ERIC BORGUET

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Academic Appointments

Hazel Tomlinson Professor of Chemistry, Temple University	2023-present
Professor of Chemistry, Temple University	2007-present
Associate Professor of Chemistry, Temple University	2004-2007
Assistant Professor of Chemistry, University of Pittsburgh	1996-2004

Research Interests

Nanotechnology and Nanoscale Processes at Interfaces, Plasmonics, Nonlinear Optics, Ultrafast Dynamics, Environmental Chemistry, Nanomaterials, Scanning Probe Microscopy, Sensors for Biological and Chemical Agents

Education

Post-doctoral Research Fellow, Columbia University, New York 1993-1996
"Nonlinear Optical Studies of Spectroscopy and Dynamics at Liquid Interfaces"
Advisor: Professor Kenneth Eisenthal

Ph.D., University of Pennsylvania, Philadelphia, Pennsylvania 1993
"Spectroscopic Study of Adsorption and Intermolecular Interactions on Stepped Metal Surfaces"
Advisor: Professor Hai-Lung Dai

B.Sc. (Maîtrise de Chimie-Physique), Université de Paris-Sud (XI-Orsay), France 1986

Honors and Awards

Morino Lectureship, Japan	2019-2020
Honorary Visiting Professor, Indian Institute of Technology-Bombay, India	2019-2020
Fulbright Specialist Roster	2018-2023
Visiting Professor, Université Paul Sabatier, Toulouse, France	2013
Temple University CST Dean's Distinguished Excellence in Mentoring Award	2012
Visiting Professor, Hokkaido University, Japan	2012
American Physical Society, Fellow	2010
Adjunct Professor, Tohoku University, Sendai, Japan	2010-2013
American Chemical Society, Philadelphia Section Award	2009
U.S. Young Observer to 2007 IUPAC General Assembly and Congress	2007
Visiting Fellow, Japan Society for the Promotion of Science	2007-2008
Adjunct Professor of Chemical & Petroleum Engineering, University of Pittsburgh	2002-2011
Visiting Professor, Université de Bordeaux, France	1999
NSF CAREER Award	1998-2002
Sigma Xi (The Scientific Research Society)	1996
University Research Fellowship, University of Pennsylvania	1987-1993
Pre-doctoral Summer Fellowship, University of Pennsylvania	1986

Funded research contracts from NSF, Research Corporation, DOE, DTRA, DARPA, ACS-PRF, DOE-NETL, NASA, Nanotechnology Institute
Editorial Advisory Board: Chemical Physics, Journal of Chemical Physics

Professional Affiliations

American Chemical Society, American Physical Society, Electrochemical Society
International Society of Electrochemistry

External Funding

(Total awards as PI or co-PI $38,722,480)

Current External Funding (Total: $9,354,451)

Agency: DTRA Program:BAA
Title: **Energy Harvesting and Storage with Stratified Hybrid MOFs for Around the Clock Destruction of Chemical Warfare Agents**
Co-PIs: J. K Johnson, J. Millstone, N. Rosi, R. Frontiera
Amount: $2,500,000 ($500,000 to Borguet group) Award Period: 06/01/21-05/30/26

Agency: NSF (CHE 2102557) Program: CHE
Title: **Understanding the Fundamental Behavior of Single Molecule Electrical Junctions**
Amount: $550,000 Award Period: 08/15/21-07/31/24

Agency: DOE Program: BES
Title: **A New Paradigm for Water Splitting in Layered Materials by Modulation of Catalyst Oxidation State**
Co-PIs: M. Zdilla, J. Perdew
Amount: $1,309,873 Award Period: 06/01/22-05/31/25

Agency: DTRA Program:BAA
Title: **Rapid Response Development of Molecular Lego-like SYMBAs**
Co-PIs: C. Schafmeister, J. Hines (Sensanna)
Amount: $4,994,578 ($282,959 to Borguet group) Award Period: 06/01/22-05/30/26

Proposals Pending

Agency: Keck Foundation Program:Phase 1
Title: **Observing Small Molecules in Action at Living Cell Membranes with Subcellular Spatial and Real Time Resolutions**
Co-PIs: H.L. Dai, Gerhard, W. Yang
Amount: $1,200,000 Award Period: 06/01/24-05/30/27

Previous Funding (Total $29,363,029)
($1,419,795)

Agency: The University of Pittsburgh. Program: Research Development Fund
Title: **Dynamics at Buried Interfaces**
Amount: $14,000 Award Period: 07/1/97-06/30/98

Agency: The Research Corporation. Program: Research Innovations
Title: **"Experimental Molecular Dynamics". Dynamics of Surface Processes with Combined Atomic and Ultrafast Resolution**
Amount: $35,000 Award Period: 01/01/98 -01/31/00

Agency: NSF Program: CAREER (CHE-9734273)
Title: **Structure, Dynamics and Reactivity at Electrode Interfaces**
Amount: $320,000 Award Period: 02/01/98 -01/31/02

Agency: DOE Program: Advanced Coal Research
Title: **Combined Theoretical and Experimental Investigation of Mechanisms and Kinetics of Vapor-Phase Mercury Uptake by Carbonaceous Surfaces**
Co PI's: K. Johnson (Chemical Engineering), R. Vidic (Environmental Engineering)
Amount: $360,931 Award Period: 9/1/98-3/31/01

Agency: NSF Program: NSF-CNRS INT-98-15824
Title**: Spectroscopy and Dynamics of Thermal Energy Relaxation Processes at Interfaces by Infrared-Second Harmonic Generation**
Amount: $18,000 Award Period: 03/01/99 -02/28/02

Agency: ACS-PRF Program: Type G
Title: **Dynamics & Reactivity of Photoexcited Electrons at Electrochemical Interfaces**
Amount: $25,000 Award Period: 5/1/2000-8/31/2002

Agency: National Energy Technology Laboratory (NETL) Program: Student Partnership
Title: **Adsorption on Nanotubes**
Co- PI Prof. R. Vidic -Civil and Environmental Engineering
Amount: $35,000 Award Period: 2/01/02-1/31/03

Agency: NSF Program: Research Experience for Undergraduates
Title: **Research Experience for Undergraduates in Physics - Focus on Minorities**
Co-PI, J.A. Thompson, J. Mueller, D.L. Naples, O. Onipede
Amount: $199,032 Award Period: 5/1/2000-4/30/2003

Agency: NSF (DMR 0116034) Program: Major Research Instrumentation
Title: **Development of an Ultrafast Time-Resolved Microscope for Imaging Charge Carrier Dynamics in Complex Materials**
Co-PI: H. Petek, J. Levy, J. T. Yates Jr.
Amount: $412,832 Award Period: 8/01/01-7/31/04

Previous Funding (contd.)
($1,850,542)

Agency: NSF (BES 0202015) Program: Engineering Division
Title: **Development of Novel Mercury Adsorbents through Applied Industrial Ecology**
Co- PI Prof. R. Vidic - Civil and Environmental Engineering
Amount: $376,180 Award Period: 7/01/02-6/30/05

Agency: ACS-PRF Program: Type AC
Title**: Thermal Energy Relaxation Pathways at Aqueous Interfaces**
Amount: $120,000 Award Period: 7/01/03-6/30/06

Agency: NSF (NER DMI 0508508) Program: NSF-NER
Title: **Templated Assembly of Functional Nanostructures**
Amount: $100, 000 Award Period: 7/01/05-6/30/06

Agency: NSF (PHY 0244105) Program: Research Experience for Undergraduates
Title: **Research Experience for Undergraduates in Physics - Focus on Minorities**
Co-PI, J.A. Thompson, J. Mueller, D.L. Naples, O. Onipede
Amount: $333,655 Award Period: 6/15/03-5/31/08

Agency: NSF Program: Research Experience for Undergraduates (REU)
Title: **REU Supplement to CRC: Long-Range Electron Transfer in Hybrid Inorganic-Peptide Nucleic Acid Nanoscale Assemblies**
Amount: $12,000 Award Period: 07/01/07-06/31/08

Agency: NSF (CHE 0456965) Program: Surface and Analytical Chemistry
Title: **A Real Time and Molecular Resolution Investigation of the Dynamics of Self Assembly at Electrochemical Interfaces**
Amount: $324,001 Award Period: 7/01/04-12/31/07

Agency: DOE (DE-FG02-05ER15638) Program: Basic Energy Sciences
Title: **Real Time Dynamics of Laser Activated Interface Processes at the Molecular Scale**
Amount: $443,354 Award Period: 02/01/05-12/30/07

Agency: DOE Program: UCR
Title: **Mercury Speciation in Coal-Fired Power Plant Flue Gas - Experimental Studies And Model Development**
(co-PI R. Vidic-Pitt, J.R.V. Flora, University of South Carolina)
Amount: $100,000 (Temple award exclusively) Award Period: 8/01/05-7/31/08

Agency: NASA Program: STTR-Phase I
Title: **Passive Wireless Humidity Sensors Using Orthogonal Frequency Coded Acoustic Wave Devices**
(in collaboration with Applied Sensor Research & Development Corporation)
Amount: $41,352 (Temple award exclusively) Award Period: 3/01/08-2/28/09

Previous Funding (contd.)

Agency: NASA Program: STTR, Phase II
Title: **Passive Wireless Hydrogen Sensors Using Orthogonal Frequency Coded Acoustic Wave Devices**
(subcontract on Phase II award to Applied Sensor Research & Development Corporation)
Amount: $108,988 (Temple award exclusively) Award Period: 9/01/07-8/31/09

Agency: NASA Program: STTR, Phase I
Title: **Rapid Hydrogen and Methane Sensors for Wireless Leak Detection**
(subcontract on Phase I award to Applied Sensor Research & Development Corporation)
Amount: $13,501 (Temple award exclusively) Award Period: 02/01/10-07/30/10

Agency: Pennsylvania Nanotechnology Institute Program: PSTR
Title: **Large-scale purification of carbon nanotubes by dynamic annealing**
Amount: $ 60,000 Award Period: 7/01/09-09/30/10

Agency: Pennsylvania Nanotechnology Institute Program: Core Grant
Title: **Nanoscale Cellular Probes**
Co- PIs: H. Bau (Penn), P Ducheyne (Penn), N. Dun (Temple), Y. Gogotsi (Drexel)
Amount: $ 99,000 (Temple award to Borguet group exclusively) Award Period: 9/01/08-09/30/10

Agency: Pennsylvania Nanotechnology Institute Program: Core Grant
Title: **Array piezoelectric nanocantilever sensors to detect immune responses to therapeutic monoclonal antibodies and breast cancer markers**
Co- PIs: W-.Y. Shih (Drexel), W.-H. Shih (Drexel) G.P. Adams (Fox Chase Cancer Center), H. Borghaei (Fox Chase Cancer Center)
Amount: $ 80,434 (Temple award to Borguet group exclusively) Award Period: 9/01/08-09/30/10

Agency: NSF (CHE 0628169) Program: Collaborative Research in Chemistry
Title: **CRC: Long-Range Electron Transfer in Hybrid Inorganic-Peptide Nucleic Acid Nanoscale Assemblies**
Co- PIs; C. Achim (Carnegie Mellon University)**,** Y. He (Temple), M. Madrid (Pittsburgh Supercomputer Center)**,** D. H. Waldeck (University of Pittsburgh)
Amount: $481,655 (Temple award to Borguet group exclusively) Award Period: 09/01/06-08/31/11

Agency: NATO Program: SCIENCE FOR PEACE AND SECURITY
Title: **Gas Analytical System Based on Nanosensor to Analyse Fire-Presage Gases**
Amount: $9,779 (EURO 7,000) Award Period: 09/01/10-08/31/11

Agency: NASA Program: STTR, Phase II
Title: **Passive Wireless SAW Humidity Sensors and System**
(subcontract on Phase II award to Applied Sensor Research & Development Corporation)
Amount: $173,759 (Temple award exclusively) Award Period: 01/01/10-9/30/11

Agency: ACS-PRF Program: New Directions
Title: **Acid-base chemistry at the aqueous-mineral interface**
Amount: $100,000 Award Period: 01/01/09-12/30/11

Previous Funding (contd.)

Agency: NASA Program: STTR, Phase I
Title: **Hypergol Sensor Using Passive Wireless Saw Devices**
(as subcontract to Applied Sensor Research & Development Corporation)
Amount: $30,017 (Temple award exclusively) Award Period: 04/01/11-12/31/11

Agency: NSF (CHE 0809838) Program: Surface and Analytical Chemistry
Title: **A Molecular Resolution Investigation of Electron Transfer at Electrochemical Interfaces**
Amount: $426,205 Award Period: 7/01/08-6/30/12

Agency: NSF Program: MRI
Title: **MRI: Acquisition of a Transmission Electron Microscope for Multidisciplinary Research**
Co-PIs: D. Strongin, L. C. Knight, Parsaoran Hutapea, Bradford Wayland
Amount: $431,480 Award Period: 08/01/09-07/30/12

Agency: Lockheed-Martin Program: Surface chemistry
Title: **Photoreactivity of Surfaces**
Amount: $42,750 Award Period: 03/25/13-10/25/13

Agency: DARPA Program: LoCo
Title: **Coherent Photoreactivity of Surfaces**
Co-PI: Robert Levis
Amount: $100,000 Award Period: 05/09/13-04/30/14

Agency: Exxon-Mobil Program: EMRE
Title: **Interface between water and a carbonate mineral oxide model system**
Amount: $70,000 Award Period: 09/01/13-08/30/14

Agency: DARPA Program: LoCo
Title: **LoCo-4C: Local Control of Materials Synthesis**
Co-PI: Robert Levis
Amount: $571,048 Award Period: 12/01/13-12/31/14

Agency: DARPA Program: LoCo
Title: **DARPA LoCo FOUR-C: Local Control of Materials Syntheses - Fundamental Optimal Dynamic Discrimination for User-defined Reaction-Control**
Co-PI: Robert Levis
Amount: $120,841 Award Period: 06/01/14-11/31/14

Agency: NSF Program: NSF Graduate Teaching Fellows in K-12 Education
Title: **Scientists as Teachers; Teachers as Scientists**
Co-PIs: Shohreh Amini, Judith Stull, Nina Hillman
Amount: $2,917,073 Award Period: 05/01/09-04/30/15

Previous Funding (contd.)

