

THOMAS P. PEARL

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Education

1994 *B.A., Physics* Carleton College, Northfield, MN
2000 *Ph.D., Chemistry* The University of Chicago, Chicago, IL

Experience

2003-present: Assistant Professor, Department of Physics
North Carolina State University (NCSU), Raleigh, NC
2000-2003: Postdoctoral research associate, Departments of Chemistry and Physics
The Pennsylvania State University, University Park, PA

Awards and Honors

NCSU chapter Sigma Xi Membership (2007)
NCSU Faculty Research and Professional Development Award (2006)
American Chemical Society-PRF Type G Award (2006)
Ralph E. Powe Junior Faculty Enhancement Award (2004)
GAANN Department of Education Graduate Fellow (1996-1998)
Carleton College Dana Award for Personal Achievement (1994)

Professional Memberships APS, ACS, and Sigma Xi

Current and past research group members (current position if not in group)

Visiting faculty member (1): Jae-Ryang Hahn, Chonbuk National University

Postdoctoral fellows (1): Pengshun Luo

Ph.D. students (6): Satyaveda C. Bharath (Univ. of Maryland), Randy Catalano (local industry), Shawn M. Huston, Simon J. Kelly (Universiteit Leiden), Nancy M. Santagata (Ohio State Univ.), Katie M. Andrews
Undergraduate (7): Darryl J. DeWitt (NCSU), Amit M. Lakhani (UC-Berkeley), Kaustubh Pimputkar (Cisco Systems, Inc.), Alex Pronschinske (NCSU), Bryce F. Davis, Norman L. Bemelmans, Rachel F. Port

Advisors

Graduate thesis advisor: Steven J. Sibener, Ph.D., University of Chicago

Postdoctoral research advisor: Paul S. Weiss, Ph.D., The Pennsylvania State University

Collaborators

N. S. Barker (UVA), L. I. Clarke (NCSU), C. B. Gorman (NCSU), A. Gruverman (Nebraska), M. Heyde (FHI-Berlin, Germany), M. Gail Jones (NCSU), M. B. Nardelli (NCSU), R. J. Nemanich (ASU), M. Norton (Marshall), H.-P. Rust (FHI-Berlin, Germany)

Research and Teaching Objectives

I would like to join a community of researchers and teachers that are dedicated to the development of undergraduate and graduate students through progressive and interdisciplinary research as well as stimulating and interactive classroom settings. My research interests focus on studying interactions between surfaces and adsorbates that induce morphological transitions, change electronic characteristics, determine growth and ordering, and drive surface reaction dynamics as they relate to energy generation, nanoscale electronics, and chemical sensors.

