

## Thermal decomposition of ethanol and growth of vertically aligned single-walled carbon nanotubes by alcohol catalytic chemical vapor deposition

### PRES 29

**Erik Einarsson**, erik@photon.t.u-tokyo.ac.jp, Hai M. Duong, Masayuki Kadowaki, and Shigeo Maruyama, maruyama@photon.t.u-tokyo.ac.jp. Department of Mechanical Engineering, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8656, Japan

The alcohol catalytic chemical vapor deposition (ACCVD) method[1] is becoming increasingly important for synthesizing high-purity SWNTs by a simple, inexpensive technique. In combination with a liquid-based dip-coat catalyst loading technique[2], the ACCVD method can also be used to produce films of vertically aligned SWNTs (VA-SWNTs)[3,4], which are desired for many potential applications. Recent studies have elucidated the growth process of these VA-SWNT films, but the details of the growth reaction are not yet well understood. In this study, we have investigated the thermal decomposition of ethanol at various temperatures, as well as the resulting growth due to interaction with metal catalyst particles.

References: [1] S. Maruyama et al., Chem. Phys. Lett. 360 (2002) 229. [2] Y. Murakami et al., Chem. Phys. Lett. 377 (2003) 49. [3] Y. Murakami et al., Chem. Phys. Lett. 385 (2004) 298. [4] S. Maruyama et al., Chem. Phys. Lett. 403 (2005) 320.

[SWNTs From Synthesis to Application, From the Lab to the Fab: In Memory of Dr. Richard Smalley](#)  
4:30 PM-6:30 PM, Sunday, 10 September 2006 Moscone Center -- Room 305, Poster

[Presidential Event](#)

[The 232nd ACS National Meeting, San Francisco, CA, September 10-14, 2006](#)