

The Raymond and Beverly Sackler Distinguished Lecturers in Chemistry

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|---------|--------------------------------|
| 1980-81 | Prof. Rudolf A. Marcus |
| 1982-83 | Prof. Andrew Streitwieser, Jr. |
| 1983-84 | Prof. John B. Fenn |
| 1984-85 | Prof. Bruce Berne |
| 1985-86 | Prof. Robert G. Shulman |
| 1985-86 | Prof. George Feher |
| 1986-87 | Prof. Adam Heller |
| 1987-88 | Prof. Harold L. Friedman |
| 1988-89 | Prof. Walter D. Knight |
| 1989-90 | Prof. Robert Silbey |
| 1990-91 | Prof. Vitali I. Goldanskii |
| 1991-92 | Prof. Richard E. Smalley |
| 1992-93 | Prof. Ahmed H. Zewail |
| 1993-94 | Prof. Anatol M. Zhabotinsky |
| 1993-94 | Prof. Graham Fleming |
| 1994-95 | Prof. Friedrich Hensel |
| 1995-96 | Prof. Alex Pines |

Joshua Jortner Distinguished Lectures in Chemistry of The Raymond and Beverly Sackler Foundation

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| 1996-97 | Prof. John M. Deutch |
| 1998-99 | Prof. Steve Berry |
| 1999-00 | Prof. Gary H. Posner |
| 2000-01 | Prof. Jan Peter Toennies |
| 2001-02 | Prof. Adrian Parsegian |
| 2003-04 | Prof. Claude Cohen-Tannoudji |
| 2004-05 | Prof. George Whitesides |
| 2005-06 | Prof. Tobin J. Marks |
| 2006-07 | Prof. K. C. Nicolaou |
| 2007-08 | Prof. Mark A. Ratner |
| 2009-10 | Prof. Barry Trost |
| 2009-10 | Prof. Louis Brus |
| 2010-11 | Prof. Richard Van Duyne |
| 2011-12 | Prof. Krzysztof Matyjaszewski |

TEL AVIV UNIVERSITY  אוניברסיטת תל-אביב

Joshua Jortner הרצאות מיוחדות בכימיה
Distinguished Lectures in Chemistry על שם יהושע יורטנר
Endowed by Raymond and Beverly Sackler נתרמו ע"י ריימונד ובברלי סאקלר

Professor Martin Moskovits פרופסור מרטין מוסקוביץ
Professor of Physical Chemistry פרופסור לכימיה פיסיקלית
Department of Chemistry and Biochemistry מחלקה לכימיה וביוכימיה
University of California אוניברסיטת קליפורניה
Santa Barbara, CA USA סנטה ברברה, ארה"ב

General Lecture הרצאה כללית

"THE FASCINATING AND SOMETIMES BIZARRE 40-YEAR HISTORY OF METAL-ENHANCED SPECTROSCOPY"

The lecture will be held on Tuesday, 10 June 2014, at 15.00, in Hall No. 002, Dan David Building, Tel Aviv University, Ramat Aviv. ההרצאה תתקיים ביום שלישי, 10 ביוני 2014, בשעה 15.00, באולם מס' 002, בבניין דן דוד, אוניברסיטת תל-אביב, רמת-אביב.

Lecture הרצאה

"SOLAR DEVICES BASED ON PLASMONIC DECAY"

The Lecture will be held on Thursday, 12 June 2014, at 11.45, in the framework of the Tel Aviv Symposium in Chemical Physics 2014*, in the Zeevi Auditorium, The Diaspora Museum, Tel Aviv University, Ramat Aviv. ההרצאה תתקיים ביום חמישי, 12 ביוני 2014, בשעה 11.45, במסגרת סימפוזיון תל אביב בפיסיקה כימית 2014*, באולם זאבי, בבית התמוצות, אוניברסיטת תל-אביב, רמת-אביב

Light refreshments will be served before each Lecture כיבוד קל יוגש רבע שעה לפני כל הרצאה

* <http://chemistry.tau.ac.il/events/TASCP>



Joshua Jortner was born in Poland in 1933 and immigrated to Israel in 1940. He received his Ph.D. from the Hebrew University of Jerusalem in 1960. In 1964 he was appointed to a professorship in the Department of Chemistry at Tel Aviv University and served as its first chairman. From 1966-72 he served as Deputy Rector, Acting Rector and Vice President of Tel Aviv University. From 1973-2003 he held the position of the Heinemann Professor of Chemistry at the School of Chemistry, The Raymond and Beverly Sackler Faculty of Exact Sciences of Tel Aviv University. He has held visiting Professorships at the University of Chicago, the University of Copenhagen, and the University of California, Berkeley. In 1995 he was the Christensen Visiting Fellow, St. Catherine's College, Oxford, and in 1998 he served in the International Research Chair "Blaise Pascal" of the Fondation de l'École Normale Supérieure, France. Jortner holds honorary doctorates from the Ben Gurion University of the Negev, Israel (1985);

