

Brief Curriculum Vitae

David Tománek

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Education

1983 Ph.D. (Dr. rer. nat.) Theoretical Physics, Freie Universität Berlin, Germany
1979 M.S. (Diploma) Theoretical Physics, University of Basel, Switzerland

Employment/Professional Experience

1987-present Professor of Physics, Departments of Physics and Astronomy, Michigan State University, East Lansing, MI
1985-1987 Post-Doctoral Fellow, University of California, Berkeley, CA
1985 Post-Doctoral Fellow, AT&T Bell Labs.
1985-1987 Assistant Professor on leave from Freie Universität Berlin.
1979-1985 Research Assistant at the Freie Universität Berlin.

Honors

- Fellow, American Physical Society
- Alexander-von-Humboldt Foundation Distinguished Senior Scientist Award (Humboldt-Forschungspreis)

Synergistic Activities

- Organizer and initiator, *International Cluster Workshops* (ICW'91, ICW'92, ICW'93)
- Organizer and initiator, *International Nanotube conferences* (NT'99, NT'01, NT'02, NT'04, NT'05, NT'06, NT'07)
- Coordinator, *Computational Nanotechnology Team* at the Earth Simulator Supercomputer in Tokyo, Japan
- Coordinator, The Nanotube Site at <http://www.pa.msu.edu/cmp/csc/nanotube.html>
- Interdisciplinary lecturer on "*Fundamental Problems in Nanotechnology*" and Distinguished Professor of Physics, Seoul National University and Tokyo Institute of Technology

Research Experience

Development and application of numerical techniques for structural, electronic, transport, and optical properties of surfaces, low-dimensional systems and nanostructures. Computer simulations of fullerenes, nanotubes, nanowires, ferrofluids, metallic and magnetic clusters.

Selected Publications

1. Teng Yang, Shinya Okano, Savas Berber and David Tománek, Interplay between structure and magnetism in $\text{Mo}_{12}\text{S}_{919}$ nanowires, *Phys. Rev. Lett.* **96** (2006).
2. Norbert Nemeč, David Tománek, and Gianuario Cuniberti, Contact Dependence of Carrier Injection in Carbon Nanotubes: An *Ab Initio* Study, *Phys. Rev. Lett.* **96**, 076802 (2006).
3. Young-Kyun Kwon, Savas Berber, and David Tománek, Thermal Contraction of Carbon Fullerenes and Nanotubes, *Phys. Rev. Lett.* **92**, 015901 (2004).

4. G. K. Kostov, J. M. Pacheco, and David Tománek, Quantum Size Effects in the Polarizability of Carbon Fullerenes, *Phys. Rev. Lett.* **92**, 215501 (2004).
5. Mina Yoon, Seungwu Han, Gunn Kim, Sangbong Lee, Savas Berber, Eiji Osawa, Jisoon Ihm, Mauricio Terrones, Florian Banhart, Jean-Christophe Charlier, Nicole Grobert, Humberto Terrones, Pulickel M. Ajayan, David Tománek, The zipper mechanism of nanotube fusion: Theory and Experiment, *Phys. Rev. Lett.* **92**, 075504 (2004).
6. Yoshiyuki Miyamoto, Savas Berber, Mina Yoon, Angel Rubio, David Tománek, Can Photo Excitations Heal Defects in Carbon Nanotubes? *Chem. Phys. Lett.* **392**, 209–213 (2004).
7. Noejung Park, Mina Yoon, Savas Berber, Jisoon Ihm, Eiji Osawa, and David Tománek, Magnetism in all-carbon nanostructures with negative Gaussian curvature, *Phys. Rev. Lett.* **91**, 237204 (2003).
8. Savas Berber, Young-Kyun Kwon, and David Tománek, Bonding and Energy Dissipation in a Nanohook Assembly, *Phys. Rev. Lett.* **91**, 165503 (2003).
9. Savas Berber, Young-Kyun Kwon, and David Tománek, Microscopic Formation Mechanism of Nanotube Peapods, *Phys. Rev. Lett.* **88**, 185502 (2002).
10. M. Rao, J. Chen, E. Richter, P. C. Eklund, R. C. Haddon, U. D. Venkateswaran, Y.-K. Kwon, and D. Tománek, Interpretation of the Raman Spectrum of Solubilized Single Walled Carbon Nanotubes, *Phys. Rev. Lett.* **86**, 3895 (2001).
11. Petr Král, E. J. Mele, and David Tománek, Photogalvanic Effects in Heteropolar Nanotubes, *Phys. Rev. Lett.* **85**, 1512 (2000).
12. Savas Berber, Young-Kyun Kwon, and David Tománek, Unusually High Thermal Conductivity of Carbon Nanotubes, *Phys. Rev. Lett.* **84**, 4613 (2000).
13. Stefano Sanvito, Young-Kyun Kwon, David Tománek, and Colin J. Lambert, Fractional quantum conductance in carbon nanotubes, *Phys. Rev. Lett.* **84**, 1974 (2000).
14. Young-Kyun Kwon, David Tománek, and Sumio Iijima, "Bucky-Shuttle" Memory Device: Synthetic Approach and Molecular Dynamics Simulations, *Phys. Rev. Lett.* **82**, 1470 (1999).
15. Young-Kyun Kwon, Young Hee Lee, Seong-Gon Kim, Philippe Jund, David Tománek, and Richard E. Smalley, Morphology and stability of growing multi-wall carbon nanotubes, *Phys. Rev. Lett.* **79**, 2065 (1997).
16. Andreas Thess, Roland Lee, Pavel Nikolaev, Hongjie Dai, Pierre Petit, Jerome Robert, Chunhui Xu, Young Hee Lee, Seong Gon Kim, Daniel T. Colbert, Gustavo Scuseria, David Tománek, John E. Fischer, and Richard E. Smalley, Crystalline ropes of metallic carbon nanotubes, *Science* **273**, 483 (1996).
17. A.G. Rinzler, J.H. Hafner, P. Nikolaev, L. Lou, S.G. Kim, D. Tománek, P. Nordlander, D.T. Colbert, and R.E. Smalley, Unraveling Nanotubes: Field Emission from an Atomic Wire, *Science* **269**, 1550 (1995).
18. W. Zhong, Y. Cai and D. Tománek, Computer simulation of hydrogen embrittlement in metals, *Nature* **362**, 435 (1993).

Selected Invited Review Articles

- David Tománek, Collective electronic excitations in carbon fullerene clusters, *Comments on Atomic and Molecular Physics* **31**, 337 (1995).
- David Tománek, Carbon-Based Nanotechnology on a Supercomputer. Topical Review, *J. Phys.: Condens. Matter* **17**, R413-R459 (2005).

Selected Patent Applications

- "Procedure and Container for a Planned Delivery of an Active Substance". German Patent Application of Peter Borrmann, David Tománek, Philippe Jund, and Seong Gon Kim.
- "Micro-Fastening System and Method of Manufacture". U.S. Patent Application of D. Tománek, Richard J. Enbody, and Young-Kyun Kwon, filed February 12, 1998.
- "Nanocapsules containing charged particles, their uses and methods of forming the same". U.S. Patent 6,473,351 of D. Tománek, Richard J. Enbody, Young-Kyun Kwon, Mark Brehob, issued 2002.