JAMES M. TOUR, Ph.D.

T. T. and W. F. Chao Professor of Chemistry
Professor of Computer Science
Professor of Materials Science and NanoEngineering

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Research Areas
General: green carbon research, graphene, organic chemistry, nanomedicine, nanotechnology, materials science, polymer chemistry, K-12 educational outreach.

Specific: Tour's scientific research areas include nanoelectronics, graphene electronics, silicon oxide electronics, carbon nanovectors for medical applications, green carbon research for enhanced oil recovery and environmentally friendly oil and gas extraction, graphene photovoltaics, carbon supercapacitors, lithium ion batteries, CO_2 capture, water splitting to H_2 and O_2, water purification, carbon nanotube and graphene synthetic modifications, graphene oxide, carbon composites, hydrogen storage on nanoengineered carbon scaffolds, and synthesis of single-molecule nanomachines which includes molecular motors and nanocars. He has also developed strategies for retarding chemical terrorist attacks. For pre-college education, Tour developed the *NanoKids* concept for K-12 education in nanoscale science, and also *Dance Dance Revolution* and *Guitar Hero* science packages for elementary and middle school education: *SciRave* (http://www.scirave.org) which later expanded to Stemscopes-based *SciRave* (http://stemscopes.com/scirave/). The *SciRave* program has risen to be the #1 most widely adopted program in Texas to complement science instruction, and it is currently used by over 450 school districts and 40,000 teachers with almost 2 million student downloads.

Publications
Tour has over 600 research publications and over 120 patents, with an H-index = 123 (107 by ISI Web of Science) and i10 index = 509 with total citations over 68332 (Google Scholar). He was inducted into the National Academy of Inventors in 2015.Tour was named among "The 50 Most Influential Scientists in the World Today" by TheBestSchools.org in 2014; listed in "The World's Most Influential Scientific Minds" by Thomson Reuters ScienceWatch.com in 2014; and recipient of the Trotter Prize in "Information, Complexity and Inference" in 2014; and was the Lady Davis Visiting Professor, Hebrew University, June, 2014. He was named "Scientist of the Year" by *R&D Magazine*, 2013.

Education

- Stanford University, National Institutes of Health Postdoctoral Fellow, Organic Chemistry, 1987-88 with Barry M. Trost
- University of Wisconsin, Postdoctoral Fellow, Organometallic Chemistry, 1986-87 with Barry M. Trost
- Purdue University, Ph.D., Organic Chemistry, 1986 with E. Negishi
- Syracuse University, B.S., Chemistry, 1981

Professional Experience

- Weebit, Co-Founder, 2015
- Dotz, Co-Founder, 2015
- Tubz, Co-Founder, 2015
- Acelerox, Co-Founder, 2015
- Avid Chemotherapeutics, Co-Founder, 2015Department of Commerce, Emerging Technology and Research Advisory Committee, 2008 to 2011
- NanoJTech Consultants, LLC, Founder, 2007 to present.
- RJAC-10, LLC, Co-Founder, 2007
- Defense Science Board Chem/Nano Study Section, 2007
- MD Anderson Cancer Research Center's Competitive Grant Renewal Board, 2007-present
- Ariel Ministries, Board of Directors, 2006 to 2012
- LUMS School of Science and Engineering, Lahore Pakistan, Chemistry Search Committee, 2006 to present
- Carbon Nanotechnology Laboratory, Director, 2005 to 2007
- NanoComposites Inc., Co-Founder, 2004 to 2012
- *Chemical Reviews*, American Chemical Society, Editorial Advisory Board, 1999 to 2002.
- T. T. and W. F. Chao Professor of Chemistry, Professor of Mechanical Engineering and Materials Science, and Professor of Computer Science, Rice University, Smalley Institute for Nanoscale Science and Technology, Houston, Texas, 1999 to present
- Adjunct Professor, Rice University, Department of Chemistry and Center for Nanoscale Science and Technology, Houston, Texas, February 1999 to May 1999
- California Molecular Electronics Corporation, Technical Advisory Committee, August 1998 to November 1999
- National Defense Science Study Group, 1997 to 1999
- Governor's Mathematics and Science Advisory Board for South Carolina, 1996 to 1998
- Guy F. Lipscomb Professor of Chemistry, University of South Carolina, Columbia, SC, 1996 to 1999
- National Science Foundation, Materials Research Centers Advisory Committee, April 1996 and February 1997
- National Science Foundation, CAREER Program Advisory Committee, March 1995
- Visiting Scholar, Department of Chemistry, Harvard University, while on sabbatical leave from the University of South Carolina, Fall 1994

