CURRICULUM VITAE

RUDOLPH A. MARCUS

Personal Information

Date of Birth: July 21, 1923
Place of Birth: Montreal, Canada
Married: Laura Hearne (dec. 2003), 1949 (three sons: Alan, Kenneth, and Raymond)
Citizenship: U.S.A. (naturalized 1958)

Education

B.Sc. in Chemistry, McGill University, Montreal, Canada, 1943
Ph.D. in Chemistry, McGill University, 1946

Professional Experience

Postdoctoral Research, National Research Council of Canada, Ottawa, Canada, 1946-49
Postdoctoral Research, University of North Carolina, 1949-51
Assistant Professor, Polytechnic Institute of Brooklyn, 1951-54; Associate Professor, 1954-58; Professor, 1958-64; (Acting Head, Division of Physical Chemistry, 1961-62)
Member, Courant Institute of Mathematical Sciences, New York University, 1960-61
Professor, University of Illinois, 1964-78 (Head, Division of Physical Chemistry, 1967-68)
Visiting Professor of Theoretical Chemistry, IBM, University of Oxford, England, 1975-76
Professorial Fellow, University College, University of Oxford, 1975-76
Arthur Amos Noyes Professor of Chemistry, California Institute of Technology, 1978-2012
John G. Kirkwood and Arthur A. Noyes Professor of Chemistry, California Institute of Technology, 2013-
Professor (hon.), Fudan University, Shanghai, China, 1994-
Professor (hon.), Institute of Chemistry, Chinese Academy of Sciences, Beijing, China, 1995-
Fellow (hon.), University College, University of Oxford, 1995-
Linnett Visiting Professor of Chemistry, University of Cambridge, 1996
Honorable Visitor, National Science Council, Republic of China, 1999
Professor (hon.), China Ocean University, Qingdao, China, 2002 -
Professor (hon.), Tianjin University, Tianjin, China, 2002-
Professor (hon.) Dalian Institute of Chemical Physics, Dalian, China, 2005-
Professor (hon.) Wenzhou Medical College, Wenzhou, China, 2005-
Distinguished Affiliated Professor, Technical University of Munich, 2008-
Visiting Nanyang Professor, Nanyang Institute of Technology, Singapore 2009-
Chair Professor (hon.) University System of Taiwan, 2011
Distinguished Professor (hon.), Tumkur University, India, 2012
Arthur Amos Noyes Professor of Chemistry, California Institute of Technology, 1978-2013

Honorary Doctorates

University of Chicago, 1983 (D.Sc.h.c.), Polytechnic University, 1986, University of Göteborg, Sweden, 1987 (Fil.dr.h.c.), McGill University, Canada, 1988, University of New Brunswick, Canada, 1993, Queen's University, Canada, 1993, University of Oxford, England, 1995, University of North Carolina at Chapel Hill, 1996, Yokohama National University, Japan, 1996 (D.h.c.), University of Illinois at Urbana-Champaign, 1997, Technion-Israel Institute of Technology, Israel, 1998, Universidad Politécnica de Valencia, Spain, 1999, Northwestern University, IL, 2000, University of Waterloo, Canada, 2002, Nanyang Technological University, Singapore, 2010, Tumkur University, India, 2012, University of Hyderabad, India, 2012, University of Calgary, Canada, 2013 (LL.D.), Bernardo O'Higgins University, Chile, 2018

Honorary Memberships

Member, National Academy of Sciences, 1970-
Fellow, American Academy of Arts and Sciences, 1973-
Foreign Member, The Royal Society (London), 1987-
Member, International Academy of Quantum Molecular Science, 1987-
Member, American Philosophical Society, 1990- , Member of Council, 1999-2005
Honorary Fellow, Royal Society of Chemistry, 1991-
Foreign Fellow, Royal Society of Canada, 1993-
Honorary Member, International Society of Electrochemistry, 1994-
Honorary Board Member, International Society of Theoretical Chemical Physics, 1995-
Honorary Member, Korean Chemical Society, 1996-
Honorary Editor, International Journal of Quantum Chemistry, 1996-
Foreign Member, Chinese Academy of Sciences, 1998-
Honorary Board Member of The International Raoul Wallenberg Foundation, 2003-
Honorary Board Member of The Angelo Roncalli International Committee, 2003-
Honorary Member, European Academy of Sciences, 2004-
First Honorary Scientific Fellow, Literary & Historical Society, University College, Dublin, 2004-
Sesquicentennial Medal, Polytechnic University, Brooklyn, 2006.
Honorary Member, The National Museum of Emerging Science and Innovation, Tokyo, Japan, September 2008-
Honorary Member, Institute for Advanced Studies, Technical University of Munich, Munich, Germany, 2008-
Member, International Panel of Advisors, Institute of Advanced Studies, Nanyang Technological University, Singapore, 2008-
Honorary Academician, Academia Sinica, Taiwan 2010-

Other Honors and Awards

Anne Molson Prize in Chemistry, McGill, 1943
NSF Senior Postdoctoral Fellowship, 1960-61
Alfred P. Sloan Fellowship, 1960-63
Associate Member, Center for Advanced Studies, University of Illinois, 1968-69
Alexander von Humboldt Foundation Senior U.S. Scientist Award, Technical University of Munich, 1976
Irving Langmuir Award in Chemical Physics, American Chemical Society, 1978

The Electrochemical Society Lecture, The Electrochemical Society, 1979, 1996
Robinson Medal, Faraday Division, Royal Society of Chemistry, 1982
Renaud Foundation Lectureship, American Chemical Society, Michigan State University Section, 1982
Nebraska Lectureship, American Chemical Society, University of Nebraska, 1982
Chandler Medal, Columbia University, New York, 1983
Wolf Prize in Chemistry, 1985
Willard Gibbs Medal, American Chemical Society, Chicago Section, 1988
Peter Debye Award in Physical Chemistry, American Chemical Society, 1988
Centenary Medal, Faraday Division, Royal Society of Chemistry, 1988
S. C. Lind Lectureship, American Chemical Society, East Tennessee Section, 1988
National Medal of Science, 1989
Theodore William Richards Medal, American Chemical Society, Northeastern Section, 1990
William Lloyd Evans Award, Ohio State University, Columbus, 1990
Edgar Fahs Smith Award, American Chemical Society, Philadelphia Section, 1991
Remsen Award, American Chemical Society, Maryland Section, 1991
Linus Pauling Award, American Chemical Society, Oregon, Portland, and Puget Sound Sections, 1991
Nobel Prize in Chemistry, 1992
Joseph O. Hirschfelder Prize in Theoretical Chemistry, 1993
American Academy of Achievement Golden Plate Award, 1993
Honorary Citizen of Winnipeg, 1994
Lavoisier Medal, Société Française de Chimie, 1994
Treasure of Los Angeles Award, Central City Association of Los Angeles, 1995
Auburn - G. M. Kosolapoff Award, American Chemical Society, Auburn Section, 1996
Commissioned a Kentucky Colonel, 1996
Award in Theoretical Chemistry, American Chemical Society, 1997
Honorary Co-President, 29th International Chemistry Olympiad, Montreal, Canada, 1997
Oesper Award, American Chemical Society, Cincinnati Section, 1997
Top 75 Award, Chemical and Engineering News, American Chemical Society, Boston, MA, 1998
Key to the City of Taipei, Taiwan, 1999
Symposium in honor of Professor Rudolph A. Marcus, Organized by faculty at the Technical University of Munich, Germany, 2003
Symposium in honor of Professor Rudolph A. Marcus, John Stauffer Lecture in the Sciences, USC, Los Angeles, 2003
Tree Planting Ceremony, Nobel Garden, Pohang University, Gyeongui City, South Korea, 2004
Postage stamp of Guiné-Bissau, 2005
Special Symposium in honor of Professor Rudolph A. Marcus: 50 Years of Electron Transfer and RRKM Theory, American Chemical Society 2006 Annual Meeting, San Francisco, California, 2006
Lifetime Achievement Award in Theoretical Chemistry, Theory and Applications of Computational Chemistry Conference (TACC), Shanghai, China, 2008
Spiers Medal, Royal Society of Chemistry, University of Wales Institute, Cardiff, UK, 2009
Chief Judge, "A*Star Talent Search, Singapore Science and Engineering Fair Awards" for high school students, Singapore, 2011
Unveiling of portrait of Rudy Marcus, chemistry faculty conference room, Chemistry Building, McGill University, Montreal Canada, 2011
Inauguration of the "Rudy Marcus Chemical Sciences Laboratories," Department of Chemistry, McGill University, Montreal Canada, 2012
The Prof. Rudolph A. Marcus Award, given annually for the best paper(s) in the 'Dynamics' area of *Journal of Spectroscopy and Dynamics*, 2013

