Professor of Chemical Engineering
66-566 Department of Chemical Engineering, MIT
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Cambridge, MA 02139-4307

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Appointments

2012-pres.	Professor of Chemical Engineering, Department of Chemical Engineering, MIT
2009-2012	Charles and Hilda Roddey Associate Professor of Chemical Engineering, Tenured, Department of Chemical Engineering, MIT
2007-2009	Charles and Hilda Roddey Associate Professor of Chemical Engineering, WOT, Department of Chemical Engineering, MIT
2006-2007	Associate Professor, Department of Chemical and Biomolecular Engineering, University of Illinois, Urbana-Champaign
2005-2007	Affiliate, Bioengineering Department, University of Illinois, Urbana-Champaign
2004-2007	Affiliate, Beckman Institute, University of Illinois, Urbana-Champaign
2003-2007	Faculty Appointment, Center for Nanoscale Science and Technology, University of Illinois, Urbana-Champaign
2003-2006	Assistant Professor, Department of Chemical and Biomolecular Engineering, University of Illinois, Urbana-Champaign
2002-2003	*Postdoctoral Fellow*, Center of Nanoscale Science and Technology with Prof. Richard E. Smalley, Rice University, Houston, TX
1998-2001	*Visiting Scientist*, Central Research and Development, DuPont Company Laboratory

Education

1997-2001	Ph.D. Chemical Engineering, University of Delaware, Newark, DE *Thesis Title*: Nanoporous Reactive Membranes – the Influence of Pore Structure on Membrane Selectivity *Thesis Advisor:* Henry C. Foley Graduation *summa cum laude*
1993-1997	B.S. Chemical Engineering, Polytechnic University, Brooklyn, NY *Senior Thesis Title:* A Multivariable Metric Approach to Simultaneous Chemical and Physical Thermodynamic Equilibrium Graduation *summa cum laude*

Awards and Honors

2013	Associate Editor, Current Protocols in Chemical Biology
2013	Barnett F. Dodge Distinguished Lecture in Chemical Engineering, Yale University
2012	Nanoscale Science and Engineering Forum Award, American Institute of Chemical Engineering
2012	Editorial board, Langmuir
2011	Kavli Frontiers of Science Fellow, National Academy of Sciences
2011	Thompson Reuters, Ranked 19th, Top 20 Chemist of the Decade 2000-2010

2010	Council of Scientific Society Presidents, Honorary Lecturer
2010	R. M. Langer Lectureship, Yale University
2010	Editorial Board, Advanced Energy Materials
2010	Editorial Board, Chemistry of Materials
2009	NSF Alan T. Waterman Award, Honorable Mention
2009	Brilliant 10, Popular Science Magazine
2009	Thiele Lectureship, Notre Dame University
2008	Allen P. Colburn Award, American Institute of Chemical Engineers
2008	Office of Naval Research, Young Investigator Award
2008	Colburn Memorial Lectureship, University of Delaware
2008	Outstanding Young Investigator Award, Materials Research Society
2008	Alfred P. Sloan Foundation Research Fellowship
2007	National Academy of Engineers, Frontiers of Engineering
2007	American Chemical Society Unilever Award for Colloidal Science
2007	Henry and Camille Dreyfus Teacher-Scholar Award
2006	Presidential Early Career Award for Scientists and Engineers (PECASE)
2006	Collaboration Success Award from the Council of Chemical Research
2006	Beckman Young Investigator Award
2006	3M Nontenured Faculty Award
2006	Coblentz Award for Excellence in Molecular Spectroscopy
2005	Young Investigator Award, Nanoscale Science and Engineering Forum, AIChE
2005	Top 1% of Highly Cited Researchers, Essential Science Indicators/Web of Science
2005	National Science Foundation Career Award
2004	Top Young Innovator Award, MIT Technology Review (TR100)
2004	Dupont Young Investigator Award

Selected Invited Lectures (2002-2010)

2002

"Single Walled Carbon Nanotubes in Aqueous Suspension: Solution Phase Behavior, Enhanced Spectral Properties and Selective Reaction Pathways," Dupont Experimental Station, Wilmington, DE, November 2002

2003

"Single Walled Carbon Nanotubes in Aqueous Suspension: Solution Phase Behavior, Enhanced Spectral Properties and Selective Reaction Pathways," Dupont Experimental Station, Wilmington, DE, November 2002

