

## NANOTUBE-99

# International Workshop on the Science and Application of Nanotubes

East Lansing, Michigan, USA, July 24-27, 1999

## Workshop Schedule

Saturday, July 24, 1999 - Morning

08:30 - 10:30

Session A:
Morphology, Characterization, and Electronic Structure of Nanotubes I
Coordinators: Mildred Dresselhaus, Philippe Lambin

A.x Contributed Talks and Posters

10:30 - 11:00

Coffee Break (sponsored by Zyvex)

Session B:
Morphology, Characterization, and Electronic Structure of Nanotubes II
Coordinators: Annick Loiseau, Eugene Mele

B.x Contributed Talks and Posters

12:30 - 13:30

Lunch

#### Saturday, July 24, 1999 - Afternoon

Session C:
Formation Process of Nanotubes I
Coordinators: Jerzy Bernholc, Zhifeng Ren
C.x Contributed Talks and Posters

15:30 - 16:30
Coffee Break (sponsored by MSU Composite Center)

Session D:
Formation Process of Nanotubes II
Coordinators: Jean-Christophe Charlier, Gary G. Tibbetts
D.x Contributed Talks and Posters

Sunday, July 25, 1999 - Morning

Lazy Morning Time to Enjoy MSU Campus

Session E:

10:00 - 11:00 Mechanical Properties of Nanotubes

Coordinator: David Luzzi

E.x Contributed Talks and Posters

11:00 - 12:30 Session F:

Chemical Properties of Nanotubes

Coordinators: John E. Fischer, Susumu Saito

F.x Contributed Talks and Posters

12:30 - 13:30 Lunch

#### Sunday, July 25, 1999 - Afternoon

13:30 Session G:

17:00 Electronic Properties and Transport in Nanotubes

Coordinators: Jisoon Ihm, Alex Zettl

G.x Contributed Talks and Posters

Coffee Served during Poster Presentation (sponsored by MSU CFMR)

17:00 Session H:

19:00 Applications of Nanotubes

Coordinator: Cees Dekker

H.1 "Field emission displays (FEDs) have much in common with cathode-ray tubes (CRTs)" by W.B. Choi, Y.H. Lee, J.H. Kang, H.Y. Kim, D.S. Chung, I.T. Han, Y.W. Jin, and J.M. Kim

<u>"Carbon Nanotube Artifi</u>cial Muscles"

H.2 by R. H. Baughman, C. Cui, A. A. Zakhidov, Z. Iqbal, J. N. Barisci, G. M. Spinks, G. G. Wallace, A. Mazzoldi, D. De Rossi, A. G. Rinzler, O. Jaschinski, S. Roth, and M. Kertesz

H.x Contributed Talks and Posters

#### Monday, July 26, 1999 - Morning

08:30 - Session I:

10:30 Formation and Characterization of Nanotubes I

Session Chair: Gene Dresselhaus

I.1 "Growth dynamics of graphitic carbon by laser ablation"

by S. Iijima, M. Yudasaka, K. Takahashi and F. Kokai

I.2 "Energetics and Electronic Properties of Doped Nanotubes"

by Susumu Saito

"Dynamics of Interacting Nanotubes"

by Young-Kyun Kwon and David Tománek

10:30 -11:00 Coffee Break (sponsored by Zyvex)

10:30 - Session J:

12:30 Formation and Characterization of Nanotubes II

Session Chair: Laszlo Forro

"Synthesis, structure, chemistry and growth of composite B-N-C nanotubes and

J.1 filled carbon nanotubes"

by A. Loiseau

J.2 "Simulation of STM images of carbon nanotubes: Principles and illustrations" by Philippe Lambin and Vincent Meunier

<u>"Perspectives on Nanotube Applications from the Vapor-Grown Carbon Fiber</u>

J.3 <u>Community"</u>
by Gary G. Tibbetts

12:30 -13:30 Lunch

#### Monday, July 26, 1999 - Afternoon

13:30 - Session K:

15:30 Formation and Characterization of Nanotubes III

Session Chair: Peter Eklund

K.1 "Large arrays of well-aligned carbon nanotubes" by Z. F. Ren, Z. P. Huang, D. Z. Wang, and J. G. Wen

K.2 "Catalytic Growth Mechanisms for Single-Wall Nanotubes" by J.-C. Charlier

"Nanoscopic Hybrid Materials: The Synthesis, Structure and Properties of

K.3 Peapods, CATs and Kin"

by David E. Luzzi and Brian W. Smith

15:30 -16:00 Coffee Break (sponsored by Dow Chemical Company)

16:00 - Session L:

18:00 Ground-State Properties of Nanotubes

Session Chair: Sumio Ijjima

L.1 "Physical Properties of Commercially-Available SWNT" by M. Tachibana, K.A. Williams, S.L. Fang, E. Richter, and P.C. Eklund

L.2 "Doped Nanotubes: Fundamental Properties and Battery Applications" by John E. Fischer, Roland S. Lee and Agnes Clave

"Mechanical Properties and Transport in Carbon Nanotubes"

L.3 by J. Bernholc, M. Buongiorno Nardelli, J.-L. Fattebert, D. Orlikowski, R. Roland and Q. Zhao

### Tuesday, July 27, 1999 - Morning

08:00 - Session M:

10:00 Electronic Properties of Nanotubes I

Session Chair: Walt de Heer

"Defects and Transport in Carbon Nanotubes"

by Steven G. Louie

"Electrical transport in carbon nanotubes and quantum wires: experiments and

M.2 theoretical results" by Phaedon Avouris

"Field emission from carbon nanotubes of various tip structures"

by Jisoon Ihm and Seungwu Han

10:00 -10:30 Coffee Break

10:30 - Session N:

12:30 Electronic Properties of Nanotubes II

Session Chair: Steven G. Louie

N.1 "Second-Order Resonant Raman Spectra of Single-walled Carbon Nanotubes" by Mildred S. Dresselhaus and Gene Dresselhaus

"Electronic Structure Inferred from Resonant Raman Spectra of Carbon

N.2 Nanotubes"

by Gene Dresselhaus and M.S. Dresselhaus

N.3 "Carbon Nanotubes Kinks as Intramolecular Junctions"

by Cees Dekker

12:30 – 13:30 Lunch

Tuesday, July 27, 1999 - Afternoon

13:30 - 16:30 Session O:

Electronic Properties of Nanotubes III

Session Chair: Phaedon Avouris

O.1 "From mechanical to electronic properties of carbon nanotubes" by Laszlo Forro, J.-P. Salvetat, J.-M. Bonard, R. Gaal, B. Ruzicka, and L. Degiorgi

O.2 "In situ electron microscopy experiments on MWNTs" by Walt de Heer, Philippe Poncharal, R. Nitsche, and Z.L. Wang

O.3 "Density Waves and STM Imaging of Carbon Nanotubes" by E.J. Mele and C.L. Kane

by E.J. Mele and C.L. Kane

O.4 "T.B.A." by Alex Zettl

16:30 Closing Remarks

17:00 End of NANOTUBE-99





For further information contact:

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Document <a href="http://www.pa.msu.edu/cmp/csc/NANOTUBE-99/nt99-schedule.html">http://www.pa.msu.edu/cmp/csc/NANOTUBE-99/nt99-schedule.html</a>

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