Publications

Articles in Refereed Journals

1. *Rational Design of Interfacial Structure: Adsorbate-Mediated Templating*, S. B. Darling, A. T. Hanbicki, T. P. Pearl, and S. J. Sibener, *J. Phys. Chem. B* **103**, 9805-9808 (1999) [Cover Story].
2. *Proximity Heater for Elevated Temperature in situ Vacuum Scanning Tunneling Microscopy of Metal Surfaces*, T. P. Pearl and S. J. Sibener, *Rev. Sci. Instrum.* **71**, 124-127 (2000).
3. *Spatial and Temporal Dynamics of Individual Step Merging Events on Ni(977) Measured by Scanning Tunneling Microscopy*, T. P. Pearl and S. J. Sibener, *J. Phys. Chem. B* **105**, 6300-6306 (2001) [Cover Story].
4. *Oxygen Driven Reconstruction Dynamics of Ni(977) Measured by Time-Lapse Scanning Tunneling Microscopy*, T. P. Pearl and S. J. Sibener, *J. Chem. Phys.* **115**, 1916-1927 (2001).
5. *Step-modified Region of Phase Diagram of Chemisorbed Oxygen on Nickel*, T. P. Pearl, S. B. Darling, and S. J. Sibener, *Surf. Sci.* **491**, 140-148 (2001).
6. *Temperature Control of a Liquid Helium Cooled Eigler-Style Scanning Tunneling Microscope*, H.-P. Rust, M. Doering, J. I. Pascual, T. P. Pearl, and P. S. Weiss, *Rev. Sci. Instrum.* **72**, 4393-4397 (2001).
7. *Mechanism and Energetics for Step Merging on a Metallic Surface Captured with Scanning Tunneling Microscopy*, T. P. Pearl and S. J. Sibener, *Surf. Sci. Lett.* **496**, L29-L34 (2002).
8. *In Search of Nano-Perfection: Experiment and Monte Carlo Simulation of Nucleation-Controlled Step Doubling*, Y. Wang, T. P. Pearl, S. B. Darling, J. L. Gimmell, and S. J. Sibener, *J. Appl. Phys.* **91**, 10081-10087 (2002).
9. *Matrix-Mediated Control of Stochastic Single Molecule Conductance Switching*, Z. J. Donhauser, B. A. Mantooth, T. P. Pearl, K. F. Kelly, S. U. Nanayakkara, and P. S. Weiss, *Jap. J. Appl. Phys.* **41**, 4871-4877 (2002).
10. *Influence of Oxygen Dissolution History on Reconstruction Behavior of a Stepped Metal Surface*, T. P. Pearl, S. B. Darling, L. Niu, D. D. Koleske, D. J. Gaspar, S. F. King and S. J. Sibener, *Chem. Phys. Lett.* **364**, 284-289 (2002).
11. *A Double Lamellae Drop-off Etching Procedure for Tungsten Tips Attached to Tuning Fork AFM/STM Sensors*, M. Kulawik, T. P. Pearl, M. Nowicki, G. Thielsch, L. Cramer, H.-P. Rust, P. S. Weiss, and H.-J. Freund, *Rev. Sci. Instrum.* **74**, 1027-1030 (2003).
12. *A Comparative Scanning Tunneling Microscopy Study of Physisorbed Linear Quadrupolar Molecules: C₂N₂ and CS₂ on Au(111) at 4 K*, P. Han, E. C. H. Sykes, T. P. Pearl and P. S. Weiss, *J. Phys. Chem. A* **107**, 8124-8129 (2003).
13. *Design and operation of a versatile, ultrahigh vacuum, low temperature scanning probe microscope*, A. M. Lakhani, S. J. Kelly, and T. P. Pearl, *Rev. Sci. Instrum.* **77**, 043709 (2006).
14. *Spectral diffusion in the tunneling spectra of ligand-stabilized undecagold clusters*, R. K. Smith, S. U. Nanayakkara, G. H. Woehrl, T. P. Pearl, M. M. Blake, J. E. Hutchison, and P. S. Weiss, *J. Am. Chem. Soc.* **128**, 9266-9267 (2006).
15. *Persistence of chirality for a weakly bound adsorbate: (R,R)- and (S,S)-tartaric acid/Ag(111)*, A. M. Lakhani, D. J. DeWitt, N. M. Sant'Agata, and T. P. Pearl, *J. Phys. Chem. C* **111**, 5750-5755 (2007).

16. *Liquid crystal deposition on poled, single crystalline lithium niobate*, S. C. Bharath, K. R. Pimputkar, A. M. Pronschinske, and T. P. Pearl, *Applied Surface Science* **254**, 2048-2053 (2008).
17. *Probing molecular-level organizational structure and electronic decoupling of tartaric acid domains supported on Ag(111)*, N. M. Santagata, A. M. Lakhani, D. J. DeWitt, P. Luo, and T. P. Pearl, *Journal of Physics-Conference Series* **100**, 052066 (2008).
18. *Organizational structure and electronic decoupling of surface bound chiral domains and biomolecules*, N. M. Santagata, P. S. Luo, A. M. Lakhani, D. J. DeWitt, B. S. Day, M. L. Norton, and T. P. Pearl, *IEEE Sensors* **8**, 758-766 (2008).
19. *Bumpy, sticky, and shaky: Nanoscale Science and the Curriculum*, A. Taylor, M. G. Jones, and T. P. Pearl, *Science Scope (NSTA journal)* **31**, 28-35 (2008).
20. *Molecular rings formed from effective attraction in submonolayer DNA deposited on Au(111)*, Pengshun Luo, Norman L. Bemelmans, Michael S. Woody, and Thomas P. Pearl, *Langmuir* **25**, 7559-8000 (2009).