Postage stamp of Ghana, 2013
Rudolph A. Marcus Conference and Festival, Singapore, 2013
Induction into the Alpha Chi Sigma Hall of Fame, Charlottesville, Virginia, 2014
Chairman, International Peer Review of the College of Chemistry and Molecular Engineering, Peking University, China, 2015
Honorary Editor of the Springer Book Series *Progress in Theoretical Chemistry and Physics*, 2016
Electrochemical Society Masters Film Interview, Pasadena, California, 2016
E&S Magazine "No Rest for a Nobelist: Rudolph A. Marcus" Film Interview, California Institute of Technology, Pasadena, California, 2016
Victor Babes Honorary Scientist Award, Bucharest, Romania, 2018
Medal, Ecole Supérieur du Professorat et de l'Éducation (ESPE); Cergy, France, 2019
Establishment of the Marcus International Managing Award, FLOGEN Organization, Paphos, Cyprus, 2019
Fray International Sustainability Award, FLOGEN Organization, Paphos, Cyprus, 2019

Other Professional Memberships

Alpha Chi Sigma
American Association for the Advancement of Science
American Chemical Society
American Physical Society

Committees

Chairman, Division of Physical Chemistry, American Chemical Society, 1964-65
Chairman, Board of Trustees, Gordon Research Conferences, 1968-69
(Member of Board, 1966-69, Council Member at Large, 1965-68)
Director, Zeta Corporation, Alpha Chi Sigma, 1966-70
Graduate Science Facilities Consultant, National Science Foundation, 1969-70
Advisory Board, Petroleum Research Fund, American Chemical Society, 1970-72
Executive Committee, Division of Chemical Physics, American Physical Society, 1970-72
Chairman, National Research Council - National Academy of Sciences,
Committee on Kinetics of Chemical Reactions, 1975-77 (Member, 1973-77)
National Research Council - National Academy of Sciences, Climatic Impact Committee,
Panel on Atmospheric Chemistry, 1975-78
National Research Council - National Academy of Sciences,
Committee on Chemical Sciences, 1977-79
Advisory Committee for Chemistry, National Science Foundation, 1977-80
Co-Chairman, Executive Committee, American Academy of Arts and Sciences,
Western Section, 1981-84 (Member, Executive Committee, 1979-84)
National Research Council - National Academy of Sciences Committee to
Survey Opportunities in the Chemical Sciences, 1982-86
Committee on Research and Planning, American Academy of Arts and Sciences, 1989-91
Member, External Advisory Board, NSF Center for Photoinduced Charge Transfer,
Rochester, NY, 1990-
Chile Presidential Chairs Committee, Republic of Chile, 1994-96
Advisor of the Center for Molecular Sciences, Chinese Academy of Sciences,
Beijing, China, 1995-

Advisor of the State Key Laboratory for Structural Chemistry of Unstable and Stable Species, Beijing, China, 1995-
Member, Mathematics Panel, International Benchmarking of U.S. Research Fields, NAS-NRC Committee on Science, Engineering and Public Policy, 1996-1998
Panel Member, Accountability of Federally Funded Research, COSEPUP, 2000-
Co-organizer, First Gordon Research Conference Summer School, "Analytical Approaches to Rate Processes and Time-Resolved Spectroscopy in Condensed Phases", 2000

Editorial Boards

Journal of Chemical Physics, 1964-66
Annual Review of Physical Chemistry, 1964-69
Journal of Physical Chemistry, 1968-72, 1980-84
Accounts of Chemical Research, 1968-73
International Journal of Chemical Kinetics, 1976-1980
Molecular Physics, 1977-1980
Chemical Physics Letters, 1980-1990
Laser Chemistry, 1982-
Advances in Chemical Physics, 1984-2006
Theoretica Chimica Acta, 1985-1988
International Advisor in Chemistry, World Scientific Publishing, 1987-
International Reviews in Physical Chemistry, 1988-
Progress in Physics, Chemistry and Mechanics (China), 1989
Journal of the Chemical Society. Faraday Transactions, 1990-1995
Journal of the Chemical Society. Perkin Transactions 2, 1992-2002
International Journal of Molecular Science, Physical Chemistry, Theoretical and Computational Chemistry, 2007 -

Selected Lectures (1963 -)

Plenary Lecture, Comité International de Thermodynamique et Cinétique Electrochemiques, USSR, 1963
Henry Werner Lectures, University of Kansas, 1963
International Summer School in Theoretical Chemistry, NATO, Constance, Germany, 1965
Frontiers in Chemistry Lecture, Western Reserve University, 1967
Venable Lecture, University of North Carolina, 1967
Seydel-Wooley Lectures, Georgia Institute of Technology, 1967
Introductory Lecture, Faraday Society Discussion on Electrode Reactions of Organic Compounds, England, 1968
Foster Lectures, State University of New York at Buffalo, 1968
Plenary Lecture, International Society of Electrochemistry, Yugoslavia, 1971
International Summer School on Applications of Quantum Mechanics to Electrochemistry, Yugoslavia, 1971
Second International Summer School on Applications of Quantum Mechanics to Electrochemistry, Yugoslavia, 1972
Introductory Lecture, Theoretical Section, Faraday Discussion on Molecular Beam Scattering, University College, London, England, 1973
Lectures, Winter Institute in Theoretical Chemistry, Norway, 1976

Distinguished Lectures, University of Rochester, 1977
Summer Lectures, Northwestern University, 1977
Distinguished Visiting Professorship, University of Texas, 1977
Lectures, Seminar on Mechanisms and Kinetics of Electron Transfer, Switzerland, 1978
Kelly Lectures, Purdue University, 1978
William Draper Harkins Lecture, University of Chicago, 1980
Raymond and Beverly Sackler Distinguished Lectures in Chemistry, Tel Aviv University, Israel, 1980
I. M. Kolthoff Lectures, University of Minnesota, 1981
O. K. Rice Lectures, University of North Carolina, 1982
E. H. Boomer Lectures, University of Alberta, Canada, 1982
R. A. Robinson Memorial Lecture, Introductory Lecture, Faraday Society Discussion on Electron and Proton Transfer, The University, Southampton, England, 1982
Frontiers in Chemical Research Lectures, Texas A & M University, 1982
Charles Brockman Memorial Lecture, University of Georgia, 1982
Distinguished Lecture, 11th Peter A. Leermakers Symposium, Wesleyan University, Connecticut, 1983
Nieuwland Lecture, University of Notre Dame, 1983
Distinguished Lectures, Guelph-Waterloo Center for Graduate Work in Chemistry, Ontario, Canada, 1983
Charles Frederick Chandler Lecture, Columbia University, 1983
E. U. Condon Lecture, Department of Chemistry, University of Colorado, 1985
Sydney Golden Lecture, Brandeis University, 1985
Leland J. Haworth Distinguished Scientist Lectures, Brookhaven National Laboratory, New York, 1985-1987
Birch Lecture, Research School of Chemistry, The Australian National University, 1985
Neckers Lecture, University of Southern Illinois, 1986
Krug Lecture, Alpha Chi Sigma, University of Illinois, 1986
Plenary Lecture, Sixth Euchem Conference on Organic Electrochemistry, Switzerland, 1986
Plenary Lecture, Sixth International Conference on Photochemical Conversion and Storage of Solar Energy, France, 1986
Francis Clifford Phillips Lectures, University of Pittsburgh, 1987
Distinguished Lecture, 15th Peter A. Leermakers Symposium, Wesleyan University, 1987
Opening Lecture, Faraday Symposium on Molecular Vibrations, England, 1987
Iddles Lectures, University of New Hampshire, 1988
Dartmouth Lecture, Dartmouth College, 1988
Joe L. Franklin Memorial Lecture, Rice University, 1988
Frontiers in Chemistry Lecture, Case Western Reserve University, 1988
Arthur D. Little Lectures, Northeastern University, 1988
Convocation Address, Faculties of Science and Graduate Studies and Research, McGill University, Canada, 1988
Centenary Lectures, Royal Society of Chemistry, Universities of Cambridge, Birmingham, Oxford, Southampton, Manchester, Strathclyde, Imperial College of Science and Technology; England, 1988
3M University Lectures, University of Western Ontario, Canada, 1988
Plenary Lecture, Eighth International Congress on Photosynthesis, Sweden, 1989
Lectures, Summer School on Molecular Sciences, Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan, 1989

