

Curriculum Vitae

Ahmed H. Zewail

California Institute of Technology (Caltech)
Arthur Amos Noyes Laboratory of Chemical Physics, Mail Code 127-72
1200 East California Boulevard, Pasadena, California 91125, U.S.A.

Linus Pauling Chair
Professor of Chemistry
& Professor of Physics

Director
Physical Biology Center for
Ultrafast Science & Technology

Telephone: (626) 395-6536 (direct)
FAX: (626) 792-8456 (direct)
Assistants: (626) 395-6516

(626) 395-2345
(626) 796-8315
(626) 395-2611

Email: zewail@caltech.edu
Home Page: <http://www.zewail.caltech.edu>

PERSONAL

Nationality: Egyptian and American
Residence: California (USA)/Cairo (Egypt)
Family status: Married, four children

ACADEMIC POSITIONS

Director, Physical Biology Center for Ultrafast Science & Technology (2005-)
Director, NSF Laboratory for Molecular Sciences (LMS), Caltech (1996-2007)
Linus Pauling Professor of Chemistry and Professor of Physics, Caltech (1995-)
Linus Pauling Professor of Chemical Physics, Caltech (1990-1994)
Professor of Chemical Physics, Caltech (1982-1989)
Associate Professor of Chemical Physics, Caltech (1978-1982)
Assistant Professor of Chemical Physics, Caltech (1976-1978)
IBM Postdoctoral Fellow, University of California, Berkeley (1974-1976)
Predoctoral Research Fellow, University of Pennsylvania (1970-1974)
Teaching Assistant, University of Pennsylvania (1969-1970)
Instructor and Researcher, Alexandria University (1967-1969)
Undergraduate Trainee, Shell Corporation, Alexandria (1966)

ACADEMIC DEGREES

Alexandria University, Egypt (1967); B.S., First Class Honors
Alexandria University, Egypt (1969); M.S.
University of Pennsylvania, Philadelphia, U.S.A. (1974); Ph.D.

HONORARY DEGREES

Oxford University, United Kingdom (1991); M.A., h.c. (Arts)
American University in Cairo, Egypt (1993); D.Sc., h.c. (Science)
Katholieke Universiteit, Leuven, Belgium (1997); D.Sc., h.c. (Science)
University of Pennsylvania, U.S.A. (1997); D.Sc., h.c. (Science)
Université de Lausanne, Switzerland (1997); D.Sc., h.c. (Science)
Swinburne University, Australia (1999); D.U., h.c. (University)
Arab Academy for Science & Technology, Egypt (1999); H.D.A.Sc. (Appl. Science)
Alexandria University, Egypt (1999); D.Ph., h.c. (Philosophy)
University of New Brunswick, Canada (2000); D.Sc., h.c. (Science)
University of Rome “La Sapienza”, Italy (2000); D., h.c. (Doctor)
Université de Liège, Belgium (2000); D., h.c. (Doctor)
Queen of Angels-Hollywood Presbyterian Medical Center
Honorary Member of the Medical Staff, U.S.A. (2000); M.D. (Medicine)
Jadavpur University, India (2001); D.Sc., h.c. (Science)
Concordia University, Montréal, Canada (2002); LL.D., h.c. (Law)
Heriot-Watt University, Scotland (2002); D.Sc., h.c. (Science)
Pusan National University, Korea (2003); M.D., h.c. (Medicine)
Lund University, Sweden (2003); D.Ph., h.c. (Philosophy)
Bo ğaziçi University, Istanbul, Turkey (2003); D.Sc., h.c. (Science)
École Normale Supérieure, Paris, France (2003); D.Sc., h.c. (Science)
Oxford University, United Kingdom (2004); D.Sc., h.c. (Science)
Peking University, People’s Republic of China (2004); H.D.D. (University)
Autonomous University of the State of Mexico, Toluca, Mexico (2004); D., h.c. (University)
University of Dublin, Trinity College, Ireland (2004); D.Sc., h.c. (Science)
Tohoku University, Sendai, Japan (2005); H.D.D. (University)
American University of Beirut, Lebanon (2005); D. H. L. (Humane Letters)
University of Buenos Aires, Argentina (2005); D., h.c. (University)
National University of Cordoba, Argentina (2005); D., h.c. (University)
Cambridge University, United Kingdom (2006); D.Sc., h.c. (Science)
Babeş-Bolyai University, Cluj, Romania (2006); H.D.D. (University)
Mansoura University, Mansoura, Egypt (2007); D.Sc., h.c. (Science)
Universiti Malaya, Malaysia (2007); D.Sc., h.c. (Science)
Universiti Teknologi Malaysia (2007); D.Sc., h.c. (Science)
Universidad Complutense de Madrid, Spain (2008); D., h.c. (Doctor)
University of Jordan, Amman, Kingdom of Jordan (2009); D.Sc., h. c. (Arts and Sciences)
École Polytechnique Fédérale de Lausanne (EPFL), Switzerland (2009); D.Sc., h. c. (Science)