"Spectroscopic Assignment and Selective Reaction Pathways of Metallic Single Walled Carbon Nanotubes," IWEPNM Annual 2003 Winterschool, Kirchberg, Austria, March 2003

"Advances in Carbon Nanotube Spectroscopy," Institute of Physical Chemistry, University of Karlsruhe, Germany, March 2003

"Selective Functionalization of Single Walled Carbon Nanotubes for Separation," FACSS Meeting, October 2003

2004

"Charge Transfer at the Single Walled Carbon Nanotube Interface," Naval Research Laboratories, January 2004

"Understanding and Exploiting the Surface Chemistry of Single Walled Carbon Nanotubes," Science at the Edge Seminar Series, Michigan State University, February 2004

"Selective Functionalization of Single Walled Carbon Nanotubes for Separation," American Chemical Society Meeting, Spring 2004

"Selective Functionalization of Single Walled Carbon Nanotubes According to Electronic Structure," American Physical Society Meeting, March 2004
"Understanding Carbon Nanotube Surface Chemistry," Southern Illinois University, March 2004
"Applications of Nanotechnology in Medicine," University of Illinois at Chicago, Grand Rounds, UIC Cancer Center, 2004
"Understanding the Surface Chemistry of Single Walled Carbon Nanotubes," Oklahoma State University, EPSCoR Meeting, 2004
"Applications of Carbon Nanotube Surface Chemistry," Nanotube 2004, San Louis Potosi, Mexico, July 2004

2005

Keynote Speaker, "Optical Characterization and Applications of Single Walled Carbon Nanotubes," American Physical Society, March 2005
"Understanding and Exploiting the Chemistry of Single Walled Carbon Nanotubes," University of California – Santa Barbara, Department of Chemical Engineering, May 2005
"Applications of Carbon Nanotube Surface Chemistry," IWEPNM Annual 2005 Winterschool, Kirchberg, Austria, March 2005
"Understanding and Exploiting the Chemistry of Single Walled Carbon Nanotubes," Georgia Institute of Technology, Department of Polymer Engineering, September 2005
"Understanding and Exploiting the Chemistry of Single Walled Carbon Nanotubes", Purdue University, Department of Chemical Engineering, October 2005

2006

"Biomolecular Detection via Single Walled Carbon Nanotube Fluorescence," UIUC, Center for Nanoscale Science and Technology, January 2006
"Detection of Aqueous Containments via nIR Carbon Nanotube Sensors," UIUC, Center for Nanoscale Science and Technology, February 2006
"Understanding and Exploiting the Chemistry of Single Walled Carbon Nanotubes," Brown University, Department of Chemical Engineering, April 2006
"Understanding and Exploiting the Chemistry of Single Walled Carbon Nanotubes," Massachusetts Institute of Technology, Department of Chemical Engineering, April 2006
"Biomolecular Detection via Single Walled Carbon Nanotube Fluorescence," FNano06, Boulder, CO, April 2006
Invited Speaker, "Single Walled Carbon Nanotube Chemistry," Nanotube 2006, Nagano, Japan, June 2006
"Biomolecular Detection via Single Walled Carbon Nanotube Fluorescence," American Chemical Society Annual Meeting, San Fran. CA, Sept 2006
"Understanding and Exploiting the Chemistry of Single Walled Carbon Nanotubes," University of Oklahoma, Department of Chemical Engineering, Sept 2006

2007

"Fluorescence Applications of Single Walled Carbon Nanotubes," Invited Lecturer, MOF Conference, Salsburg, Austria, Sept 2007
"Molecular Electronic Applications of Single Walled Carbon Nanotubes," Royal Society of London, London, England, April 2007
"Optical Modulation of Single Walled Carbon Nanotubes," Invited Speaker, Ottowa, Canada Wonton 2007
"Optical Modulation of Single Walled Carbon Nanotubes," Invited Speaker, NIST Workshop, Bethesda, MD, Sept 2007
"Optical Modulation of Single Walled Carbon Nanotubes," Invited Speaker, MRS Annual Meeting, Boston, MA Dec. 2007
"The Chemistry of Single Walled Carbon Nanotubes," Cornell, Ithica, NY, Sept 2007
"Colloidal Chemistry of Single Walled Carbon Nanotubes," Unilever Award Lecture, University of Delaware, Newark Delaware, June 2007
"The Chemistry of Single Walled Carbon Nanotubes," UCLA Materials Science, Los Angeles, CA, Oct. 2007

