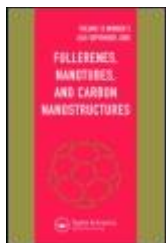


Fullerenes, Nanotubes and Carbon Nanostructures



Synthesis of Diamond-like Carbon Structures using Co and Ni Catalysts by PECVD Method

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Abstract

This research carried out the Diamond-like Carbon (DLC) growth on Si (p-type 100) substrate by using plasma enhanced chemical vapor deposition (PECVD) system. Acetylene (C_2H_2) diluted in H_2 were used as reaction gasses and acetylene was utilized as the etching gas. Nickel and cobalt nanoparticles were used as the catalysts. The effects of nickel and cobalt catalysts and growth conditions on the synthesis of DLC were studied. It was found that role of catalyst plays an important on purity, morphology and structure of synthesized DLC structures. The DLC produced under the same conditions were characterized used scanning electron microscopy (SEM), x-ray diffraction (XRD), Raman spectroscopy and atomic force microscopy (AFM).

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Keywords

[Diamond-like carbon](#), [Catalyst](#), [AFM](#), [XRD](#), [Raman spectroscopy](#), [SEM](#)