HONORARY AND VISITING PROFESSORSHIPS

University of Amsterdam, John van Geuns Stichting Visiting Professor, Holland (1979)
University of Bordeaux, Visiting Professor, France (1981)
École Normale Supérieure, Visiting Professor, France (1983)
University of Kuwait, Visiting Professor, Kuwait (1987)

University of California, Visiting Scholar, Los Angeles, U.S.A. (1988)
American University in Cairo, Distinguished Visiting Professor, Egypt (1988)
Johann Wolfgang Goethe-Universität, Rolf Sammet Professor, Frankfurt, Germany (1990)
Oxford University, Sir Cyril Hinshelwood Chair, Visiting Professor, Oxford, U.K. (1991)
Texas A&M University, Visiting Professor, U.S.A. (1992)
University of Iowa, Visiting Professor, U.S.A. (1992)
Collège de France, Visiting Professor, Paris, France (1995)
Katholieke Universiteit, Visiting Professor, Leuven, Belgium (1998)
University of Würzburg, Röntgen Visiting Professor, Germany (1999)
Université de Lausanne, Honorary Chair Professor, Switzerland (2000)
University of Cambridge, Linnett Professorship, United Kingdom (2002)
United Nations University, Distinguished Chair of Science & Technology Policy,
Tokyo, Japan (2003-)
Huazhong University, Honorary Professorship, Wuhan, P.R. China (2004-)
Fudan University, Honorary Professorship, Shanghai, P.R. China (2004-)
École Normale Supérieure, Blaise Pascal Honorary Professorship, France (2004-2005)
Tohoku University, First Honorary University Professor, Sendai, Japan (2005)

SPECIAL HONORS

King Faisal International Prize in Science (1989)
First Linus Pauling Chair, Caltech (1990)
Femtochemistry Conferences; Solvay, Nobel, and International series (1993-)
Wolf Prize in Chemistry (1993)
Order of Merit (OM) from President M. H. Mubarak, Egypt (1995)
Leonardo Da Vinci Award of Excellence, France (1995)
Robert A. Welch Award in Chemistry (1997)
Benjamin Franklin Medal, The Franklin Institute, U.S.A. (1998)
Egypt Postage Stamps, with “Portrait” (1998); “The Fourth Pyramid” (1999)
Dr. Ahmed Zewail High School, Disuq City (1998)
Nobel Prize in Chemistry (1999)
Order of the Grand Collar of the Nile, Highest Honor of Egypt, conferred by
President Mubarak (1999)
Order of Zayed, Highest Presidential Honor, State of UA Emirates (2000)
Order of Cedar, Highest Rank of Commander, from President Emile Lahoud, State of
Lebanon (2000)
Dr. Ahmed Zewail Medan (Square), City of Alexandria (2000)
Order of ISESCO, First Class, from Prince Salman Ibn Abdel Aziz, Saudi Arabia (2000)
Order of Merit (OM) of Tunisia, Highest Honor from The President of the Republic,
Zine El Abedine Ben Ali (2000)
Insignia of Pontifical Academy, from Pope John Paul II, Vatican (2000)
Ahmed Zewail Fellowships, University of Pennsylvania, U.S.A. (2000-)
Ahmed Zewail Prize, American University in Cairo (2001-)
Exhibition, Nobel Museum, Stockholm, Sweden (2001)
BBC Documentary (2001)