2008

"The Chemistry and Applications of Single Walled Carbon Nanotubes," KAIST, Korea, January 2008.
"The Chemistry and Applications of Single Walled Carbon Nanotubes," SKKU, Suwon, Korea, January 2008.
"The Chemistry of Single Walled Carbon Nanotubes," Tulane, New Orleans, LA, January 2008.
"The Chemistry of Single Walled Carbon Nanotubes," University of Michigan, Ann Arbor, January 2008.
"Optical Modulation of Single Walled Carbon Nanotubes" IWEPNM Annual 2008 Winter School, Kirchberg, Austria, March 2008.
"The Chemistry of Single Walled Carbon Nanotubes," Invited Award Lecture, Materials Research Society, Spring Meeting, YIA Award Lecture, San Fran. CA. March 2008.
"The Chemistry of Single Walled Carbon Nanotubes," Invited Award Lecture, Colburn Memorial Lecture, University of Delaware, April 2008.
"Optical Modulation of Single Walled Carbon Nanotubes" Carbon 2008, Nagano, Japan, July 2008.
"Recent Progress towards Separation of Single Walled Carbon Nanotubes and Graphene," 2008 DARPA workshop on RF electronics, Silver Springs, MD, Aug 2008.
"Optical Modulation of Single Walled Carbon Nanotubes" 2008 Gordon Research Conference, Sept 2008, Aussois, France

2009

"Applications of single walled carbon nanotube sensors to Epidermal Growth Factor Signaling" University of Illinois, Biophysics, Sept 2009
"Near Infrared Fluorescent Sensors for In-Vivo Glucose Detection Based on Single Walled Carbon Nanotubes" A. Tech. Treatment Diabetes Athens, Greece, Feb 2009
"Optical sensors based on single walled carbon nanotubes" Am. Physics Soc., Pittsburgh, PA, March 2009
"The Chemistry of Single Walled Carbon Nanotubes: Biosensors and Thermopower Waves" SAINT, Seoul, S. Korea, March 2009
"The Wonders of One Dimensional Chemistry: Carbon Nanotubes for Single Molecule Biodetection and Energy Applications" Thiel Lecture, Notre Dame, South Bend, Indiana, April 2009
"Energy Harvesting using Chemically Driven, Nanotube Guided Thermopower Waves" AFOSR workshop, Arlington, VA, April 2009
"The Wonders of One Dimensional Chemistry: Carbon Nanotubes for Single Molecule Biodetection and Energy Applications Lecture", U. Conn., Storrs, CN, April 2009
"Biological Applications of Near Infrared Fluorescent Sensors based on Single Walled Carbon Nanotubes "WONTON '09, Japan, June 2009
"Progress in single walled carbon nanotube electronic networks for sensor applications" ICMAT, Singapore June 2009
"Transparent, Reactive Armor from Single Walled Carbon Nanotube Reactive Framework Materials" AFOSR, Arlington, VA, July 2009
"Biological Applications of Near Infrared Fluorescent Sensors based on Single Walled Carbon Nanotubes "ACS, Graphite Mat. Sci., Washington, DC, Aug 2009
"Biological Applications of Near Infrared Fluorescent Sensors based on Single Walled Carbon Nanotubes "Beckman Meeting, Irvine, CA, Aug 2009
"The Chemistry of Graphene" MURI Kickoff, Washington, DC, Sept 2009
"The Wonders of One Dimensional Chemistry: Carbon Nanotubes for Single Molecule Biodetection and Energy Applications'" Penn State lecture, Univ. Park, PA, Sept 2009
"Biological Applications of Near Infrared Fluorescent Sensors based on Single Walled Carbon Nanotubes" NANO DDS, Tampa, FL, Sept 2009
"Photoelectrochemical Complexes for Solar Energy Conversion that Chemically and Autonomously Regenerate" DOE, 3rd Biennial Mtg., Warrenton, VA, Oct. 2009
"The Rational Design of Nitric Oxide Selectivity in Single-Walled Carbon Nanotube Near Infrared Fluorescence" "Sensors for Biological Detection Thermopower Waves" AIChE annual Mtg., Nashville, TN, Nov 2009