In preparation

21. *Chiral steering of molecular organization in the limit of weak adsorbate-substrate interactions: tartaric acid on Ag(111)*, N. M. Santagata, A. M. Lakhani, B. F. Davis, P. Luo, and T. P. Pearl, in preparation for submission to *ACS Nano* (2009).
22. *Modification of interfacial electronic structure as a function of organic overlayer stereochemistry*, N. M. Santagata, A. M. Lakhani, B. F. Davis, P. Luo, and T. P. Pearl, in preparation for submission to *Physical Review Letters* (2009).
23. *Scanning tunneling microscopy study of thiophene adsorption on Si(5 5 12)-2x1*, S. C. Bharath, J. -R. Hahn, and T. P. Pearl, in preparation.
24. *Comparison of molecular adsorption sites and geometry for pyrrole and pyridine on Si(5 5 12)-2x1*, S. C. Bharath, J. -R. Hahn, and T. P. Pearl, in preparation.
25. *Stereosensitive binding of propanediol enantiomers on Si(111)*, S. C. Bharath, J. -R. Hahn, and T. P. Pearl, in preparation.
26. *Growth of monatomic layers of Au on lithium niobate (0001) measured with atomic force microscopy*, S. C. Bharath and T. P. Pearl, in preparation.

Invited, non-refereed articles

1. *Atomic Scale Imaging of Dynamic Surfaces*, T. P. Pearl, in *McGraw-Hill Yearbook of Science and Technology 2005* (McGraw-Hill, New York, 2005), 23-25.

Invited colloquia, seminars, and workshops

1. James Franck Institute Symposium, James Franck Institute, University of Chicago (Chicago, IL), May 2000, *Watching Steps Dance: The Interaction of Adsorbates with a Stepped Metal Surface Studied with LEED and STM*, T. P. Pearl and S. J. Sibener
2. University of Maryland MRSEC seminar (College Park, MD), February 2000, *Adsorbate Interactions with a Stepped Metal Surface Studied Using LEED and STM: Overlayer Templating and Reconstruction Dynamics*, T. P. Pearl and S. J. Sibener
3. Haverford College, Department of Chemistry, faculty job interview seminar (Haverford, PA), December 2002, *Probing single molecules using low temperature scanning tunneling microscopy*, T. P. Pearl
4. Amherst College, Department of Chemistry, faculty job interview seminar (Amherst, MA), December 2002, *Probing single molecules using low temperature scanning tunneling microscopy*, T. P. Pearl

5. North Carolina State University, Department of Physics, faculty job interview seminar (Raleigh, NC), December 2002, *Probing single molecules and nanoclusters using low temperature scanning tunneling microscopy*, [T. P. Pearl](#)
6. UNC-Chapel Hill, Physical Chemistry and Materials Chemistry seminar, (Chapel Hill, NC), February 2004, *Probing single molecules and nanoclusters using low temperature STM*, [T. P. Pearl](#)
7. University of North Carolina-Wilmington, Department of Physics colloquium (Wilmington, NC), October 2005, *Probing surface chemical reactions, interactions, and behavior of single molecules with atomic scale tools*, [T. P. Pearl](#)
8. NCSU MRS chapter meeting seminar (Raleigh, NC), September 2005, *Probing surface chemical reactions, interactions, and behavior of single molecules with atomic scale tools*, [T. P. Pearl](#)
9. Army Research Office Workshop-Sensing Biomolecular Architectures (Edgewood, MD), December 2005, *Local probing of alignment and organization of biomolecules in nanoscale electronic junctions for THz sensing*, [T. P. Pearl](#)
10. Department of Chemical Physics (Abteilung Chemische Physik) seminar, Fritz-Haber-Institut der MPG, (Berlin, Germany), July 2007, *Probing molecular-level organizational structure and electronic decoupling of weakly surface bound chiral domains*, [T. P. Pearl](#)
11. Army Research Office Midterm Program reviews and workshop-Advanced Architectures for Biological Agent Detection & Discrimination (Hoboken, NJ and Duck Key, FL), January and December 2007, *Local Probing of Alignment and Organization of Biomolecules in Nanoscale Electronic Junctions for THz sensing*, [T. P. Pearl](#)
12. The Pennsylvania State University, Department of Chemistry, Analytical Chemistry Seminar (University Park, PA), March 2008, *Probing molecular-level organizational structure and electronic decoupling of weakly surface bound chiral domains and biomolecular species*, [T. P. Pearl](#)
13. Argonne National Lab, Center for Nanoscale Materials seminar (Argonne, IL), May 2008, *Probing molecular-level organizational structure and electronic properties of weakly surface bound metallic nanoparticles, chiral domains, and single biomolecules*, [T. P. Pearl](#)
14. The University of Chicago, James Franck Institute seminar (Chicago, IL), May 2008, *Probing molecular-level organizational structure and electronic decoupling of weakly surface bound metallic nanoparticles, chiral domains, and biomolecular species*, [T. P. Pearl](#)
15. University of Maryland, Department of Chemistry-Physical Chemistry/Chemical Physics seminar (College Park, MD), September 2008, *Molecular-level probing of weakly surface bound metallic nanoparticles, chiral domains, and biomolecular species*, [T. P. Pearl](#)
16. North Carolina State University, Department of Physics colloquium (Raleigh, NC), September 2008, *Spatially resolved organizational structure and electronic properties of weakly surface bound nanostructures*, [T. P. Pearl](#)
17. College of Charleston, Department of Physics colloquium (Charleston, SC), September 2008, *Probing molecular-level organizational structure and electronic decoupling of weakly surface bound metallic nanoparticles, chiral domains, and biomolecular species*, [T. P. Pearl](#)
18. Gordon Research Conference-Chemical Reactions at Surfaces (Ventura, CA), February 2009, hot topic poster presentation: *Molecular rings formed from an effective attraction*