Agency: NSF (CHE-1337880) Program: MRI
Title: **MRI:Development of a high energy, ultrabroadband, ultrashort infrared laser source**
Amount: $821,431 ($645,432.00 excluding TU cost share) Award Period: 09/15/13 - 08/31/17

Agency: DOE Program: EFRC
Title: **Center for the Computational Design of Functional Layered Materials**
Director: John P. Perdew (TU). Co-PIs: Arun Bansil (Northeastern), Gustavo E. Scuseria (Rice), David J. Srolovitz (Penn), Daniel R. Strongin (TU), Xiaoxing Xi (TU). Other Principal Investigators: Eric Borguet (TU), Linyou Cao (North Carolina State), Mikko Haataja (Princeton), Maria Iavarone (TU), Goran Karapetrov (Drexel), Michael L. Klein (TU), Adrienn Ruzsinszky (TU), Jianwei Sun (TU), Umesh V. Waghmare (JNCASR), Xifan Wu (TU), Weitao Yang (Duke), Michael J. Zdilla (TU), Yimei Zhu (Brookhaven), International Member: C.N.R. Rao (JNCASR - Bangalore)
Amount: $ 12,000,000 (Borguet group $540,335 over 4 years)Award Period: 08/01/14 - 07/31/18

Agency: NSF (CHE 1508567) Program: CHE
Title: **Electrical Properties of Single Molecules; from Switches towards Devices**
Amount: $450,000 Award Period: 08/15/15 - 07/31/19

Agency: DOE (DE-SC0012575) Program: EFRC
Title: **Center for Materials Theory**
Director: John P. Perdew (TU). Co-PIs: Arun Bansil (Northeastern), Eric Borguet (TU), Maria Iavarone (TU), Goran Karapetrov (Drexel), Michael L. Klein (TU), Adrienn Ruzsinszky (TU), Gustavo E. Scuseria (Rice), David J. Srolovitz (Penn), Daniel R. Strongin (TU), Jianwei Sun (Tulane), Xiaoxing Xi (TU), Xifan Wu (TU), Weitao Yang (Duke), Michael J. Zdilla (TU), Yimei Zhu (Brookhaven), International Member: C.N.R. Rao (JNCASR - Bangalore), Umesh V. Waghmare (JNCASR - Bangalore)
Amount: $2,000,000 (Borguet group $104,748 over 2 years) Award Period: 08/01/18 - 07/31/20

Agency: ACS-PRF (58559-ND5) Program: New Directions
Title: **Investigating complex solid-liquid interfaces using the vibrational spectroscopy and dynamics of molecular ions**
Amount: $110,000 Award Period: 01/01/18-08/31/20

Agency: DTRA Program:
Title: **Design, Synthesis and Characterization of Hybrid Stratified MOF-Plasmonic Nanoparticle Materials for Detection and Destruction of Chemical Agents**
Co-PIs: J. K Johnson, J. Millstone, N. Rosi
Amount: $2,500,000 ($625,000 to Borguet group) Award Period: 08/01/16 - 05/31/21

Agency: NSF (DUE 1643874) Program: S-STEM
Title: **Emerging STEM Scholars**
Co-PIs: Shohreh Amini, Peter Jones, Judith Stull
Amount: $999,636 Award Period: 10/01/16-09/30/22

Previous Funding (contd.)

Agency: NSF (MRI 1828421) Program: MRI
Title: **MRI: Development of a time-resolved, high resolution nonlinear optical microscope for interfacial studies**
Co-PI: Hai-Lung Dai
Amount: $1,535,014 (including $460,504 TU cost share) Award Period: 10/01/18-09/30/23

Publications (157 total; 1 in 2000, 3 in 2001, 9 in 2002, 5 in 2003, 4 in 2004, 6 in 2005, 7 in 2006, 5 in 2007, 5 in 2008, 7 in 2009, 10 in 2010, 10 in 2011, 6 in 2012, 7 in 2013, 7 in 2014, 4 in 2015, 7 in 2016, 4 in 2017, 6 in 2018, 9 in 2019, 5 in 2020, 5 in 2021, 5 in 2022, 4 in 2023, 3 papers in press, paper accepted, 7 papers submitted)

https://scholar.google.com/citations?user=bdTuVVMAAAAJ&hl=en h-index=57

1. Time-Resolved Surface Kinetics by IR Diode Laser Reflection-Absorption Spectroscopy, E. Borguet and H. L. Dai, J. Elect. Spect. Rel. Phen. 54/55, 573-580 (1990).

2. Strong Dynamical Dipole Coupling Between CO Molecules Adsorbed on a Metal Surface, E. Borguet and H. L. Dai, Chemical Physics Letters 194, 57-61 (1992).

3. An IR Diode Laser Spectroscopic Study of Adsorption and Intermolecular Interactions on Stepped Metal Surfaces: CO on Vicinal Cu(100), E. Borguet, Ph.D. Dissertation, University of Pennsylvania (1993).

4. Transient IR and Visible Laser Reflection-Absorption Spectroscopic Studies of Interadsorbate and Adsorbate/Substrate Interactions, E. Borguet, J. Dvorak and H. L. Dai, SPIE Proceedings on Laser Techniques for Surface Science (Int. Soc. Opt. Eng., Bellingham WA, 1994), SPIE Vol. 2125, 12.

5. Ultrafast Isomerization Dynamics at Interfaces by Time Resolved Second Harmonic Generation, E. Borguet, X. Shi and K. B. Eisenthal, Ultrafast Phenomena IX (Springer-Verlag, Berlin, 1994).

6. Site Specific Properties and Dynamical Dipole Coupling of CO Molecules Adsorbed on a Vicinal Cu(100) Surface, E. Borguet and H. L. Dai, Journal of Chemical Physics, 101, 9080 (1994).

7. Adsorbate Induced Reflectivity Changes in the Visible Region on a Metal Surface, J. Dvorak, E. Borguet and H. L. Dai, SPIE Proceedings on Laser Techniques for Surface Science (Int. Soc. Opt. Eng., Bellingham WA), SPIE Vol. 2547, 30, 1995.

8. Nonlinear Optical Studies of Structure and Dynamics at Liquid Interfaces, E. Borguet, X. Shi, A. N. Tarnovsky and K. B. Eisenthal, Brookhaven Natl. Lab., [Rep.] BNL (1995), Issue BNL 61733, Proceedings of the Nineteenth DOE Solar Photochemistry Research Conference, 1995, 81-3.

9. Time-Resolved Diode Laser IR Reflection-Absorption Spectroscopy of Surface Kinetics, E. Borguet and H. L. Dai, in Laser Spectroscopy and Photochemistry on Metal Surfaces, Advanced Series in Physical Chemistry, Vol. 5 (World Scientific, 1996).

10. Ultrafast Dynamics and Structure at Aqueous Interfaces by Second Harmonic Generation, X. Shi, E. Borguet, A. N. Tarnovsky and K. B. Eisenthal, Chemical Physics, 205, 167 (1996).

11. Ultrafast Nonlinear Optical Studies of Activated and Barrierless Relaxation Dynamics at Aqueous Interfaces, E. Borguet, X. Shi, A. N. Tarnovsky and K. B. Eisenthal, in Femtochemistry: Ultrafast Chemical and Physical Processes in Molecular Systems; Ed. M. Chergui (World Scientific, Singapore, 1996).

Publications (Undergraduate co-authors)

12. Monitoring Adsorption and Desorption on a Metal Surfaces by Optical Nonresonant Reflectivity Changes, J. Dvorak, E. Borguet and H. L. Dai, Surface Science 369, L122-L130 (1996).

13. Laser Studies of Molecules at Liquid Interfaces by Second Harmonic and Sum-Frequency Generation, E. Borguet, D. Zhang and K. B. Eisenthal, in Physical Supramolecular Chemistry (Kluwer, Dordrecht, 1996).

14. Second Harmonic Generation from the Surface of Centrosymmetric Particles in Bulk Solution, H. Wang, E. C. Y. Yan, E. Borguet and K. B. Eisenthal, Chemical Physics Letters, 259, 15 (1996). DOI: 10.1016/0009-2614(96)00707-5

15. Polarity of Liquid Interfaces by Second Harmonic Generation Spectroscopy, H. Wang, E. Borguet and K. B. Eisenthal, Journal of Physical Chemistry A, 101, 713-718 (1997). DOI: 10.1021/jp962074w

16. Generalized Interface Polarity Scale Based on Second Harmonic Spectroscopy, H. Wang, E. Borguet and K. B. Eisenthal, Journal of Physical Chemistry B, 102, 4927-4932 (1998).

17. Molecules at Liquid and Solid Surfaces, H. Wang, E. Borguet, E. C. Y. Yan, D. Zhang, J. Gutow and K. B. Eisenthal, Langmuir, 14, 1472-1477 (1998).

18. Picosecond Infrared Optical Parametric Amplifier for Nonlinear Interface Spectroscopy, D. Bodlaki and E. Borguet, Review of Scientific Instruments, 71, 4050-4056 (2000).

19. Non-Quadratic Second Harmonic Generation from Semiconductor-Oxide Interfaces, V. Fomenko, J.-F. Lami, and E. Borguet, Physical Review B, 63, 121316 (R) (2001).

20. Photoreactivity of Alkylsiloxane Self Assembled Monolayers on Silicon Oxide Surfaces, T. Ye, D. Wynn, R. Dudek and E. Borguet, Langmuir 17, 4497-4500 (2001).

21. Dynamics of Metastable Nanoscale Island Growth and Dissolution at Electrochemical Interfaces by Time-Resolved STM, Y. He and E. Borguet, Journal of Physical Chemistry B, 105, 3981-3986 (2001).

22. Effect of local environment on nanoscale dynamics at electrochemical interfaces: Anisotropic growth and dissolution in the presence of a step providing evidence for a Schwoebel-Ehrlich barrier at solid/liquid interfaces, Y. He and E. Borguet, Faraday Discussions 121, 17-25 (2002).

23. Second Harmonic Generation from Chemically Modified Ge(111) Interfaces, V. Fomenko, D. Bodlaki, C. Faler and E. Borguet, Journal of Chemical Physics, 116, 6745-6754 (2002).

24. Second Harmonic Generation Investigations of Charge Transfer at Chemically Modified Semiconductor Interfaces, V. Fomenko, C. Hurth, T. Ye and E. Borguet, Journal of Applied Physics, 91, 4394-4398 (2002).

Publications (Undergraduate co-authors)

25. Combined Experimental and Theoretical Investigation of Polar Organic Adsorption/Desorption from Model Carbonaceous Surfaces; Acetone on Graphite, S. Kwon, J. Russell, X. Zhao, R. Vidic, J. K. Johnson and E. Borguet, Langmuir, 18(7), 2595-2600 (2002).

26. Enhancement of Adsorption on Graphite (HOPG) by Modification of Surface, Chemical Functionality and Morphology, S. Kwon, R. Vidic, and E. Borguet, Carbon, 40(13), 2351-2358 (2002).

27. Porphyrin Self-Assembly at Electrochemical Interfaces: Role of Potential Modulated Surface Mobility, Y. He, T. Ye, and E. Borguet, Journal of the American Chemical Society 124 (40), 11964-11970 (2002).

28. Impact of Surface Heterogeneity on Mercury Uptake by Carbonaceous Sorbents under UHV and Atmospheric Pressure Conditions, S. Kwon, E. Borguet, and R. D. Vidic Environmental Science & Technology, 36(19) 4162-4169 (2002).

29. The Role of Hydrophobic Chains in Self-assembly at Electrified Interfaces: Observation of Potential-Induced Transformations of Two Dimensional Crystals of Hexadecane by In-situ Scanning Tunneling Microscopy, Y. He, T. Ye and E. Borguet, Journal of Physical Chemistry B 106(43); 11264-11271 (2002).

30. Layering and Orientational Ordering of Propane on Graphite: An Experimental and Simulation Study, X. Zhao, S. Kwon, R. Vidic, E. Borguet, and J. K. Johnson, Journal of Chemical Physics 117, 7719-7731 (2002).

31. The Effect of Surface Chemical Functional Groups on the Adsorption and Desorption of a Polar Molecule, Acetone, from a Model Carbonaceous Surface, Graphite, S. Kwon, R. Vidic, and E. Borguet, Surface Science, 522 (1-3), 17-26 (2003).

32. Infrared Second Harmonic Spectroscopy of Germanium Interfaces, D. Bodlaki, E. Freysz and E. Borguet, Journal of Chemical Physics, 119, 3958-3962 (2003).

33. Combined Electron-Hole Dynamics at UV-Irradiated Si-SiO_2 Interfaces Probed by Second Harmonic Generation, V. Fomenko, E. Borguet, Physical Review B 68, 081301(R) 1-4 (2003).

34. Dynamics and Second Order Nonlinear Optical Susceptibility of Photo Excited Carriers at Si(111) Interfaces, D. Bodlaki and E. Borguet, Applied Physics Letters, 83, 2357-2359 (2003). DOI: 10.1063/1.1592893

35. Fluorescence Detection of Surface Bound Intermediates Produced from UV Photoreactivity of Alkylsiloxane SAMs, Eric A. McArthur, Tao Ye, Jason Cross, Stéphane Petoud and Eric Borguet, Journal of the American Chemical Society (Communication) 126, 2260-2261 (2004).

Publications (Undergraduate co-authors)

36. Ambient Stability of Chemically Passivated Germanium Interfaces, D. Bodlaki, H. Yamamoto, D. H. Waldeck and E. Borguet, Surface Science 543, 63-74 (2003).