Plenary Lecture, Fortieth International Society of Electrochemistry Meeting, Japan, 1989
Theodore Williams Richards Lecture, American Chemical Society, Northeastern Section, Harvard University, 1990
John Howard Appleton Lecture, Brown University, 1990
William Lloyd Evans Award Lecture, Ohio State University, 1990
Closing Lecture, Faraday Discussion on Structure and Dynamics of Reactive Transition States, England, 1991
Glenn Brown Lectures, Case Western Reserve University, 1991
Fritz London Memorial Lecture, Duke University, North Carolina, 1991
Opening Lecture, Satellite Meeting on Electron Transfer, International Congress of Quantum Chemistry, Sophia-Antipolis, France, 1991
George Fisher Baker Lectures in Chemistry, Cornell University, 1991
Dupont Lecture, Harvey Mudd College, 1992
Northwest Lectureship in Physical Chemistry, Molecular Science Research Center, Battelle Pacific Northwest Laboratories, Washington State University, and University of Washington, 1992
1991 Pauling Award Address, American Chemical Society, Oregon State University, 1992
C.A. McDowell Lectures, University of British Columbia, Canada, 1992
Nobel Lecture, Stockholm, Sweden, 1992
J.O. Hirschfelder Lectures, Madison, Wisconsin, 1993
Sigma Xi Edison Lecture, Washington, D.C., 1993
Convocation Address, University of New Brunswick, Saint John, Canada, 1993
Convocation Address, Faculty of Arts and Science, Queen's University, Canada, 1993
Opening Lecture, Cursos de Verano, Universidad Complutense, Aguadulce, Spain, 1993
Nobel Laureate Lectureship, California State University, Long Beach, CA, 1993
Blacet Lecture, University of California at Los Angeles, 1994
Opening Lecture, Accademia dei Lincei Symposium, Perugia, Italy, 1994
Special Nobel Laureate Panel, National Science Teachers Association, Anaheim, CA, 1994
Arthur D. Little Lectures, Massachusetts Institute of Technology, 1994
Priestman Lectures, University of New Brunswick at Fredericton, Canada, 1994
Beatty Lecture, McGill University, Canada, 1994
Herzberg Lecture, Carleton University, Ottawa, Canada, 1994
Nelson J. Leonard Distinguished Lectures, University of Illinois at Urbana-Champaign, 1994
Festkolloquium in honor of H. Gerischer, Berlin, Germany, 1994
Speaker, International Union of Pure and Applied Chemistry, Nobel Laureate Symposium, "Chemistry for Life," Winnipeg, Canada, 1994
Frontiers in Chemistry Lecture in honor of Ernest Yeager, Case Western Reserve University, Cleveland, OH, 1994
Opening Lecture, Bicentennial Celebration in honor of Lavoisier, Congrès de la Société Française de Chimie, Lyon, France, 1994
Closing Lecture, Bioelectrochemistry and Bioenergetics Symposium, Seville, Spain, 1994
F. E. Bartell Memorial Lecture, University of Michigan, 1994
Keynote Lecture, Open House, University at Buffalo, SUNY, 1994
Lecture tour, Ministry of Education, Republic of China, 1994
Lectures, Chinese Academy of Sciences, Beijing and Hefei, China, 1994
Distinguished Lecture in Science, Hong Kong University of Science and Technology, Kowloon, Hong Kong, 1994
Kenneth S. Pitzer Lecture, University of California at Berkeley, 1995
Lecture, 15th Meeting of the Nobel Laureates in Chemistry, Lindau, Germany, 1995

Plenary Lecture, International Union of Pure and Applied Chemistry, 35th Congress, Istanbul, Turkey, 1995
Opening Lecture, International Society of Electrochemistry, 46th Annual Meeting, Xiamen, China, 1995
Samuel Schrage Memorial Lecture in the History of Science and Technology, University of Illinois at Chicago, Chicago, IL, 1995
Closs Lecture, University of Chicago, Chicago, IL, 1995
Lecture, Solvay Conference, Brussels, Belgium, 1995
Opening Lecture, Symposium on Electron Transfer in Proteins and Supramolecular Assemblies at Interfaces, Kanagawa, Japan, 1996
Davis Lecture, University of New Orleans, New Orleans, LA, 1996
Matsen Lecture, University of Texas at Austin, Austin, TX, 1996
Distinguished Lecture, University of Louisville, Louisville, KY, 1996
Electrochemical Society Lecture, 189th Meeting of the Electrochemical Society, Los Angeles, CA, 1996
Linnett Visiting Professor Lectures, University of Cambridge, England, 1996
Inaugural Symposium Lecture, Korea Institute for Advanced Study, Seoul, Korea, 1996
Twenty-fifth Anniversary Lecture, Korea Advanced Institute of Science and Technology, Taejon, Korea, 1996
Lecture, Nobel Symposium, Björkborn, Sweden, 1996
Lecture, Electron Centennial Meeting, University of Cambridge, UK, 1997
George B. Kistiakowsky Lecture, Harvard University, Cambridge, MA, 1997
Bryce Crawford Lecture, University of Minnesota, Minneapolis, MN, 1997
Plenary Lecture, Conference on Optical, Electronic and Magnetic Properties of Molecules, University of Cambridge, UK, 1997
Oesper Lecture, University of Cincinnati, OH, 1997
Plenary Lecture, Symposium on Chemistry, Centennial Celebration of Peking University, Beijing, China, 1998
Lecture, Symposium, Twenty Years of Wolf Prizes, Jerusalem, Israel, 1998
Lecture, 16th Meeting of Nobel Laureates in Chemistry, Lindau, Germany, 1998
Speaker, Renaissance Weekend, Beaver Creek, CO, 1998
Lecture, Polytechnic University, ACS Global Salute to Polymers, American Chemical Society, New York, 1999
Lecture, Centennial Meeting, Centennial Symposium on "The History of Chemical Physics," American Physical Society, Atlanta, GA, 1999
Lecture, 9th Tohwa University International Symposium on Chemistry into the 21st Century, Japan, 1999
Hon. D.Sc. Lecture, Polytechnic University of Valencia, Spain, 1999
Lecture, Conference on Isotopes and Isotope Effects, Carry le Rouet, France, 1999
Lecture, Humboldt 200th Anniversary Lecture Series, Berlin, Germany, 1999
Wilhelm Jost Memorial Lectures and Silver Medal, Deutsche Bunsengesellschaft and Academy of Sciences in Gottingen, at Leipzig, Halle, Dresden, Gottingen and Marburg, Germany, 1999
Festsitzung Lecture in honor of Prof. J. Wolfrum, Heidelberg, Germany, 1999
Nobel Lecture, Ritsumeikan University, Kusatsu, Japan, 1999
Nobel Lecture, Kanagawa University, Yokohama, Japan, 1999
Plenary Lecture, 8th Asian Chemical Congress, Taipei, Taiwan, 1999
Plenary Lecture, 3rd NIMC International Symposium on Photoreaction Control and Photofunctional Materials, Tsukuba, Japan, 2000

