

**EFFECT OF Au THICKNESS ON PREPARATION OF CARBON NANOSTRUCTURE BY USING NANOSTRUCTURED ZnO AS A TEMPLATE**

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**ABSTRACT**

Different thickness of Au was prepared as a catalyst to deposit ZnO nanostructure on Au-coated surfaces by sol-gel method. The ZnO nanostructure will be used as template to deposit carbon nanostructure by using thermal chemical vapor deposition (TCVD) method. The carbon material has been successfully grown by using ZnO nanostructure material as template. Rod-like ZnO appeared with sphere-like carbonaceous material on the surface of the template. The as-prepared material has been characterized with X-ray diffraction (XRD), scanning electron microscopy (FESEM) and Fourier transmission infrared (FTIR). The XRD peaks of the products were indexed to ZnO materials, but exhibited different relative intensities for the (002) diffraction peak. ZnO play a role as a template for the growth of the carbonaceous material and they can link ZnO particles together as a complex fabrication. This discovery is useful for nano-electronic applications.

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