37. Ultrafast Time-evolution of the Nonlinear Susceptibility of Hot Carriers at the Ge(111)-GeO_2 Interface as Probed by SHG, Arthur McClelland, Vasiliy Fomenko, and Eric Borguet, Journal of Physical Chemistry B, 108 (12), 3789-3793 (2004). DOI: 10.1021/jp0460700

38. In situ Second Harmonic Generation Measurements of the Stability of Si(111)-H and Kinetics of Oxide Regrowth in Ambient, D. Bodlaki and E. Borguet, Journal of Applied Physics 95 (9): 4675-4680 (2004).

39. A Vibrational Spectroscopic Study of the Fate of Oxygen Containing Functional Groups and Trapped CO_2 in Single Walled Carbon Nanotubes During Thermal Treatment, X. Feng, C. Matranga, R. Vidic and E. Borguet, Journal of Physical Chemistry B 108(52); 19949-19954 (2004).

40. Mechanism of UV Photoreactivity of Alkylsiloxane Self-Assembled Monolayers. Tao Ye, Eric A. McArthur and Eric Borguet, Journal of Physical Chemistry B, 109(20); 9927-9938 (2005).

41. Optical Second Harmonic Generation Studies of Ultrathin High-K Dielectric Stacks, V. Fomenko, E.P. Gusev and E. Borguet, Journal of Applied Physics 97, 083711 (2005).

42. Conjugated Thiol Linker for Enhanced Electrical Conduction of Gold-Molecule Contacts, Alexei V. Tivanski, Yufan He, Eric Borguet, Haiying Liu, Gilbert C. Walker and David H. Waldeck, Journal of Physical Chemistry B, 109(12); 5398-5402 (2005).

43. Probing Surface Short Range Order and Inter-Adsorbate Interactions through IR Vibrational Spectroscopy: CO on Cu(100), E. Borguet and H. L. Dai, Journal of Physical Chemistry B, 109(17); 8509-8512 (2005). DOI: 10.1021/jp040527o

44. Sensitivity of Ammonia Interaction with Single-Walled Carbon Nanotube Bundles to the Presence of Defect Sites and Functionalities, X. Feng, S. Irle, H. Witek, K. Morokuma, R. Vidic and Eric Borguet, Journal of the American Chemical Society, 127(30); 10533-10538 (2005).

45. Adsorption of hydrogen sulfide onto activated carbon fibers: Effect of pore structure and surface chemistry, W. Feng, S. Kwon, E. Borguet and R.D. Vidic, Environmental Science and Technology, 39(24); 9744-9749 (2005).

46. Nanolithographic Write, Read and Erase via Reversible Nanotemplated Nanostructure Electrodeposition on Alkanethiol Modified Au(111) in an Aqueous Solution, K. Seo and E. Borguet, Langmuir *22*(4); 1388-1391 (2006).

47. Sulfur impregnation of activated carbon fibers through H_2S oxidation for vapor-phase mercury removal, W. Feng, S. Kwon, X. Feng, E. Borguet and R.D. Vidic, J. Environmental Engineering, *ASCE*, 132 (3) 292-300, (2006).

Publications (Undergraduate co-authors)

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143. Probing Heterogeneous Charge Distributions at the α-Al_2O_3(0001)/H_2O Interface, Stefan M. Piontek, Mark DelloStritto, Bijoya Mandal, Tim Marshall, Michael Klein and Eric Borguet, Journal of the American Chemical Society 142, 28, 12096–12105 (2020) **DOI:** 10.1021/jacs.0c01366

144. Modeling of Diffusion of Acetone in UiO-66, Jacob Wardzala, Jonathan Ruffley, Isabella Goodenough, Allie Schmidt, Priyanka Shukla, Xin Wei, Abhishek Bagusetty, Mattheus De Souza, Prasenjit Das, Dorian Thompson, Christopher Karwacki, Christopher Wilmer, Eric Borguet, Nathaniel L. Rosi and J. Karl Johnson, The Journal of Physical Chemistry C 124, 52, 28469–28478 (2020) DOI: 10.1021/acs.jpcc.0c07040

145. Interplay between Intrinsic Thermal Stability and Expansion Properties of Functionalized UiO-67 Metal-Organic Frameworks, Isabella Goodenough, Venkata Swaroopa Datta Devulapalli, Wenqian Xu, Mikaela Boyanich, Mélissandre Richard, Tianyi Luo, Mattheus De Souza, Nathaniel L. Rosi and Eric Borguet, Chemistry of Materials, 33 (3) 910–920 (2021) 10.1021/acs.chemmater.0c03889 (Featured on the front cover)

146. Optimizing the Nodes of Metal-Organic Frameworks for the Hydrolysis of a Nerve Agent Simulant, Venkata Swaroopa Datta Devulapalli, Melissandre Richard, Tianyi Luo, Mattheus De Souza, Nathaniel L. Rosi and Eric Borguet, Dalton Transactions, 50 (9), 3116-3120 (2021) DOI: 10.1039/D1DT00180A (Featured on the front cover)

147. Investigation of Water/Oxide Interfaces by Molecular Dynamics Simulations, Ruiyu Wang, Michael Klein, Vincenzo Carnevale, and Eric Borguet, WIREs Computational Molecular Science, 11(6) e1537 (2021) DOI: 10.1002/wcms.1537

Publications (Undergraduate co-authors)

148. Reimagining the e_g^1 electronic state in oxygen evolution catalysis: Oxidation-state-modulated superlattices as a new type of heterostructure for maximizing catalysis, Ran Ding, Parisa Yasini, Haowei Peng, John P. Perdew, Eric Borguet, and Michael J. Zdilla, Advanced Energy Materials, 11(41) 2101636 (2021) DOI: 10.1002/aenm.202101636

149. Identifying UiO-67 Metal-Organic Framework Defects and Binding Sites through Ammonia Adsorption, Venkata Swaroopa Datta Devulapalli, Ryan McDonnell, Jonathan P. Ruffley, Priyanka B. Shukla, Tian-Yi Luo, Mattheus L. De Souza, Prasenjit Das, Nathaniel L. Rosi, J. Karl Johnson and Eric Borguet, ChemSusChem 15(1) e202102217 (2022) DOI: 10.1002/cssc.202102217

150. Vibrational Dynamics at Aqueous-Mineral Interfaces, Stefan M. Piontek and Eric Borguet, The Journal of Physical Chemistry C 126(5) 2307–2324 (2022) DOI: 10.1021/acs.jpcc.1c08563

151. Layer by Layer Deposition of 1T'-MoS_2 for the Hydrogen Evolution Reaction, Farbod Alimohammadi, Parisa Yasini, Tim Marshall, Nuwan Attanayake, Eric Borguet and Daniel R. Strongin, ChemistrySelect 7(7) e202103386 (2022) DOI: 10.1002/slct.202103386

152. Synergistic Electronic Effects in AuCo Nanoparticles Stabilized in Triazine Covalent Organic Framework - Catalyst for Methyl Orange Reduction, Venkata Swaroopa Datta Devulapalli, Rinku Kushwaha, Edwin Ovalle, Himan Dev Singh, Pragalbh Shekhar, Debanjan Chakraborty, Chathakudath Prabhakaran Vinod, Ramanathan Vaidhyanathan, and Eric Borguet, ACS Applied Nano Materials 5(4) 4744–4753 (2022) DOI: 10.1021/acsanm.1c04212

153. Superhydrophilicity of α-Alumina Surfaces Results from Tight Binding of Interfacial Waters to Specific Aluminols, Ruiyu Wang, Yunqian Zou, Richard C. Remsing, Naomi O. Ross, Michael L. Klein, Vincenzo Carnevale, and Eric Borguet, Journal of Colloid & Interface Science 628, Part A, 943-954 (2022) DOI: 10.1016/j.jcis.2022.07.164

154. Oxide- and Silicate-Water Interfaces and Their Roles in Technology and the Environment, Banuelos, Jose; Borguet, Eric; Brown, Gordon; Cygan, Randall; De Yoreo, James; Dove, Patricia; Gaigeot, Marie-Pierre; Geiger, Franz; Gibbs, Julianne; Grassian, Vicki; Ilgen, Anastasia; Jun, Young-Shin; Kabengi, Nadine; Katz, Lynn; Kubicki, James; Lutzenkirchen, Johannes; Putnis, Christine; Remsing, Richard; Rosso, Kevin; Rother, Gernot; Sulpizi, Marialore; Villalobos, Mario; Zhang, Huichun, Chemical Reviews 123 (10), 6413–6544 (2023) DOI: https://pubs.acs.org/doi/full/10.1021/acs.chemrev.2c00130

155. Vibrational Spectroscopy of Geochmical Interfaces, Stefan M. Piontek and Eric Borguet, Surface Science Reports (in press, 2023)

156. COF Supported Zirconium Oxyhydroxide as a Versatile Heterogeneous Catalyst for Knoevenagel Condensation and Nerve Agent Simulant Hydrolysis, Pragalbh Shekhar, Venkata Swaroopa Datta Devulapalli, Reshma Reji, Himan Dev Singh, Aleena Jose, Arun Torris, Chatakudath P. Vinod, John A. Tokarz, John J. Mahle, Gregory W. Peterson, Eric Borguet and Ramanathan Vaidhyanathan, iScience 26 (11) 108088 (2023) DOI: 10.1016/j.isci.2023.108088

Publications (Undergraduate co-authors)

157. Anomalous Infrared Intensity Behavior of Acetonitrile Diffused into UiO-67, Ryan McDonnell, Venkata Swaroopa Datta Devulapalli, Tae Hoon Choi, Laura McDonnell, Prasenjit Das, Nathaniel L. Rosi, J. Karl Johnson and Eric Borguet, Chemistry of Materials 35 (21), 8827–8839 (2023) DOI: 10.1021/acs.chemmater.3c00639

158. Modulation of Charge Transport through Single Molecules Induced by Solvent-Stabilized Intramolecular Charge Transfer, Parisa Yasini, Stuart Shepard, Manuel Smeu, and Eric Borguet, Journal of Physical Chemistry B 127 (45), 9771–9780 (2023) DOI: 10.1021/acs.jpcb.3c03576

159. Reversible Solvent Interactions with UiO-67 Metal Organic Frameworks, Isabella Goodenough, Mikaela Boyanich, Ryan McDonnell, Lauren Castellana, Venkata Swaroopa Datta Devulapalli, Tian-Yi Luo, Prasenjit Das, Mélissandre Richard, Nathaniel Rosi, and Eric Borguet. Journal of Chemical Physics (in press, 2024)

160. Cation Modifies Interfacial Water Structures on Platinum during Alkaline Hydrogen Electrocatalysis, Pengtao Xu, Ruiyu Wang, Haojian Zhang, Vincenzo Carnevale, Eric Borguet, and Jin Suntivich, Journal of the American Chemical Society (in press, 2024).

161. Fundamentals, Measurement & Regulation of the Conductance of Single Molecule Junctions, Parisa Yasini and Eric Borguet, (submitted)

162. Charged Solutes Show Faster Vibrational Dynamics at Oxide/Water Interfaces, Bijoya Mandal, Somaiyeh Dadashi, Mark DelloStritto, Richard C. Remsing, Stefan M. Piontek, Michael Klein and Eric Borguet, (submitted)

163. On the Role of α-Alumina in the Origin of Life: Surface Driven Assembly of Amino Acids, Ruiyu Wang, Richard C. Remsing, Michael L. Klein, Eric Borguet, and Vincenzo Carnevale (submitted)

164. Chemical Modulation of Charge Transport Perpendicular to the Molecular Plane, Parisa Yasini, Stuart Shepard, Manuel Smeu, and Eric Borguet, (submitted)

165. Simplified Approach for Dynamic Contact Angle Measurements, Yunqian Zou, Naomi O. Ross, and Eric Borguet, (submitted)

166. Topological properties of interfacial hydrogen bond networks, Ruiyu Wang, Mark DelloStritto, Michael L. Klein, Eric Borguet, and Vincenzo Carnevale (submitted)

167. The influence of charged site density on local electric fields and polar solvent organization at oxide interfaces Somaiyeh Dadashi, Shyam Parshotam, Bijoya Mandal, Benjamin Rehl, Julianne Gibbs, and Eric Borguet, (submitted)

Publications (Undergraduate co-authors)

Patents

1. Methods and Devices for Generation of Broadband Pulsed Radiation. International Application No.:PCT/US2009/035434; US Patent Application PCT/US2009/035434 (publication date 12/23/2010). US Patent approved May 14, 2013. US Patent number 8,441,720

2. Purification of Single Walled Carbon Nanotubes by Dynamic Annealing, Nikolay Dementev, and Eric Borguet. US Patent approved December 3, 2013. US Patent number 8,597,605

Invited Talks (313 total; 19 in 1996 -2000, 21 in 2001, 15 in 2002, 20 in 2003, 12 in 2004, 7 in 2005, 10 in 2006, 14 in 2007, 9 in 2008, 12 in 2009, 19 in 2010, 6 in 2011, 13 in 2012, 12 in 2013, 7 in 2014, 14 in 2015, 14 in 2016, 16 in 2017, 11 in 2018, 19 in 2019, 9 in 2020, 3 in 2021, 17 in 2022, 10 in 2023, 4 in 2024)

Invited Talks (Universities, Colleges, National and Industrial Laboratories)
(185 total; 15 in 1996-2000, 18 in 2001, 7 in 2002, 15 in 2003, 9 in 2004, 4 in 2005, 5 in 2006, 10 in 2007, 7 in 2008, 6 in 2009, 14 in 2010, 2 in 2011, 5 in 2012, 7 in 2013, 1 in 2014, 4 in 2015, 6 in 2016, 9 in 2017, 5 in 2018, 14 in 2019, 7 in 2020, 1 in 2021, 9 in 2022, 3 in 2023, 2 in 2024)

1. "Chemical and Physical Processes at the Surfaces of Particles in Bulk Solution"
   Department of Geology & Planetary Science, University of Pittsburgh September 1996