Postage Stamp, issued by the country of Ghana (2002)
Ahmed Zewail Center for FemtoScience Technology, Korea (2002)
Order of the Two Niles, First Class, Highest State Honor, from President Omar Bashir,
Republic of Sudan (2004)
Dr. Ahmed Zewail Prize for Creativity in the Arts, Opera Culture Center, Cairo (2004-)
Zewail Foundation for Knowledge and Development, Cairo (2004-)
Ahmed Zewail Prizes for Excellence and Leadership, International Centre for Theoretical
Physics (ICTP), Trieste, Italy (2004-)
Film Documentary, "Nobelity" (2005)
Ahmed Zewail Award for Ultrafast Science and Technology, American Chemical
Society (2005-)
Ahmed Zewail Prize in Molecular Sciences, Elsevier (2006-)
Dr. Ahmed Zewail's School for Linguistics, Bani Sweif (2006)
Albert Einstein World Award, World Cultural Council (2006)
Documentary, "A.-Z. Alphabet of Time", Slovak Television (2007)
Ahmed H. Zewail Gold Medal Award & Distinguished Lecture, Wayne State University,
Detroit, Michigan (2008-)
Othmer Gold Medal, Chemical Heritage Foundation, Philadelphia (2009)

SELECTED AWARDS AND PRIZES

Alfred P. Sloan Foundation Fellow (1978-1982)
Camille and Henry Dreyfus Teacher-Scholar Award (1979-1985)
Alexander von Humboldt Award for Senior United States Scientists (1983)
National Science Foundation Award for especially creative research (1984; 1988; 1993)
Buck-Whitney Medal, American Chemical Society (1985)
John Simon Guggenheim Memorial Foundation Fellow (1987)
Harrison Howe Award, American Chemical Society (1989)
Carl Zeiss International Award, Germany (1992)
Earle K. Plyler Prize, American Physical Society (1993)
Medal of the Royal Netherlands Academy of Arts and Sciences, Holland (1993)
Bonner Chemiepreis, Germany (1994)
Herbert P. Broida Prize, American Physical Society (1995)
Collège de France Medal, France (1995)
Peter Debye Award, American Chemical Society (1996)
National Academy of Sciences Award, Chemical Sciences, U.S.A. (1996)
J. G. Kirkwood Medal, Yale University (1996)
Peking University Medal, PU President, Beijing, China (1996)
Pittsburgh Spectroscopy Award (1997)
First E. B. Wilson Award, American Chemical Society (1997)
Linus Pauling Medal Award (1997)
Richard C. Tolman Medal Award (1998)
William H. Nichols Medal Award (1998)
Paul Karrer Gold Medal, University of Zürich, Switzerland (1998)
E. O. Lawrence Award, U.S. Government (1998)

Merski Award, University of Nebraska (1999)
Röntgen Prize, (The 100th Anniversary of The Discovery of X-rays), Germany (1999)
Faye Robiner Award, Ross University School of Medicine, New York (2000)
Golden Plate Award, American Academy of Achievement (2000)
City of Pisa Medal, City Mayor, Pisa, Italy (2000)
Medal of “La Sapienza” (“wisdom”), University of Rome (2000)
Médaille de l’Institut du Monde Arabe, Paris, France (2000)
Honorary Medal, Universite Du Centre, Monastir, Tunisia (2000)
Honorary Medal, City of Monastir, from The Mayor, Tunisia (2000)
Distinguished Alumni Award, University of Pennsylvania (2002)
G. M. Kosolapoff Award, The American Chemical Society, Auburn, Alabama (2002)
Distinguished American Service Award, ADC, Washington D.C. (2002)
Sir C. V. Raman Award, Kolkata, India (2002)
Arab American Award, National Museum, Dearborn, Michigan (2004)
Gold Medal (Highest Honor), Burgos University, Burgos, Spain (2004)
Slovak Academy of Science Medal, Bratislava, Slovak Republic (2005)
Gold Medal, Slovak Chemical Society (2005)
Grand Gold Medal, Comenius University, Bratislava, Slovak Republic (2005)
Medal of University of Buenos Aires, Argentina (2005)
Medal of National University of Cordoba, Argentina (2005)
Jubilee Medal, National Research Council, Egypt (2006)
Linus Pauling Medal Award, Stanford University (2007)
American Medical Students Association Award (2007)
Stanford University Inaugural Award of MSE (2007)
150th Anniversary Medal of the French Chemical Society, Paris (2007)
Gold Jubilee Medal (50th Anniversary), Assiut University (2007)
Jabir Ibn Hayyan (“Geber”) Medal, Chemical Society, Saudi Arabia (2008)
MIT Lifetime Achievement Award, ASO (2008)
700th Anniversary Medal, Universidad Complutense de Madrid (2008)