"The Wonders of One Dimensional Chemistry: Carbon Nanotubes for Single Molecule Biodetection and Energy Applications" Tufts seminar,nMedford, Mass., Nov 2009
"The Wonders of One Dimensional Chemistry: Carbon Nanotubes for Single Molecule Biodetection and Energy Applications" Langer Lecture, Yale University, New Haven Conn., Dec 2009
The wonders of one dimensional chemistry: carbon nanotubes for single molecule biodetection and energy applications, Invited Seminar, University of Massachusetts at Lowell, Jan. 2010

2010
"The role of reactive oxygen signaling in Epidermal Growth Factor Receptor (EGFR) function: insights from single molecule detection using fluorescent carbon nanotubes", Invited Speaker, Nanoworkshop Los Alamos National Laboratory, Sante Fe, April 2010
"Chemically driven carbon-nanotube-guided thermopower waves", Invited Seminar, NETL, April 2010

"Chemically driven carbon-nanotube-guided thermopower waves", Invited Seminar, Council of Scientific Society Presidents, June 2010
"New concepts in molecular and energy transport within carbon nanotubes: thermopower waves, stochastically resonant ion channels, and single molecule biosensors," Invited Speaker, NT 10, Annual Carbon Nanotube Conference, June 2010.
"New concepts in molecular and energy transport within carbon nanotubes: thermopower waves, stochastically resonant ion channels, and single molecule biosensors", Invited Speaker, American Vacuum Society, June 2010
"Single Molecule Analyte Detection using Stochastic Nanosensors", Invited Lecture, University of Illinois at Urbana Champaign, July 2010
"New concepts in molecular and energy transport within carbon nanotubes: thermopower waves and stochastically resonant ion channels", Invited Seminar, Chemistry, University of Maryland, Sept 2010
"A single walled carbon nanotube based optical glucose sensor for continuous in vivo glucose detection", Procter and Gamble, September 2010
"Dancing on the Head of a Pin: the Coming Revolution in Nanosensors for Single Molecule Biodetection, Invited Seminar", NIST, Oct. 2010
"Bi- and Tri- Layer Graphene Solutions and Electronic and Regio- Selective Chemistry of Graphene for Nanoelectronics", MURI Review, MIT, Oct. 2010
"Dancing on the Head of a Pin: the Coming Revolution in Nanosensors for Single Molecule Biodetection, Invited Speaker", TTI Vanguard, Dec. 2010
"Exciton Antennae, Solar Concentrators, and Carbon Cages from the Directed Assembly of Single Walled Carbon Nanotubes", Invited Speaker, MRS Annual Meeting, Dec. 2010
"New concepts in molecular and energy transport within carbon nanotubes: thermopower waves and stochastically resonant ion channels", Invited Seminar, University of Texas at Austin, Dec. 2010

2012

"Reactive Oxygen Detection using SWNT" U. Albany seminar January 2012
"New Concepts in Energy and Mass Transport using Graphene and Carbon Nanotubes", CalTech, seminar March 2012
"New Concepts in Energy and Mass Transport" Winterschool, Kirchberg, Austria, March 2012 seminar
"In vivo glucose detection using SWNT" PITTCON, Orlando, Florida, speech March 2012
"New Concepts in Energy and Mass Transport" Purdue U., seminar March 2012
"The Graphene Consortium at MIT"Naval Warfare NSWC, Crane, Indiana, seminar March 2012
"Transport through Single Walled Carbon Nanotube Nanopores" Sunbury Res. Center BP, England, seminar March 2012
"Theroy and Applications of Thermopower waves" Army Res. Lab, Adelphia, Maryland, seminar April 2012

