



# Synthesis and Characterization of Nano Hybrid Gentamycin with Zinc Oxide Layered Hydroxides

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**Abstract:** Zinc oxide (ZnO) nanostructure was prepared by using a sol-gel reaction between ZnO and gentamycin. Characterization was done using various techniques such as UV-VIS spectroscopy, Fourier transform infrared spectroscopy (FT-IR) and x-ray diffraction (XRD). The other techniques also used included scanning electron microscopy (SEM) and atomic force microscope (AFM). The results show the intercalation of gentamycin within ZnO is possible and they are of great importance to the field of chemical admixtures in bioinorganic composites. This study demonstrated the use of gentamycin as the normal way of intercalating ZnO layered hydroxides with the use of hydrothermal synthesis at a temperature of 40°C in the formation of stable complex gentamycin-ZnO nanoparticles. It released and characterized the end-composite structure of gentamycin power.

**Keywords:** ZnO, Nano materials, Gentamycin, Intercalations

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