in submonolayer DNA deposited on Au(111), T. P. Pearl, Pengshun Luo, Norman L. Bemelmans, and Michael S. Woody

19. 13th IACIS International Conference on Surface and Colloid Science and the 83rd ACS Colloid & Surface Science Symposium (New York, NY), June 2009, *Spatially resolved organizational structure and interfacial electronic states for stereospecific molecular domains*, T. P. Pearl

Conference contributed oral presentations, Lecture Series, and Colloquia (presenter underlined)

1. Ninth Workshop on Surface Dynamics (Charlottesville, VA), June 1999; *Step and Adsorbate Templating of Nanoscale Structure*, S. B. Darling, A.T. Hanbicki, T. P. Pearl, S. J. Sibener
2. University of Chicago Chemistry Department Student Seminar, January 2000, *The Interaction of Adsorbates with a Stepped Metal Surface Studied with LEED and STM*, T. P. Pearl and S. J. Sibener
3. American Physical Society (Minneapolis, MN) March 2000, *Oxygen-Driven Reconstruction Dynamics of Ni(977) Measured by Scanning Tunneling Microscopy*, T. P. Pearl and S. J. Sibener
4. Physical Electronics Conference (Taos, NM), June 2001, *Oxygen Driven Reconstruction Dynamics and Mechanistic Details of a Stepped Metallic Surface Measured by Time-Lapse Scanning Tunneling Microscopy*, T. P. Pearl and S. J. Sibener
5. American Vacuum Society (Denver, CO), November 2002, *Conductance Switching in Single Molecules*, Z. J. Donhauser, T. P. Pearl, and P. S. Weiss
6. American Physical Society (Austin, TX), March 2003, *A comparative scanning tunneling microscopy study of physisorbed linear quadrupolar molecules: C₂N₂ and CS₂ on Au(111) at 4 K*, Patrick Han, Charles Sykes, Thomas Pearl, and P. S. Weiss
7. Spring Materials Research Society Meeting, San Francisco, CA, April 2003, *Single Molecule Electronics*, Z. J. Donhauser, T. P. Pearl, and P. S. Weiss
8. STM '03, (Eindhoven, the Netherlands), June 2003, *Ordering, dynamics and spectroscopy of weakly bound molecules on Au{111} at 4 K*, P. Han, E. C. H. Sykes, T. P. Pearl, P. S. Weiss
9. American Chemical Society (New York, NY), September 2003, *Elucidation of the electronic properties of alkanethiolate-stabilized gold clusters and nanoparticles using scanning tunneling microscopy*, R. K. Smith, S. U. Nanayakkara, B. A. Mantooth, G. Woehrle, T. P. Pearl, J. E. Hutchison, and P. S. Weiss
10. American Chemical Society (New York, NY), September 2003, *Dynamics and conductance of conjugated molecules supported in monolayer matrices studied by low temperature scanning tunneling microscopy*, S. U. Nanayakkara, T. P. Pearl, P. S. Weiss, and J. M. Tour
11. American Chemical Society (New York, NY), September 2003, *Ordering, dynamics, and spectroscopy of weakly bound molecules on Au(111) at 4 K*, P. Han, E. C. H. Sykes, T. P. Pearl, and P. S. Weiss
12. American Vacuum Society (Baltimore, MD), November 2003, *Elucidation of the electronic properties of isolated alkanethiolate-passivated undecagold clusters by low temperature scanning tunneling microscopy and spectroscopy*, S. U. Nanayakkara, R. K. Smith, T. P. Pearl, B. A. Mantooth, G. Woehrle, J. E. Hutchison, and P. S. Weiss
13. Materials Research Society (Boston, MA), December 2003, *Elucidation of the electronic properties of alkanethiolate-passivated gold clusters and nanoparticles using scanning*

