



Chains of carbon nanoparticles from the interaction of fullerenes with thin metal films

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Different fullerene blacks were produced by the arc-discharge vaporization of graphite in various experimental conditions. Pressed pellets of these materials were sputtered with thin metal films. After the subsequent pyrolysis up to 1200 °C the samples were studied with SEM. Wormlike nanostructures arose from the nickel covered parts of the fullerene containing pellets. TEM and EELS showed that chains of hollow elongated carbon nanostructures were generated with outer diameters usually between 35 and 90 nm. A model for the formation of the chains is proposed considering diffusion of carbon through a metal particle and surface melting of the metal.