"New Concepts in Energy and Mass Transport using Graphene and Carbon Nanotubes"N.Dakota State U., seminar April 2012
"Biomedical sensors based on SWNT" Mayo Clinic, Rochester, Minnesota, seminar, May 2012
""New Concepts in Energy and Mass Transport""Gordon Conf., North Carolina, seminar June 2012
"SWNT ion channels"Barcelona (ICREA) speech July 2012
"Molecular sequencing", RESPOL company, Madrid, Spain, seminar July 2012
"Sugar Recognition" Sanofi, Frankfort, Germany, seminar July 2012
"Electron transport: New Concepts in Energy and Mass Transport""Gordon Conf., Newport, RI, seminar August 2012
"New Concepts in Energy and Mass Transport", Mat.Res.Society, Brazil, speech September 2012
"Thermopower waves", Embry-Riddle Aero Inst. Conference, Daytona Beach, Florida October 2012
"New Concepts in Energy and Mass Transport" Crystal/Graphene Symposium (SIWAN), Szeged, Hungary, speech October 2012
"New concepts in mass and energy transport"AIChE, Pittsburgh, speech, November 2012
"Thermopower Waves"AFOSR (MURI), Arlington, VA, report October 2012
"New Concepts in Energy and Mass Transport", Tripathy Anniv. Symp., U. Mass, Lowell, MA, speech Dec 2012

Industrial Consulting (with Confidentiality Agreement)

Dupont, Wilmington DE (2003-2004)
Intel, Portland OR (2005-pres.)
Luna Innovation (2006-pres.)
Nanoasis (2008-pres)
Ross (2008-pres)
Nanterra (2009-pres)
DCM (2009-pres)
Graphene Technologies (2012-pres)

Recent Professional Activities

2012 American Institute of Chemical Engineers Awards Committee
2012 NT13 Conference, organizer, speaker selection
2012 National Institutes of Health, Ad Hoc Reviewer, Nanoscale Science and Technology
2012 MIT Lemelson Award Committee, Panelist
2012 National Science Foundation, Panel Reviewer
2011 American Institute of Chemical Engineers Awards Committee
2011 National Institutes of Health, Ad Hoc Reviewer, Nanoscale Science and Technology
2011 MIT Lemelson Award Committee, Panelist
2011 National Science Foundation, Panel Reviewer 2010 Nanoscale Science and Engineering Forum, Executive Committee, and Blue Ribbon Awards Panel, American Institute of Chemical Engineers
2010 Session organizer/chairman for American Institute of Chemical Engineers Annual Meeting
2010 Session organizer/chairman for Materials Research Society Annual Meeting
2009 NIH Panel Reviewer, several study sections, Nanomedicine, NCI and Grand Challenges
2008 Editorial board, Journal Carbon
2007 Advisory board, Journal of Physical Chemistry, American Chemical Society
2006 Editorial board member: Journal of Experimental Biology and Medicine
2006 NSF Panel Reviewer, Nanotechnology Interdisciplinary Research Grants (NIRT)
2006 American Chemical Society, Presidential Symposium Organizer
2005 Panel Reviewer, NCI-NIH Nanotechnology Platforms
2005-06 Treasurer, NSEF, AIChE
2004 NSF Panel Reviewer, Sensors and Sensor Networks
2004 NSF Panel Reviewer, Nanotechnology Interdisciplinary Research Grants (NIRT)

2004 Reviewer, Department of Energy, Basic Energy Sciences
2004 Organizer and Co-Chair, Nanoscale Science and Technology Plenary Sessions, AIChE
2004 Organizer and Chair, Issues in Carbon Nanotubes Sessions, AIChE Annual Meeting
2003 NSF Panel Reviewer, Sensors and Sensor Networks
2003 Organizer and Chair, Issues in Carbon Nanotubes Sessions, AIChE Annual Meeting

Active reviewer for Journals: Science, PNAS, Nature Materials, Journal of the American Chemical Society, Advanced Materials, Nanoletters, Carbon, Journal of Physical Chemistry B, Langmuir, Physical Review Letters, Applied Physics Letters, Science, Nature Nanotechnology, Nature Materials, Nature Photonics, Nature Biotechnology

Professional Associations

American Chemical Society
American Physical Society
Materials Research Society
American Institute of Chemical Engineers
Federation of Analytical Chemistry and Spectroscopy Society
Tau Beta Pi, Engineering Honor Society
Omega Chi Epsilon, Chemical Engineering Honor Society

Students and Postdoctoral Associates

Current: 14 Ph.D. Graduate Students
7 Post Doctorial Researchers

Geraldine Paulus PhD Chemical Engineering
Andrew Hilmer PhD Chemical Engineering

Nigel Reuel PhD Chemical Engineering
Steven Shimizu PhD Chemical Engineering
Chih Jen Shih PhD Chemical Engineering (w/D. Blankschtein)

