

Synthesis and Characterization of amorphous carbon film for potential application in cell culture

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Plasma enhanced chemical vapor deposition (PECVD) is one of the method of coating thin film for improve surface material properties which can be apply to electronic, medicine and bio molecular. This research focuses on coating amorphous carbon thin film by PECVD technique for cell culture applications. PECVD is the process operated at low temperature, able to control compound and properties of film as well, with high deposition rate and good adhesion with substrate. We synthesized amorphous carbon film from plasma of gas mixture between acetylene and ammonia at gas various and characterized amorphous carbon film by context angle, Atomic Force Microscope(AFM), Fourier Transform Infrared Spectroscopy (FTIR), X-ray Photoelectron Spectroscopy (XPS) and Scanning Electron Microscope (SEM).

Mixed gas plasma parameters has been carried out by a rf-compensated Langmuir probe. The operating RF power vary from 20 to 80 W and gas pressure from 100 to 300 mTorr, respectively. The result showed electron temperature increased when RF power increased but it decreases when gas pressure increased.

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