2. "Spectroscopie et Dynamique des Interfaces Liquides"
   LURE, Université de Paris-Sud (XI), Orsay, France June 1997

3. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
   Department of Chemistry, Norfolk State University November 1997

4. "Spectroscopie et Dynamique des Interfaces Liquides"
   Ecole Supérieure de Chimie et Physique, Paris, France June 1997

5. "Spectroscopie et Dynamique des Interfaces Liquides"
   Laboratoire de Chimie Théorique, Orsay, France June 1997

6. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
   Department of Chemistry, Wellesley College September 1998

7. "Probing Molecular Behavior at Liquid Interfaces with Ultrafast Lasers"
   NASA, Lewis Research Center March 1998

8. "Spectroscopie et Dynamique des Interfaces Liquides"
   CPMOH, Université de Bordeaux, France June 1999

9. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
   Department of Chemistry, College of Franklin and Marshall September 1999

10. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
    Department of Chemistry, James Madison University October 1999

11. "Nonlinear Optical Investigations of Structure and Dynamics at Buried Interfaces"
    Condensed Matter Group, University of Pittsburgh October 1999

12. "Nonlinear Optical Investigations of Structure and Dynamics at Buried Interfaces"
    WINS Series, Department of Chemistry, University of Pittsburgh October 1999

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

13. "Nonlinear Optical Spectroscopy and Dynamics at Semiconductor Interfaces"
    CPMOH, Université de Bordeaux, France June 2000

14. "STM and AFM studies of Nanoscale Dynamics and Photochemistry at Surfaces"
    University of Notre Dame, Chemistry Department November 2000

15. "STM and AFM studies of Nanoscale Dynamics and Photochemistry at Surfaces"
    University of Chicago, Chemistry Department November 2000

16. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
    Ohio State University, Chemistry Department January 2001

17. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
    Allegheny College, Chemistry Department January 2001

18. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
    Case Western Reserve University, Chemistry Department March 2001

19. "Nanoscale Dynamics at Electrode Interfaces"
    Carnegie Mellon University-CINR Nanotechnology Summit 2001 May 2001

20. "Chemical Control of Hot Electron Behavior at Semiconductor Interfaces"
    Stanford University, Chemistry Department May 2001

21. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
    University of California-Santa Cruz, Chemistry Department May 2001

22. "Chemical Control of Hot Electron Behavior at Semiconductor Interfaces"
    University of California-Irvine, Chemistry Department May 2001

23. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
    Department of Chemistry, Calvin College, MI September 2001

24. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
    Department of Chemistry, Hope College, MI September 2001

25. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
    University of Pennsylvania, Chemistry Department October 2001

26. "Chemical Control of Hot Electron Dynamics at Semiconductor Interfaces"
    University of Delaware, Chemistry Department October 2001

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

27. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
University of Maryland, Chemistry Department October 2001

28. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
The Pennsylvania State University, Chemistry Department November 2001

29. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
The State University of West Georgia, Chemistry Department November 2001

30. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
University of Georgia, Chemistry Department November 2001

31. "Probing Chemical and Topological Heterogeneity of Carbonaceous Surfaces via Temperature Programmed Desorption of Simple Molecules from Model Carbonaceous Surfaces"
National Energy Technology Laboratory, Pittsburgh November 2001

32. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
University of Akron, Physics Department December 2001

33. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
Princeton University, Chemistry Department December 2001

34. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
Colorado State University, Chemistry Department February 2002

35. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
University of Colorado-Boulder, Chemistry Department March 2002

36. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
University of Utah, Chemistry Department September 2002

37. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM"
University of Guelph, Canada, Chemistry Department November 2002

38. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
Photonics Research Ontario Seminar Series: Frontiers in Photonics
University of Toronto, Canada November 2002

39. "Nanoscale Dynamics at Electrochemical Interfaces"
University of Illinois at Urbana-Champaign, Chemistry Department December 2002

40. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
Naval Research Laboratory, Washington, D.C December 2002

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

41. "Nanoscale Dynamics at Electrochemical Interfaces"
    Northwestern University, Chemistry Department January 2003

42. "Nanoscale Dynamics at Electrochemical Interfaces"
    Temple University, Chemistry Department January 2003

43. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
    Bennett College, Chemistry Department January 2003

44. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
    North Carolina A&T State University, Chemistry Department January 2003

45. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
    University of North Carolina at Greensboro, Chemistry Department January 2003

46. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
    Emory University, Chemistry Department March 2003

47. "Nanoscale Dynamics at Electrochemical Interfaces"
    Georgia Institute of Technology, Chemistry Department March 2003

48. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
    Université Laval, Quebec Canada April 2003

49. "Nanoscale Dynamics at Electrochemical Interfaces"
    Université de Sherbrooke, Quebec Canada April 2003

50. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
    IBM Research, Yorktown Heights, NY May 2003

51. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
    Temple University, Chemistry Department October 2003

52. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
    University of Virginia, Chemistry Department November 2003

53. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
    Mc Gill University, Chemistry Department November 2003

54. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
    Kansas State University, Chemistry Department November 2003

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

55. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
University of Ottawa, Chemistry Department December 2003

56. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
Ohio State University, Chemistry Department January 2004

57. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
University of British Columbia, Chemistry Department January 2004

58. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
Case Western Reserve University, Chemistry Department January 2004

59. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
University of Connecticut, Chemistry Department February 2004

60. "Nanoscale Dynamics at Electrochemical Interfaces"
Auburn University, Chemistry Department April 2004

61. "Fluorescence Labeling of Surface Species (FLOSS): a Key to Understanding the UV Photoreactivity of Alkylsiloxane SAMs"
University of Pittsburgh, ACS Student Affiliates September 2004

62. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
Susquehanna University, Chemistry Department October 2004

63. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
Temple University, Physics Department October 2004

64. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
Trinity College, Dublin, Ireland Institute for Nanoscience December 2004

65. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
Philadelphia University of the Sciences, Chemistry Department January 2005

66. "Nanoscale Dynamics at Electrochemical Interfaces"
Rutgers University, Surface Science Center January 2005

67. "Nanoscale Dynamics at Charged Solid-Liquid Interfaces"
Georgetown University, Chemistry Department September 2005

68. "Nanoscale Dynamics of Molecular Processes at Electrode Interfaces"
Université de Bordeaux, France, Chemistry Department December 2005

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

69. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
St. Joseph's University, Chemistry Department January 2006

70. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
Villanova University, Chemistry Department February 2006

71. "Chemical and Physical Processes at Interfaces: A Key to Understanding Catalysis, Electronics, Environmental and Biological Function"
Lebanon Valley College, Chemistry Department March 2006

72. "Fluorescence Labeling of Surface Species (FLOSS) As a Probe of Chemical Composition of Complex Interfaces"
SCHOTT North America, Inc., Research Laboratories July 2006

73. "Fluorescence Labeling of Surface Species (FLOSS) As a Probe of Chemical Composition of Complex Interfaces"
Exxon Research Laboratories, Annandale NJ September 2006

74. "Dynamics of Self-Assembly and Nanomaterial Growth at Electrode Interfaces"
Materials Science & Engineering, Rutgers University, New Brunswick, NJ February 2007

75. "Dynamics of Self-Assembly and Nanomaterial Growth at Electrode Interfaces"
Osaka University, Osaka, Japan June 2007

76. "Ultrafast nonlinear optical studies of semiconductor (Si, Ge and Si_xGe_{1-x}) and molecular interfaces"
Kyoto University, Kyoto, Japan June 2007

77. "Dynamics of Self-Assembly and Nanomaterial Growth at Electrode Interfaces"
Nagoya University, Nagoya, Japan June 2007

78. "Ultrafast nonlinear optical studies of semiconductor (Si, Ge and Si_xGe_{1-x}) and molecular interfaces"
RIKEN, Wako, Japan June 2007

79. "Ultrafast nonlinear optical studies of semiconductor (Si, Ge and Si_xGe_{1-x}) and molecular interfaces"
Tokyo University, Tokyo, Japan June 2007

80. "Ultrafast nonlinear optical studies of semiconductor (Si, Ge and Si_xGe_{1-x}) and molecular interfaces"
Hokkaido University, Sapporo, Japan June 2007

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

81. "Dynamics of Self-Assembly and Nanomaterial Growth at Electrode Interfaces"
Materials Science Department, Drexel University, Philadelphia October 2007

82. "Dynamics of Self-Assembly and Nanomaterial Growth at Electrode Interfaces"
Chemistry Department, Lincoln University, PA October 2007

83. "Ultrafast nonlinear optical studies of semiconductor (Si, Ge and Si_xGe_{1-x}) and molecular interfaces"
Optics Center, Delaware State University, DE October 2007

84. "Dynamics of Self-Assembly and Nanomaterial Growth at Electrode Interfaces"
Chemistry Department, Rutgers-Camden, NJ February 2008

85. "Dynamics of Self-Assembly and Nanomaterial Growth at Electrode Interfaces"
City University of New York-Staten Island, NY February 2008

86. "Dynamics of Self-Assembly and Nanomaterial Growth at Electrode Interfaces"
Chemistry Department, Brigham Young University, UT March 2008

87. "Dynamics of Self-Assembly and Nanomaterial Growth at Electrode Interfaces"
Chemistry Department, Washington State University, WA April 2008

88. "Self-Assembly, Nanomaterial Growth and Charge Transfer at Electrochemical Interfaces"
Chemistry Department, Bloomsburg University, PA September 2008

89. "Self-Assembly, Nanomaterial Growth and Charge Transfer at Electrochemical Interfaces"
Chemistry Department, Bucknell University, PA September 2008

90. "Charge Transfer Through and Between Single Molecules at Electrochemical Interfaces"
Chemistry Department, University of Delaware, DE October 2008

91. "The vibrational dynamics of ordered water at solid interfaces"
RIKEN, Wako, Japan March 2009

92. "Nonlinear optical studies of structure and dynamics at aqueous interfaces"
Laboratory for Surface Modification, Rutgers-New Brunswick, NJ April 2009

93. "Single Molecule Charge Transfer at Interfaces"
Departément de Chimie, Université de Genève, Suisse June 2009

94. "Single Molecule Charge Transfer and Localization at Interfaces"
Chemistry Department, Carnegie Mellon University, Pittsburgh PA September 2009

95. "Single Molecule Charge Transfer and Localization at Interfaces"
Ecole Normale Supérieure, Cachan France December 2009

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

96. "The vibrational dynamics of ordered interfacial water"
Laboratoire de Photophysique Moléculaire,
Université de Paris-Sud (XI-Orsay), France PA December 2009

97. "Single Molecule Charge Transfer and Localization at Interfaces"
Chemistry Department, Boston University, Boston MA January 2010

98. "Ultrafast Vibrational Dynamics and Spectroscopy of Water at a Charged Interface"
Chemistry Department, Tohoku University, Sendai, Japan April 2010

99. "Vibrational Dynamics of Water at a Charged Solid/Liquid Interface"
Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan April 2010

100. "Fluorescence Labeling of Surface Species as an Efficient Tool for Detection, Identification and Quantification of Oxygen Containing Functionalities on Carbon Materials"
Department of Applied Chemistry, Tohoku University, Sendai, Japan April 2010

101. "Single molecule redox chemistry at a solid-liquid interface"
Department of Applied Chemistry, Tohoku University, Sendai, Japan April 2010

102. "Single molecule redox chemistry at a solid-liquid interface"
CEA-SACLAY, Gif-sur-Yvette, France June 2010

103. "Single Molecule Charge Transfer and Localization at Interfaces"
Laboratoire PMC, CNRS - Ecole Polytechnique, Palaiseau, France June 2010

104. "Single Molecule Charge Transfer and Localization at Interfaces"
Chemistry Department, National Taras Shevchenko University, Kiev September 2010

105. "Single Molecule Charge Transfer and Localization at Interfaces"
Institute of Surface Chemistry, National Academy of Sciences of Ukraine October 2010

106. "Single Molecule Charge Transfer and Localization at Interfaces"
Chemistry Department, Ursinus College, Collegeville PA October 2010

107. "Single Molecule Charge Transfer and Localization at Interfaces"
Chemistry Department, Messiah College, Grantham PA October 2010

108. "Fluorescence Labeling of Surface Species; an Efficient Tool for Detection, Identification and Quantification of Oxygen Containing Functionalities on Complex Materials including Nanocarbons"
Exxon-Mobil, Baytown, TX November 2010

109. "Single Molecule Charge Transfer and Localization at Interfaces"
Chemistry Department, University of Houston, Houston, TX November 2010

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

110. "Fluorescence Labeling of Surface Species; an Efficient Tool for Detection, Identification and Quantification of Oxygen Containing Functionalities on Complex Materials including Nanocarbons"
Smalley Institute, Rice University, Houston, TX November 2010

111. "Single Molecule Charge Transfer and Localization at Interfaces"
Nano/Bio Interface Center, University of Pennsylvania, Philadelphia, PA November 2011

112. "Ultrabroadband Vibrational Sum Frequency Spectroscopy at Mineral-Aqueous Interfaces"
Exxon Research Laboratories, Annandale NJ December 2011

113. "Charge Transport through Single Molecules"
Chemistry Department, Hokkaido University, Sapporo, Japan May 2012

114. "Ultra-broadband & Ultrafast Vibrational Spectroscopy & Dynamics of Mineral/Aqueous Interfaces"
Catalysis Research Center, Hokkaido University, Sapporo, Japan May 2012

115. "Structure and dynamics of water at charged solid interfaces""
Chemistry Department, University of Maryland, College Park September 2012

116. "Ultra-broadband Vibrational Spectroscopy & Ultrafast Dynamics at Mineral/Aqueous Interfaces"
Chemistry Department, Bowling Green State University, Ohio November 2012

117. "Detection, Identification and Quantification of Chemical Functionalities on Complex Materials"
National Institute of Standards and Technology (NIST), Gaithersburg, MD December 2012

118. "Charge Transport through Single Molecules"
Chemistry Department, University of Alberta, Edmonton, AB, Canada April 2013