Lecture, Nobel Laureates' Jubilee Meeting, Lindau, Germany, 2000
Lecture, Canadian Nobel Laureates Symposium, Alberta Teachers' Association Science Council Conference 2000, Edmonton, Canada, 2000
Lecture, Chemical Heritage Foundation, Nobel Centennial Symposium, Philadelphia, PA, 2000
Lecture, Nobel Laureates, Chemical Dynamics at the Turn of the New Century: Nobel Laureates Look Back and Ahead, American Chemical Society, San Diego, CA, 2001
First Richard M. Noyes Memorial Lecture, University of Oregon, 2001
Plenary Lecture, International Conference on Electrified Interfaces, Acadia University, Wolfville, NS, Canada, 2001
Plenary Lecture, First International Symposium on Isotopomers, Yokohama, Japan, 2001
Lecture, 14th Canadian Symposium on Theoretical Chemistry, Ottawa, Canada, 2001
Lecture, International Symposium on Interfacial Electron Transfer, American Chemical Society, Chicago, IL, 2001
Lecture, Sutin Symposium, Brookhaven National Laboratory, Upton, NY, 2001
Lecture, Medical Research Council, Cambridge, England, 2001
Lecture, Nobel Jubilee Symposium, Frontiers of Molecular Sciences, Friiberghs Manor, Örsundsbro, Sweden, 2001
Lecture, DOE Chemical Sciences Council Workshop on Charge Transfer on the Nanoscale, Santa Fe, NM, 2002
Lecture, Gordon Research Conference on Isotope Effects in the Biological and Chemical Sciences, Ventura, CA 2002
Keynote Lecture, Bioelectrochemistry Symposium. The Electrochemical Society Centennial Meeting, Philadelphia, PA, 2002
Lecture, Manuel M. Baizer Award Symposium on Organic Electrochemistry Symposium. The Electrochemical Society Centennial Meeting, Philadelphia, PA, 2002
Plenary Lecture, International Symposium on Frontiers in Molecular Science, China Ocean University, Qingdao, China, 2002
Lecture, Tianjin University, Tianjin, China, 2002
Lecture, Tsinghua University, Tsinghua, China, 2002
Keynote Speaker, International Goldschmidt Conference, Davos, Switzerland, 2002
Lecture, Noyes Laboratory Centennial Celebration, University of Illinois, Urbana-Champaign, IL, 2002
Lecture, University of Waterloo Ontario, Canada, 2002
Keynote Speaker, 12th Annual Goldschmidt conference, Davos, Switzerland, 2002
Lecture, American Geophysical Union, "Mass Independent Isotope Fractionation: New Frontiers in Isotope Biogeochemistry," San Francisco, 2002
Lecture, Hydrogen Storage Think Tank Meeting, Department of Energy, Washington DC, 2002
Lecture, 31st John Stauffer Lecture in the Sciences Symposium, "Frontiers in Theoretical Chemistry," Los Angeles, CA, 2003
Robinson Memorial Lecture, Texas Tech University, 2003
Lecture, Jortner-Fest Symposium, Tel Aviv, Israel, 2003
Lecture, Meeting of Nobel Laureates, Lindau, Germany, 2003
Plenary Lecture, Symposium on Slow Dynamics in Complex Systems, Sendai, Japan, 2003
Plenary Lecture, U.S.-Korea Conference on Science, Technology & Entrepreneurship, California Institute of Technology, Pasadena, California 2003
Nobel Lecture, University of La Verne, La Verne, California 2003
Plenary Lecture, Frontiers of Chemical Sciences and Education in the Middle East, Malta, November 2003

Keynote Lecture, Symposium of International Center for Technology and Innovation, University of Calabria Cosenza, Italy, 2003
Lecture: University of Calabria, Italy. ALARICO -International Conference on Frontiers in Science and Technology, University of Rome, November-December 2003
Plenary Lecture, Frontiers of Chemical Sciences, Research and Education in the Middle East, American Chemical Society & International Union of Pure & Applied Chemistry, Portomaso, Malta, 2003
Lecture, Nobel Symposium, University of Laverne, Los Angeles, California, 2003
Lecture, International Centre for Theoretical Physics, Trieste, Italy, 2004
Lecture, Fantoni Research Center, Udine, Italy, 2004
Lecture and Discussion, Garibaldi High School, Udine, Italy, 2004
Lecture, Department of Chemistry and Astronomy, University of Padova, Padova, Italy, 2004
Plenary Lecture, Symposium on Theory and Applications of Computational Chemistry, Gyeongui City, South Korea, 2004
Commencement Address, Pohang University, Gyeongui City, South Korea, 2004
Lecture, Alhambra High School Science Fair, Alhambra, California, March, 2004
Frontier in Physical Sciences Lecture, Imperial College, University of London, U.K., 2004
Lecture, Mark S. Child Symposium, Theoretical Chemistry Laboratory, Oxford University, Oxford, U.K., 2004
Lecture, Department of Chemistry, Columbia University, New York, NY, 2004
Lecture, Institute of Geophysics and Planetary Sciences, University of California Los Angeles, 2004
Slichter Lecture, Institute of Geophysics and Planetary Sciences, University of California Los Angeles, Los Angeles, Ca., May, 2004
Lecture, Institute of Geophysics and Planetary Sciences, University of California Los Angeles, Los Angeles, Ca., May, 2004
Bridicka Lecture, Heyrovsky Institute, Czech Academy of Science, Czech Republic, 2004
Heyrovsky Discussion, Heyrovsky Institute, Czech Academy of Science, Prague, Czech Republic, June 2004
Lecture, 40th Anniversary Celebrations, Abdus Salam International Centre for Theoretical Physics, Trieste, Italy 2004
Plenary Lecture, VII School of Neutron Scattering, Palau, Sardinia, Italy 2004
Opening Plenary Lecture, 3rd Annual Conference of Chinese Theoretical and Computational Chemistry, Hong Kong, January 2005
Opening Plenary Lecture, Asian Photochemistry Conference, Taipei, Taiwan, January, 2005
Lecture, GeoClub, California Insitute of Technology, Pasadena, California, February 2005
Lecture, Westridge High School, Pasadena, California, 2005
Lecture, Department of Chemistry, University of California Berkeley, 2005
Flygare Memorial Lecture, University of Illinois-Champaign Urbana, Urbana, Illinois, 2005
Roundtable Discussion, Nobel Laureates' Meeting, Lindau, Germany, 2005
Keynote Lecture, Femtochemistry VII Conference, Washington, DC, 2005
Plenary Lecture, Edinburgh Protein Interaction Centre (EPIC), Edinburgh, Scotland, 2005
Lecture, Oxygen in the Earliest Solar System Workshop, Gaitlinburg, Tennessee, 2005
Keynote Address, 3rd Annual Congress of International Drug Discovery Science and Technology, Shanghai, China, 2005
Lecture, Wenzhou Medical College, Wenzhou, China, 2005
Nobel Lecture, 3rd Annual Congress of International Drug Discovery Science and Technology, Dalian, China, 2005
Lecture, Dalian Institute of Chemical Physics, Dalian, China, 2005

Lecture, ISIS Center for Chemical Research, University Louis Pasteur, Strasbourg, France, 2005
Lecture, In Honor of Seymour Rabinovitch, University of Washington, Seattle, WA, 2005
Summarizing Lecture, The Royal Society of London, London, UK, 2005
Distinguished Morawetz Lecture, Polytechnic University, Brooklyn NY, 2006
Lecture, Nobel Laureates Meeting, Lindau, Germany, June 2006
Lecture, Technical University, Munich, Germany, June 2006
Round Table Discussion, Petra Conference of Nobel Laureates II, Amman, Jordan, June 2006
Lecture, Third National Symposium on Isotopomers, University of California San Diego, San Diego, California, August 2006
Lecture, McGill Alumni Association, Hilton Hotel, Pasadena, California, 2006
Lecture, Special Symposium, American Chemical Society, 2006 Fall Annual Meeting, San Francisco, California, September 2006
Robert S. Mulliken Lecture, Department of Chemistry & Center for Computational Chemistry, University of Georgia, Athens, Georgia, October 2006
Keynote Address, Second Annual Undergraduate Research Conference, McGill University, Montreal, Quebec, Canada, October 2006
Opening Dinner Talk, Future Direction in Chemical Dynamics Conference in Celebration of Professor Yuan T. Lee's 70th Birthday, Academia Sinica, Taipei, Taiwan, R.O.C., December 2006
Round Table Discussion Forum, Future Direction in Chemical Dynamics Conference in Celebration of Professor Yuan T. Lee's 70th Birthday, Academia Sinica, Taipei, Taiwan, R.O.C., December 2006
Video-Conference Lecture, "Electron Transfers in Chemistry and Biology," Pragyan 2007, National Institute of Technology, Trichy, India, February 2007
Lecture, "Electron Transfer in and among Nanoparticles," Mesilla Chemistry Workshop: Electron Transfer and Molecular Devices, Las Cruces, New Mexico, February 2007
Lecture, "On the theory of Intermittent Fluorescence of Quantum Dots," Conference on Fluorescence Intermittency in Molecules, Quantum Dots and Quantum Wires, University of Notre Dame, Notre Dame, Indiana, April 2007
Plenary Lecture, "On the Theory of Intermittent Fluorescence of Quantum Dots," 5th International Symposium on Theory of Atomic and Molecular Clusters, Richmond, Virginia, May 2007
Opening Lecture, "Isotope Effects: From the Earliest Solids in the Solar System to the Enzymatic Catalysis," Isotopes 2007 Conference, Universitat Jaume I, Binicassim, Spain, May 2007
Lecture, "Electron Transfer Reactions in Chemistry and Biology – Then and Now," Institute of Computational Chemistry, University of Girona, Girona, Spain, June 2007
Lecture, "Surface Processes: From Inorganic Quantum Qots to 'On Water' Catalysis of an Organic Reaction," Nanyang Technological University, Singapore, September 2007
Lecture, "Electron Transfer Reactions in Chemistry and Biology – Then and Now," Nanyang Technological University, Singapore, September 2007
Lecture, "Electron Transfer Reactions in Chemistry and Biology – Then and Now," Nobel Laureates Beijing Forum 2007-Energy & Environment, Beijing, China, September 2007
Lecture, "Striking Acceleration of Rate of Organic Reaction 'On Water': A Theory," Nobel Laureates Beijing Forum 2007-Energy & Environment, No. Eight Middle School, Beijing, China, September 2007
Round Table Discussion, Global Sustainability – A Nobel Cause, 1st Interdisciplinary Symposium, Potsdam Institute for Climate Impact Research, Pottsdam, Germany, October 2007