Zachary Ulissi PhD Chemical Engineering
Sayalee Girish Mahajan PhD Chemical Engineering
Lee William Drahushuk PhD Chemical Engineering

Youngwoo Son PhD Chemical Engineering
Sean Faltiermeir PhD Chemical Engineering

Darin Bellisario PhD Chemistry
Rishabh Jain PhD Materials Science
Akira Kudo PhD Materials Science (w/B. Wardle)

Justin Nelson PhD Chemical Engineering

Current postdoctoral researchers
Dr. Tom McNichilos
Dr. Qing Hua Wang
Dr. Bin Mu
Dr. Zhang Jin
Dr. Kevin Tvrdy
Dr. Nicole Iverson

Past Graduate Students
Jaeyun Sung, October 2006-2007, Masters Degree, Chemical Engineering, UIUC
Daniel Heller, 2003-2009, PhD Chemistry, UIUC (currently post doctorial researcher at MIT with R. Langer)
Rachel Graff, 2003-2007, Masters Degree, Chemical Engineering, UIUC
Nitish Nair, "A Structure-Reactivity Relationship for Single Walled Carbon Nanotubes," PhD Chemical Engineering, MIT
Esther Jeng, "The Detection of DNA Hybridization Using the Near-Infrared Fluorescence of Single-Walled Carbon Nanotubes," PhD Chemical Engineering, MIT
Paul Barone, "Signal Transduction in Glucose Oxidase - Single Walled Carbon Nanotube Complexes: A Near-Infrared Glucose Sensor," PhD Chemical Engineering, UIUC
Monica L. Usrey, "Selective Chemistry and Separation of Single Walled Carbon Nanotubes," December, 2006
Hong Jin, PhD Chemical Engineering, MIT
Chang Young Lee, Interior and Exterior Detection of Analytes Using Single Walled Carbon Nanotubes. PhD Chemical Engineering, MIT
Richa Sharma, PhD Chemical Engineering, MIT, October 2010
Joel Abrahamson , PhD Chemical Engineering, MIT
Won Joon Choi, PhD Mechanical Engineering, MIT
Arde Boghossian, PhD Chemical Engineering, MIT
Jingqing Zhang, PhD Chemical Engineering, MIT

Past Postdoctoral Researchers

2008	Postdoctoral researcher, Dr. Marie Kalbacova (currently Assistant Professor, Department of Biology, Prague, Czech Republic)
2007-2008	Postdoctoral researcher, Dr. Joon Hyun Baik (currently Post Doctorial Researcher, Department of Chemical and Biomolecular Engineering, Penn State University)
2005-2009	Postdoctoral researcher, Dr. Woo Jae Kim (currently Assistant Professor, Department of Chemical and Biomolecular Engineering, University, Korea)
2005-2009	Postdoctoral researcher, Dr. Cristiano Fantini (currently Assistant Professor, Department of Physics, University, Brazil)
2006-2007	Postdoctoral researcher, Dr. Ryuichiro Maruyama (currently Sony Corp. Japan)
2005-2008	Postdoctoral researcher, Dr. Jong Hyun Choi (currently Assistant Professor, Department of Mechanical Engineering, Purdue University, Indiana)
2003-2004	Postdoctoral researcher, Dr. Seunghyun Baik (currently Assistant Professor, Department of Mechanical Engineering, Sungkyunkwan University, Korea)
2004-2005	Postdoctoral researcher, *Dr. Jianqi Zhang* (whereabouts unknown)

Teaching Responsibilities

ChE 261	Introduction to Chemical Engineering, 2003-2006 (UIUC)
ChE 370	Chemical Engineering Thermodynamics, 2004-2007 (UIUC)
ChE 574	Graduate Reaction Engineering, 2005-2007, (UIUC)

Course 10.10 Introduction to Chemical Engineering, 2007 (MIT)
Course 10.65 Graduate Reaction Engineering, 2007-present (MIT)
Course 10.585 Engineering Nanotechnology, 2007-present (MIT)
Course 10.27 Energy Laboratory Module, 2010-present (MIT)