119. "La conductivité à l'échelle de la molécule unique"
Department de Chimie, Ecole Polytechnique, Palaiseau, France October 2013

120. "Charge Transport through Single Molecules at Interfaces"
Chemistry Department, Sungkyunkwan University, Korea November 2013

121. "Nanoscale Dynamics of Physical and Chemical Processes at Electrochemical Interfaces"
CEMES, Toulouse, France December 2013

122. "La conductivité à l'échelle de la molécule unique"
Laboratoire de Chimie de Coordination, Toulouse, France December 2013

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

123. ”Ultra-broadband Vibrational Spectroscopy & Ultrafast Dynamics at Mineral/Aqueous Interfaces”
Institut Charles Gerhardt, Montpellier, France December 2013

124. ”Development of Ultra-broadband Infrared Optical Parametric Sources and Applications in Ultrafast Vibrational Spectroscopy & Dynamics of Interfaces”
Laboratoire Collisions, Agrégats, Réactivité, Toulouse France December 2013

125. "Charge Transport and Conductance Switching in Single Molecules”
Chemistry Department, Queens College-CUNY, New York, NY December 2014

126. ”Ultrafast Vibrational Sum Frequency Spectroscopy & Ultrafast Dynamics at Mineral/Aqueous Interfaces”
Institut des Nanosciences (INSP), Paris, France March 2015

127. ”Charge Transport through Single Molecules at Interfaces”
Xinjiang Technical Institute of Physics & Chemistry, Chinese Academy of Sciences
Urumqi, Xinjiang, China September 2015
”

128. ”Ultrafast Vibrational Sum-Frequency Spectroscopy and Dynamics at Mineral/Aqueous Interfaces”
Institute of Chemistry, Chinese Academy of Sciences, Beijing China September 2015

129. ”Ultrafast Vibrational Sum-Frequency Spectroscopy and Dynamics at Mineral/Aqueous Interfaces”
Tata Institute of Fundamental Research (TIFR), Mumbai India December 2015

130. ”Single Molecule Switching and Sensing”
Chemistry Department, University of California-Davis April 2016

131. ”Single Molecule Switching and Sensing”
Chemistry Department, University of California-Merced April 2016

132. ”Single Molecule Switching and Sensing”
Hefei National Laboratory for Physical Sciences at Microscale, University of Science and Technology, Hefei, China July 2016

133. “Ions and ultrafast vibrational spectroscopy & dynamics at aqueous interfaces"
Department of Chemistry, University of Washington, Seattle, WA October 2016

134. “Ions and ultrafast vibrational spectroscopy & dynamics at aqueous interfaces"
Frontiers in Geochemistry Lecture
Pacific Northwest National Laboratory, WA October 2016

135. ”Water at Interfaces”
Physics Department, Drexel University November 2016

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

136. ”Single Molecule Switching and Sensing”
Department of Chemistry, St. John’s University, Queens NY February 2017

137. ”Water at Interfaces”
Department of Chemistry, University of Chicago, Chicago IL May 2017

138. “Ions and ultrafast vibrational spectroscopy & dynamics at aqueous interfaces"
Elettra Synchrotron, Trieste, Italy May 2017

139. ”Single Molecule Switching and Sensing”
Department of Chemistry, West Chester University, West Chester PA September 2017

140. ”Single Molecule Switching and Sensing”
Faculty of Science, Lebanese University, Hadath, Lebanon October 2017

141. ”Single Molecule Switching and Sensing”
Department of Chemistry, American University of Beirut, Lebanon October 2017

142. ”Single Molecule Switching and Sensing”
Department of Chemistry, Lebanese American University, Beirut, Lebanon October 2017

143. “Ions and ultrafast vibrational spectroscopy & dynamics at aqueous interfaces"
Indian Institute of Science Education and Research, Bhopal, India October 2017

144. “Ions and ultrafast vibrational spectroscopy & dynamics at aqueous interfaces"
Indian Institute of Science, Bangalore, India December 2017

145. ”Single Molecule Switching and Sensing”
Materials Science Program, Binghamton University, Binghamton, NY February 2018

146. “Ions and ultrafast vibrational spectroscopy & dynamics at aqueous interfaces"
Rutgers University, New Brunswick, NJ April 2018

147. “Ultrafast vibrational spectroscopy & dynamics at aqueous interfaces"
Universitaet Duisburg-Essen, Duisburg, Germany May 2018

148. “Single Molecule Switching and Sensing”
Department of Chemistry, College of Franklin and Marshall October 2018

149. ”Water at Interfaces”
Indian Institute of Science Education & Research, Thiruvananthapuram, India October 2018

150. ”Ultrabroadband vibrational spectroscopy and dynamics at aqueous interfaces”
Max Born Institute, Berlin, Germany January 2019

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

151. ”The impact of ions on ultrafast vibrational spectroscopy & dynamics at aqueous interfaces”
Fritz Haber Institute, Berlin, Germany January 2019

152. ”Ultrabroadband vibrational spectroscopy and dynamics at aqueous interfaces”
Max Planck Institute for Polymer Research, Mainz, Germany January 2019

153. ”Single Molecule Switching and Sensing”
Indian Institute of Science Education & Research, Mohali, India February 2019

154. "Single Molecule Switching and Sensing”
Department of Chemistry, Fudan University, Shanghai, China April 2019

155. ”Ultrabroadband vibrational spectroscopy and dynamics at aqueous interfaces”
Department of Physics, Fudan University, Shanghai, China April 2019

156. "Single Molecule Switching and Sensing”
Department of Chemistry, Xiamen University, Shanghai, China April 2019

157. ”Ultrabroadband vibrational spectroscopy and dynamics at aqueous interfaces”
Department of Chemistry, Xiamen University, Shanghai, China April 2019

158. "Single Molecule Switching and Sensing”
Department of Chemistry, SUSTech, Shenzhen, China April 2019

159. ”Single Molecule Switching and Sensing”
Harbin Institute of Technology, Shenzhen, China April 2019

160. "Single Molecule Switching and Sensing”
NIMS, Tsukuba, Japan September 2019

161. “Ultrabroadband vibrational spectroscopy and dynamics at aqueous interfaces”
Department of Chemistry, Korea University, Seoul, Korea September 2019

162. "Understanding water organization at charged surfaces”
Department of Physics, Sogang University, Seoul, Korea September 2019

163. ”Impact of ions on structure and dynamics at aqueous interfaces”
Department of Chemistry, Boston College, Boston, MA October 2019

164. "Single Molecule Switching and Sensing”
Osaka University, Osaka, Japan January 2020

165. "Single Molecule Switching and Sensing”
Institute for Molecular Science -IMS, Okazaki, Japan January 2020

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

166. ”Impact of ions on structure and dynamics at aqueous interfaces”
RIKEN, Wako, Japan January 2020

167. "Single Molecule Switching and Sensing”
Chemistry Department, Rowan University, NJ January 2020

168. "Single Molecule Switching and Sensing”
Chemistry Department, Washington State University, WA February 2020

169. "Single Molecule Switching and Sensing”
Chemistry Department, Indiana University, IN March 2020

170. "Understanding water organization at geochemical surfaces”
Chemistry Department, Ball State University, IN March 2020

171. "Understanding water organization at charged surfaces”
Chemistry Department, Queens College-CUNY, New York, NY February2021

172. "Single Molecule Switching and Sensing”
Chemistry Department, Lancaster University, UK April 2022

173. "Single Molecule Switching and Sensing”
Chemistry Department, University of Liverpool, UK April 2022

174. "Single Molecule Switching and Sensing”
Chemistry Department, University of Oviedo, Spain May 2022

175. "Single Molecule Switching and Sensing”
Chemistry Department, University of Santiago de Compostella, Spain May 2022

176. "Single Molecule Switching and Sensing”
Chemistry Department, University of the Basque Country, Bilbao, Spain September 2022

177. "Single Molecule Switching and Sensing”
Universidad Nacional Autónoma de México, Mexico City, Mexico October 2022

178. “The impact of hydrogen bonding on vibrational relaxation at aqueous interfaces"
Indian Institute of Technology-Bombay, India November 2022

179. “Single Molecule Switching and Sensing”
Indian Institute of Technology-Madras, India November 2022

180. “Single Molecule Switching and Sensing”
Indian Institute of Science Education & Research, Tirupati, India November 2022

Invited Talks (Universities, Colleges, National and Industrial Laboratories) (contd.)

181. "Understanding water organization and the impact of ions at oxide-aqueous interfaces"
Department of Geosciences, Princeton University, NJ February 2023

182. "Structure and ultrafast dynamics at aqueous-oxide interfaces"
Departments of Chemistry and Physics, Ohio State University, OH April 2023

183. "Hydrogen bonding and ultrafast dynamics at aqueous-oxide interfaces"
Ecole Normale Supérieure, Paris, France July 2023

184. "Hydrogen bonding and ultrafast dynamics at aqueous-oxide interfaces"
Chemistry Department, Missouri University of Science & Technology, MO January 2024

185. "Hydrogen bonding and ultrafast dynamics at aqueous-oxide interfaces"
Chemistry Department, Duke University, NC February 2024

Invited Talks at Conferences and Workshops
(128 total; 1 in 1997, 1 in 1998, 2 in 2000, 3 in 2001, 8 in 2002, 5 in 2003, 4 in 2004, 3 in 2005, 5 in 2006, 4 in 2007, 2 in 2008, 6 in 2009, 5 in 2010, 4 in 2011, 8 in 2012, 5 in 2013, 6 in 2014, 10 in 2015, 8 in 2016, 7 in 2017, 6 in 2018, 5 in 2019, 2 in 2020, 2 in 2021, 8 in 2022, 6 in 2023, 2 in 2024)

1. "Phénomènes Ultrarapides aux Interfaces Liquides"
   "Phénomènes Ultrarapides" Conference, Bordeaux, France June 1997

2. "Probing Molecular Behavior at Liquid Interfaces with Ultrafast Lasers"
   Spectroscopy Society, Cleveland Section March 1998

3. "Nonlinear Optical Spectroscopy and Dynamics at Semiconductor Interfaces"
   ACS 32nd Central Regional Meeting, Cincinnati May 2000

4. "Photoinduced Nonlinear Optical Response of Semiconductor Interfaces"
   Pacifichem 2000, Honolulu HI December 2000

5. "Dynamics of Metastable Nanoscale Islands and Effect of Local Environment by Time-Resolved STM at Electrochemical Interfaces",
   International Conference on Electrified Interfaces, Nova Scotia July 2001

6. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
   Interdisciplinary Laser Science Conference, Long Beach CA, Fall 2001 October 2001

7. "Chemical Control of Physical Processes at Semiconductor Interfaces"
   NSF Materials Chemistry Workshop, University of Wisconsin, Madison October 2001

8. "Time-Resolved Second Harmonic Generation at Semiconductor Interfaces"
   SPIE Photonics West, San Jose CA January 2002

9. "Effect of Local Environment on Nanoscale Dynamics at Electrochemical Interfaces" at Faraday Discussion # 121, "The Dynamic Electrode Surface", Fritz-Haber Institute, Berlin, Germany April 2002

10. "Nanoscale Dynamics at Electrochemical Interfaces by Time-Resolved STM" 2002
    Midwest Thermodynamics and Statistical Mechanics Meeting, Pittsburgh, PA May 2002

11. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
    SPIE "Physical Chemistry of Interfaces and Nanomaterials", Seattle, WA July 2002

12. "Hot Electrons, Charge Transfer and Trapping in Chemically Modified Semiconductor Surfaces"
    Telluride Workshop on Semiconductor Surface Chemistry, Telluride, CO August 2002

13. "Photochemistry of SAMs on Silica"
    Telluride Workshop on Semiconductor Surface Chemistry, Telluride, CO August 2002

Invited Talks at Conferences and Workshops (contd.)

14. "Nonlinear Optical Response and Stability of Chemistry of Si and Ge "
    Telluride Workshop on Semiconductor Surface Chemistry, Telluride, CO August 2002

15. "Environmental Applications of Nanoporous Carbons"
    Pennsylvania Nanotechnology 2002 Workshop, Harrisburg, PA October 2002

16. "STM Studies of Potential Modulated Surface Mobility and Molecular Self-Assembly"
    Electrochemistry Gordon Research Conference, Ventura CA January 2003

17. "Nanoscale Dynamics of Molecular Self Assembly at Electrochemical Interfaces"
    ACS Symposium in Honor of Mike Weaver, New Orleans, LA March 2003

18. "Potential Modulated Surface Mobility and Molecular Self-Assembly at Electrode Interfaces"
    American Physical Society National Meeting, Austin, Texas March 2003

19. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
    35th Central Regional Meeting, Pittsburgh PA October 2003

20. "Nanoscale Dynamics of Molecular Assembly at Electrochemical Interfaces"
    204th Electrochemical Society National Meeting Orlando, Florida October 2003

21. "Fluorescence Labeling of Surface Species (FLOSS): a Key to Understanding the UV Photoreactivity of Alkylsiloxane SAMs"
    226th ACS National Meeting, Anaheim CA April 2004

22. "Fluorescence Labeling of Surface Species (FLOSS): a Key to Understanding the UV Photoreactivity of Alkylsiloxane SAMs"
    2006 DOE-BES Analysis Research Meeting, Annapolis, Maryland April 2004

23. "Dynamique Nanomètrique d'Auto-Assemblage Moléculaire à l'Interface Solide Liquide"
    Nanosciences: défis et prospectives - 72e Congrès de l'ACFAS, Quebec, Canada May 2004

24. "Nonlinear Optical Studies of Hot Electrons at Semiconductor Interfaces"
    Gordon Conference on Laser Materials Interactions, Proctor Academy, NH August 2004

25. "Probing single molecule oxidation at electrochemical interfaces: TPyP at Au(111)"
    229th ACS National Meeting, San Diego CA March 2005

26. "Sonication induced chemisorption of solvents on single walled carbon nanotubes: infrared spectroscopy and temperature programmed desorption study"
    229th ACS National Meeting, San Diego CA March 2005

Invited Talks at Conferences and Workshops (contd.)

