



Illinois Institute of Technology

Jeff Terry

Professor, Physics Department, Illinois Institute of Technology

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Profile

I specialize in the study of chemical physics utilizing synchrotron radiation techniques. I have extensive experience using a variety of synchrotron techniques to examine many problems of interest in materials physics. Presently, I have ongoing projects involving photovoltaic cells, nuclear reactors, molecular magnets, nanocluster formation and patterning, heavy metals in the environment, radiopharmaceuticals, and high-Z materials. I primarily use the synchrotron radiation techniques of photoelectron (PES), x-ray emission (SXE), and x-ray absorption spectroscopies (XAS) to determine the electronic and geometric structures of these systems. The experimental measurements are supplemented with theoretical modeling of the system components using Density Functional Theory. I have been a member of the experimental team from the Daya Bay Antineutrino Experiment utilizing the Day Bay nuclear reactors. I am currently the technical contact for all synchrotron radiation experiments awarded by the Advanced Test Reactor National Scientific User Facility (ATR NSUF).

Education

Stanford University, Stanford, California — Ph. D. Chemical Physics 1997

University of Chicago, Chicago, Illinois — B. S. Chemistry 1990



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Research Experience

Professor, Illinois Institute of Technology; Chicago, Illinois – 05/2014 – present

Associate Professor, Illinois Institute of Technology; Chicago, Illinois – 08/2011 – 05/2014

Assistant Professor, Illinois Institute of Technology; Chicago, Illinois – 08/2005 – 07/2011

Research Assistant Professor, Illinois Institute of Technology; Chicago, Illinois – 12/2002 – 08/2005

Senior Research Associate, Illinois Institute of Technology; Chicago, Illinois – 08/2000 – 12/2002

My work at the Illinois Institute of Technology has involved understanding materials properties using synchrotron radiation techniques. This work has had an impact in several areas. Our results have suggested methodologies to improve the structural properties of materials used in Generation IV liquid-metal cooled, nuclear reactors. We have shown that the technique of In-situ Gaseous Reduction can be used to form immobile heavy metal species in the vadose zone. We have demonstrated that impurity phases at grain boundaries can result in either an increase or a decrease of solar cell efficiency in CdTe based systems. We have determined the redox chemistry of free radioactive ions, U(IV, V, VI), Pu(IV, VI) due to bioreduction in simulated nuclear waste streams. Recent research focuses on the radiation damage in high temperature reactor structural materials.

Staff Scientist, Los Alamos National Laboratory; Los Alamos, New Mexico – 11/1998 – 07/2000

Post-Doctoral Researcher, Los Alamos National Laboratory; Los Alamos, New Mexico – 09/1997 – 11/1998 (Advisors: Dr. Roland Schulze, Dr. Mary Neu)

At Los Alamos National Laboratory, I was attempting to understand the physics of 5f electronic materials, most notably plutonium metal. Using resonant photoemission, we measured observed the 5f electronic structure in many plutonium allotropes and oxides. Our results showed that localized 5f electrons resemble atomic-like states, while itinerant 5f electrons cannot be easily modeled using one-electron theory, We have shown that x-ray absorption spectroscopy is very sensitive to structural changes induced by radiation damage. Finally, reaction chemistry between nuclear waste and backing material in nuclear waste repositories were investigated as part of the Source Term Test Project (STTP).

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Post-Doctoral Researcher, Northwestern University; Evanston, Illinois – 12/1996 – 09/1997 (Advisor: Prof. Michael J. Bedzyk)

Co-Term Post-Doctoral Researcher, Argonne National Laboratory; Evanston, Illinois – 06/1996 – 09/1997

My post-doctoral work was based on the study of environmental chemistry on calcite surfaces. This work utilized the technique of x-ray standing waves spectroscopy. This technique requires perfect single crystals and as such has limited use in environmental chemistry.

Doctoral Researcher, Stanford University; Stanford, California – 06/1991 – 11/1996 (Advisor: Prof. Piero Pianetta, co-Advisor: Prof. Edward I. Solomon)

My graduate research focused on the functionalization of silicon surfaces. It resulted in the first determination of an organic-silicon bond at the interface of an alkane with the Si(111) surface. Prior work usually required the presence of a thin silicon oxide layer to be located at the interface in order for an organic molecule to stick. Two reaction mechanisms were shown to produce alkane and alkene groups bound to the Si(111) surface.

Doctoral Researcher, Stanford University; Stanford, California – 09/1990 – 06/1991 (Advisor: Prof. Steven M. George)

This work involved the use of laser induced thermal desorption spectroscopy to study diffusion and chemical reactions at the surface of single crystal, metal oxides.

Undergraduate Researcher, University of Chicago; Chicago, Illinois – 10/1988 – 06/1990 (Advisor: Prof. Laurie J. Butler)

This work involved understanding the potential energy surfaces of laser induced photodissociation reactions. We assembled a crossed-laser, molecular beam apparatus with a rotatable source. I simulated the ion beam optics that were responsible for focussing the ionized molecular fragments into a mass spectrometer. I, also, designed vacuum compatible electronics to trigger the data acquisition system to acquire data when triggered by a light pulse through a chopper wheel.

Honors and Awards

Plenary Speaker – NuMat 2012 – 10/2012

I was chosen to be a Plenary Speaker at the NuMat 2012 conference in Osaka, Japan. I spoke on the use of synchrotron radiation techniques to study nuclear materials.

Science Profile Subject – Apple, Inc. – 08/2006

A project of mine that has undergraduate students at the Illinois Institute of Technology becoming involved in observational astronomy was selected for a Science Profile by

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Apple, Inc. In this work, our undergraduate students have collected images utilizing remote telescopes. They process these images using a computer program, iCCD that I have written for Apple Computers using the Mac OS X operating system. The profile can be found at: <http://www.apple.com/science/profiles/terry/>.

Best University Interprofessional Studies Project – Illinois Institute of Technology – 05/2003

My course, IPRO 317: Design and Construction of an 0.6 m Newtonian Telescope, was selected the as the best IPRO project for the Spring 2003 semester during the annual university competition.

Science and Technology Award Recipient – Los Alamos National Laboratory – 09/1999

My work on the measurement of the electronic structure of plutonium was recognized by the external review committee of the Nuclear Materials Technology Division as the Science and Technology Award winner during the year 1998-1999 fiscal year.

Student Prize Winner in Physical Chemistry – International Chemical Congress of Pacific Basin Societies (Pacifichem, Honolulu, Hawaii) – 12/1995

My presentation, Characterization of Alkyl-Terminated Silicon(111) Surfaces was awarded the Student Prize in Physical Chemistry during the 3rd Congress during the 1995 Pacifichem Meeting.