- tunneling microscopy*, R. K. Smith, S. U. Nanayakkara, B. A. Mantooth, G. Woehrle, T. P. Pearl, J. E. Hutchison, and P. S. Weiss
14. American Physical Society (Montreal, Canada), March 2004, *Elucidation of the electronic properties of alkanethiolate-passivated gold clusters and nanoparticles using scanning tunneling microscopy*, T. P. Pearl, S. U. Nanayakkara, R. K. Smith, B. A. Mantooth, G. H. Woehrle, J. E. Hutchison, and P. S. Weiss
 15. American Chemical Society (Washington D. C.), August 2005, *Ultrastable conductance measurements of self assembled monolayer supported phenylene-ethylene oligomers*, S. U. Nanayakkara, M. M. Blake, A. Dameron, R. Zhang, C. Pochas, P. S. Weiss, T. P. Pearl, S. Uppili, D. L. Allara, and J. M. Tour
 16. American Chemical Society (Washington D. C.), August 2005, *Tunneling spectroscopy of precise, ligand-stabilized nanoparticles and nanoparticle assemblies*, S. U. Nanayakkara, Rachel K. Smith, Paul S. Weiss, Thomas P. Pearl, Gerd Woehrle, and James E. Hutchison
 17. American Vacuum Society (Boston, MA), November 2005, *Ultrastable conductance measurements of self assembled monolayer supported phenylene-ethylene oligomers*, S. U. Nanayakkara, Meaghan M. Blake, Arrelaine Dameron, Rong Zhang, Chris Pochas, Paul S. Weiss, Thomas P. Pearl, Sundar Uppili, David L. Allara, and James M. Tour
 18. American Physical Society (Baltimore, MD), March 2006, *Spectral diffusion in the tunneling spectra of ligand-stabilized undecagold clusters*, T. P. Pearl, R. K. Smith, S. U. Nanayakkara, P. S. Weiss, G. H. Woehrle, and J. E. Hutchison
 19. American Chemical Society (San Francisco, CA), September 2006, *Observation of stereospecific domain formation: Adsorption of tartaric acid on Ag(111)*, A. M. Lakhani and T. P. Pearl
 20. American Physical Society (Denver, CO) March 2007, *STM studies of the molecular-level organization of chiral tartaric acid domains on Ag(111)*, N. M. Santagata, A. M. Lakhani, D. J. DeWitt, and T. P. Pearl
 21. IVC-17/ICSS-13 and ICN+T2007 (Stockholm, Sweden), July 2007, *Probing molecular-level organizational structure and electronic decoupling of tartaric acid domains supported on Ag(111)*, T. P. Pearl, N. M. Santagata, A. M. Lakhani, D. J. DeWitt, and Pengshun Luo
 22. ICN+T 2008 (Keystone, CO), July 2008, *Schockley-type Surface State Modification for Enantiopure vs. Racemic Tartaric Acid on Ag(111)*, N. M. Santagata, P. Luo, B. F. Davis, and T. P. Pearl
 23. Physical Electronics Conference (Riverside, CA), June 2008, *Spatially resolved organizational structure and electronic signatures of weakly surface bound chiral domains*, Thomas P. Pearl, Nancy M. Santagata, Pengshun Luo, and Bryce F. Davis
 24. American Physical Society-2008 SE Section (Raleigh, NC), October 2008, *Shockley-type Surface State Modification for Enantiopure vs. Racemic Tartaric Acid on Ag(111)*, Nancy M. Santagata, Pengshun Luo, Bryce F. Davis, T. P. Pearl
 25. American Physical Society-2008 SE Section (Raleigh, NC), October 2008, *Observation of molecular rings formed from DNA deposited on Au(111)*, Pengshun Luo, Michael S. Woody, Norman L. Bemelmans, T. P. Pearl
 26. American Physical Society-2008 SE Section (Raleigh, NC), October 2008, *Characterization of polar molecular species adsorbed on LiNbO₃ surfaces*, S. C. Bharath and T. P. Pearl