27. "Probing chemical functionality on carbonaceous materials"
    230th ACS National Meeting, Washington DC August 2005

28. "Fluorescence Labeling of Surface Species (FLOSS) As a Probe of Chemical Composition of Complex Interfaces"
    231st ACS National Meeting, Atlanta, GA March 2006

29. "Fluorescence Labeling of Surface Species (FLOSS) As a Probe of Chemical Composition of Complex Interfaces"
    2006 DOE-BES Analysis Research Meeting, Warrenton, Virginia April 2006

30. "Probing dynamics at the single molecule level at electrochemical interfaces"
    International Symposium on Surface Imaging/Spectroscopy at the Solid/Liquid Interface
    Krakow, Poland May 2006

31. "Probing redox dynamics at the single molecule level at electrochemical interfaces"
    2006 Joint International Meeting of The Electrochemical Society,
    Cancun, Mexico October 2006

32. "Nanoscale Dynamics at Electrochemical Interfaces for Rewritable Devices"
    Eastern Analytical Symposium Somerset, New Jersey November 2006

33. "Probing the dynamics of interfacial electron transfer at the single molecule level "
    Mesilla Conference "Electron Transfer and Molecular Devices" February 2007

34. "High Resolution Interfacial Spectroscopy on an Ultrafast Timescale"
    MARM 2007, ACS Mid-Atlantic Regional Meeting, Collegeville, PA May 2007

35. "Nanostructured Materials by Electrodeposition onto Molecular Scale Templates"
    Fundamental Aspects on Nanostructured Materials and Electrocatalysis Symposium
    Hokkaido University, Sapporo, Japan June 2007

36. "Two Dimensional Charge Diffusion in a Self Assembled Monolayer of Redox Active Porphyrins"
    ICEI 2007 (International Conference on Electrified Interfaces 2007) Sahoro, Japan June 2007

37. "Charge Transfer Through and Between Single Molecules"
    235th ACS National Meeting, New Orleans, LA April 2008

38. "Ultrafast Vibrational Sum-Frequency Spectroscopy and Dynamics at Interfaces"
    EAS 2008, Eastern Analytical Symposium, Somerset, NJ November 2008

39. "Single Molecule Charge Transfer at Interfaces"
    WPI International Workshop, Sendai, Japan March 2009

Invited Talks at Conferences and Workshops (contd.)

40. "Surface Vibrational Spectroscopy of the HDO:D_2O/silica interface"
Ali Eftekhari-Bafrooei, Eric Borguet,
237th ACS National Meeting, Salt Lake City, UT March 2009

41. The Vibrational Dynamics of Ordered Interfacial Water"
13th International Conference on Surface and Colloid Science and the 83rd ACS Colloid & Surface Science Symposium, New York, NY June 2009

42. "Single Molecule Charge Transfer at Interfaces"
5th International Symposium on Molecular Materials: Electronics, Photonics and Spintronics, Rennes, France October 2009

43. "Electrochemistry at the Nanoscale"
MONALISA Interdisciplinary Day, Temple University, Philadelphia November 2009

44. "Single Molecule Charge Transfer and Localization at Interfaces"
1st Winter Workshop on Functional SPM in Bio and Chemical Physics, Modena, Italy December 2009

45. "Single Molecule Redox Chemistry at a Solid-Liquid Interface"
239th ACS National Meeting, San Francisco, CA March 2010

46. "The Ultrafast Vibrational Dynamics of Interfacial Water"
13th International Conference on Vibrations at Surfaces, Orlando, FL March 2010

47. "Ultrafast Vibrational Dynamics and Spectroscopy of Water at a Charged Interface"
ECONOS, Bremen, Germany June 2010

48. "Charge Transfer Through Single Molecules at Interfaces"
61th ISE Annual Meeting, Nice, France September 2010

49. "The vibrational spectroscopy and ultrafast dynamics of water at a charged solid interface"
Pacifichem 2010, Honolulu HI December 2010

50. "The vibrational spectroscopy and ultrafast dynamics of water at a charged solid-liquid interface"
Canadian Society for Chemistry Meeting, Montréal, Canada June 2011

51. "Charge Transfer and Localization in Single Molecules at Interfaces"
Canadian Society for Chemistry Meeting, Montréal, Canada June 2011

52. "Charge Transfer and Localization in Single Molecules at Interfaces"
6th International Toulouse-Kiev Chemistry Conference, Toulouse, France June 2011

Invited Talks at Conferences and Workshops (contd.)

53. "Thermal analysis to find molecules hiding from photons in carbon nanotubes"
Thermal Analysis Forum of Delaware Valley Annual Meeting, Claymont DE December 2011

54. "Ultrabroadband Vibrational Spectroscopy at a Mineral-Aqueous Interfaces"
243th ACS National Meeting, San Diego, CA March 2012

55. "Development and characterization of hybrid carbon nanotube based materials for solar energy conversion and microscopy applications"
243th ACS National Meeting, San Diego, CA March 2012

56. "Ultrabroadband Vibrational Sum Frequency Spectroscopy at a Charged Solid-Aqueous Interface"
221st Electrochemical Society Meeting, Seattle WA May 2012

57. "Charge Transport through Single Porphyrins at Interfaces"
221st Electrochemical Society Meeting, Seattle WA May 2012

58. "Dramatic Reduction of IR Vibrational Cross-sections of Molecules Encapsulated in Carbon Nanotubes, "
221st Electrochemical Society Meeting, Seattle WA May 2012

59. "Sum-frequency vibrational spectroscopy of amorphous silica surfaces in presence of water molecules adsorbing from the vapor phase"
244th ACS National Meeting, Philadelphia, PA August 2012

60. "Sum-frequency generation spectroscopy of the combination band vibrations of water molecules at silica surfaces"
244th ACS National Meeting, Philadelphia, PA August 2012

61. "Ultrabroadband Vibrational Sum Frequency Spectroscopy at Solid-Aqueous Interfaces"
Eastern Analytical Symposium, Somerset NJ November 2012

62. "Effect of salt and pH on the water/silica interface"
245th ACS National Meeting, New Orleans, LA April 2013

63. "Quasi-Ohmic Single Molecule Charge Transport through Highly Conjugated meso-to-meso Ethyne-Bridged Porphyrin Wires"
223rd Electrochemical Society Meeting, Toronto, Canada May 2013

64. "Effect of Endohedrally Adsorbed Molecules on S_{11} Electronic Transitions of Single Wall Carbon Nanotubes "
223rd Electrochemical Society Meeting, Toronto, Canada May 2013

65. "Charge Transport through Single Porphyrins at Interfaces"
Temple-NIMS Symposium, Tsukuba, Japan November 2013

Invited Talks at Conferences and Workshops (contd.)

66. "Charge Transport through Single Porphyrins at Interfaces"
Temple-Yonsei Symposium, Yonsei University, Korea November 2013

67. "Ultrafast vibrational sum-frequency spectroscopy and dynamics of OH groups at mineral/aqueous interfaces"
247th ACS National Meeting, Dallas, TX March 2014

68. "Hot Electron Based Gold Nanoplasmonic Optical Hydrogen Sensor"
UNESCO MATECSS Workshop, Montréal, Canada April 2014

69. "Electronic Transport Properties of Molecular Graphyne"
225rd Electrochemical Society Meeting, Orlando, Florida May 2014

70. "Spectroscopie et Dynamique Vibrationelle aux Interfaces Aqueuses"
"Journée Photonique aux Interfaces" Orsay, France May 2014

71. "Ultrafast vibrational sum-frequency spectroscopy and dynamics at mineral/aqueous interfaces"
97th Canadian Chemistry Conference, Vancouver, Canada June 2014

72. "Anisotropy of Charge Transport through Single Molecules at Interfaces"
2014 Joint International Meeting of the Electrochemical Society,
Cancun, Mexico October 2014

73. "Plasmonic Detection of Simple Molecules and Ions with Gold Nanostructures"
45th Winter Colloquium on the Physics of Quantum Electronics,
Snowbird, Utah January 2015

74. "Plasmonic Detection of Simple Molecules and Ions with Gold Nanostructures"
ACS 249th National Meeting, Denver, CO March 2015

75. "Electrochemical Gating of Charge Transport in Single Macrocycle Molecules"
225rd Electrochemical Society Meeting, Chicago, Illinois May 2015

76. "Plasmonic Detection of Simple Molecules and Ions with Metal Nanostructures"
Mexico MRS Meeting, Cancun, Mexico August 2015

77. "Supramolecular gateways to single molecule electronic properties"
Chinanano 2015, Beijing China September 2015

78. "Ultrafast dynamics at mineral/water interfaces"
Chemistry and Physics of Advanced Materials Symposium, Pune, India December 2015

79. "Ultrabroadband vibrational spectroscopy & ultrafast dynamics of aqueous/solid interfaces"
ICMS-Temple University Workshop
International Centre for Materials Science, Bangalore, India December 2015

Invited Talks at Conferences and Workshops (contd.)

80. "Charge Transport through Single Molecules at Interfaces"
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore India
Cambridge-JNCASR Winter School on "Frontiers in Materials Science" December 2015

81. "Ultrafast dynamics at mineral/water interfaces"
Pacifichem 2015, Honolulu HI December 2015

82. "Supramolecular gateways to single molecule electronic properties"
Pacifichem 2015, Honolulu HI December 2015

83. "Plasmonic Sensing with Nanostructures"
46th Winter Colloquium on the Physics of Quantum Electronics,
Snowbird, Utah January 2016

84. "Ultrabroadband vibrational spectroscopy & ultrafast dynamics of aqueous/solid interfaces"
CECAM Workshop "Liquid/Solid interfaces", Lausanne, Switzerland January 2016

85. Spectroscopy and vibrational dynamics of strongly hydrogen bonded OH species at the α-Al_2O_3(110) /H_2O interface
ACS 251st National Meeting, San Diego, CA March 2016

86. "Single Molecules Swicthing and Sensing"
MARM 2016, ACS Mid-Atlantic Regional Meeting, Riverdale, NY June 2016

87. "Ultrabroadband & ultrafast vibrational sum frequency generation spectroscopy and dynamics of aqueous/solid interfaces"
Nonlinear Optics at Interfaces, Telluride Research Workshop June 2016

88. "Supramolecular gateways to single molecule porphyrin electronic properties"
9th International Conference on Porphyrins and Phthalocyanines (ICPP-9)
Nanjing, China July 2016

89. "Ultrabroadband vibrational spectroscopy & ultrafast dynamics of aqueous/solid interfaces"
Vibrational Spectroscopy, Gordon Research Conference July 2016

90. "Hydrogen sensing platforms for a sustainable fuel economy"
ACS 252nd National Meeting, Philadelphia, PA August 2016

91. "Plasmonic Sensing with Nanostructures"
46th Winter Colloquium on the Physics of Quantum Electronics,
Snowbird, Utah January 2017

92. "Capturing the Ultrafast Vibrational Decoherence of Water at Mineral Interfaces"
ACS 253rd National Meeting, San Francisco, CA April 2017

Invited Talks at Conferences and Workshops (contd.)

93. "Ions and the ultrafast vibrational spectroscopy & dynamics at mineral-aqueous interfaces"
MARM 2017, ACS Mid-Atlantic Regional Meeting, Hershey, PA June 2017

94. "Single molecule switching and sensing"
MARM 2017, ACS Mid-Atlantic Regional Meeting, Hershey, PA June 2017

95. "Plasmonic Detection of Reactions on Nanostructures"
ACS 254th National Meeting, Washington, DC August 2017

96. "Design, Synthesis and Sharacterization of Hybrid Stratified Plasmonic Nanoparticles for Detection and Destruction of Chemical Agents"
DTRA Surface Science Review, NC State University, Raleigh, NC September 2017

97. "Ions and the ultrafast vibrational spectroscopy and dynamics at mineral-aqueous" interfaces"
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore India
Cambridge-JNCASR Winter School on "Frontiers in Materials Science" December 2017

98. "Single molecule switching and sensing"
2nd FRIMS International Symposium, NITech, Nagoya, Japan February 2018

99. "Ions and solvent structure at mineral- aqueous interfaces"
ACS 255th National Meeting, New Orleans, LA March 2018

100. "Development of Ultrabroadband Infrared Optical Parametric Amplifiers for Ultrafast Nonlinear Optical Spectroscopy"
Drexel Engineering Symposium, Drexel University, Phialdelphia April 2018

101. "Thermal and Spectroscopic Analysis of Porous-Organic Framework Interactions with Simple Chemical Species"
ACS 256th National Meeting, Boston, MA August 2018

102. "Single molecule switching and sensing"
14th JNC Conference "Chemistry of Materials-2018", Trivandrum, India October 2018

103. "Single molecule switching and sensing"
Chemistry and Physics of Advanced Materials Symposium, Pune, India October 2018

104. "Single molecule switching and sensing"
IIT Bombay, Diamond Jubilee Symposium, Mumbai, India February 2019

105. "Ultrafast vibrational spectroscopy and dynamics at aqueous interfaces"
16th Spectroscopy & Dynamics of Molecules and Clusters Discussion Meeting,
Shimla, India February 2019

Invited Talks at Conferences and Workshops (contd.)