Honorable Mention – NSF Graduate Fellowship – 05/1990

I was named an honorable mention candidate for the NSF Graduate Fellowship in Physical Chemistry. I was awarded supercomputer time at an NSF center for being awarded honorable mention status.

Professional Duties

Editor – Applied Surface Science – 05/2016 – present

I was selected to join the editorial board of the journal Applied Surface Science in 2016. I handle reviewer assignments and make final publication decisions for approximately 200 papers per year.

Program Chair – 254th Annual Meeting of the American Chemical Society – 08/2017

– 252nd Annual Meeting of the American Chemical Society – 08/2016

– 250th Annual Meeting of the American Chemical Society – 08/2015

I was chosen to be the Program Chair for the Division of Nuclear Chemistry and Technology (NUCL) for the Fall Meetings of the American Chemical Society. I will be

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responsible for setting the program prior to and directing the NUCL sessions at the meeting.

Conference Chair – Annual Meeting of the Prairie Chapter of the American Vacuum Society – 09/2018

I organized the 2016 Prairie Chapter Meeting of the American Vacuum Society held at the Illinois Institute of Technology on September 8, 2016.

NSF Panelist – Division of Materials Research – 01/2015

I was chosen to sit on an NSF Panel for the Division of Materials Research. The planning and reviews took place in 2014 with the panel meeting in January 2015.

Session Organizer – 251st Annual Meeting of the American Chemical Society – 03/2016

- 248th Annual Meeting of the American Chemical Society – 08/2014
- 247th Annual Meeting of the American Chemical Society – 03/2014
- 234th Annual Meeting of the American Chemical Society – 08/2007

I was selected to organize the sessions entitled Chemical Imaging: Applications, Advances, and Challenges in 2016; Young Researchers in Nuclear and Radiochemistry in 2014; Global Status of Nuclear Energy in 2014; and the Analytical Chemistry in Nuclear Technology: Innovative Techniques and Analytical Applications in Material Science, Separation Science, and Nuclear Materials Processing in 2007.

Member – eXtreme MATerials beamline Board of Directors – 08/2013 – present

I was selected to be a board member working to guide the development of the XMAT beamline proposed to be constructed at the Advanced Photon Source.

Chair Ex Officio – Advanced Test Reactor National Scientific User Organization Executive Committee – 06/2013 – 5/2015

I became the Chair Ex Officio of the executive committee of the ATR NSUO upon completion as my term as chair.

Director – Advanced Test Reactor National Scientific User Facility – 08/2013 – 1/2014

I had a short term as the director of the ATR NSUF.

Chair – Advanced Test Reactor National Scientific User Organization Executive Committee – 05/2011 – 6/2013

I was elected the 1st chair of the executive committee of the ATR NSUO.

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Neutronics Chair, Nuclear Materials Compatibility Workshop – Colorado School of Mines – 09/13-14/2011

I chaired the neutronics committee of the task force charged with determining reporting standards of materials research in the field of nuclear energy.

University Safety Committee – Illinois Institute of Technology – 05/2011 – 06/2012

As Chair of the Laser Safety Committee at the Illinois Institute of Technology, I was made a member of the University Safety Committee.

Director – Health Physics Program – Illinois Institute of Technology – 05/2011 – 12/2011

I was the director of the 3rd largest Health Physics program in the United States during the reorganization of the Biology, Chemical, and Physical Sciences Department.

Member – Advanced Test Reactor National Scientific User Organization Executive Committee – 02/2011 – 05/2015

I was elected to 1st executive committee of the ATR NSUO to guide the direction of the ATR NSUF.

Member – Daya Bay Antineutrino Experiment Collaboration – 07/2008 – 05/2015

I was elected to the collaboration and will be working on low-background detector design and fission-rate calculations.

Committee On Laboratories – American Association Of Physics Teachers – 01/2008 – 01/2010

I was appointed to the committee by the 2008 AAPT Nominating Committee. The Committee on Laboratories has the responsibility of guiding future directions of laboratory experiments in both General Physics and Advance Physics courses.

Editorial Board Member – The Open Inorganic Chemistry Journal – 12/2007 – 06/2010

I was asked to join the editorial board of the Open Inorganic Chemistry Journal. This journal is freely available to all members of the scientific community. Authors pay the publishing fees and they retain copyright to their submissions. I believe that this model of publication will be very important in the future and I accepted appointment to the editorial board.

Chair, Laser Safety Committee – Illinois Institute of Technology – 09/2007 – 06/2012

I was elected to chair the Laser Safety Committee at the Illinois Institute of Technology. This committee has the responsibility of overseeing the operation of all class 3(b) and

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class 4 lasers at the university. The committee reviews and approves the standard operating procedures of these systems and any experiments utilizing these lasers.

Department Safety Officer, Department of Biological, Chemical, and Physical Sciences – Illinois Institute of Technology – 03/2006 – 08/2011

I was appointed to be the Safety Officer for the Biological, Chemical, and Physical Sciences Department at the Illinois Institute of Technology. In this position, I am responsible for overseeing the faculty compliance to OSHA rules and regulations.

Reviewer – Journals and Proposals – 08/1997 – present

I have been a reviewer for numerous journals and proposals. I have reviewed articles for the Journal of Vacuum Science and Technology, Environmental Science and Technology, Applied Physics Letters, and the Journal of Applied Physics. I have reviewed proposals for the National Science Foundation, the Department of Energy, and the American Chemical Society.

Session Chair – American Nuclear Society Summer 2010 Meeting – 06/2010

I was selected to chair a session on nuclear materials. This session focused on radiation damage in structural materials.

Session Chair – Millimeter Scale Characterization of Activated Samples at Neutron and X-ray User Facilities Workshop – 06/2009

I was selected to chair the session on millimeter scale characterization of activated samples using synchrotron and neutron beams at the Characterization of Activated Samples at Neutron and X-ray User Facilities Workshop held to support the proposed Matter–Radiation Interactions In Extremes (MaRIE) facility.

Workshop Organizer – Advanced Test Reactor National Scientific Users' Week – 06/2009

I was selected to organize the workshop on Synchrotron Radiation Studies of Irradiated Materials at the 2nd Annual Advanced Test Reactor National Scientific User Facility Users' Week.

Judge (Physics) – 57th Annual Intel International Science Fair – 05/2006

I was selected to judge the Physics Science Projects at the International Science Fair in Indianapolis, Indiana.

Member – Molecular Environmental Science Working Group to Decide the Scientific Direction of the Advanced Light Source – 03/1998

I was a member of the group tasked with determining the Scientific Direction of Environmental Research at the Advanced Light Source. This group strongly

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recommended that actinide research be allowed on the low energy beamlines at the Advanced Light Source.