Campus Service

2003	Seminar Committee, Center for Nanoscale Science and Technology
2003-date	Library Committee, School of Chemical Sciences
2003-date	Academic Advising Committee, Department of Chemical Engineering
2003-date	Administrative Committee, Department of Chemical Engineering

2007-date Graduate Admissions Committee, Chemical Engineering, MIT
2007-date Seminar Committee, Chemical Engineering, MIT
2007-date Faculty Hiring Committee, Chemical Engineering, MIT
2011-date Committee on Toxic Chemicals, MIT
2012-date Safety Committee, Department of Chemical Engineering, MIT

Publications

Book Chapters

Strano, M. S., J. Rempel, J. Halverson, C. Burket, J. Mathews and H. C. Foley. Structural Modeling of Nanoporous Carbon: A Review of Approaches Simulating an Aperiodic and Non-Equilibrium Solid. in *From Semiconductors to Proteins: Beyond the Average Structure*, edited by S. J. Billinge and M. F. Thorpe (Kluwer Academic/Plenum, New York, 2001)

Strano, M. S., E. Haroz, C. Kittrell, R. H. Hauge, and R. E. Smalley. Assignment of (n,m) Ramanand Absorption Spectral Features of Metallic Single-Walled Carbon Nanotubes. in *Electronic Properties of Novel Materials - Molecular Nanostructures*, edited by H. Kuzmany, J. Fink, M. Mehring, and S. Roth (Springer, New York, 2003), pp. 246-252.

Hennrich, F., M. M. Kappes, **M. S. Strano**, R. H. Hauge, and R. E. Smalley. Infrared Analysis of Amine Treated Single-Walled Carbon Nanotubes Produced by Decomposition of CO. in *Electronic Properties of Novel Materials - Molecular Nanostructures*, edited by H. Kuzmany, J. Fink, M. Mehring, and S. Roth (Springer, New York, 2003), pp. 197-201.

Weisman, R. B., S. M. Bachilo, **M. S. Strano**, C. Kittrell, R. H. Hauge, and R. E. Smalley. (*n*,*m*)- Assigned Absorption and Emission Spectra of Single-Walled Carbon Nanotubes. in *Electronic Properties of Novel Materials - Molecular Nanostructures*, edited by H. Kuzmany, J. Fink, M. Mehring, and S. Roth (Springer, New York, 2003), pp. 241-245.

Patents

Eight US Patents Issued

Selected Peer Reviewed Journal Publications
(h-index = 46 as of Oct 2012)

(1) Acharya, M.; Strano, M. S.; Mathews, J. P.; Billinge, J. L.; Petkov, V.; Subramoney, S.; Foley, H. C.: Simulation of nanoporous carbons: a chemically constrained structure. *Philosophical Magazine B-Physics of Condensed Matter Statistical Mechanics Electronic Optical and Magnetic Properties* **1999**, *79*, 1499-1518.

(2) Strano, M. S.; Foley, H. C.: Deconvolution of permeance in supported nanoporous membranes. *Aiche Journal* **2000**, *46*, 651-658.

(3) Strano, M. S.; Foley, H. C.: Synthesis and characterization of catalytic nanoporous carbon membranes. *Aiche Journal* **2001**, *47*, 66-78.

(4) Strano, M. S.; Foley, H. C.: Synthesis and characterization of heteropolyacid nanoporous carbon membranes. *Catalysis Letters* **2001**, *74*, 177-184.

(5) Bachilo, S. M.; Strano, M. S.; Kittrell, C.; Hauge, R. H.; Smalley, R. E.; Weisman, R. B.: Structure-assigned optical spectra of single-walled carbon nanotubes. *Science* **2002**, *298*, 2361-2366.

(6) O'Connell, M. J.; Bachilo, S. M.; Huffman, C. B.; Moore, V. C.; Strano, M. S.; Haroz, E. H.; Rialon, K. L.; Boul, P. J.; Noon, W. H.; Kittrell, C.; Ma, J. P.; Hauge, R. H.; Weisman, R. B.; Smalley, R. E.: Band gap fluorescence from individual single-walled carbon nanotubes. *Science* **2002**, *297*, 593-596.

