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**Effect of Catalyst Particle Size on CVD Growth of Single-Walled Carbon Nanotubes.** A. HARUTYUNYAN, Honda Research Institute, E. MORA, J-W. YOO, Department of Physics The Ohio State University, T. TOKUNE, Honda Research Institute, A.J. EPSTEIN, Department of Physics The Ohio State University, HONDA RESEARCH INSTITUTE COLLABORATION, THE OHIO STATE UNIVERSITY COLLABORATION — A series of Fe catalysts with different mean diameter supported on alumina with different molar ratios were studied before and after SWNTs growth by using magnetic and Raman measurements to follow changes on catalyst particle size and its relationship with diameter of grown tubes. After the growth, based on blocking temperature values and Langevin function analysis, it was determined that for all catalysts, an increase and redistribution of particle size occurred. This is explained in terms of particle agglomeration, due to carbon-induced liquefaction accompanied with an increase in catalyst mobility. The free path of supported Fe particles was estimated to be >2.1nm. For big particles no correlation between catalyst size and nanotube diameter was observed. Analysis of the intensity of Breit-Wigner-Fano line contribution in the Raman G-band revealed that big catalyst particles are more selective to tubes chiralities, and more favorable to the growth of particular metallic tubes.

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