In this work, ZnO nanocolumns were grown using a chemical bath deposition technique on corning glass substrates in which a seed layer of ZnO nanoparticles was deposited at different temperatures in a range of 300°C - 600°C, with the ultrasonic spray pyrolysis technique (USP). Growth of ZnO nanocolumns by chemical bath deposition was carried out with zinc nitrate hexahydrate (Zn(NO$_3$)$_2$·6H$_2$O) and hexamine (C$_6$H$_{12}$N$_4$) as precursors. Which were dissolved in deionized water at equimolar concentration with a synthesis temperature of 96°C and a time of 2-6 hours were used to observe the effect of this on the morphological and structural properties of the nanocolumns. The results of Scanning Electron Microscopy (SEM) present nanocolumns with vertical alignment, high density, hexagonal facets and diameters of around 145 nm. Raman Spectroscopy characterization showed the vibrational modes of the ZnO nanocolumns in wurtzite-type phase located at 99 and 436 cm$^{-1}$, corresponding to two modes; low E$_2$ and high E$_2$, which are attributed to the general structure of wurtzite in ZnO.

Keywords: ZNO, NANOCOLUMNS, CHEMICAL BATH DEPOSITION

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