PROFESSIONAL AND HONORARY FELLOWSHIPS

American Physical Society, Fellow (elected 1982)
National Academy of Sciences, U.S.A. (elected 1989)
Third World Academy of Sciences, Italy (elected 1989)
St. Catherine's College, Fellow, Oxford, U.K. (elected 1991)
Sigma Xi Society (elected 1992)
American Academy of Arts and Sciences (elected 1993)
Académie Européenne des Sciences, des Arts et des Lettres, France (elected 1994)
American Philosophical Society (elected 1998)
Pontifical Academy of Sciences (elected 1999)
American Academy of Achievement (elected 1999)
Royal Danish Academy of Sciences & Letters (elected 2000)
American Association for the Advancement of Science, AAAS, Fellow (elected 2000)
Chemical Society of India, Honorary Fellow (elected 2001)

Indian Academy of Sciences, Bangalore, India (elected 2001)
The Royal Society of London, Foreign Member, U.K. (elected 2001)
Sydney Sussex College, Honorary Fellow, Cambridge, U.K. (elected 2002)
Indian National Science Academy, Foreign Fellow, New Delhi, India (elected 2002)
Korean Academy of Science and Technology, Honorary Foreign Member (elected 2002)
African Academy of Sciences, Honorary Fellow, Nairobi, Kenya (elected 2002)
Royal Society of Chemistry, Honorary Fellow, U.K. (elected 2003)
Russian Academy of Sciences, Foreign Member (elected 2003)
The Royal Swedish Academy of Sciences, Stockholm, Foreign Member (elected 2003)
The Royal Academy of Belgium, Brussels, Foreign Member (elected 2003)
Islamic World Academy of Sciences, Honorary Fellow (elected 2003)
St. Catherine's College, Honorary Fellow, Oxford, U.K. (elected 2004)
European Academy of Sciences, Honorary Member, Brussels, Belgium (elected 2004)
The Literary & Historical Society, University College, Honorary Fellow, Dublin, Ireland (elected 2004)
The National Society of High School Scholars, Honorary Member Board of Advisors, Atlanta, Georgia, U.S.A. (elected 2004)
Academia Bibliotheca Alexandrinae, Founding Member (2004)
French Academy of Sciences, Foreign Member (elected 2005)
Academy of Sciences Malaysia, Honorary Fellow with PM Mahathir Mohamed and PM Ahmad Badawi (elected 2005; inducted 2007)
Royal Spanish Academy of Sciences, Foreign Member (elected 2007; inducted 2008)

PROFESSIONAL ACTIVITIES

Member of Advisory and Editorial Boards; Editor of scientific journals and book series;
Chairman and Member of Organizing Committees of national and international conferences;
Member of Boards including the following:

Chief Editor, Chemical Physics Letters (1991-2007); Honorary Advisory Editor (2007-)
World Scientific Advisory Board (1994-)
Max Planck Institute, Board of Advisors (1994-)
American University in Cairo, Board of Trustees (1999-)
Bibliotheca Alexandria, Board of Trustees (2001-2005) and Advisory Board (2006-)
The Welch Foundation, Scientific Advisory Board (2002-)
Multilateral Initiative on Malaria, Patron (2003-)
Qatar Foundation, Board of Directors (2003-)
Chalmers University, Scientific Advisory Board, Sweden (2003-)
TIAA-CREF, Board of Trustees (2004-2007)
Nanyang Technological University (NTU), Advisory Board, Singapore (2005-)
École Normale Supérieure, Scientific Council, Paris, France (2005-)
Emirates Foundation, Board of Trustees (2007-)
State of Kuwait, Co-Chair, High Level (Blue Ribbon) Amiri Panel (2007)
King Abdullah University of Science & Technology, International Advisory Board (2007)
Arab American National Museum, National Advisory Board (2007-)

L'Oréal-UNESCO "For Women in Science" Awards, President, International Jury (2007-)
Supreme Council for Science and Technology, Egypt (2007-)
President Obama's Council of Advisors on Science and Technology, PCAST, (2009-)
International Chemistry Olympiad (44th), President, American Chemical Society (2012)

PUBLICATIONS AND PRESENTATIONS

Articles

Some 500 articles have been published in the fields of science (authored and co-authored), education, and world affairs.

