

Electronic Supporting Information

Iridium-Catalyzed Growth of Single-Walled Carbon Nanotubes with a Bicentric Diameter Distribution

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Content of Supporting Information

Figure S1. TEM characterization results of Ir nanoparticles.

Figure S2. Diameter distribution of Ir nanoparticles determined by AFM.

Figure S3. AFM images of SWNTs grown on Ir catalyst.

Figure S4. High frequency modes of SWNTs in the Raman spectra.

Figure S5. Evidences for perpendicular mode of SWNT growth.

Figure S6. SWNT-Ir catalyst interfaces.

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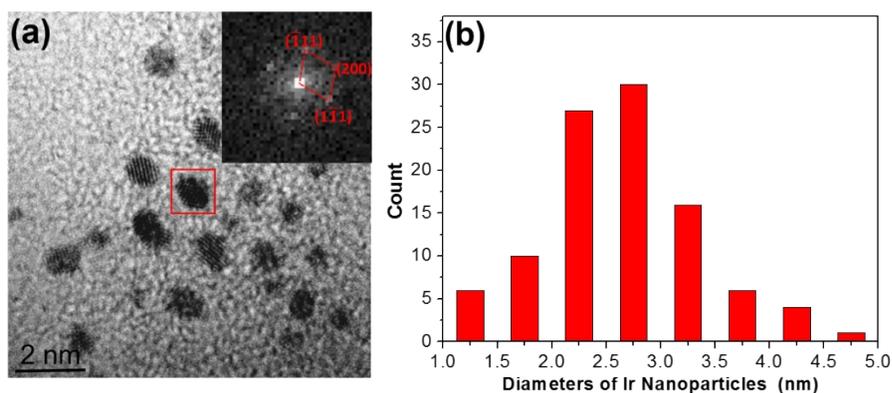


Figure S1. (a) A TEM overview of Ir nanoparticles. Inset is the FFT pattern of the marked Ir nanoparticle. (b) The diameter distribution of the Ir nanoparticles measured by TEM.

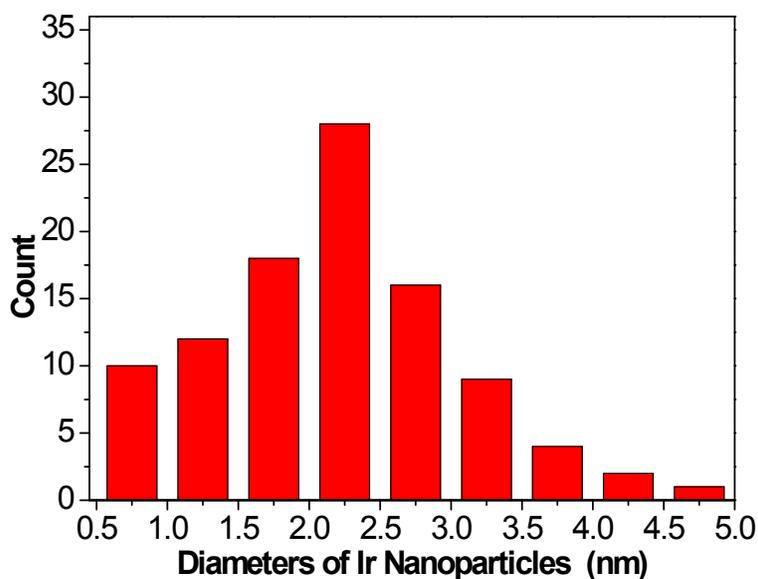


Figure S2. The diameter distribution of the Ir nanoparticles measured by AFM images.

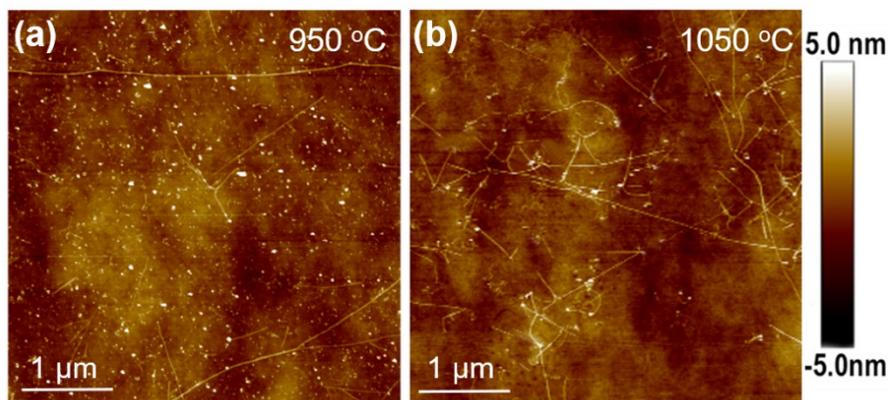


Figure S3. AFM images of the SWNTs grown from Ir nanoparticles at (a) 950 °C, (b) 1050 °C.