Lecture, “Theoretical studies on H/D isotope effects for unusual systems - from 'on water' organic reactions to single molecule fluctuations in enzyme catalysis.” XIVth International Workshop: Quantum Atomic and Molecular Tunneling in Solids and other Condensed Phases, University of Houston, Houston, Texas, October 2007

Lecture, “Electron Transfers – From the Early Days to Quantum Dots,” Technical University of Munich, Munich, Germany, February 2008

Plenary Lecture, “Single Molecule Studies – From Quantum Dots to Proteins,” Center for Nanoscale Materials, Argonne National Laboratory, Argonne, Illinois, May 2008

Round Table Discussion, Petra Conference of Nobel Laureates IV, Amman, Jordan, June 2008

Address to School Assembly & Science Club, Flintridge Prep High School, La Canada Flintridge, California, May 2008

Plenary Lecture, “Theory of Electron Transfer Processes: Origin, Applications, and Fluorescence Intermittency of Semiconductor Nanoparticles,” 1st International Conference of the Grand Challenge to Next-Generation Integrated Nanoscience, Institute for Solid State Physics, Tokyo, Japan, June 2008

Lecture, “Enzymatic Catalysis, Models, Rates, and Fluctuations,” Institute of Molecular Sciences, Okazaki, Japan, June, 2008

Round Table Discussion, Scientific and Medical Challenges Confronting Society, Petra Conference of Nobel Laureates IV, Amman, Jordan, June 2008

Lecture, American Conference on Theoretical Chemistry, Northwestern University, Evanston, Illinois, July 2008

Lecture, 6th Congress of the International Society for Theoretical Chemical Physics, University of British Columbia, Vancouver, British Columbia, Canada, July 2008

Plenary Lecture, “Theory of Electron Transfer Processes: Origin, Applications, and Fluorescence Intermittency of Semiconductor Nanoparticles,” 1st International Conference of the Grand Challenge to Next-Generation Integrated Nanoscience, Institute of Solid State Physics, University of Tokyo, Tokyo, Japan, June 2008

Lecture, “Enzymatic Catalysis, Models, Rates, and Fluctuations,” Institute of Molecular Science, Okazaki, Japan, June 2008

Round Table Discussion, Scientific and Medical Challenges Confronting Society, Petra Conference of Nobel Laureates IV, Amman, Jordan, June 2008

Lecture, “Interaction Between Experiments, Analytical Theories and Computation,” ACS 236th National Meeting, Division of Physical Chemistry, Philadelphia, Pennsylvania, August 2008

Plenary Lecture, “Experiment-Motivated Theoretical Studies of Reaction Rates: ‘On Water’ Organic Reactions, Isotope Fractionation and Single-Molecule Fluctuations,” Theory and Applications of Computational Chemistry 2008 (TACC), Shanghai, China, September 2008

Lecture, “The Mutual Impact of Atmospheric Reactions, Experiments, and Chemical Physics Theory”, 4th International Symposium on Isotopomers 2008 (ISA 2008), The National Museum of Emerging Science and Innovation, Tokyo, Japan, October 2008

Lecture, “Experiment-Motivated Theoretical Studies of Reaction Rates: ‘On Water’ Organic Reactions, Isotope Fractionation and Single-Molecule Fluctuations, Dynamics and Spectroscopy of Small Molecules and Biomolecules”, Institute of Atomic and Molecular Sciences (IAMS), Academia Sinica, Taipei, Taiwan, November 2008

Lecture, “Theoretical Studies Ranging from Quantum Dots to On-Water Catalysis”, Nanyang Technological University, Singapore, November 2008

Lecture, “Experiment-Motivated Theoretical Studies of Reaction Rates: ‘On Water’ Organic Reactions, Isotope Fractionation and Single-Molecule Fluctuations,” Shaul Mukamel Symposium, University of California Irvine, Irvine, California, December 2008

Lecture, “Experiment-Motivated Theoretical Studies of Reaction Rates: 'On Water' Organic Reactions, Isotope Fractionation and Single-Molecule Fluctuations”, Conference on Life in Liouville Space: 30 Years of Theoretical Spectroscopy, University of California Irvine, Irvine, California, December 1, 2008

Lecture, “Quantum Dots: Results and Unknowns,” Nanyang Technological University Singapore, March 1-15, 2009

Lecture, “Single Molecules and Other Properties in Enzyme Catalysis”, Conference on Functional Motions in Enzyme Catalysis, American Chemical Society 237th National Meeting, Salt Lake City, Utah, March 26, 2009

Panel Discussion**:** The Role and Future of Chemistry for Renewable Energy, 59th Meeting of Nobel Laureates, Lindau, Germany, 2009, June 30, 2009

Lecture, “'On Water' and Enzyme Catalysis to Single Molecules and Quantum Dots, Theory and Experiment”, 59th Meeting of Nobel Laureates, Lindau, Germany, July 1, 2009

Lecture, “From 'On Water' and Enzyme Catalysis to Single Molecules and Quantum Dots, Theory and Experiment”, Conference on “Frontiers in Chemistry,” Nanyang Technological University, Singapore, July 20-22, 2009

Einstein Lecture, Workshop on Protein Function and Dynamics 2009, Kavli Institute for Theoretical Physics China at the Chinese Academy of Sciences (KITPC Beijing), Beijing, China, August 1, 2009

Lecture, “Experiment-Motivated Theoretical Studies of Reaction Rates: 'On water' Organic Reactions, Isotope Fractionation and Single-Molecule Fluctuations”, Graduate School of Chinese Academy of Sciences, Beijing, China, August 14, 2009

Lecture, “Quantum Dots and Intermittency, Results, and Puzzles”, Symposium on “The Physical Chemistry of Photon to Fuel Conversion” 238th ACS National Meeting in Washington, D.C., August 16-20, 2009

Spiers Memorial Lecture and Medal, “Interplay of theory and computation in chemistry --- examples from on-water organic catalysis, enzyme catalysis, and single-molecule fluctuations,” Faraday Discussion 145: Frontiers in Physical Organic Chemistry University of Wales Institute, Cardiff, UK, September 2009

Lecture, Quantum Dots - Inorganic and Organic, Experiments, Theory, Predictions, Tests and Unknowns, Laser Science XXV Conference, San Jose CA, October 2009

Panel Discussion, Festival of Thinkers, Future Innovations: Promoting Science and Technology, Abu Dhabi Men’s College, Abu Dhabi, United Arab Emirates, November 2009

Panel Discussion, Festival of Thinkers, Future Responsibilities: Global Citizenship, Dubai Men’s College, Dubai, United Arab Emirates, November 2009

Lecture, Topics (1) On-Water Organic Catalysis, (2) Electron Transfer Reaction, Siemens Competition in Math, Science, and Technology, California Institute of Technology November 2009

Lecture, Semiconductor Quantum Dots: Experiments, Theory, Predictions, Tests and Unknowns, Nanyang Technological University, Singapore, March 2010

Lecture, Single Molecule Studies of Charge Transfers, Nanyang Technological University, Singapore, March 2010

Lecture, Studies on the Theory of Bimolecular Recombinations and Photochemical Unimolecular Dissociations, The Fifth International Symposium on Isotopomers, ISI 2010, Amsterdam, The Netherlands, June 2010

Lecture, Experimental Surprises and Their Solution in Theory, The 60th Lindau Nobel Laureate Meeting, Lindau, Germany, June 2010

