

Acid treatment on Synthesized Carbon Nanotube(CNT) Yarns from Methane

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Like announces about carbon nanotube(CNT) on various media, it has excellent properties like high strength, electrical conductivity, thermal conductivity, etc. The only one weak point of CNT is the limited length(~cm). To smash it, scientists suggested a spinning idea, long CNT yarns from short CNTs through spinning, similar to process of ordinary yarn industry. Our group produced this CNT yarns from vertical CVD reactor with methane and other catalysts at over 1000°C named 'direct spinning method'. This method includes very dynamic reactions so produced CNT yarns cannot avoid the impurities like amorphous carbon or catalyst particles which can reduce the properties of CNT yarns. Proper acid treatment can remove these impurities and strengthen the properties of CNT yarns.