**Member – Actinide Safety Review Committee at the Advanced Light Source –
01/1999 – 09/2000**

I was a member of the group in charge of reviewing actinide proposals at the Advanced Light Source to ensure that they could be safely conducted.

Service Activities

Columnist, Bulletin of the Atomic Scientists – 01/15 - present

I write a column four times per year for the Bulletin of the Atomic Scientists. This allows me to explain both nuclear weapons and nuclear energy issues to the general public.

Advisor, Politicians and Legislators – 03/11 - present

I have consulted for a number of politicians in the US, UK, Australia, on issues related to nuclear energy and nuclear waste policy. I have very good interactions with the Indiana State Legislature and have worked with IN State Senators on Nuclear Energy Issues including writing talking points and answering questions on nuclear energy and nuclear waste.

**Co-Organizer – 2016 National Nuclear Science Week – Chicago Event, Chicago,
Illinois – 10/2016**

**– 2015 National Nuclear Science Week – Chicago Event, Chicago, Illinois –
10/2015**

**– 2014 National Nuclear Science Week – Chicago Event, Chicago, Illinois –
10/2014**

**– 2013 National Nuclear Science Week – Chicago Event, Chicago, Illinois –
10/2013**

I co-organized the National Nuclear Science Week Workshops held in Chicago, Northern Illinois, and Northwest Indiana for National Nuclear Science Week Organization.

**Co-Organizer, 2012 National Nuclear Science Big Event – Illinois Institute of
Technology, Chicago, Illinois – 01/25/2012**

I co-organized the National Nuclear Science Day Workshops held at the Illinois Institute of Technology for National Nuclear Science Week 2012. The workshop brought together speakers, sponsored by The National Museum of Nuclear Science and History, to discuss nuclear science with students throughout the US with the assistance of the National Science Teachers Association.

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Media Appearances – Fukushima, Nuclear Energy, and Chemical Safety – United States – 05/05 - present

I have made many media appearances to explain technical material to the general public in print, radio, and television on WSRB, WERS, WIBC, NPR, PBS, ABC, CBS, and FOX.

Co-Organizer, 2010 Midwest Astroimaging Conference and Macintosh Astronomy Workshop – Northern Illinois University, Elk Grove Village, Illinois – 07/22-24/2010

I was asked to be the co-organizer for the 2010 Midwest Astroimaging Conference and Macintosh Astronomy Workshop. The conference was a three day seminar on the state of the art techniques in astrophotography and image processing. The topics covered are were of interest to all skill levels in the art of astrophotography and image processing. The conference's ten speakers were among the most highly regarded astroimagers in the world.

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Co-Organizer, 2007 Midwest Astroimaging Conference – St. Joseph's College, Rensselaer, Indiana – 07/13-14/2007

I was asked to be the co-organizer for the 2007 Midwest Astroimaging Conference. The conference was a two day seminar on the state of the art techniques in astrophotography and image processing. The topics covered are were of interest to all skill levels in the art of astrophotography and image processing. The conference's ten speakers were among the most highly regarded astroimagers in the world.

Organizer, The Macintosh Astronomy Workshop I – Illinois Institute of Technology, Chicago, Illinois – 09/08/2005

I organized the first Macintosh Astronomy Workshop. The workshop was held in conjunction with the Chicago Astronomical Society's annual Astrofest. The workshop featured speakers describing and demoing the features of numerous mac-based astronomy programs. Featured areas included image collection and processing, planetarium and planning programs, and telescope control programs.

Teaching Experience

Philosophy

I strongly believe in challenging students of all levels. I feel that students who are allowed to just get by will not live up to their full potential. My classes involve a great deal of student participation. I insist that all students answer questions during class in upper division courses. I learn how the course is progressing during these question and answer sessions and can modify the direction of the course based on my assessment of how well the students currently understand the material being covered.



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Instructor, Illinois Institute of Technology; Chicago, Illinois — 01/2001 – present

I have designed and taught the following courses at the Illinois Institute of Technology:

PHYS 200: Basic Physics For Architects
PHYS 221: General Physics II: Electricity and Magnetism
PHYS 240: Computational Science
PHYS 304: Kinetic Theory and Thermodynamics
PHYS 348: Modern Physics for Scientists and Engineers
PHYS 361: Observational Astrophysics
PHYS 427: Advanced Physics Laboratory I
PHYS 437: Solid State Physics
PHYS 440: Computational Physics
PHYS 537: Solid State Physics I
PHYS 538: Solid State Physics II
PHYS 770: Instrumentation for Health Physics
CHEM 321: Instrumental Methods of Analysis
CHEM 344: Physical Chemistry II
CHEM 509: Physical Methods of Characterization
CHEM 510: Electronics and Instrumentation
CHEM 512: Spectrochemical Methods II
IPRO 219: Galilean Test of the Einstein Principle of Equivalence
IPRO 317: Design and Construction of an 0.6 m Newtonian Telescope

Guest Instructor, University of Missouri, Columbia; Columbia, Missouri — 07/2001 and 07/2002

I have designed and co-taught the following summer course at the University of Missouri, Columbia:

Nuclear Engineering 310: X-ray Absorption Applications in Engineering

Teaching Assistant, Stanford University; Stanford, California — 09/2000 – 06/1996

I have been a teaching assistant for the following courses at Stanford University:

Undergraduate Quantum Chemistry
Undergraduate Physical Chemistry Laboratory I
Undergraduate Physical Chemistry Laboratory II
Undergraduate General Chemistry
Graduate Solid State Physics
Graduate Electronic Structure of Solids

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Publications

Seibert, R., D. Velazquez, K. A. Terrani, and J. Terry, "Local atomic structure of *Pd* and *Ag* in the *SiC* containment layers of used *TRISO* fuel pellets," in preparation (2016).

Yun, D., K. Logan, and J. Terry, "Xenon gas bubbles in *U-10wt%Mo* formed during Ion Irradiation," in preparation (2016).

Olive, D., Y. Ha, Y. Gim, Z. Gu, B. Hua, B. Deng, and J. Terry, "Characterization of arsenic adsorption by Fe_2O_3 supported on granular activated carbon (GAC)," in preparation (2016).

Linford, M. R., B. Singh, D. Velázquez, J. Terry, J. D. Bagley, D. H. Tolley, A. Diwan, V. Jain, A. Herrera-Gomez, "Uniqueness Plots: A simple graphical tool for identifying poor fits in x-ray photoelectron spectroscopy," *Applied Surface Science* 387, 155 (2016).

