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X-Ray Photoelectron Spectroscopy (XPS) of Carbon nanostructures obtained by underwater arc discharge of graphite electrodes

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Carbon nanostructures, obtained by underwater arc discharge of graphite electrodes, were studied by X-Ray Photoelectron Spectroscopy (XPS). It was observed that the spectra of the samples taken from the floating part of the synthesis products, composed basically by Carbon nano-onions (CNO), present differences with those obtained from the precipitate , which contains a mixture of CNOs and multi-walled Carbon Nanotubes (MWCNT). These differences are related with the presence of atoms of carbon located in orbitals with different degree of hybridization (sp^2-sp^3), which in turn is related to the diverse grade of curvature of the planes of carbon in the nanostructures present in the samples.

The obtained results indicate that XPS can be an important element in the characterization of the products obtained by the above-mentioned method of synthesis.

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