Remarks, Convocation Dinner, Nanyang Technological University, Singapore, July 2010
Lecture, What Do We Learn from Single Molecule Studies of Electron Transfer Processes, Gordon Research Conference, Salve Regina University, Newport, RI, August 2010
Lecture, Molecular Basis of Photosynthetic Energy and Electron Transfer with Comparison to Related Respiratory Systems, 15th International Photosynthesis Congress, Nanyang Technological University, Singapore, August 2010
Opening Lecture, Complementarity of Analytical and Computational Studies of Reactions, Examples from Enzyme Catalysis and from Organic Reactions in Emulsions ("On-Water"), 20th International Conference on Physical Organic Chemistry Busan Exhibition & Convention Center (BEXCO), Busan, Korea, August 2010
Lecture, Single Molecule Studies of Quantum Dots, Solar Energy Components and Enzymes, Opening-Symposium Bionanosciences BOKU/AIT, University of Natural Resources and Applied Life Sciences, Vienna, Austria, September 2010
Public Lecture, Electron Transfer and its Role in Chemistry, Biology and Solar Energy Conversion, Austrian Academy of Sciences/Austrian Institute of Technology, Vienna, Austria, September 2010
Public Lecture, Experimental Surprises and Their Solution in Theory, 22nd Solvay Conference in Chemistry on Quantum Effects in Chemistry and Biology, International Solvay Institutes, Brussels, Belgium, October 2010
Lecture, From On-water Catalysis of Organic Reactions to Blinking Dyes and Quantum Dots, Symposium in Honor of Arieh Warshel's 75th Birthday, University of Southern California, Los Angeles, CA, November 2010
Lecture, 'On Water' Organic Catalysis in Emulsions, Dangling Interfacial OH's Theory and Experiment, National Institute of Clean and Low-Carbon Energy Meeting, Pasadena, CA, February 2011
Lecture, Reorganization, Tunneling, and Work Terms (Gating) in Electron and Other Transfer Reactions, Symposium on Twenty Years of Tunneling Pathways, 241st National ACS Meeting, Anaheim, CA, March 2011
Lecture, McGill Memories and A Life in Science, McGill University, Montreal, Quebec, Canada, April 2011
Opening Lecture, Experiment, Theory and Applications: Electron Transfer, Intermittent Fluorescence, On-water Catalysis, Conference in Celebration of 75th Birthday of John Albery, University of Oxford, England, April 2011
Brief Talk to high school participants and their mentors in the A*Star Talent Search, Singapore Science and Engineering Fair Awards for 15 – 18 year olds students, Awards Presentation Ceremony, Singapore, April 2011
Lecture, Kinetic Developments -- from On-water Catalysis to Blinking in Dye-Sensitized Systems, 'Green Chemistry', A*Star, Singapore, April 2011
Lecture, Developments in field of electron and related transfers - now and then, 242nd National ACS Meeting, Denver, CA, August 2011
Lecture, Single molecule studies in quantum dots and in initial steps in dye sensitized solar cells - examples of electron transfers, 242nd National ACS Meeting, Denver, CO, August 2011
Lecture, Developments in field of electron and related transfers – now and then, Gibbs Medal Centennial, 242nd National ACS Meeting, Denver, CO, August 2011
Lecture, Developments in field of electron and related transfers - early and recent, Second Biennial John A. Pople Lecture in Theoretical and Computational Chemistry Conference, Pittsburgh, PA, October 2011

Lecture, Single molecule studies in quantum dots and in initial steps in dye sensitized solar cells - examples of electron transfers, Conference on Studies of Nano and Bio-Materials Using Laser, X-ray and Single-Molecule Techniques, Saylin Wen Cultural and Education Foundation (SWCEF) Lecture, Taipei, Taiwan, November 2011

Lecture, A life long experience as a scientist/student and educator, Conference on Studies of Nano and Bio-Materials Using Laser, X-ray and Single-Molecule Techniques, SWCEF Lecture, Taipei, Taiwan, November 2011

Lecture, Science, teaching and the world of electron transfer reactions, Conference on Studies of Nano and Bio-Materials Using Laser, X-ray and Single-Molecule Techniques, SWCEF Lecture, Taipei, Taiwan, November 2011

Lecture, Single-molecule studies in quantum dots and in initial steps in dye sensitized solar cells - examples of electron transfers, Conference on Quantum Molecular Dynamics: A Conference in Honor of William Miller, Berkeley, CA, January 2012

Lecture, Processes at interfaces, ranging from fluorescence intermittency to on-water catalysis, Black Forest Focus on Soft Matter 7 Conference, Saig, Germany, March 2012

Lecture, Single molecule studies of diffusion controlled electron transfer in an initial dye-sensitized step in solar cells and in quantum dots, 243rd National ACS Meeting, San Diego, CA, March 2012

Lecture, Single molecule studies of intermittent fluorescence: a diffusion-influenced electron transfer in dye-sensitized solar cells and in quantum dots, 2nd International Photosynthesis Workshop - Natural and Artificial Photosynthesis, Bioenergetics and Sustainability, Singapore, June 2012

Plenary Lecture, Single molecule studies in initial steps in dye sensitized solar cells and in quantum dots – examples of electron transfers, IPS-19, 19th International Conference on Photochemical Conversion and Storage of Solar Energy, California Institute of Technology, Pasadena, CA, July 2012

Lecture, Single molecule studies of initial steps in dye sensitized solar cells and of quantum dots – examples of electron transfer and relation to ensemble studies, Nobel Laureates Meeting, Lindau, Germany, July 2013

Plenary Lecture, Single molecule studies of quantum dots and of the initial steps in a solar cell – examples of electron transfers, Electrochimie dans les Nanosciences 6, Paris, France, May 2014

Lecture, Electron transfer reaction theory in chemistry – from the isotopic exchange reactions of the 1940s and 1950s to the modern solar energy conversion era, Doctoral School of Chemical Physics and Analytical Chemistry, Diderot University, Paris, France, June 2014

Conference Lecture, Single molecule studies of quantum dots and in the initial steps in a solar cell – examples of electron transfers, 3rd International Workshop on Solar Energy for Sustainability "Natural and Artificial Photosynthesis: Advances in Solar Fuels and Photovoltaics," Singapore, June 2014

Lecture, Ventures in science, theory and experiment, University of Granada, Spain, September 2014

Opening lecture, Single molecule intermittent fluorescence studies of quantum dots and in initial steps in dye sensitized solar cells, International Conference of Fundamental Processes in Semiconductor Nanocrystals Oxford, United Kingdom, September 2014

Honorary Chairman and Plenary Lecture, "Single Molecule Intermittent Fluorescence Studies of Quantum Dots and in Initial Steps in Dye Sensitized Solar Cells – Examples of Electron Transfers and Diffusion", 19th International Workshop on Quantum Systems in Chemistry, Physics and Biology, Taipei, Taiwan, November 2014

Plenary Lecture, "Electron Transfer Reaction Theory in Vhemistry – from the Isotopic Exchange Reactions of the 1940s and 1950s to the Modern Solar Energy Conversion Era", Global Young Scientists Summit, Singapore, January 2015

Lecture, "Early Steps in Polyelectrolytes Study and a Leap into the Electron Transfer Theory", Polyelectrolytes in Chemistry, Biology and Technology Workshop, Singapore, January 2015

Plenary Lecture, "Electron Transfer Theory in Single Molecule Studies of Intermittent Quantum Dots and in Initial Steps in Dye Sensitized Solar Cells", The 15th International Congress of Quantum Chemistry, Beijing, China, June 2015

Lecture, "Electron Transfer Theory in Single Molecule Studies of Intermittent Fluorescence of Quantum Dots and in Initial Steps in Sensitized Solar Cells", Nobel Laureate Meeting, Lindau, Germany, July 2015

Lecture, "Electron Transfers: From Simple Isotopic Exchange Reactions to the Single Molecule Era", Multiscale Modeling of Complex Molecules and Life Processes: A Symposium Honoring and Celebrating Dr. Arieh Warshel, University of Southern California, November 2015

Lecture, "Rates, Equilibrium Constants and Brønsted Slopes in F1-ATPase Single Molecule Imaging: Experiments and a Theoretical Approach", 4th International Workshop on Solar Energy for Sustainability "Photosynthesis and Bioenergetics"; Singapore, March 2016

Lecture, "A Talk on Scientific Research", deToledo High School Science Academy Colloquium, West Hills, California, April 2016

