

# WONTON: International Workshop on Nanotube Optics and Nanospectroscopy

July 17-20, 2005  
Mountain Village Conference Center  
Telluride, CO

Organizers: Tobias Hertel (Vanderbilt University) and Junichiro Kono (Rice University)

## Conference sponsors:

DARPA  
ARO  
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Applied NanoFluorescence

## SATURDAY, 16<sup>th</sup> July 2005

Arrival and check-in

7:00 pm - 9:00 pm Welcome in the bar of the Mountain Lodge Telluride

## SUNDAY, 17<sup>th</sup> July 2005

8:00 am - 8:45 am Continental style breakfast in the mountain village conference center

8:45 am - 9:00 am **WELCOME: Tobias Hertel (Vanderbilt University) and Junichiro Kono (Rice University)**

9:00 am - 10:00 am **SESSION 1: *Keynote Lecture***  
**Chair: Junichiro Kono (Rice University)**

Mildred S. Dresselhaus (MIT)  
*Recent Advances in the Photophysics of Carbon Nanotubes*

10:00 am - 10:15 am Coffee Break

10:15 am - 12:15 am **SESSION 2: *Excitons and Exciton Dynamics***  
**Chair: Tony F. Heinz (Columbia University)**

10:15 am - 11:15 am **Tsunea Ando (Tokyo Institute of Technology)**  
*Excitons and Aharonov-Bohm Effect in Carbon Nanotubes*

11:15 am - 12:15 pm **Graham R. Fleming (University of California, Berkeley)**  
*Ultrafast exciton dynamics in semiconducting single walled carbon nanotubes*

12:15 pm - 1:30 pm Lunch arranged individually & free time

1:30 pm - 2:45 pm Poster setup

2:45 pm - 4:00 pm **BREAKOUT SESSIONS 1,2, and 3**

4:00 pm - 5:30 pm **POSTER SESSION 1**

5:30 pm - 7:00 pm Dinner arranged individually

- 7:00 pm - 9:00 pm **SESSION 3: *Many-Particle Effects***  
Chair: Riichiro Saito (Tohoku University)
- 7:00 pm - 8:00 pm Eugene J. Mele (University of Pennsylvania)  
*Electron Interactions and Scaling Relations for Excitons in Carbon Nanotubes*
- 8:00 pm - 9:00 pm Steven G. Louie (University of California, Berkeley)  
*Many-electron effects in the optical response of single-walled nanotubes*
- 9:00 pm - 10:30 pm **POSTER SESSION 1 continued**

### MONDAY, 18<sup>th</sup> July 2005

- 8:00 am - 8:45 am Continental style breakfast in the mountain village conference center
- 8:45 am - 10:45 am **SESSION 4: *Nanospectroscopy and Imaging***  
Chair: Mildred S. Dresselhaus (MIT)
- 8:45 am - 9:45 am Lukas Novotny (University of Rochester)  
*Near-field Raman Imaging of Nanotube Defects*
- 9:45 am - 10:15 am Coffee Break
- 10:15 am - 11:15 am Achim Hartschuh (University of Tübingen)  
*Photoluminescence Imaging of Excitons in Semiconducting Nanotubes with 10 nm Resolution*
- 11:15 am - 12:15 pm Victor I. Klimov (Los Alamos National Lab)  
*Single carbon nanotubes probed by photoluminescence and photoluminescence-excitation spectroscopies: The role of phonon-assisted transitions*
- 12:15 pm - 9:00 pm Lunch, hike and BBQ

### TUESDAY, 19<sup>th</sup> July 2005

- 8:00 am - 8:45 am Continental style breakfast in the mountain village conference center
- 8:45 am - 10:45 am **SESSION 5: *Applications and Devices***  
Chair: Robin J. Nicholas (Oxford University)
- 8:45 am - 9:45 am R. Bruce Weisman (Rice University)  
*Single-Walled Nanotube Fluorescence: from Discovery to Applications*
- 9:45 am - 10:15 am Coffee Break
- 10:15 am - 11:15 am Andrew Rinzler (University of Florida)  
*Transparent Nanotube Films for Electrical Coupling to Optoelectronic Devices*
- 11:15 am - 12:15 pm Phaedon Avouris (IBM Yorktown Heights)  
*Carbon nanotubes: excited states, electroluminescence and optical devices*
- 12:15 pm - 2:30 pm Lunch arranged individually & free time
- 1:30 pm - 2:45 pm Poster setup
- 2:45 pm - 4:00 pm **BREAKOUT SESSIONS 4, 5, and 6**
- 4:00 pm - 5:30 pm **POSTER SESSION 2**
- 5:30 pm - 8:00 pm Dinner arranged individually
- 6:00 pm - 7:15 pm **PINHEAD TOWN TALK: Mildred S. Dresselhaus (MIT)**  
Interviewer: Nina Jablonsky (California Academy of Sciences)  
Location: Mountain Village Conference Center Plaza
- 8:00 pm - 9:00 pm **SESSION 6: *Growth and Processing***  
Chair: Shigeo Maruyama (University of Tokyo)

8:00 pm - 9:00 pm **Robert H. Hauge** (Rice University)  
*Effects of SWNT cutting, functionalization, and selective extraction on the absorption and fluorescence spectra of SWNT*

9:00 pm - 10:30 pm **POSTER SESSION 2 continued**

**Wednesday, 20<sup>th</sup> July 2005**

8:00 am - 8:45 am Continental style breakfast in the mountain village conference center

8:45 am - 10:45 am **SESSION 7: Raman Spectroscopy**  
**Chair: Stephen Doorn** (Los Alamos National Laboratory)

8:45 am - 9:45 am **Hans Kuzmany** (University of Vienna)  
*Resonance Raman spectroscopy of single wall carbon nanotubes filled with tubes, and oxides*

9:45 am - 10:15 am Coffee Break

10:15 am - 11:15 am **Hirofumi Kataura** (Tokyo Metropolitan University)  
*Resonance Raman scattering of isolated single-wall carbon nanotubes directly grown in ceramics*

11:15 am - 12:15 pm **Shigeo Maruyama** (University of Tokyo)  
*Raman and Fluorescence Spectroscopy of Isotopically Modified Single-Walled Carbon-13 Nanotubes*

12:15 pm - 3:30 pm Lunch arranged individually & free time

3:30 pm - 5:30 pm **SESSION 8: Time Domain and Single Tube Spectroscopy**  
**Chair: Tobias Hertel** (Vanderbilt University)

3:30 pm - 4:30 pm **Tony F. Heinz** (Columbia University)  
*Ultrafast and Nonlinear Spectroscopy of Single-Wall Nanotubes*

4:30 pm - 5:30 pm **Paul Finnie** (Institute for Microstructural Sciences, Ottawa)  
*Photoluminescence from nanotubes suspended in free space*

5:30 pm - 8:00 pm Dinner arranged individually

8:00 pm - 9:00 pm **SESSION 9: Environmental Factors in Tube Photoluminescence**  
**Chair: Anna K. Swan** (Boston University)

8:00 pm - 9:00 pm **Manfred M. Kappes** (University of Karlsruhe)  
*Temperature- and pressure-dependent photoluminescence spectroscopy of individual SWNTs in suspensions and on surfaces*

9:00 pm - 9:15 pm **CLOSING REMARKS**

**THURSDAY, 21<sup>st</sup> July 2005**

Departure