

# Characterization and Synthesis of Carbon Nanotubes

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The discovery of carbon nanomaterials has added to the applications of carbon and created enormous interest in their development, characterization and applications in many different fields. The carbon nanotubes have unique electronic and mechanical properties. Further enhancement of the growth technique raised the nanotube yields; the single-wall [SWNTs] samples; to above 70

The prepared samples were investigated using XRD to ensure that there are nanotubes in the batch. Then, an efficient purification procedure which combines ntrifugation and precipitation has been applied. As shown in SEM micrograph that more bundles of carbon nanotubes have appeared depending on the degree of prification. The thermal behavior and stability of SWCNTs-Water has been investigated by differential scanning calorimetry [DSC]. Also, XRD of SWNT for different Y and Ni catalysts has been characterized by powder X-ray diffraction.

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