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Microwave plasma enhanced chemical vapor deposition growth of small-diameter CNTs using the polymer based catalysts PENG WANG, U. of North Carolina at Chapel Hill, JENNIFER LU, Agilent Inc., OTTO ZHOU, Dept. of Physics and Astronomy U. of North Carolina at Chapel Hill, DEPT. OF PHYSICS AND ASTRONOMY COLLABORATION, AGILENT INC. COLLABORATION — Microwave plasma enhanced chemical vapor deposition (MPECVD) has emerged to be a promising candidate method to realize the growth of carbon nanotubes (CNTs) at a temperature of several hundred degrees Celsius. Among various catalysts, metal-containing polymers have the advantage of easy particle size and density controlling. Here we report to produce carbon nanotubes by using metal-containing polymers at 604 ^{o}C. There are two to six wall layers. The diameter is consistently in the range of 4 to 7 nm. The control of the density and the length of the as grown nanotubes are discussed. The field emission property is characterized.

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