

Sonochemical Synthesis of Multi-Walled Carbon Nanotubes under Ambient Conditions

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Multi-walled carbon nanotubes (MWCNTs) were synthesized in horn-type reaction vessel by sonochemical method under ambient conditions. This method has many advantages, such as fast reaction time, simple and economical process. By varying the experimental parameters, such as concentration of ferrocene-dissolved p-xylene solution, sonication time and power, pulse, type of reaction vessel, etc., we found out the optimum conditions for producing MWCNTs. High-resolution transmission electron microscopy (HR-TEM) analysis reveals that synthesized nanomaterials have the graphite sheets and structures of hollow pillar. The diameters of MWCNTs fell in the range of 30 – 60 nm. Considering that the proposed method is very simple and ambient-condition process, we expect that our method can be used as practical synthetic route to MWCNTs.