- Professor, Department of Chemistry and Biochemistry, University of South Carolina, Columbia, SC, August 1994 to 1996
- Associate Professor, Department of Chemistry and Biochemistry, University of South Carolina, Columbia, SC, August 1992 to August 1994
- Associate Director of the American Chemical Society, Polymer Division, Materials Science Secretariat, 1991 to 1995
- Assistant Professor, Department of Chemistry and Biochemistry, University of South Carolina, Columbia, SC, August 1988 to August 1992
- National Institutes of Health Postdoctoral Fellow, Department of Chemistry, Stanford University, with Professor Barry M. Trost, 1987 to 1988
- Postdoctoral Fellow, Department of Chemistry, University of Wisconsin, with Professor Barry M. Trost, 1986 to 1987
- Graduate Student, Department of Chemistry, Purdue University, with Professor Ei-ichi Negishi, 1981 to 1986
- Undergraduate Student, Department of Chemistry, Syracuse University, 1977 to 1981

Awards and Honors

- Lady Davis Visiting Professor, Hebrew University, June 2014.
- Tour was named among "The 50 Most Influential Scientists in the World Today" by TheBestSchools.org in 2014.
- Listed in "The World's Most Influential Scientific Minds" by Thomson Reuters ScienceWatch.com in 2014.
- Recipient of the Trotter Prize in "Information, Complexity and Inference" in 2014.
- Named “Scientist of the Year” by *R&D Magazine*, 2013.
- George R. Brown Award for Superior Teaching, Rice University, 2012.
- Won the *ACS Nano* Lectureship Award from the American Chemical Society, 2012.
- Lady Davis Visiting Professor, Hebrew University, June 2011.
- Fellow of the American Association for the Advancement of Science (AAAS), 2009.
- Ranked one of the Top 10 chemists in the world over the past decade, by a Thomson Reuters citations per publication index survey, 2009.
- Distinguished Alumni Award, Purdue University, 2009.
- Houston Technology Center’s Nanotechnology Achievement Award, 2009
- Feynman Prize in Nanotechnology, 2008
- NASA Space Act Award, 2008
- Arthur C. Cope Scholar Award from the American Chemical Society, 2007
- George R. Brown Award for Superior Teaching, Rice University, 2007
- *Small Times* Magazine’s Innovator of the Year Award, 2006
- *Nanotech Briefs* Nano 50 Innovator Award, 2006
- Alan Berman Research Publication Award, Department of the Navy, 2006
- American Chemical Society’s #1 Most Accessed Journal Article in 2005, “Directional Control in Thermally Driven Single-Molecule Nanocars”
- American Chemical Society, Southern Chemist of the Year Award 2005
- Honda Innovation Award–NanoCars, 2005

- Distinguished Faculty Associate, Hanszen College, Rice University, 1999-2000
- Russell Research Award in Science, Mathematics and Engineering, Univ. South Carolina, 1997
- Abbott Distinguished Lecturer, Colorado State Univ., March 1997
- Weissberger-Williams Lecturer, Eastman Kodak Corporation, Rochester, NY, November 1995
- Exxon Educational Foundation Research and Training Award, 1994
- National Science Foundation Presidential Young Investigator Award in Polymer Chem., 1991-96
- Office of Naval Research Young Investigator Award in Polymer Chemistry, 1989-92
- IBM Corporation, One-Week Visiting Lecturer, Polymer Division, Almaden Research Center, June 1988
- National Institutes of Health Postdoctoral Fellow, 1987-88
- IBM Corporation Full Graduate Fellowship in Polymer Chemistry, Purdue University 1985-86
- Celanese Corporation Graduate Fellowship in Chemistry, Purdue University, 1981-82
- American Institute of Chemists Award, 1981
- Bachelor of Science, *Cum Laude*, Syracuse University, 1981
- George Wiley Award in Organic Chemistry, 1979