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Synthesis and characterization of carbon nanotubes from Iraqi date palm seeds using chemical vapor deposition method

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Abstract : This work involves synthesis of carbon nanotubes (CNTs) from ambient raw Iraqi kentardate palm seeds (IKDPS) using chemical vapor deposition method (CVD). The synthesized CNTs were characterized using different analytical and instrumental methods to identify these produced CNTs. These methods including powdered X-rays diffraction(PXRD), Raman spectroscopy, scanning electron spectroscopy (SEM), transmission electron spectroscopy (TEM), energy dispersive X-rays (EDX), thermal gravimetric analysis (TGA), and UV-Vis reflectance spectroscopy. Crystal size of the synthesized CNTs was estimated using PXRD. Raman spectroscopy was used to investigate the growth of CNTs. Morphology and dimensions of CNTs were investigated using both TEM and SEM. The ratio of elemental composition of CNTs samples was investigated via using EDX.TGA was used to determine the purity and thermal behavior of the produced CNTs. Energy band gab of the produced materials was measuredusing UV-Vis reflectance spectroscopy. Functional groups of the CNTs surface were investigated using Fourier transform infrared spectroscopy(FTIR).
Keywords : Synthesis of carbon nanotubes, Iraqikentar date palm seeds, chemical vapor deposition method.

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