(7) Strano, M. S.; Foley, H. C.: Temperature- and pressure-dependent transient analysis of single component permeation through nanoporous carbon membranes. *Carbon* **2002**, *40*, 1029-1041.

(8) Strano, M. S.; Rempel, J.; Halverson, J.; Burket, C.; Mathews, J.; Foley, H. C.: *Structural modeling of nonaporous carbon: A review of approaches to simulating an aperiodic and non-equilibrium solid*, 2002.

(9) Strano, M. S.; Zydney, A. L.; Barth, H.; Wooler, G.; Agarwal, H.; Foley, H. C.: Ultrafiltration membrane synthesis by nanoscale templating of porous carbon. *Journal of Membrane Science* **2002**, *198*, 173-186.

(10) Doorn, S. K.; Strano, M. S.; O'Connell, M. J.; Haroz, E. H.; Rialon, K. L.; Hauge, R. H.; Smalley, R. E.: Capillary electrophoresis separations of bundled and individual carbon nanotubes. *Journal of Physical Chemistry B* **2003**, *107*, 6063-6069.

(11) Hennrich, F.; Kappes, M. M.; Strano, M. S.; Hauge, R. H.; Smalley, R. E.: Infrared analysis of amine treated single-walled carbon nanotubes produced by decomposition of CO. In *Molecular Nanostructures*; Kuzmany, H., Fink, J., Mehring, M., Roth, S., Eds., 2003; Vol. 685; pp 197-201.

(12) Huxtable, S. T.; Cahill, D. G.; Shenogin, S.; Xue, L. P.; Ozisik, R.; Barone, P.; Usrey, M.; Strano, M. S.; Siddons, G.; Shim, M.; Keblinski, P.: Interfacial heat flow in carbon nanotube suspensions. *Nature Materials* **2003**, *2*, 731-734.

(13) Moore, V. C.; Strano, M. S.; Haroz, E. H.; Hauge, R. H.; Smalley, R. E.; Schmidt, J.; Talmon, Y.: Individually suspended single-walled carbon nanotubes in various surfactants. *Nano Letters* **2003**, *3*, 1379-1382.

(14) Strano, M. S.: Probing chiral selective reactions using a revised Kataura plot for the interpretation of single-walled carbon nanotube spectroscopy. *Journal of the American Chemical Society* **2003**, *125*, 16148-16153.

(15) Strano, M. S.; Agarwal, H.; Pedrick, J.; Redman, D.; Foley, H. C.: Templated pyrolytic carbon: the effect of poly(ethylene glycol) molecular weight on the pore size distribution of poly(furfuryl alcohol)-derived carbon. *Carbon* **2003**, *41*, 2501-2508.

(16) Strano, M. S.; Doorn, S. K.; Haroz, E. H.; Kittrell, C.; Hauge, R. H.; Smalley, R. E.: Assignment of (n, m) Raman and optical features of metallic single-walled carbon nanotubes. *Nano Letters* **2003**, *3*, 1091-1096.

(17) Strano, M. S.; Dyke, C. A.; Usrey, M. L.; Barone, P. W.; Allen, M. J.; Shan, H. W.; Kittrell, C.; Hauge, R. H.; Tour, J. M.; Smalley, R. E.: Electronic structure control of single-walled carbon nanotube functionalization. *Science* **2003**, *301*, 1519-1522.

(18) Strano, M. S.; Foley, H. C.: Modeling ideal selectivity variation in nanoporous membranes. *Chemical Engineering Science* **2003**, *58*, 2745-2758.

(19) Strano, M. S.; Haroz, E. H.; Kittrell, C.; Hauge, R. H.; Smalley, R. E.: Assignment of (n,m) Raman and absorption spectral features of metallic single-walled carbon nanotubes. In *Molecular Nanostructures*; Kuzmany, H., Fink, J., Mehring, M., Roth, S., Eds., 2003; Vol. 685; pp 246-250.

(20) Strano, M. S.; Huffman, C. B.; Moore, V. C.; O'Connell, M. J.; Haroz, E. H.; Hubbard, J.; Miller, M.; Rialon, K.; Kittrell, C.; Ramesh, S.; Hauge, R. H.; Smalley, R. E.: Reversible, band-gap-selective protonation of single-walled carbon nanotubes in solution. *Journal of Physical Chemistry B* **2003**, *107*, 6979-6985.

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