direct band gap increased as the oxygen content increased and was in the range of 1.62-1.92eV.

*Keywords*: silver oxide, electrochemical deposition, particles

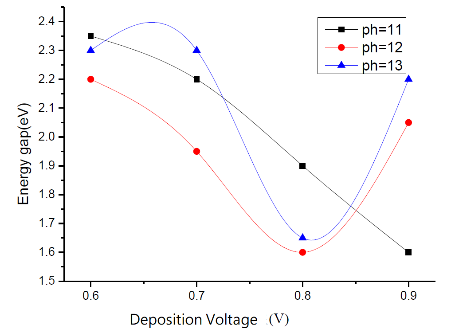
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Figure: Different AgxO morphologies and energy gap due to the different applied voltages.