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Synthesis of aligned self-joint carbon nanotubes

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Large amounts of well-aligned carbon nanotubes with open tips have been produced by pyrolysis of iron(II) phthalocyanine. The aligned carbon nanotubes have an average length about 10 μm and diameters ranging from 92-229 nm. Some of produced carbon nanotubes showed Y-junction structure due to self-joint growth. The well-aligned carbon nanotubes indicated a bamboo-shaped multiwalled structure and fairly good crystallinity.