Olive, D., H. Ganegoda, Y. Yang, C. Dickerson, T. Allen, and J. Terry, "Using a Spherical Crystallite Model With Vacancies to Relate Local Atomic Structure and Irradiation Defects in *ZrC* and *ZrN*," *Journal of Nuclear Materials* 475, 123 (2016).

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Velazquez, D., R. Seibert, H. Man, L. Spentzouris, and J. Terry, "Pulsed laser deposition of single layer, hexagonal boron nitride (white graphene, *h-BN*) on fiber-oriented *Ag(111)/SrTiO₃(001)*," *Journal of Applied Physics* 119, 095306 (2016).

Liu, X., K. Mo, Y. Miao, K.-C. Lan, G. Zhang, W.-Y. Chen, C. Tomchik, R. Seibert, J. Terry, and J. F. Stubbins, "Investigation of thermal aging effects on the tensile properties of Alloy 617 by in-situ synchrotron wide-angle X-ray scattering," *Materials Science and Engineering: A* 651, 55 (2016).

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Terry, J., "The research warrants a significant increase in nuclear power," Commentary made under [The experts on nuclear power and climate change](http://thebulletin.org/commentary/research-warrants-significant-increase-nuclear-power), <http://thebulletin.org/commentary/research-warrants-significant-increase-nuclear-power>, *Bulletin of the Atomic Scientists*, December 21, 2015.

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Kaplan, D. M., K. Kirch, D. Mancini, J. D. Phillips, T. J. Phillips, T. J. Roberts, and J. Terry, "Measuring antimatter gravity with muonium," Proceedings of the 3rd International Conference on New Frontiers in Physics, EPJ Web of Conferences 95, 05008 (2015).

Velazquez, D., R. Seibert, Z. Yusof, J. Terry, and L. Spentzouris "Synthesis of Ultra-Thin Single Crystal MgO/Ag/MgO Multilayer for Controlled Photocathode Emissive Properties," Bulletin of the American Physical Society 60 (2015).

Kim, Y.-J., T. Jurewicz, A. Kucuk, E. Mader, B. Cheng, J. Katsoudas, D. Olive, and J. Terry, "Electrochemical Corrosion of Zircalloys Under Irradiation and Different Water Chemistry Conditions," Proceedings of the Water Reactor Fuel Performance Meeting, Sendai, Japan, Sept, 2014, 100030.

Terry, J., "Indiana should consider public-private model in meeting CO₂ rules," The Times of Northwest Indiana, http://www.nwitimes.com/news/opinion/columnists/guest-commentary/guest-commentary-indiana-should-consider-public-private-model-in-meeting/article_72606b94-f240-59bd-b646-4470c7d8075f.html, July 15, 2014.

Singh, B., D. Velazquez, J. Terry, and M. R. Linford, "Comparison of the equivalent width, the autocorrelation width, and the variance as figures of merit for XPS narrow scans," Journal of Electron Spectroscopy and Related Phenomenon 197, 112 (2014).

Singh, B., D. Velazquez, J. Terry, and M. R. Linford, "The Equivalent Width as a Figure of Merit for XPS Narrow Scans," Journal of Electron Spectroscopy and Related Phenomenon 197, 56 (2014).

Conradson, S. D., N. Baclet, N. Bock, J. M. Castro, D. R. Conradson, L. E. Cox, W. Dmowski, D. E. Dooley, T. Egami, F. J. Espinosa-Faller, F. J. Freibert, A. J. Garcia Adeva, N. J. Hess, E. Holmstrom, R. C. Howell, L. Jolly, J. C. Lashley, B. A. Martinez, R. J. Martinez, D. P. Moore, L. A. Morales, J. David Olivas, R. A. Pereyra, M. Ramos, J. Terry, C. Valot, and P. M. Villeda, "Intrinsic Nanoscience of δ Pu-Ga Alloys: Local Structure and Speciation, Collective Behavior, Nanoscale Heterogeneity, and Aging Mechanisms," Journal of Physical Chemistry C 118, 8541 (2014).

Gupta, V., H. Ganegoda, M. H. Engelhard, J. Terry, and M. R. Linford, "Assigning Oxidation States to Organic Compounds vis Predictions from X-ray Photoelectron Spectroscopy: A Discussion of Approaches and Recommended Improvements," Journal of Chemical Education 91, 232 (2014).

Li, M., D. Olive, Y. Trenikhina, H. Ganegoda, J. Terry, and S. A. Maloy, "Study of Irradiated Mod.9Cr-1Mo Steel by Synchrotron EXAFS," Journal of Nuclear Materials 44, 674 (2013).

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Chen, X., A. Kotlyarevsky, A. Kumiega, J. Terry, B. Wu, S. Goldberg, and E. A. Hoffman, "Small Modular Nuclear Reactors: Parametric Modeling of Integrated Reactor Vessel Manufacturing Within A Factory Environment Volume 2, Detailed Analysis," Energy Policy Institute at Chicago (EPIC) Report, University of Chicago, <http://mrmac.mr.aps.anl.gov/~jterry/pdf/SMRVol1.pdf>, (2013).

Chen, X., A. Kotlyarevsky, A. Kumiega, J. Terry, B. Wu, S. Goldberg, and E. A. Hoffman, "Small Modular Nuclear Reactors: Parametric Modeling of Integrated Reactor Vessel Manufacturing Within A Factory Environment Volume 1," Energy Policy Institute at Chicago (EPIC) Report, University of Chicago, <http://mrmac.mr.aps.anl.gov/~jterry/pdf/SMRVol2.pdf>, (2013).

Ruth, A., K. Nemeth, K. C. Harkay, J. Z. Terdik, L. Spentzouris, and J. Terry, "Searching for low-workfunction phases in the Cs-Te system: The case of Cs₂Te_s," Journal of Applied Physics 113, 183703 (2013).

Wisniewski, E. E., D. Velazquez, Z. Yusof, L. Spentzouris, J. Terry, T. J. Sarkar, and K. Harkay, "Kelvin probe studies of Cesium Telluride photocathode for AWA photoinjector," arXiv:1203.6632v1, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 711, 60 (2013).

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Collingwood, J. F., M. R. Davidson, V. Antharam, J. P. Bullivant, A. Mikhaylova, E. House, S. B. Chandra, P. D. Quinn, J. F. W. Mosselmans, J. Terry, S. Chattopadhyay, J. Forder, J. Dobson, and C. Batich, "Synchrotron X-ray analysis of iron and zinc distribution in subfields of the Alzheimer's hippocampus: implications for MRI," Neuroimage submitted (2011).

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Terdik, J. Z., K. Nemeth, K. C. Harkay, J. Terry, L. Spentzouris, D. Velazquez, R. Rosenberg, G. Srajer, "Anomalous Workfunction Anisotropy in Ternary Acetylides," Physical Review B 86, 035142 (2012).