27. MRS/ASM/AVS- Mid-Atlantic Sectional (Raleigh, NC), November 2008, *Characterization of molecular and atomic species adsorbed on ferroelectric crystal surfaces*, S. C. Bharath and T. P. Pearl

Contributed conference poster presentations

1. Gordon Research Conference, Chemical Reactions at Surfaces (Ventura, CA), March 1999, *Step Dynamics and Reactivity of Ni(977) Measured by STM*, T. P. Pearl and S. J. Sibener
2. National Science Foundation US-China Workshop on Nanotechnology (Washington D.C.), March 2006, *Probing surface chemical reactions, interactions, and behavior of single molecules with atomic scale tools*, T. P. Pearl
3. Materials Research Society (Boston, MA), November 2006, *Liquid crystal deposition on poled, single crystalline lithium niobate*, S. C. Bharath, K. R. Pimputkar, A. M. Pronschinske, T. P. Pearl
4. Nanoelectronic Devices for Security and Defense (Crystal City, VA), June 2007, *Probing organizational structure and electronic decoupling of surface bound biomolecules and chiral domains*, T. P. Pearl
5. International Symposium on Spectral Sensing Research (ISSSR) (Hoboken, NJ), June 2008, *Organizational structure and electronic properties of chiral molecular domains and single biomolecules*, P. Luo, N. M. Santagata, B. F. Davis, N. L. Bemelmans, and T. P. Pearl
6. Gordon Research Conference-Chemical Reactions at Surfaces (Ventura, CA), February 2009, *Molecular rings formed from an effective attraction in submonolayer DNA deposited on Au(111)*, T. P. Pearl, Pengshun Luo, N. L. Bemelmans, and M. S. Woody
7. NC-AFM 2009 (New Haven, CT), August 2009, *Besocke style quartz tuning fork FM-AFM/STM for use in UHV and low temperatures*, S. M. Huston, R. T. Port, K. M. Andrews, and T. P. Pearl

Service to North Carolina State University and Professional Societies

Departmental Contributions

1. Department of Physics Ad hoc Professional Science Masters committee (Fall 2005-Spring 2006)
2. Co-organizer of Physics department colloquia (Fall 2005-Spring 2006)
3. Member of Department of Physics Ad hoc junior faculty committee to review proposed changes in departmental bylaws and rules of operation associated with renewal, promotion, and tenure action procedures (Spring 2006)
4. Member of Department of Physics Computing Resources committee chaired by M. Buongiorno Nardelli-Physics (Fall 2007-present)

University Wide Service

1. Spoke at NCSU Science House Summer Activity session for high school students regarding research activities (June 2004).
2. Member of organizing and scientific committees for NCSU workshop: “Nanotechnology for energy and environment” (Oct. 2005)
3. Materials Research Society, local student chapter, research presentation for undergraduate and graduate students (September 2005)
4. NCSU Department of Mathematics, Science, and Technology Education (College of Education) personnel committee member (2005)
5. Member of committee on NCSU nanotechnology initiative chaired by G. N. Parsons-Chemical and Biomolecular Engineering (Fall 2006-present)
6. NCSU Graduate research symposium-panelist/judge for the College of Physical and Mathematical Sciences division (Spring 2007)
7. NCSU Nanoscale science education committee chaired by M. Gail Jones-College of Education (Fall 2007-present)
8. Organizer of joint event with NCSU College of Education entitled, *NanoDays* (2006-present)

Professional Societies and Miscellaneous Service

1. Served as a manuscript reviewer for the following journals: ACS Nano, The Journal of the American Chemical Society, Applied Physics Letters, Chemical Physics, Journal of Nanoscience and Nanotechnology, Journal of Chemical Physics, and The Journal of Physical Chemistry B and C
2. Served as a proposal reviewer for the following agencies: Army Research Office, National Science Foundation, Department of Energy, and the Israeli National Science Foundation
3. Member of organizing and technical committee for *Nanoelectronic Devices for Defense and Security Conference* (June 2007, Crystal City, VA; September 2009, Fort Lauderdale, FL)

References

Paul S. Weiss, *Fred Kavli Chair in NanoSystems Sciences, Professor of Chemistry & Biochemistry, California NanoSystems Institute Director, Editor-in-chief: ACS Nano*

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