Books

- (1) *Advances in Laser Spectroscopy I*, ed. A. H. Zewail, SPIE, Bellingham, 1977
- (2) *Advances in Laser Chemistry*, ed. A. H. Zewail, Springer-Verlag, Berlin-Heidelberg, 1978
- (3) *Photochemistry and Photobiology, Vols. 1 and 2*, ed. A. H. Zewail, Harwood Academic, London, 1983
- (4) *Ultrafast Phenomena VII*, eds. C. B. Harris, E. P. Ippen, G. A. Mourou and A. H. Zewail, Springer-Verlag, Berlin-Heidelberg, 1990
- (5) *The Chemical Bond: Structure and Dynamics*, ed. A. H. Zewail, Academic Press, Boston, 1992
- (6) *Ultrafast Phenomena VIII*, eds. J.-L. Martin, A. Migus, G. A. Mourou and A. H. Zewail, Springer-Verlag, Berlin-Heidelberg, 1993
- (7) *Ultrafast Phenomena IX*, eds. P. F. Barbara, W. H. Knox, G. A. Mourou and A. H. Zewail, Springer-Verlag, Berlin-Heidelberg, 1994
- (8) *Femtochemistry: Ultrafast Dynamics of the Chemical Bond*, A. H. Zewail, Vols. 1 and 2, World Scientific, Singapore, 1994
- (9) *Voyage Through Time: Walks of Life to the Nobel Prize*, A. H. Zewail, American University in Cairo (AUC), Cairo, 2002; appeared in 17 languages and editions: English, French, German, Spanish, Romanian, Hungarian, Russian, Arabic, Chinese, Korean, Bahasa Malaysia, Indonesian, Hindi; and 4 editions
- (10) *Age of Science (Asr Al Álm, in Arabic)*, A. H. Zewail, Dar Al Shorouk, Beirut-Cairo, 2005; appeared in the seventh edition since publication in June 2005
- (11) *Time (Al Zaman, in Arabic)*, Book Series, A. H. Zewail, Dar Al Shorouk, Cairo, 2007
- (12) *Dialogue of Civilizations (Hewar Al Hadarat, in Arabic)*, Book Series, A. H. Zewail, Dar Al Shorouk, Cairo, 2007
- (13) *Physical Biology: From Atoms to Medicine*, ed. A. H. Zewail, Imperial College Press, London, 2008
- (14) *4D Electron Microscopy: Imaging in Space and Time*, A. H. Zewail and J. M. Thomas, Imperial College Press, London, 2009

Patents

Luminescent Solar Energy Concentrator Devices, A. H. Zewail and J. S. Batchelder, California Institute of Technology, *U.S. Pat.* 4,227,939, October 14, 1980

Method and System for Ultrafast Photoelectron Microscope, A. H. Zewail and V. A. Lobastov, California Institute of Technology, *U.S. Pat.* 7,154,091, December 26, 2006

Lectures

Some three hundred named, plenary, and keynote lectures have been given and include the following: Bernstein, Berson, Bodenstein, Cavendish (Scott Series), Celsius, Condon, Aimé Cotton, Coulson, Debye, Einstein (Berlin, New Delhi, Mexico), Eyring, Faraday, Franklin (Benjamin), Gandhi, Helmholtz, Hinshelwood, Karrer, Kirkwood, Kistiakowsky, Lawrence, London, Nobel, Novartis, Noyes, Onassis, Othmer, Ørsted, Pascal (Blaise), Pauling, Perrin, Pimentel, Max Planck, Polanyi, Raman, Roberts, Röntgen, Schrödinger, U Thant (United Nations), Thomson (J. J.), Tolman, Watson, Wilson, Welch and Zewail. Also given are commencement addresses and public lectures.

CURRENT RESEARCH AND WORLD AFFAIRS

Current research is devoted to structural dynamics in chemistry and biology with focus on the physics of elementary processes in complex systems. At the Center for Physical Biology, the main research is in the development of four-dimensional (4D) ultrafast electron microscopy and diffraction for atomic-scale visualization in space and time. Together with spectroscopy and large-scale computations, the goal is to understand complexity and nature of chemical and biological transformations.

A significant effort is also devoted to giving public lectures to enhance awareness of the value of knowledge gained from fundamental research, and helping the population of developing countries through the promotion of science and technology for the betterment of society.