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Ganegoda, H., D. Jensen, D. Olive, L. Cheng,, C. U. Segre, M. R. Linford, and J. Terry, "Photoemission studies of fluorine functionalized porous graphitic carbon," *Journal of Applied Physics* 111, 053705 (2012).

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Presentations

Department of Civil & Environmental Engineering & Earth Sciences Seminar, University of Notre Dame — Notre Dame, Indiana, September 12, 2016 (invited), “*Surface Science in the Wild: Using Synchrotron Radiation and Lab Grown Thin Films to Understand the Behavior of SiC in Accident Tolerant Nuclear Fuels.*”

Two Hundred Fifty–Second American Chemical Society National Meeting and Exposition — Philadelphia, Pennsylvania, August 23, 2016 (invited), “*Synchrotron radiation studies of advanced nuclear energy materials.*”

Two Hundred Fifty–Second American Chemical Society National Meeting and Exposition — Philadelphia, Pennsylvania, August 23, 2016 (invited), “*Tailoring the properties of surfaces using thin films.*”

American Nuclear Society Summer 2016 National Meeting — New Orleans, Louisiana, June 15, 2016 (invited), “*Materials Characterization using the Facilities of the Center for Synchrotron Radiation Research and Instrumentation (CSRRI): A NSUF Partner Facility.*”

Advanced Test Reactor Users Week, Idaho National Laboratory — Idaho Falls, Idaho, June 6, 2016 (invited), “*Nuclear Research at MRCAT.*”

Seventh International Chemical Congress of Pacific Basin Societies — Honolulu, Hawaii, December 17, 2015, “*Controlled Growth of Planar Boron Nitride on Tailored Thin Film Substrates Using Pulsed Laser Deposition.*”

The Bulletin of the Atomic Scientists' 6th Annual Clock Symposium — Chicago, Illinois, November 16, 2015 (invited), “*Nuclear Security: After the Iran Deal, What's Next for Nuclear Security?.*”

Canadian Light Source Seminar — Saskatoon, Saskatchewan, October 28, 2015 (invited), “*Surface Science in the Wild: Using Synchrotron Radiation and Lab Grown Thin Films to Understand the Behavior of SiC in Accident Tolerant Nuclear Fuels.*”

Sixty–Second National Symposium of the American Vacuum Society — San Jose, California, October 22, 2015 (invited), “*Surface Science in the Wild: Using Synchrotron Radiation and Lab Grown Thin Films to Understand the Behavior of SiC in Accident Tolerant Nuclear Fuels.*”

Advanced Test Reactor Users Week, Idaho National Laboratory — Idaho Falls, Idaho, June 22, 2015 (invited), “*Nuclear Research at MRCAT.*”

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PITTCON 2015 — New Orleans, Louisiana, March 12, 2015 (invited), *"Photoelectron Spectroscopy: From Surface Chemistry to Thin Films."*

National Superconducting Cyclotron Laboratory (NSCL) Seminar, Michigan State University — East Lansing, Michigan, February 26, 2015 (invited), *"Monitoring Radiation Damage in Material For Accident-Tolerant Nuclear Fuels."*

Chemistry Department Seminar, Washington State University — Pullman, Washington, February 9, 2015 (invited), *"Monitoring Radiation Damage in Material For Accident-Tolerant Nuclear Fuels."*

Institute of Materials Engineering Seminar, Australian Nuclear Science and Technology Organization (ANSTO) — Lucas Heights, Australia, February 4, 2015 (invited), *"Monitoring Radiation Damage in Material For Accident-Tolerant Nuclear Fuels."*

Climate and Ecology Centre Seminar, University of Adelaide — Adelaide, Australia, February 2, 2015 (invited), *"Small Modular Nuclear Reactors: Parametric Modeling of Integrated Reactor Vessel Manufacturing Within A Factory Environment."*

PacSurf 2014 — Kohala Coast, Hawaii, December 10, 2014, *"Ag/MgO is a Good Substrate for Epitaxial Deposition of Thin Films or Things You Discover When You Are Trying To Make Ultra-thin Multilayered MgO/Ag/MgO Films For Use As Photocathodes."*

Physics Department Seminar, Google Hangout, University of Central Arkansas — Conway, Arkansas, November 18, 2014 (invited), *"Understanding US Energy Policy."*

Global Physics Department Seminar, Hamline University — St. Paul, Minnesota, October 29, 2014 (invited), *"Teaching Physics: Is it 1814 or 2014?"*

Denver X-ray Conference: Sixty-Third Annual Conference on Application of X-ray Analysis — Big Sky, Montana, July 31, 2014 (invited), *"X-ray Absorption Spectroscopy and Photoelectron Spectroscopy of Nuclear Materials."*

World Nuclear Association Seminar — London, United Kingdom, March 26, 2014 (invited), *"Characterization of Nuclear Materials With Synchrotron Radiation."*

Birmingham Centre of Nuclear Education and Research Seminar, University of Birmingham — Birmingham, United Kingdom, March 24, 2014 (invited), *"Characterization of Nuclear Materials With Synchrotron Radiation."*

Two Hundred Forty-Seventh American Chemical Society National Meeting and Exposition — Dallas, Texas, March 18, 2014 (invited), *"Small modular reactors: Can they be built in a timely, cost effective manner?"*

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Nuclear Materials Science and Technology Seminar, Oak Ridge National Laboratory — Oak Ridge, Tennessee, March 3, 2014 (invited), “*Characterization of Nuclear Materials With Synchrotron Radiation.*”

Chemistry Department Seminar, University of Missouri, Columbia — Columbia, Missouri, February 11, 2014 (invited), “*Monitoring Radiation Damage in Material For Accident-Tolerant Nuclear Fuels.*”

American Nuclear Society Winter 2013 National Meeting — Washington, D. C., November 14, 2013 (invited), “*SMR Manufacturing/Modular Construction Processes.*”

Physics Department Seminar, Illinois Institute of Technology — Chicago, Illinois, September 26, 2013 (invited), “*Small Modular Nuclear Reactors: Parametric Modeling of Integrated Reactor Vessel Manufacturing Within A Factory Environment.*”

ATR NSUF Industry Advisory Committee Meeting, Electric Power Research Institute — Charlotte, North Carolina, September 10, 2013 (invited), “*Vision for the Advanced Test Reactor National Scientific User Facility.*”

Energy Policy Institute at Chicago Seminar, University of Chicago — Chicago, Illinois, August 29, 2013 (invited), “*Small Modular Nuclear Reactors: Parametric Modeling of Integrated Reactor Vessel Manufacturing Within A Factory Environment.*”