Lecture, "The Energy-Rich Molecule ATP Studied in Single Molecule Experiments: Theory, Predictions, and Tests for the Different Experiments on the Enzyme F1-ATPase", Baku International Humanitarian Forum; Azerbaijan, September 2016

Lecture, "Theory of Single Molecule Experiments of F1-ATPase: Predictions, Tests and Comparison with Wxperiments", 24th Solvay Conference on Chemistry "Catalysis in Chemistry and Biology"; Brussels, Belgium, October 2016

Lecture, "A Chemical-Mechanical Theory of a Biomolecular Machine, F_1-ATPase: Predictions, Tests and Comparison with Single Molecule Experiments", 9th Asian Photochemistry Conference; Singapore, December 2016

Lecture, "Six Decades of Marcus Theory", Nobel Laureate master class lecture, International Science Youth Forum; Singapore, January 2017

Lecture, "Quantum Mechanics and Chemical Reaction Rates, 1928 and Counting", Conference on 90 Years of Quantum Mechanics; Singapore, January 2017

Lecture, "What Can be Learned About the Enzyme ATPase from Single Molecule Studies of its Subunit F1 and What Not", Lindau Nobel Laureate Meeting; Germany, June 2017

Lecture, "Reaction Rate-Thermodynamic Relations and Application to Single Molecule Experiments on a Biomolecular Motor, F_1-ATPase", XXII International Workshop on Quantum Systems in Chemistry, Physics, and Biology; China, October 2017

Lecture, "Theoretical Analysis of Complex Systems and the Role of Phenomenology and Computer Based Calculations in Treating the Experimental Data", International Workshop on Polyelectrolytes in Chemistry, Biology, and Technology; Singapore, March 2018

Lecture, "Electron and Other Transfers – Experiment and Theory", Bernardo O'Higgins Lecture, Bernardo O'Higgins University; Chile, October 2018

Lecture, "Electron Transfers in Chemistry and Biology: Origins and Applications", University of Santiago de Chile; Chile, October 2018

Lecture, "A Shot of Theory at a Biomolecular Machin", QUITEL 2018, International Conference of Theoretical Chemists of Latin Expression, Pontificia Universidad Catolica de Chile; Chile, October 2018

Keynote Lecture, "Recent Developments in Transfers of Electrons", ElecMOL 9th International Conference on Molecular Electronics; France, December 2018

Lecture, "My Experience in Developing Theories in Chemistry: Connecting the Dots", Ursa Lecture, University of California Chemical Symposium; Lake Arrowhead, California, March 2019

Lecture, "Molecular Conductance", ARO Principal Investigators Review Meeting; North Carolina, June 2019

Plenary Lecture, "Electron Transfer Theory and its Application to Molecular Conductance", IPOE-2019, 2nd International Conference on Interface Properties in Organic and Hybrid Electronics: Perspectives & Key Challenges; France, July 2019

Lecture, "Adventures in Electron Transfer Reactions and Applications; 2019 Sustainable Industrial Processing Summit; Paphos, Cyprus, October 2019

Lecture, "Insights into the Kinetics and Mechanism of a Biological Motor F1-ATPase", William Hase Memorial Symposium, American Chemical Society National Meeting, April 2021

Discussion, 70th Lindau Nobel Laureate Meeting, June 2021

Lecture, "Reaction Rate Theory: From Electron Transfer Reactions to Biological Motors", #LatinXChem Conference 2021, September 2021

Lecture, "Electron Transfer Theory and Evolution of Theory to Treat Other Quite Different Processes", Electrochemical Online Colloquium, February 2022

Lecture, "Life in Science - Informal Discussion", Nobel Lectures of the Future Series, UNESCO Centre, Junior Academy of Science of Ukraine, Kyiv, virtual - June 2022

Lecture, "Application of Electron Transfer Theory to Group Transfers in Biological Motors: Single Molecule Experiments", Pre-Gordon Research Conference on Quantum Biology, March 2023

Recent Publications (2008 -)

Mass-Independent Oxygen Isotope Fractionation in Selected Systems. Mechanistic Considerations
R. A. Marcus
Adv. Quantum. Chem., 55, 5-19 (2008)

Isotopomer Fractionation in the UV Photolysis of N2O. 2. Further Comparison of Theory and Experiment
W.-C. Chen, M. K. Prakash, and R. A. Marcus
J. Geophys. Res.-Atmos., 113, D05309, 1-8 (2008)

Dielectric Dispersion Interpretation of Single Enzyme Dynamic Disorder, Spectral Diffusion and Radioactive Fluorescence Lifetime
M. K. Prakash and R. A. Marcus
J. Phys. Chem. B., 112, 399-404 (2008)

Mass-independent Oxygen Isotope Variation in the Solar Nebula
E. D. Young, K. Kuramoto, R. A. Marcus, H. Yurimoto, S. B. Jacobsen
Rev. Mineral. Geochem., 68, 187-218 (2008)

On Collisional Energy Transfer in Recombination and Dissociation Reactions, a Wiener-Hopf Problem and Effect of a Near Elastic Peak
Z. Zhu and R. A. Marcus
J. Chem. Phys., 129, 214106-1-214106-10 (2008)

Universal Emission Intermittency in Quantum Dots, Nanorods and Nanowires
P. Frantsuzov, M. Kuno, B. Janko, and R. A. Marcus
Nature Phys., 4, 521, 1-9 (2008)

Beyond the Historical Perspective on Hydrogen and Electron Transfers
R. A. Marcus
In Quantum Tunnelling in Enzyme-Catalysed Reactions, R. K. Allemann and N. S. Scrutton, eds. (Royal Society of Chemistry, Cambridge, UK, 2009) p. v-xiv

Interaction between Experiments, Analytical Theories, and Computation
R. A. Marcus
J. Phys. Chem. C, 113, 14598-14608 (2009)

Spiers Memorial Lecture: Interplay of Theory and Computation in Chemistry—Examples from On-water Organic Catalysis, Enzyme Catalysis, and Single-Molecule Fluctuations
R. A. Marcus
Faraday Discuss. 145, 9-14 (2010)

Coriolis Coupling as a Source of Non-RRKM Effects in Triatomic Near-Symmetric Top Molecules: Diffusive Intramolecular Energy Exchange Between Rotational and Vibrational Degrees of Freedom
M. Kryvohuz and R. A. Marcus
J. Phys. Chem., 132, 2240304-1-2240304-14 (2010)

Coriolis Coupling as a Source of Non-RRKM Effects in Ozone Molecule: Lifetime Statistics of Vibrationally Excited Ozone Molecules
M. Kryvohuz and R. A. Marcus
J. Phys. Chem., 132, 224305-1-224305-10 (2010)

Isotopomer Fractionation in the UV Photolysis of N2O: 3. 3D Ab Initio Surfaces and Anharmonic Effects
W.-C. Chen, S. Nanbu, and R. A. Marcus
J. Phys. Chem. A, 114, 9700-9708 (2010)

Protruding Interfacial OH Groups and 'On-Water' Heterogeneous Catalysis
Y. Jung and R. A. Marcus
J. Phys. Cond. Mat. 22, 284117-1-284117-6 (2010)

Interaction of Theory and Experiment: Examples from Single Molecule Studies of Nanoparticles
R. A. Marcus
Phil. Trans. R. Soc. A, 368, 1109-1124 (2010)

Microscopic structure and dynamics of air/water interface by computer simulations --comparison with sum-frequency generation experiments
Y. Wang, N. Hodas, Y. Jung, and R. A. Marcus
Phys. Chem. Chem. Phys., 13, 5388-5393 (2011)
Erratum: Amendment Published April 1, 2011

Bimolecular Recombination Reactions: Low Pressure Rates in Terms of Time-Dependent Survival Probabilities, Total J Phase Space Sampling of Trajectories, and Comparison with RRKM Theory
N. Ghaderi and R. A. Marcus
J. Phys. Chem. B, 115, 5625-5633 (2011)

At the Birth of Modern Semiclassical Theory
R. A. Marcus
Mol. Phys., 110, 513-516 (2012)

A maximum likelihood method for power law distributions that does not break down when the slope is close to unity
Zhaoyan Zhu and R. A. Marcus
J. Phys. Chem. C, 116, 14690-14693 (2012)

Theory of a single dye molecule blinking with a diffusion-based power law distribution
Wei-Chen Chen and R. A. Marcus
J. Phys. Chem. C, 116, 15782-15789 (2012)