106. "Ion adsorption and perturbations of solvent structure at mineral-aqueous interfaces"
ACS 257th National Meeting, Orlando, FL April 2019

107. "Ion solvation at mineral-aqueous interfaces"
ACS 258th National Meeting, San Diego, CA August 2019

108. "Ultrabroadband vibrational spectroscopy & ultrafast dynamics of aqueous/solid interfaces"
Annual Meeting of the Japan Society for Molecular Science, Nagoya September 2019

109. "Single Molecule Switching and Sensing"
Symposium on Electrified Interfaces 2020
Hokkaido University, Sapporo, Japan January 2020

110. "Probing local surface potentials at oxide-water interfaces"
Mesilla "Aqueous Solution/Oxide Interfaces" workshop
Mesilla, New Mexico February 2020

111. "Probing the vibrational density of states at aqueous interfaces"
ACS 258th National Meeting, Atlanta, GA August 2021

112. "Local potentials at mineral-aqueous interfaces"
ACS 258th National Meeting, Atlanta, GA August 2021

113. "Single Molecule Switching and Sensing"
Chemistry Day, Dublin City University, Ireland April 2022

114. "Charged solutes show faster vibrational relaxation at oxide/water interfaces"
Nonlinear Optics at Interfaces, Telluride Research Workshop June 2022

115. "The impact of hydrogen bonding on vibrational relaxation at aqueous interfaces"
24th International Conference on Horizons in Hydrogen Bond Research, Bilbao, Spain
September 2022

116. "Solute vibrational relaxation probes the vibrational density of states at oxide/water interfaces"
International Conference: Exploring the Nonequilibrium Properties of Condensed Matter,
San Sebastian, Spain September 2022

117. "Solute vibrational relaxation probes the vibrational density of states at oxide/water interfaces"
20th European Conference on Non-linear Optical Spectroscopy (ECONOS), Kiruna,
Sweden September 2022

118. "Single Molecule Switching and Sensing"
Sociedad Mexicana de Electroquímica (SMEQ), Puebla, Mexico October 2022

Invited Talks at Conferences and Workshops (contd.)

119. "The impact of hydrogen bonding on vibrational relaxation at aqueous interfaces"
9th Theme meeting on Ultrafast Sciences (UFS 2022) IISER Thiruvananthapuram, Kerala, India November 2022

120. "The impact of hydrogen bonding on vibrational relaxation at aqueous interfaces"
Spectroscopy & Dynamics of Molecules and Clusters Discussion Meeting (SDMC 2022)
Malpe, Karnataka, India November 2022

121. "Hydrogen bonding at aqueous-oxide interfaces"
Mesilla "Aqueous Solution/Oxide Interfaces" workshop
Mesilla, New Mexico February 2023

122. "Hydrogen bonding at aqueous interfaces"
ACS 258th National Meeting, Indianapolis, IN March 2023

123. "The impact of hydrogen bonding on vibrational relaxation at aqueous interfaces"
International Conference on Nonlinear Optics at Interfaces, Rome, Italy June 2023

124. "Hydrogen bonding at aqueous-oxide interfaces"
Goldschmidt Conference, Lyon, France July 2023

125. "Undergraduate research – from laser pointers to ultrafast lasers"
ACS National Meeting, San Francisco, CA August 2023

126. "Molecular Interactions with Nanoporous Materials"
Molecularly Designed Functional Materials 2023 (MDFM 23) India September 2023

127. "Hydrogen bonding and ultrafast dynamics at aqueous-oxide interfaces"
WE-Heraeus-Seminar on Solid-Water Interfaces at the Molecular Level February 2024

128. "Vibrational intensity anomalies upon nano-confinement"
ACS National Meeting, New Orleans, LA March 2024

Contributed Papers (Presenter Underlined, Undergraduate author)
(285 in total, 1 in 1999, 7 in 2000, 26 in 2001, 10 in 2002, 15 in 2003, 12 in 2004, 4 in 2005, 14 in 2006, 16 in 2007, 21 in 2008, 21 in 2009, 16 in 2010, 10 in 2011, 15 in 2012, 3 in 2013, 10 in 2014, 10 in 2015, 8 in 2016, 10 in 2017, 9 in 2018, 8 in 2019, 1 in 2020, 12 in 2021, 11 in 2022, 12 in 2023)

1. "Nonlinear Optical Probes of Structure and Dynamics at Semiconductor/Oxide Interfaces", D. Bodlaki, V. Fomenko, A. Ngo and E. Borguet, Gordon Research Conference on Dynamics at Surfaces, August 1999

2. "Second Harmonic Spectroscopic and Dynamic Studies of Semiconductor Interfaces" V. Fomenko, D. Bodlaki and E. Borguet, American Physical Society, Minneapolis, March 2000

3. "Combined Theoretical and Experimental Investigation of Mechanisms and Kinetics of Vapor-Phase Mercury Uptake by Carbonaceous Surfaces" S. Kwon, R. Vidic, and E. Borguet, DOE Contractor Meeting, Pittsburgh, June 2000

4. "Second Harmonic Spectroscopy of Buried Semiconductor Interfaces" V. Fomenko and E. Borguet, Physical Electronics Conference, Baton Rouge, June 2000

5. "Phase Separation in Two Dimensions on Carbonaceous Surfaces: Implications for Atmospheric Chemistry", S. Kwon, J. Russell, R.D. Vidic, and E. Borguet, Annual Chemistry Conference - Duquesne University, Pittsburgh, PA, July, 2000

6. "Photoinduced Nonlinear Optical Response of Semiconductor Interfaces", V. Fomenko, D. Bodlaki and E. Borguet, Pacifichem, Honolulu, December 2000

7. "Photoinduced Degradation of Self Assembled Monolayers on Semiconductor Oxide Surfaces", T. Ye, R. Dudek, D. Wynn, E. Borguet, Pacifichem, Honolulu, Dec. 2000

8. "Dynamics at Electrochemical Interfaces with Molecular/Atomic Resolution", Y. He, T. Ye and E. Borguet, Pacifichem, Honolulu, December 2000

9. "Charge Transfer, Trapping and Detrapping Dynamics at Semiconductor Interfaces Probed by Second Harmonic Generation", V. Fomenko, C. Faler and E. Borguet, American Physical Society, Seattle, March 2001

10. "Time-Resolved Second Harmonic Generation Investigations of Carrier Dynamics at Semiconductor Interfaces", D. Bodlaki and E. Borguet, American Physical Society, Seattle, March 2001

11. "Nanoscale Dynamics at Electrochemical Interfaces", Y. He, T. Ye and E. Borguet, American Physical Society, Seattle, March 2001

12. "Charge Transfer, Trapping and Detrapping Dynamics at Semiconductor Interfaces Probed by Second Harmonic Generation", V. Fomenko, D. Bodlaki, C Faler and E. Borguet, Electrochemical Society 199th Meeting - Washington, DC, March 25-30, 2001

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

13. "Dynamics of Metastable Nanoscale Island Growth and Dissolution at Electrochemical Interfaces by Time-Resolved STM", Y. He and E. Borguet Electrochemical Society 199th Meeting Washington, DC, March 25-30, 2001

14. "Propane Adsorption on Graphite Wall: Experiment and Simulation", Xiongce Zhao, J. Karl Johnson, Seokjoon Kwon, Radisav D. Vidic and Eric Borguet, 2001 Midwest Thermodynamics and Statistical Mechanics Conference Michigan State University, East Lansing, MI, May 2001

15. "Second Harmonic Spectroscopy of Chemically-Modified Ge Interfaces", Vasiliy Fomenko, Dora Bodlaki, Catherine Faler and Eric Borguet, Optical Spectroscopy at Interfaces (OSI-2001) Bad Honnef, Germany, May 2001

16. "Photoinduced Nonlinear Optical Response of Semiconductor Interfaces", V. Fomenko, D. Bodlaki and E. Borguet, Optical Spectroscopy at Interfaces (OSI-2001) Bad Honnef, Germany, May 2001

17. "Photoinduced Processes in Self Assembled Monolayers on Semiconductor Oxide Surfaces", Tao Ye, E. McArthur and E. Borguet, ACS Colloid and Surfaces Conference, Pittsburgh, June 2001

18. "Surface Vibrational Spectroscopy of Photoreactivity of Self Assembled Monolayers on Semiconductor Oxide Surfaces", T. Ye, E. McArthur and E. Borguet, Vibrations at Surfaces X, St. Malo, France, June 2001

19. "Impact of Pore Structure and Surface Oxygen on Elemental Mercury Uptake by Virgin Activated Carbon", Seokjoon Kwon, Aiguo Chen, Eric Borguet, and Radisav D. Vidic, Carbon2001, Lexington KY, July 2001

20. "Probing Carbonaceous Surface Chemical and Topological Heterogeneity by Temperature Programmed Propane Adsorption/Desorption", Seokjoon Kwon, Radisav Vidic and Eric Borguet, Carbon2001, Lexington KY, July 2001

21. "Investigation of Polar Organic Adsorption/Desorption from a Model Carbonaceous Surface: Acetone on Graphite", Seokjoon Kwon, Justin Russell, Radisav Vidic and Eric Borguet, Carbon2001, Lexington KY, July 2001

22. "Molecular Self-Assembly and Control of Growth and Dissolution of Surface Structures at Electrochemical Interfaces", Y. He and E. Borguet, International Conference on Electrified Interfaces, Nova Scotia, July 2001

23. "Photoinduced Processes in Self-Assembled Monolayers on Semiconductor Surfaces", T. Ye, E. McArthur and E. Borguet, Science 2001, University of Pittsburgh, September 2001

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

24. "Growth, Dissolution and Stabilization of Nanoscale Surface Structures by Electrochemical Control of Molecular Self-Assembly", Y. He, T. Ye and E. Borguet, Science 2001, University of Pittsburgh, September 2001

25. "Chemically-Modified Semiconductor Interfaces - A Pathway to Molecular Electronics", Dora Bodlaki, Vasiliy Fomenko, Catherine Faler, Lindsay Bombalski and Eric Borguet, Science 2001, University of Pittsburgh, September 2001

26. "Charge Transfer, Trapping and Detrapping Dynamics in Nanometer Films at Semiconductor Interfaces Probed by Second Harmonic Generation", V. Fomenko and E. Borguet, Science 2001, University of Pittsburgh, September 2001

27. "Probing Carbonaceous Surface Chemical and Topological Heterogeneity by Temperature Programmed Propane Adsorption/Desorption", S. Kwon, R. Vidic, and E. Borguet, Science 2001, University of Pittsburgh, September 2001

28. "Dynamics of Photo Excited Carrier Trapping and Recombination at Si(111) Interfaces Probed by Time-Resolved Second Harmonic Generation", D. Bodlaki, and E. Borguet, AVS conference, San Francisco, October 2001

29. "In situ Measurements of the Stability of H terminated Si Surfaces and Kinetics of Oxide Regrowth in Ambien'', V. Fomenko, D. Bodlaki, C. Faler and E. Borguet, AVS conference, San Francisco, October 2001

30. "Growth and Dissolution of Surface Structures by Electrochemical Control of Molecular Self-assembly" T. Ye, Y He and E. Borguet, AVS conference, San Francisco, October 2001

31. "Probing Chemical and Topological Heterogeneity of Carbonaceous Surfaces via Temperature Programmed Desorption of Simple Molecules from Model Carbonaceous Surfaces", S. Kwon, R. Vidic, and E. Borguet, AVS conference, San Francisco, October 2001

32. "Photoinduced Processes in Self-Assembled Monolayers on Semiconductor Surfaces", T. Ye, E. McArthur and E. Borguet, AVS conference, San Francisco, October 2001

33. "Nonlinear Spectroscopy of Electron Trapping at Si-oxide Interfaces", D. Bodlaki, V. Fomenko and E. Borguet, Interdisciplinary Laser Science Conference, Long Beach CA, October 2001

34. "Photoinduced Processes in Self Assembled Monolayers on Semiconductor Surfaces", Tao Ye, Eric McArthur and Eric Borguet, Organic Thin Films, Long Beach CA, October 2001

35. "Growth and Dissolution of Surface Structures by Electrochemical Control of Molecular Self-Assembly", Y. He, T. Ye and E. Borguet, Gordon Research Conference, Ventura CA, January 2002

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

36. "Tuning the Binding Energy: Electrochemical Control of Molecular Self-Assembly", Y. He, T. Ye and E. Borguet, American Physical Society, Indianapolis, March 2002

37. "Separating Bulk and Surface Contributions to the Second Order Nonlinear Optical Response of Chemically-Modified Ge Interfaces", Vasiliy Fomenko, Dora Bodlaki, and Eric Borguet , American Physical Society, Indianapolis, March 2002

38. "Tunneling Through Novel Ultrathin Dielectrics for Semiconductor Interfaces Probed by Second Harmonic Generation", E. Borguet, D. Bodlaki, and V. Fomenko, American Physical Society, Indianapolis, March 2002

39. "Potential Dependence of the Dynamics of Nanoscale Island Growth and Dissolution at Electrochemical Interfaces by Time-Resolved STM", Y. He and E. Borguet, Electrochemical Society 201th Meeting - Philadelphia, PA, May 12-17, 2002

40. "Molecular Dynamics at Electrochemical Interfaces by Time-Resolved STM", T. Ye, Y. He and E. Borguet, Electrochemical Society 201th Meeting - Philadelphia, PA, May 12-17, 2002

41. "Growth and Dissolution of Surface Structures by Electrochemical Control of Self-Assembly of Insoluble Molecular Monolayers", Y. He, T. Ye and E. Borguet, Electrochemical Society 201th Meeting - Philadelphia, PA, May 12-17, 2002

42. "Self-Assembly at Electrochemical Interfaces: Role of Potential Modulated Surface Mobility", Y. He, T. Ye, and E. Borguet, 224th ACS, National Meeting, Boston, MA, August 18-22, 2002

43. "Impact of Surface Heterogeneity on Mercury Uptake by Carbonaceous Sorbents: Bridging the Pressure Gap from UHV to Atmospheric Conditions", R.D. Vidic., S. Kwon, and E. Borguet, 19th Annual Pittsburgh Coal Conference, Pittsburgh, PA, September 23-27, 2002.