Boeing Scholars Seminar, Illinois Institute of Technology — Chicago, Illinois, July 8, 2013 (invited), “*The Future of U. S. Energy Policy.*”

Advanced Test Reactor Users Week, Idaho National Laboratory — Idaho Falls, Idaho, June 10, 2013 (invited), “*State of The Advanced Test Reactor Users Organization.*”

American Nuclear Society, Chicago Chapter Meeting — Chicago, Illinois, April 17, 2013 (invited), “*Synchrotron Radiation Studies of Advanced Nuclear Energy Materials.*”

Physics Department Seminar, Illinois Institute of Technology — Chicago, Illinois, March 14, 2013 (invited), “*Synchrotron Radiation Studies of Advanced Nuclear Energy Materials.*”

Materials Science and Engineering Department Colloquium, Columbia, University — New York, New York, March 1, 2013 (invited), “*Synchrotron Radiation Studies of Advanced Nuclear Energy Materials.*”

NuMat 2012: The Nuclear Materials Conference — Osaka, Japan, October 23, 2012 (invited, Plenary), “*Synchrotron Radiation Studies of Advanced Nuclear Energy Materials.*”

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International Workshop On Scattering Techniques For Nuclear Materials 2012 — Berkeley, California, October 19, 2012 (invited), “*Synchrotron Radiation Characterization of ZrC and ZrN.*”

American Nuclear Society Summer 2012 National Meeting — Chicago, Illinois, June 28, 2012, “*Radiation Damage In ZrC and ZrN.*”

American Nuclear Society Summer 2012 National Meeting / Advanced Test Reactor Users Organization Meeting — Chicago, Illinois, June 26, 2012, “*Status of the Advanced Test Reactor National Scientific User Facility.*”

Advanced Test Reactor Users Week, Idaho National Laboratory — Idaho Falls, Idaho, June 22, 2012 (invited), “*The Future of U. S. Energy Policy.*”

Advanced Test Reactor Users Week, Idaho National Laboratory — Idaho Falls, Idaho, June 21, 2012 (invited), “*State of The Advanced Test Reactor Users Organization.*”

ATR NSUF Industry Advisory Committee Meeting, Electric Power Research Institute — Charlotte, North Carolina, May 1, 2012, “*ATR NSUF partner experience and MRCAT beamline experiments.*”

UTANS Seminar, University of Tennessee, Knoxville — Knoxville, Tennessee, March 26, 2012, “*Status of the Advanced Test Reactor National Scientific User Facility.*”

INEST Fuel Cycle COR Meeting — Corvallis, Oregon, February 21, 2012, “*Status of the Advanced Test Reactor National Scientific User Facility.*”

National Nuclear Science Day 2012 — Chicago, Illinois, January 25, 2012, “*Shaping the Future of US Nuclear Energy.*”

American Nuclear Society Winter 2011 National Meeting / Advanced Test Reactor Users Organization Meeting — Washington, D. C., November 1, 2011, “*Status of the Advanced Test Reactor National Scientific User Facility.*”

Advanced Test Reactor Synchrotron Radiation Workshop, Idaho National Laboratory — Idaho Falls, Idaho, June 7, 2011 (invited), “*Radiation Damage In ZrC and ZrN.*”

Advanced Test Reactor Synchrotron Radiation Workshop, Idaho National Laboratory — Idaho Falls, Idaho, June 6, 2011 (invited), “*State of The Advanced Test Reactor Users Organization.*”

Physics Department Seminar, New Mexico State University — Las Cruces, New Mexico, April 19, 2011, “*Nuclear Power and Fukushima.*”

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Chemistry Department Seminar, Illinois Institute of Technology — Chicago, Illinois, March 23, 2011, “*Nuclear Power and Fukushima.*”

Sixth International Chemical Congress of Pacific Basin Societies — Honolulu, Hawaii, December 19, 2010, “*Synchrotron Radiation Characterization of In-Reactor Irradiated Materials.*”

Physics Department Seminar, Illinois Institute of Technology — Chicago, Illinois, October 14, 2010 (invited), “*Synchrotron Radiation and Nuclear Energy.*”

Chemical Engineering Seminar, University of Missouri, Columbia — Columbia, Missouri, September 30, 2010 (invited), “*Synchrotron Radiation and Nuclear Energy.*”

Actinide and Brine Chemistry in a Salt Repository Workshop — Carlsbad, New Mexico, September 15, 2010 (invited), “*Investigation of Iron Corrosion Products from Brines Using XAFS.*”

Nuclear Engineering Seminar, University of Michigan — Ann Arbor, Michigan, July 29, 2010 (invited), “*Nuclear Research at Synchrotron Radiation Facilities.*”

American Nuclear Society Summer 2010 National Meeting — San Diego, California, June 14, 2010 (invited), “*Nuclear Research at Synchrotron Radiation Facilities.*”

Advanced Test Reactor Synchrotron Radiation Workshop, Idaho National Laboratory — Idaho Falls, Idaho, June 8, 2010 (invited), “*Synchrotron Radiation Characterization of Carbide Samples.*”

Sargent and Lundy Officers’ Workshop 2010 — Chicago, IL, April 30, 2010 (invited), “*The Nuclear Option.*”

Two Hundred Thirty-Ninth American Chemical Society National Meeting and Exposition — San Francisco, California, March 22, 2010 (invited), “*Characterization of arsenic adsorption by Fe₂O₃ supported on granular activated carbon (GAC).*”

Surface Analysis 2010 — Orlando, Florida, March 8, 2010 (invited), “*Electronic Structure of PLZT Thin Films.*”

Midwest Meeting of Daya Bay Collaborators — Chicago, Illinois, March 6, 2010 (invited), “*X-ray studies of the Daya Bay Liquid Scintillator.*”

Physics Department Seminar, Illinois Institute of Technology — Chicago, Illinois, March 4, 2010 (invited), “*Antineutrino Detection At Daya Bay and Polar Stationary Phase Functionalized Porous Graphite.*”

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Chemistry and Materials Science Joint Department Seminar, University of Texas, El Paso – El Paso, Texas, January 22, 2010, “*Examples of Synchrotron Radiation Studies: Thin Films and Surface Chemistry.*”

Chemical Engineering Department Seminar, New Mexico State University – Las Cruces, New Mexico, January 21, 2010, “*Power is Everything.*”

Synchrotron Radiation Center Users’ Meeting, Synchrotron Radiation Center – Stoughton, Wisconsin, October 23, 2009 (invited), “*Electronic Structure of PLZT Thin Films.*”