Foreword
R. A. Marcus and M. E. Michel-Beyerle
Molecular Solar Fuels, T. J. Wydrzynski and W. Hillier (eds.), RSC Energy and Environment Series, RSC Publishing, Cambridge, UK, p. V. (2012)

Semiclassical Evaluation of Kinetic Isotope Effects in 13-Atomic System
M. Kryvohuz and R. A. Marcus
J. Chem. Phys., 137, 134107-134119 (2012)

Electron Transfer Theory and its Inception
R. A. Marcus
Phys. Chem. Chem. Phys., 14, 13729-13730 (2012)

Theory of Mass-Independent Fractionation of Isotopes and Phase Space Accessibility for Isotopically Symmetric and Asymmetric Isotopologues
R. A. Marcus
Proc. Natl. Acad. Sci., **110**, 17703-17707 (2013)

Historical Perspective: RRKM Reaction Rate Theory for Transition States of Any Looseness [Volume 110, Issue 3, 28 September 1984, Pages 230-234]
David M. Wardlaw, R. A. Marcus
Chem. Phys. Lett, **589**, 21-22 (2013)

Theory of Vibrational Equilibria and Pooling at Solid-Diatom Interfaces
E. T. D. Boney and R. A. Marcus
J. Chem. Phys., **139**, 124107 (2013)

a. Erratum: **139**, 159901 (2013)

On the Infrared Fluorescence of Monolayer ^{13}CO:NaCl(100)
E. T. D. Boney and R. A. Marcus
J. Chem. Phys., **139**, 184712 (2013)

Device Modeling of Dye-Sensitized Solar Cells
J. A. Bisquert and R. A. Marcus
Chapter in *Topics in Current Chemistry* – Special Volume "Computational Photovoltaics"
Eds. Beljonne/Cornil, Springer-Verlag, Berlin (2014)

On the Mechanism of Photoinduced Dimer Dissociation in the Plant UVR8 Photoreceptor
A. A. Voityuk, R. A. Marcus, and M.-E. Michel-Beyerle
Proc. Nat. Acad. Sci. U. S. A., **111**, 5219-5224 (2014)

Extension of the Diffusion Controlled Electron Transfer Theory for Intermittent Fluorescence of Quantum Dots: Inclusion of Biexcitons and the Difference of "On" and "Off" Time Distributions
Z. Zhu and R. A. Marcus
Phys. Chem. Chem. Phys., **16**, 25694-25700 (2014)

Bimolecular Recombination Reactions: K-Adiabatic and K-Active Forms of RRKM Theory, Nonstatistical Aspects, Low-Pressure Rates, and Time-Dependent Survival Probabilities with Application to Ozone. 2.
N. Ghaderi and R. A. Marcus
J. Phys. Chem. A, 118, **44**, 10166-10178 (2014)

Computed and Experimental Absorption Spectra of the Perovskite $CH_3NH_3PbI_3$
X. Zhu, H. Su, R. A. Marcus, M. E. Michel-Beyerle
J. Phys. Chem. Lett., **5** (17), 3061-3065, doi: 10.1021/jz501174e (2014)

Elucidating the Role of Disorder and Free-Carrier Recombination Kinetics in $CH_3NH_3PbI_3$ Perovskite Films
C. L.-o.-vorakiat, T. Salim, J. Kadro, M. T. Khuc, R. Haselsberger, L. Cheng, H. Xia, G. G. Gurzadyan, H. Su, Y. M. Lam, R. A. Marcus, M.E. Michel-Beyerle, E. E. M. Chia
Nat. Commun., **6**, 7903, doi:10.1038/ncomms8903 (2015)

A Theory of Rates, Equilibrium Constants and Brønsted Slopes in F_1-ATPase Single Molecule Imaging Experiments
S. Volkan-Kacso and R. A. Marcus
Proc. Nat. Acad. Sci., USA, **112** (46), 14230-14235 (2015)

Phonon Mode Transformation Across the Orthohombic-Tetragonal Phase Transition in a Lead Iodide Perovskite $CH_3NH_3PbI_3$: A Terahertz Time-Domain Spectroscopy Approach
C. La-o-vorakiat, T. Salim, J. Kadro, M.-T. Khuc, R. Haselsberger, L. Cheng, H. Xia, G. G. Gurzadyan, H. Su, Y. M. Lam, R. A. Marcus, M.-E. Michel-Beyerle, E. E. M. Chia
J. Phys. Chem. Lett., **7** (1), 1-6, doi:10.1021/acs.jpclett.5b02223 (2016)

Theory of single-molecule controlled rotation experiments, predictions, tests, and comparison with stalling experiments in F_1-ATPase
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Proc. Nat. Acad. Sci., **113** (43), 12029-12034, doi:10.1073/pnas.1611601113 (2016)

Phonon features in terahertz photoconductivity spectra due to data analysis artifact: A case study on organometallic halide perovskites
C. La-o-vorakiat, L. Cheng, T. Salim, R. A. Marcus, M.-E. Michel-Beyerle, Y. M. Lam, E. E. M. Chia
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Theory of long binding events in single-molecule-controlled rotation in F1-ATPase
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Stories from the Round Table
M. Cohen, C. Campbell, R. A. Marcus
Chapter in *Personal and Scientific Reminiscences: Tributes to Ahmed Zewail*
Eds. M. Chergui, R. A. Marcus, J. M. Thomas, D. Zhong; World Scientific Publishing Co., Singapore, 17-23 (2017)

The elastic transfer model of angular rate modulation in F1-ATPase stalling and controlled rotation experiments
S. Volkan-Kacso
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Free, Stalled, and Controlled Rotation Single Molecule Experiments on F1-ATPase and Their Relationships
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Chapter in *Photosynthesis and Bioenergetics*
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What can be learned about the enzyme ATPase from single-molecule studies of its subunit F1?
S. Volkan-Kacso and R. A. Marcus
Q. Rev. Biophys., **50** (14), 1-13, doi:10.1017/S0033583517000129 (2017)

Low-frequency optical phonon modes and carrier mobility in the halide perovskite CH3NH3PbBr3 using terahertz time-domain spectroscopy
D. Zhao, J. M. Skelton, H. Hu, C. La-o-vorakiat, J.-X. Zhu, R. A. Marcus, M.-E. Michel-Beyerle, Y. M. Lam, A. Walsh, E. E. M. Chia
Appl. Phys. Lett., **111**, 201903-1-5, doi:10.1063/1.4993524 (2017)

Monitoring Electron-Phonon Interactions in Lead Halide Perovskites Using Time-Resolved THz Spectroscopy

D. Zhao, H. Hu, R. Haselsberger, R. A. Marcus, M.-E. Michel-Beyerle, Y. M. Lam, J.-X. Zhu, C. La-o-vorakiat, M. C. Beard, E. E. M. Chia
ACS Nano, **13**, 8826-8835, doi: 10.1021/acsnano.9b02049 (2019)

Method to extract multiple states in F1-ATPase rotation experiments from jump distributions

S. Volkan-Kacso, L. Q. Le, K. Zhu, H. Su, R. A. Marcus
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Sum frequency generation, calculation of absolute intensities, comparison with experiments, and two-field relaxation-based derivation

K. Niu, R. A. Marcus
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J. Chem. Phys., **153**, 210401, doi: 10.1063/5.0035434 (2020)

On the theory of charge transport and entropic effects in solvated molecular junctions

J. K. Sowa and R. A. Marcus
J. Chem. Phys., **154**, 034110, doi: 10.1063/5.0034782 (2021)

Single molecule studies of a biological motor F1-ATPase: Interplay of experiment analytic theory and computation

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Chapter in *Computational Materials, Chemistry, and Biochemistry: From Bold Initiatives to the Last Mile - In Honor of William A. Goddard's Contributions to Science and Engineering*
Eds. S. Shankar, R. Muller, T. Dunning, G.H. Chen; Springer Publishing Co., New York, doi: 10.1007/978-3-030-18778-1 (2021)

The Drude-Smith and related equations for the frequency-dependent electrical conductivity of materials: Insight from a memory function formalism

W.-C. Chen and R. A. Marcus
ChemPhysChem, **22**, 1667-1674, doi: 10.1002/cphc.202100299 (2021)

Biographical background and front cover description for The Drude-Smith and related equations for the frequency-dependent electrical conductivity of materials: Insight from a memory function formalism

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F1-ATPase Rotary Mechanism: Interpreting Results of Diverse Experimental Modes with an Elastic Coupling Theory

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