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Abstract
In this study, the carbon nanotube (CNT) and carbon nanoclusters will be grown by electron cyclotron resonance chemical vapor deposition (ECR-CVD) method and its' characteristic will be analyzed. In growing the CNT film study, the experimental parameter that include the thickness of catalyst films, microwave power, and the mixed gas ratio have been grown at low temperature plasma. The surface morphology and structure of CNT and carbon nanoclusters will be examined by scanning electron microscope (SEM) and transmission electron microscope (TEM). The degree of graphitized will be examined by Raman spectrometer. In this study, the thickness of catalyst films will affect the length and diameter of CNT. As the microwave power increasing, the length of CNT will increase, but it will deposit more amorphous carbon. As the carry gas of the mixed gas increasing, the structure of CNT will have more amorphous carbon. The experimental results show that the CNT have best ratio of ID/IG is 1.09. Finally, the study will provide the synthetic method and proposal of CNT.
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