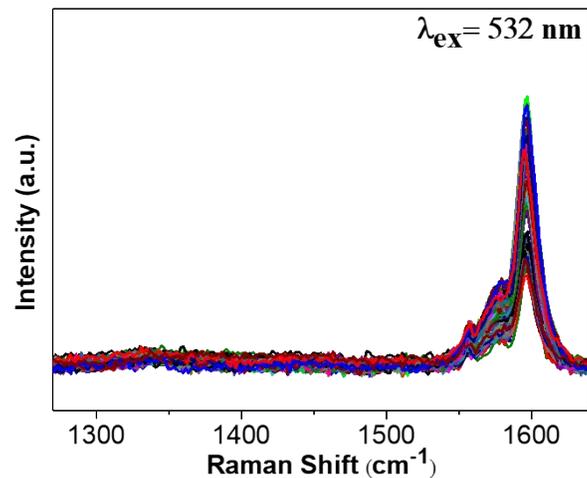


Figure S4. The high frequency modes in Raman spectra of SWNTs acquired with 532 nm laser.

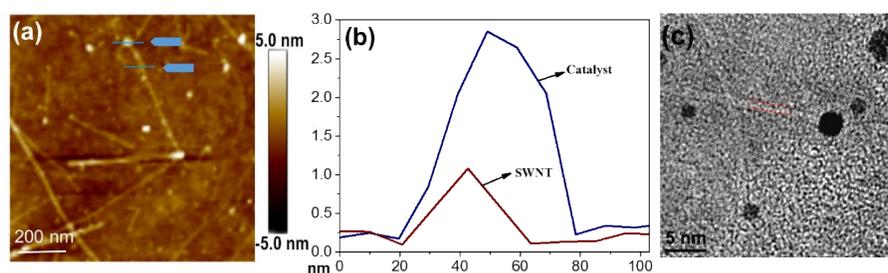


Figure S5. (a) AFM image of SWNTs. (b) Height measurement of an SWNT and its catalyst particle (indicated by arrows). (c) TEM image of SWNTs grown from Ir nanoparticles by a perpendicular mode. The tube walls are highlighted by red lines.

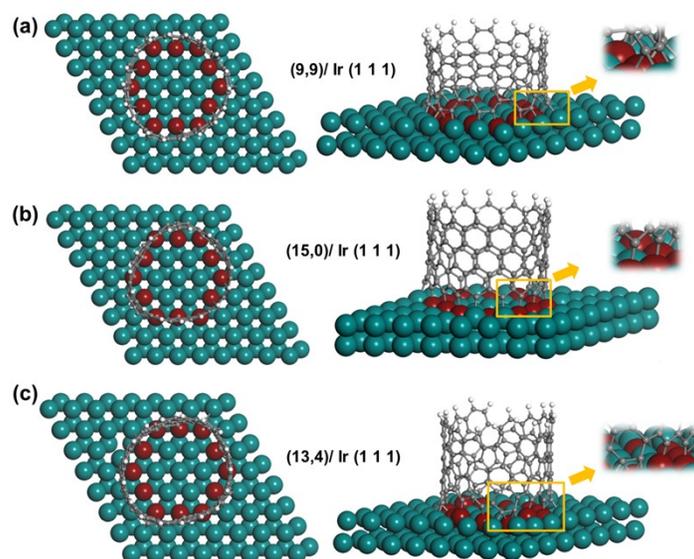


Figure S6. Top views (left) and side views (right) of SWNT segments with different chiralities anchored on Ir (111) surface. (a) (9, 9)/Ir (111). (b) (15, 0)/Ir (111). (c) (13, 4)/Ir (111). The SWNT-catalyst interfaces in yellow rectangles are enlarged in the right insets. White, gray and green balls represent hydrogen, carbon and Ir atoms, respectively. The interfacial Ir atoms are highlighted by red.