Characterization of Activated Samples at Neutron and X-ray User Facilities Workshop, Los Alamos National Laboratory – Santa Fe, New Mexico, September 22, 2009 (invited), “*Probing Radiation Damage In Solids At The Millimeter Scale Using Synchrotron Radiation Techniques.*”

Advanced Test Reactor Synchrotron Radiation Workshop, Idaho National Laboratory – Idaho Falls, Idaho, June 3, 2009 (invited), “*Examination of Radiation Damage In Solids Using Synchrotron Radiation Techniques.*”

Advanced Test Reactor National Scientific User Facility Seminar, Idaho National Laboratory – Idaho Falls, Idaho, March 16, 2009 (invited), “*Examination of Radiation Damage In Solids Using Synchrotron Radiation Techniques.*”

Advanced Photon Source Scientific Advisory Committee Seminar, Argonne National Laboratory – Argonne, Illinois, January, 21, 2009 (invited), “*Nuclear and Radiological Research Collaborative Access Team.*”

Condensed Matter and Materials Physics Seminar, Advanced Photon Source Renewal – Lisle, Illinois, October 20, 2008 (invited), “*Hard X-ray Photoemission.*”

Show and Tell: An Evening of New Ideas, School of Design, Illinois Institute of Technology – Chicago, IL, July 31, 2008 (invited), “*Charting the Heavens With An iPhone™.*”

Chemistry Department Seminar, Brigham Young University – Provo, Utah, November 7, 2007 (invited), “*Synchrotron Radiation Studies of Environmental Chemistry.*”

Physics Department Seminar, University of Texas, El Paso – El Paso, Texas, April 6, 2007, “*Synchrotron Radiation 101: Introduction to Synchrotron Radiation.*”

Physics Department Seminar, Spellman College – Atlanta, Georgia, April 4, 2007 (invited), “*Synchrotron Radiation 101: Introduction to Synchrotron Radiation.*”

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Physics Department Seminar, Jackson State University — Jackson, Mississippi, April 2, 2007, “*Synchrotron Radiation 101: Introduction to Synchrotron Radiation.*”

Physics Division Seminar, Illinois Institute of Technology — Chicago, Illinois, November 9, 2006 (invited), “*iCCD For Image Processing and Image Collection.*”

Fifth International Chemical Congress of Pacific Basin Societies — Honolulu, Hawaii,, December 19, 2005, “*Reduction of Tc and U in the Environment with S²⁻.*”

Nuclear Engineering Seminar, University of Texas, Austin — Austin, Texas, January 27, 2005 (invited), “*Synchrotrons, X-rays, and Energy-Related Research.*”

Advanced Photon Source Seminar, Argonne National Laboratory — Argonne, Illinois, November 20, 2003 (invited), “*Radiopharmaceutical Studies at MR-CAT.*”

National Chemistry Day Seminar, American Chemical Society, Chicago Chapter — Chicago, Illinois, October 25, 2003 (invited), “*Chemistry and Space Exploration.*”

Chemistry Department Seminar, University of Missouri, Columbia — Columbia, Missouri, October 7, 2003 (invited), “*Structure of Nanosystems.*”

Marc VI Conference on Radioanalytical Chemistry — Kona, Hawaii, April 11, 2003 , “*Determination of Local Atomic Structure in Tc Compounds and Radiopharmaceuticals.*”

Stanford Synchrotron Radiation Laboratory Colloquium, Stanford University — Stanford, California, April 4, 2003 (invited), “*Energy and XAFS.*”

Physics Department Colloquium, University of Missouri, Rolla — Rolla, Missouri, February 13, 2003 (invited), “*Local Structure of Radiolytically-Synthesized Nanoclusters.*”

Fourth International Chemical Congress of Pacific Basin Societies — Honolulu, Hawaii, December 15, 2000, “*Recent Advances in Actinide EXAFS.*”

Physics Department Colloquium, University of Toledo — Toledo, Ohio, October 24-25, 2000 (invited), “*Spin and Orbital Magnetism in 5f Materials.*”

Biological, Chemical, and Physical Sciences Seminar, Illinois Institute of Technology — Chicago, Illinois, September 24, 2000 (invited), “*Synchrotron Radiation Investigations of Actinides and Radiation Damage.*”

Radiochemistry/Nuclear Engineering Seminar, University of Missouri, Columbia — Columbia, Missouri, April 24-25, 2000 (invited), “*Synchrotron Radiation Investigations of Actinides and Radiation Damage.*”

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BESSRC CAT 2000 Workshop, Argonne National Laboratory — Argonne, Illinois, April 7, 2000 (invited), "*Principal Component Analysis of X-ray Absorption Spectra from Pu Alloys.*"

American Physical Society March Meeting 2000 — Minneapolis, Minnesota, March, 2000 (invited replacement for G. van der Laan), "*Spin and Orbital Magnetism in 5f Materials.*"

Materials Engineering Seminar, Colorado School of Mines — Golden, Colorado, March 2, 2000 (invited), "*Electronic and Geometric Structure of Pu Alloys.*"

Inorganic Chemistry Seminar, Florida State University — Tallahassee, Florida, February 10-11, 2000 (invited), "*Synchrotron Radiation Investigations of Plutonium Alloys and Compounds.*"

Rare Earth Research Conference, Argonne National Laboratory — Argonne, Illinois, July, 1999, "*Electronic and Geometric Structure of Pu Alloys.*"

Nuclear Materials and Technology Division Review, Los Alamos National Laboratory — Los Alamos, New Mexico, May, 1999 (invited), "*Electronic Structure of Pu Metal Allotropes.*"

American Vacuum Society (NM Chapter), 35th Annual Symposium — Albuquerque, New Mexico, April, 1999 (invited), "*Introduction to Synchrotron Radiation.*"

International Conference on Spectromicroscopy — Stoughton, Wisconsin, October, 1998, "*Synchrotron Radiation Studies of Plutonium Compounds.*"

Doctoral Dissertation Defense, Stanford University — Stanford, California, November 21, 1996, "*Atomic and Electronic Structures of Novel Silicon Surface Structures.*"

SIRM Meeting of the Northern California Chapter of the American Vacuum Society — Stanford, California, September, 1996, "*Application of X-ray Photoelectron Diffraction to Chemically Modified Silicon(111) Surfaces.*"

First International Conference on Synchrotron Radiation in Materials Science — Chicago, Illinois, July–August, 1996, "*Measurement of the Electronic Structure of Solids with a Display Spectrometer.*"

First International Conference on Synchrotron Radiation in Materials Science — Chicago, Illinois, July–August, 1996, "*Synchrotron Radiation Studies of Chemically Modified Si(111) Surfaces.*"

