RAMAN SCATTERING STUDIES OF THE INFLUENCE OF THERMAL TREATMENT OF MULTI-WALLED CARBON NANOTUBES ON THEIR STRUCTURAL CHARACTERISTICS

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S u m m a r y

The results of our researches concerning the Raman spectra of modified multi-walled carbon nanotubes (MWCNTs) are reported. The nanotubes were modified by sequentially threating them in nitric acid and burning them in an inert atmosphere of argon at a temperature of 500 or 1200 °C. Raman spectroscopy was used to determine the structural perfection of nanotubes and the degree of their graphitization. The method of temperature-controlled desorption together with mass-spectrometry was used to find the influence of oxygen-containing groups (defects) in MWCNTs on the Raman spectral characteristics of the latter. The results of our researches testify that the increase of the thermal treatment temperature gives rise to an enhancement of the graphitization degree of a nanotube structure.