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Optimization Of Home-Built Plasma Enhanced Chemical Vapour Deposition (PECVD) System (132)

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Abstract

Carbon nanotubes (CNTs) have been receiving much attention for a wide variety of applications due to their unique electronic and mechanical properties. The plasma enhanced chemical vapour deposition (PECVD) method to synthesis carbon nanotubes (CNTs) is considered as an efficient production method of great technologically interest. The objective of this study is to optimize the operating parameters for the system. In this work, PECVD system has been design and built for the synthesis of CNTs. The different intensity of plasma can be generated by varying the flow rates and voltage. The operating parameters have been optimised to enable the growth of carbonaceous materials. The results obtained showed that the voltage between 100-450V and gas mixtures for precursor and carrier gases used in a ratio between 1:2 and 1:4 are able to produce good material.