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Nuclear Materials and Technology Division Seminar, Los Alamos National Laboratory — Los Alamos, New Mexico, June 28, 1996 (invited), “*Application of X-ray Photoelectron Diffraction and Extended X-ray Absorption Fine Structure Spectroscopy to Chemically Modified Silicon(111) Surfaces.*”

Solid State Physics Seminar, University of Wisconsin, Madison — Madison, Wisconsin, April 11, 1996 (invited), “*Characterization of Pentyl-Terminated Si(111) Using Synchrotron Radiation.*”

Third International Chemical Congress of Pacific Basin Societies — Honolulu, Hawaii, December, 1995, “*Characterization of Alkyl-Terminated Silicon(111) Surfaces.*”

Fortieth National Symposium of the American Vacuum Society — Orlando, Florida, November, 1993, “*Photoemission study of Au, Ge, and O₂ deposition on NH₄F etched Si(111).*”

Thirty-Ninth National Symposium of the American Vacuum Society — Chicago, Illinois, November, 1992, “*Near Edge X-Ray Absorption of Light Emitting Porous Silicon.*”

Chemical Surface Preparation, Passivation and Cleaning for Semiconductor Growth and Processing Symposium, Materials Research Society Spring Meeting — San Francisco, California, April, 1992, “*A Photoemission Study of Electrochemically Etched Light Emitting Silicon.*”

Funded Proposals

Department of Energy (NEET), “Understand the phase transformation of thermally aged and neutron irradiated duplex stainless steels used in LWRs,” Oct 2016-September 2019, PI

Department of Energy (Idaho National Laboratory Subcontract), “Materials Characterization Using the Facilities Operated by the Center For Synchrotron Radiation and Instrumentation (CSRRI) at the Advanced Photon Source (APS): Illinois Structural Samples,” July 2016-September 2017, PI

Department of Energy (Idaho National Laboratory Subcontract), “Materials Characterization Using the Facilities Operated by the Center For Synchrotron Radiation and Instrumentation (CSRRI) at the Advanced Photon Source (APS): Purdue University Samples,” February 2016-September 2017, PI

National Science Foundation (Physics), “Advanced Accelerator Research: Photocathode Sources,” August 2015-July 2018, co-PI

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Department of Energy (Oak Ridge National Laboratory Subcontract), "Study of Irradiated TRISO Particles," July 2015-July 2017, PI

Department of Energy (Idaho National Laboratory Subcontract), "Materials Characterization Using the Facilities Operated by the Center For Synchrotron Radiation and Instrumentation (CSRRI) at the Advanced Photon Source (APS): TRISO," November 2014-September 2016, PI

WISER 2014 Interdisciplinary Seed Funding Grants (ISFG) Program, "WISER: Quantum Chemistry Based Determination of Oxidative-Aging Pathway of Asphalt and Development of Bio-Based Sustainable Solutions," June 2014-August 2015, co-PI

Department of Energy (Idaho National Laboratory Subcontract), "Materials Characterization Using the Facilities Operated by the Center For Synchrotron Radiation and Instrumentation (CSRRI) at the Advanced Photon Source (APS): Technetium," June 2014-September 2014, PI

Department of Energy (Idaho National Laboratory Subcontract), "Microstructural Evolutions in Irradiated UO₂," October 2013-September 2016, PI

Department of Energy (Idaho National Laboratory Subcontract), "Characterization of Irradiated Fuels and Claddings," August 2013-October 2014, PI

Department of Energy (Idaho National Laboratory Subcontract), "Advanced Test Reactor Support," August 2013-January 2014, PI

Department of Energy (Idaho National Laboratory Subcontract), "Materials Characterization Using the Facilities Operated by the Center For Synchrotron Radiation and Instrumentation (CSRRI) at the Advanced Photon Source (APS) for the Nuclear Energy Community," May 2013-September 2016, PI

Department of Energy (Nuclear Energy), "Determination of Microstructure and Chemical State Changes in Ion-irradiated Fuels and Structural Components With A High Kinetic Energy Electron Detector," June 2012- July 2013, PI

Department of Energy (Argonne National Laboratory Subcontract), "Economic Study – Phase II – the Economics of Mass Manufacturing of Small Modular Reactors," April 2012-August 2013, PI

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Department of Energy (Los Alamos National Laboratory Subcontract), "Fuel Pellet Tomography," November 2010-December 2010, PI

Department of Energy (Nuclear Energy), "Stress-Strain Measurements Using Illinois Institute of Technology Beamlines With A Two-Dimensional X-ray Area Detector Coupled To Both Radioactive and Non-Radioactive Tensile Stages," July 2010-August 2011, PI

National Science Foundation (Physics), "Advanced Accelerator Physics Research on Electron Beam Sources," July 2010-June 2014, co-PI

Department of Energy (Los Alamos National Laboratory Subcontract), "Solids Characterization of Actinide Environmental Samples," January 2009-March 2011, PI

Department of Energy (Idaho National Laboratory Subcontract), "Characterization of Irradiated Structural Materials Utilizing Synchrotron X-ray Techniques," October 2009-September 2014, PI

Electric Power Research Institute, "Photoelectrochemical Analysis of Zr and Ni Alloys using the MRCAT Beamline at the Advanced Photon Source," October 2009-June 2010, PI

Electric Power Research Institute, "Photoelectrochemical Analysis of Zr and Ni Alloys using the MRCAT Beamline at the Advanced Photon Source," March 2009-May 2009, PI

Department of Energy (Argonne National Laboratory Subcontract), "Support For The Nuclear and Radiological Research CAT," January 2009-June 2009, PI

Department of Energy (Los Alamos National Laboratory Subcontract), "Solids Characterization of Actinide Environmental Samples Utilizing The MRCAT Beamline," April 2007-December 2008, PI

Department of Energy (Nuclear Energy), "In-Situ Spectroscopic Studies of the Fundamental Chemistry of Pb and Pb-Bi Corrosion Processes at High Temperatures: Development and Assessment of Composite Corrosion Resistant Materials," January 2005-December 2008, Co-PI

University of Toledo (subcontract), "X-ray Absorption Studies of Cu Impurities in CdTe," February 2004-December 2004, PI

Department of Energy (Savannah River Subcontract), "Speciation of Uranium in Spent Fuel Waste," June 2003-December 2003, co-PI

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Department of Energy (Environmental Molecular Sciences Program), "Interfacial Reduction-Oxidation Mechanisms Governing Fate and Transport of Contaminants in the Vadose Zone," September 2003-December 2007, Co-PI

Department of Energy (Basic Energy Sciences), "Scientific Support of the MR-CAT Beamline," September 2003-May 2005, Co-PI

Memberships

American Vacuum Society

American Chemical Society

American Nuclear Society

American Physical Society

References

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