the Pierre and Marie Curie University of Paris, France (1986); the Technical University of Munich, Germany (1996); the Technion, Israel Institute of Technology, Haifa, Israel (2005); the Weizmann Institute of Science, Rehovot, Israel (2005); the Free University of Berlin, Germany (2005); and the Humboldt University of Berlin, Germany, (2003). Among his awards are the International Academy of Quantum Science Award (1972), the Weizmann Prize (1973), the Rothschild Prize (1976), the Kolthof Prize (1976), the Israel Prize in Exact Sciences (1982), the Wolf Prize in Chemistry (1988), the Honorary J. Heyrovsky Medal (1993), the August Wilhelm von Hofmann Medal (1995), the Joshua Jortner Distinguished Lectures in Chemistry Endowed by Raymond and Beverly Sackler (1997), the Robert S. Mulliken Medal (1999), the Joseph O. Hirschfelder Prize (1999), the Maria Sklodowsky-Curie Medal of the Polish Chemical Society (2003), the Medal of the Israeli Chemical Society (2004), the Joshua Jortner Chair in Chemistry endowed by Raymond and Beverly Sackler (2007), the Lise Meitner Research Award of the Alexander von Humboldt Foundation (2007), and the EMET Prize in Exact Sciences: Chemistry (2008). A member of the Israeli Academy of Sciences and Humanities, Jortner is a foreign honorary member of the Academies of Sciences of Denmark, Poland, Romania, Russia, India, the Netherlands and the Czech Republic. He is a member of the International Academy of Quantum Molecular Sciences, the Academia Scientiarum et Artium Europaea and the Leopoldina National Academy of Germany. He is a Foreign Honorary Member of the American Philosophical Society, the American Academy of Arts and Sciences and the National Academy of Sciences of the United States of America. He held many honorary lectureships in Europe, Asia, the United States and Israel.

Jortner served as President of the Israel Academy of Sciences and Humanities (1986-1995), served as the Founding President of the Israel Science Foundation, and acted as Science Advisor to the Prime Ministers of Israel, Shamir, Rabin and Peres. He served as the President of the International Union of Pure and Applied Chemistry (1998-2000).

His research centers on the exploration of the phenomena of energy acquisition, storage and disposal in isolated molecules, clusters, condensed phases and biophysical systems. Jortner is the author of over 725 scientific publications, and the author and editor of 28 books.



Martin Moskovits is Professor of Chemistry at the University of California, Santa Barbara where he also served as Susan and Bruce Worster Dean of Science from 2000-2007. From 2007 - 2010 he was Chief Technology Officer of API Technologies Corp. in NY, and from 2011-2012 was Provost at the City College of New York. He has degrees in Physics and Chemistry from the University of Toronto, where he received his PhD in 1971, became Professor of Chemistry in 1982, later served as the Chair of the Chemistry Department from 1993-1999. He also cofounded Spectra Fluidics in 2008, a company that combines SERS with microfluidics to develop high-sensitivity molecular sensing.

Moskovits' Fellowships and awards include: American Association for the Advancement of Science, Optical Society of America, Royal Society of Canada, and is a former member and past Vice Chair of the US Department of Energy's Basic Energy Sciences Advisory Committee 2001-2010. He received numerous prizes: 1993 Gerhard Herzberg Award, Spectroscopy Society of Canada; 1993 Royal Society of Chemistry (London) award in Surface and Colloid Science; 1995 Johannes Marcus Marci Medal, Czech Spectroscopy Society; 2008 NanoTech Briefs, Nano 50 Innovator award; 2010 Ellis Lippincott Award, Optical Society of America.

Professor Moskovits' research falls into two broad categories: (i) plasmonics and surface-enhanced Raman spectroscopy (SERS), and (ii) nanowire synthesis and nanowire-based sensing. His plasmonics research has two major goals: the first is to create plasmonic analogs of photovoltaics and photosynthetic systems. Recently, for example, his group has produced the first device ever reported which uses electrons resulting from the decay of plasmons (collective conduction electron excitations that occur in nanostructured metals and some other conductors) in gold nanorods to reduce hydrogen ions in water, and the positive charges left behind to oxidize water to oxygen gas. The device is a free running cell floating in water with light as its sole energy source. In another work, the very bright SERS spectrum of a nanotag is used to pick out, for example, cancer cells from among non-cancerous cells flowing in the microfluidic stream; or to detect and identify small analyte molecules at very low concentrations entering the microfluidic stream from the ambient atmosphere. His most recent work draws a great deal of its inspiration from biomimetics, attempting to fabricate nano-electronic analogs of olfaction, both by creating nanowire-array-based electronic nose equivalents and multi-receptor SERS arrays that use the very highly sensitive character of SERS to look at the overall spectroscopic changes produced by small molecules interacting with aptamers linking plasmonic nanoparticles. Data analysis paradigms are used to connect the observed changes to a specific analyte in analogy to the manner in which the mammalian cognitive apparatus relates the pattern of the activation of the olfactory receptors with a given fragrance.