

Mark A. Ratner

Initiative for Sustainability and Energy at Northwestern
Departments of Chemistry, Materials Science and Engineering

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Education (b. December 8, 1942)

Harvard University	Chemistry	A.B. 1964
Northwestern University	Chemistry	Ph.D. 1969
Hebrew University of Jerusalem	Honorary	DSc. 2004
University of Copenhagen	Honorary	DSc. 2010

Research and Professional Experience

Assistant, Associate Prof., Chemistry Dept., New York University	1970–74
Associate Prof., Prof., Dumas University Professor, Northwestern University	1975–
Associate Dean, College of Arts and Sciences, Northwestern University	1980–84
Visiting Prof., National Sciences Research Council, Odense University, Denmark	1984
Chemistry Department Chair, Northwestern University	1988–91; 2010–12
Co-Director, Initiative for Sustainability and Energy at Northwestern	2008–
Interim Dean, Weinberg College, Northwestern University	2014–

Fellowships and Awards

Alfred P. Sloan Foundation Fellow	1972–75
Fellow, Advanced Study Institute, Hebrew University	1980, 1993
University Distinguished Teacher Award, Northwestern University	1981
Fellow, American Physical Society	1981
Faculty Teaching Honor Roll, Northwestern University (12 years)	1977–2002
Fellow, American Association for Advancement of Science	1992
Member, American Academy of Arts and Sciences	2001
US National Academy of Sciences	2002
Feynman Prize, Foresight Institute	2002
Langmuir Prize, American Chemical Society	2003
Honorary Doctor of Science Degree, Hebrew University of Jerusalem	2003
Honorary Doctor of Science Degree, University of Copenhagen	2010
International Academy of Quantum Molecular Sciences	2004
Foreign Member, Royal Danish Academy of Sciences	2004
American Chemical Society Fellow	2011
J. Willard Gibbs Medal, Chicago Section, American Chemical Society	2012

Memberships

American Physical Society, American Chemical Society, Materials Research Society, Sigma Xi

Editorial Boards (current)

Advances in Quantum Chemistry, Chemical Reviews, Chemical Physics, Chemical Physics Letters, Moroccan Journal of Condensed Matter, Physical Chemistry/Chemical Physics, Proceedings of the US National Academy of Sciences, Small

Chair Positions and Advisory Boards

Former Chair, Division of Physical Chemistry, American Chemical Society; Chemical Physics Division, American Physical Society; Materials Advisory Committee, Dow Chemical Company; Gordon Research Conferences; Member, International Advisory Board: Kemisk Institut, Københavns Universitet. Nanocenter Evaluation Committee, Minister of Science, Israel. Advisory Committee, Argonne National Lab., Basic Energy Sciences Advisory Committee, US Dept. of Energy

Publications and Lectures

More than 800 technical publications, 5 edited books, 4 authored books: *Quantum Mechanics in Chemistry* (with G. C. Schatz), *Introduction to Quantum Mechanics in Chemistry* (with G. C. Schatz), *Nanotechnology: A Gentle Introduction to the Next Big Idea* (with D. Ratner), *Nanotechnology and Homeland Security* (with D. Ratner). 104 named lectures in Netherlands, France, Germany, England, Israel, Denmark, India, Sweden, Spain, Switzerland, Portugal, Belgium, Japan, Venezuela, Argentina, Australia, Canada, and US. More than 450 lectures at universities, colleges, industrial firms and civic organizations.

Advisors / Advisees

Doctoral: G. L. Hofacker, S. Fischer (both retired at Technische Universität München)

Postdoctoral: J. Linderberg (retired at Aarhus University, Denmark)

Mentorship: Awarded 69 PhD degrees, and sponsored 71 postdoctoral fellows

Five Significant Publications [number of citations]

1. Aviram, A.; Ratner, M. A., Molecular rectifiers. *Chemical Physics Letters* **1974**, 29 (2), 277–283. [1,944]
2. Nitzan, A.; Ratner, M. A., Electron transport in molecular wire junctions. *Science* **2003**, 300 (5624), 1384–1389. [1,1376]
3. Kanis, D., Ratner, M.A. and Marks, T.J. Design and construction of molecular assemblies with large 2nd-order optical nonlinearities - quantum-chemical aspects. *Chemical Reviews* **1994**, 94, 195-242 [1,241]
4. Barbara, P. F.; Meyer, T. J.; Ratner, M. A., Contemporary issues in electron transfer research. *Journal of Physical Chemistry* **1996**, 100 (31), 13148–13168. [826]
5. Davis, W. B.; Svec, W. A.; Ratner, M. A.; Wasielewski, M. R., Molecular-wire behaviour in *p*-phenylene-vinylene oligomers. *Nature* **1998**, 396 (6706), 60–63. [497]

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