44. "Impact of Chemical and Topological Heterogeneity of Single Walled Carbon Nanotubes (SWNT) on Uptake and Binding Simple Molecules?", S. Kwon, R. Vidic, and E. Borguet, Annual Meeting for the University/NETL Student Partnership Program Pittsburgh, PA October 22, 2002

45. "Second Harmonic Generation Probing of Band Bending, Dopant Type and Density at Buried Semiconductor Interfaces" Julie Fiore, Vasiliy Fomenko, and Eric Borguet, American Physical Society National Meeting, Austin, Texas, March 2003

46. "Femtosecond Time-Resolved Second Harmonic Generation Investigations of Carrier Dynamics at Ge Interfaces", A. McClelland, V. Fomenko, E. Borguet, American Physical Society National Meeting, Austin, Texas, March 2003

47. "Effects of Surface Chemical Heterogeneity on Molecular Adsorption in and on Single Walled Carbon Nanotubes", S. Kwon, X. Feng, T. Newsome, E. Borguet, and R. Vidic, Nanotechnology and the Environment symposium, 225th ACS National Meeting, New Orleans, March 2003

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

48. "Role of Surface Chemical and Topological Heterogeneity on Adsorption on Carbonaceous Surfaces", S. Kwon, R. Vidic, and E. Borguet, 225th ACS National Meeting, New Orleans, March 2003

49. "Bridging the Pressure Gap from UHV to Atmospheric Conditions: Adsorption of Mercury by Graphite and Activated Carbon", Kwon, S., Borguet, E., and Vidic, R.D., Proceedings of the 26th Biennial Conference on Carbon, Oviedo, Spain, July 6-10, 2003

50. "Catalysis of Hydrogen Sulfide Oxidation by Carbonaceous Surfaces for Effective Sulfur Impregnation", R.D. Vidic, W. Feng, X. You, X. Feng, E. Borguet, Proceedings of the 26th Biennial Conference on Carbon, Oviedo, Spain, July 6-10, 2003

51. "Time-Resolved Second Harmonic Generation Investigations of Hot Carrier Dynamics at Buried Semiconductor Interfaces", A. McClelland, J. Fiore, V. Fomenko, E. Borguet, SPIE Annual Meeting, San Diego, August 2003

52. "Self-assembled Molecular Scale Templates at Electrochemical Interfaces", Tao Ye, Yufan He and Eric Borguet, the Chemistry of Electronic Materials Gordon Conference, July 13-18, 2003

53. "Effect of Surface Chemistry on the Behavior of Hot Electrons at Semiconductor Interfaces.", A. McClelland, J. Fiore, V. Fomenko, E. Borguet, 226th ACS National Meeting, New York, NY September 2003

54. "Second Harmonic Generation as a Probe of Adsorption at Colloidal Particle Surfaces", R. Kramer Campen and Eric Borguet, ACS Regional Meeting, Pittsburgh, October 2003

55. "How Do Surface Functional Groups on Single Walled Carbon Nanotubes (SWNTs) Affect Molecular Adsorption?", Xue Feng, Radisav Vidic, Eric Borguet, ACS Regional Meeting, Pittsburgh, October 2003

56. "Adsorption of Hydrogen Sulfide on Activated Carbon Fibers: Effect of Pore Structure and Surface Treatment", Wenguo Feng, Radisav Vidic, Xue Feng and Eric Borguet, ACS Regional Meeting, Pittsburgh, October 2003

57. "Molecular Scale Templates at Electrochemical Interfaces", Jasmine Ma, Tao Ye, Yufan He and Eric Borguet, ACS Regional Meeting, Pittsburgh, October 2003

58. "Fluorescence Detection of Surface Bound Intermediates Produced from UV Photoreactivity of Alkylsiloxane SAMs", Eric A. McArthur, Tao Ye, Kessler McCoy-Simandle, Jason Cross, Stéphane Petoud and Eric Borguet, ACS Regional Meeting, Pittsburgh, October 2003

59. "Separating Nanoscale Island Dynamics from Phase Transitions at the Au(111) Electrochemical Interface using Asymmetric Potential Pulse Perturbation STM", Y. He and E. Borguet, ACS Regional Meeting, Pittsburgh, October 2003

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

60. "Understanding the Adhesion of Gram Negative Bacteria to Mineral Surfaces", R. Kramer Campen, James D. Kubicki, Eric Borguet, CEMS Graduate Student Conference, Stony Brook University, Long Island New York, February 2004

61. "A Vibrational Spectroscopy Study of the Fate of Oxygen Containing Functional Groups on Carbon Single Walled Nanotube Surfaces during Thermal Treatment", Xue Feng, Radisav Vidic, Eric Borguet, Vibrations at Surfaces 11, Bangor, Maine, June, 2004

62. "Influence of Surface Functional Groups on Molecular Adsorption by Single Walled Carbon Nanotubes (SWNTs)", Xue Feng, Wenguo Feng, Radisav Vidic, Eric Borguet, Carbon 2004, Providence, RI, July, 2004

63. "Fluorescence Labeling of Surface Functionalities on Carbon Materials: Activated Carbon Fiber and Single Walled Carbon Nanotubes", Xue Feng, Wenguo Feng, Radisav Vidic, Eric Borguet, Carbon 2004, Providence, RI, July, 2004

64. "Vibrational Spectroscopy of Oxygen Containing Functional Groups and Their Influence on the Adsorption of Small Molecules on Single Walled Carbon Nanotubes", X. Feng, C. Matranga, R. Vidic, E. Borguet, 228th ACS National Meeting, Philadelphia, PA, August 22-26, 2004

65. "Molecular Adsorption and Electrode Reactions of Porphyrins at the Au(111)-electrolyte Interface" Y. He, T. Ye, and E. Borguet, 228th ACS National Meeting, Philadelphia, PA, August 22-26, 2004

66. "Adsorption of H_2S onto Activated Carbon Fibers under Dry and Anoxic Conditions", W. Feng, X. Feng, R. Vidic, E. Borguet, 228th ACS National Meeting, Philadelphia, PA, August 22-26, 2004

67. "Sulfur Impregnation on Activated Carbon Fibers through H_2S Oxidation for Vapor Phase Mercury Removal", W. Feng, S. Kwon, X. Feng, R. Vidic, E. Borguet, 228th ACS National Meeting, Philadelphia, PA, August 22-26, 2004

68. "Second Harmonic Generation as a Probe of Adsorption at Colloidal Particle Surfaces", R. Kramer Campen, James D. Kubicki, Eric Borguet, 228th ACS National Meeting, Philadelphia, PA, August 22-26, 2004

69. "Second Harmonic Generation as a Probe of Adsorption at Colloid Particle Surfaces", R. Kramer Campen, James D. Kubicki, Eric Borguet, Environmental Symposium, Pennsylvania State University, University Park, March 2004.

70. "Study of Ammonia Adsorption on Single walled Carbon Nanotubes (SWNTs) by Infrared Spectroscopy", Xue Feng, Radisav Vidic, Eric Borguet AICHE 2004, Austin, TX, November 2004

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

71. "Infrared Spectroscopy Study of Functionalities on Single Walled Carbon Nanotubes (SWNTs)", Xue Feng, Christopher Matranga, Radisav Vidic, Eric Borguet, AICHE 2004, Austin, TX, November 2004

72. "Sulfur Impregnation on Activated Carbon Fibers through H_2S Oxidation for Mercury Control", W. Feng, S. Kwon, E. Borguet, R. Vidic, 229th ACS National Meeting, San Diego CA, March 2005

73. "Using Second Harmonic Generation to Understand the Aqueous Colloid Interface" R. Kramer Campen, Hongfei Wang, James D. Kubicki, Eric Borguet, Environmental Chemistry Symposium, Pennsylvania State University, April 2005.

74. "Second harmonic generation as a probe of adsorption at colloidal particle surfaces" R. Kramer Campen, Ali Eftekhari, Satoshi Nihonyanagi, James D. Kubicki, Hong-fei Wang, and Eric Borguet 230th ACS National Meeting, Washington DC, August 2005

75. "Optical Studies of Adsorption of Functionalized Colloidal Polystyrene Spheres" Allison Pymer, Fuyuo Nagayama, R. Kramer Campen, Eric Borguet OSA/APS-DLS Conference, Frontiers in Optics, Tucson, AZ, October 2005.

76. "The Specificity and Sensitivity of Fluorescence Labeling of Surface Species", Yangjun Xing, Eric U Borguet, ACS Philadelphia Local Meeting, Villanova PA, January 2006

77. "A Surface Charge of Colloidal Particles as a function of solution pH using Second Harmonic Generation", Allison K. Pymer, Fuyuo Nagayama, R. Kramer Campen, Eric Borguet, ACS Philadelphia Local Meeting, Villanova PA, January 2006

78. "A New Phase of the Au(111) Surface in Electrolyte Revealed by STM and Asymmetric Potential Pulse Perturbation", Yufan He and Eric Borguet, American Physical Society National Meeting, Baltimore, Maryland, March 2006

79. "Nanolithographic Write, Read and Erase via Reversible Nanotemplated Nanostructure Electrodeposition on Alkanethiol Modified Au(111) in an Aqueous Solution", Kyoungja Seo and Eric Borguet, American Physical Society National Meeting, Baltimore, Maryland, March 2006

80. "Growth of Electrodeposited Ag Nanowires in Anionic Surfactant Nanotemplates on Au(111)", Eric Borguet, Kyoungja Seo, and Tao Ye, American Physical Society National Meeting, Baltimore, Maryland, March 2006

81. "Using ultrafast lasers for nonlinear optical studies of surface charge on mesoscopic particles in solution." Allison Pymer, Fuyou Nagayama, Oleksandr Isaienko, Satoshi Nihonyanagi, R. Kramer Campen, Eric Borguet. Temple Undergraduate Research Forum (TURF), March 2006

82. "Using ultrafast lasers for nonlinear optical studies of surface charge on mesoscopic particles in solution." Allison Pymer, Fuyou Nagayama, Oleksandr Isaienko, Satoshi Nihonyanagi, R. Kramer Campen, Eric Borguet. Intercollegiate Student Chemist Convention, Ursinus College, April 2006

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

83. "Mechanisms of H_2S adsorption onto carbonaceous surfaces under dry and anoxic conditions" W. Feng, E. Borguet, and R.D Vidic, International Conference on Carbon, Aberdeen, Scotland, July 16-21, 2006

84. "Sulfurization of carbon surface for vapor phase mercury removal" W. Feng, E. Borguet, and R.D Vidic, International Conference on Carbon, Aberdeen, Scotland, July 16-21, 2006

85. "Towards an Experimental Determination of The Interfacial Potential at the Colloidal Silica Water Interface using Second Harmonic Generation: R. Kramer Campen, Alison K Pymer, Satoshi Nihonyanagi and Eric Borguet, Geological Society of America, Annual Meeting, Philadelphia, PA, October 2006

86. "Potential-Induced Structural Change in a Self-Assembled Monolayer of 4-Methylbenzenethiol on Au(111)", Kyoungja Seo and Eric Borguet, 98th Meeting of the Korean Chemical Society, Gwangju, Korea, October 2006

87. "Nonlinear Optical Studies of Mesoscopic Particle Surface Charge" Allison Pymer, R. Kramer Campen, Satoshi Nihonyanagi, Oleksandr Isaienko and Eric Borguet OSA/APS-DLS Conference, Frontiers in Optics, Rochester NY, October 2006

88. "Potential-Induced Structural Change in a Self-Assembled Monolayer of 4-Methylbenzenethiol on Au(111)" Eric Borguet and Kyoungja Seo, 2006 Joint International Meeting of The Electrochemical Society, Cancun, Mexico, November 2006

89. "Fluorescence Labeling of Surface Species (FLOSS) As a Probe of Chemical Composition of the Interfaces of Complex Nanoporous Carbon Materials" Eric Borguet, Nikolay Dementev, Radisav Vidic, 2006 Joint International Meeting of The Electrochemical Society, Cancun, Mexico, November 2006

90. "Probing porphyrin redox dynamics at the single molecule level at electrochemical interfaces" Yangjun Xing, Yufan He, Tao Ye and Eric Borguet
Electrochemistry Gordon Research Conference, Ventura CA, January 2007

91. "Two Dimensional Charge Diffusion in a Self-Assembled Monolayer of Redox Activated Porphyrins" Yangjun Xing, Yufan He, Tao Ye and Eric Borguet
ACS Poster Session at LaSalle University, Philadelphia PA, January 2007

92. "Determining Functionalities on the Surface of Carbon Nanotubes by Fluorescence Labeling" Nikolay Dementev, Xue Feng, Eric Borguet.
ACS Poster Session at LaSalle University, Philadelphia PA, January 2007

93. "High resolution spectroscopy using ultra-fast, time domain sum frequency generation" Satoshi Nihonyanagi, Ali Eftekhari-bafrooei, Eric Borguet
ACS Poster Session at LaSalle University, Philadelphia PA, January 2007

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

94. "Nonlinear Optical Studies of Mesoscopic Colloidal Particle Surface Charge" Allison K. Pymer, R. Kramer Campen, Satoshi Nihonyanagi, Eric Borguet.
ACS Poster Session at LaSalle University, Philadelphia PA, January 2007

95. "Ultrafast Vibrational Dynamics at Water Interfaces by Sum-Frequency Generation", Ali Eftekhari-Bafrooei, Satoshi Nihonyanagi, and Eric Borguet
ACS Poster Session at LaSalle University, Philadelphia PA, January 2007

96. "High Resolution Surface Vibrational Spectroscopy using Ultrashort Laser Pulses," S. Nihonyanagi, A. Eftekhari-Bafrooei E. Borguet, 87th Spring Meeting of the Chemical Society of Japan, Kansai University, Osaka, Japan, March 2007

97. "Two Dimensional Charge Diffusion in a Self-Assembled Monolayer of Redox Active Porphyrins," by E. Borguet, Y. Xing, Y. He and T. Ye
211th Meeting of the Electrochemical Society, Chicago Illinois, May 2007

98. "Interaction of acetone with single wall carbon nanotubes: FTIR and TPD study" Dmitry Kazachkin, Xue Feng, Seokjoon Kwon, Nikolay Dementev, Radisav Vidic, Eric Borguet. MARM Conference, May 2007

99. "Nonlinear Optical Studies of the Surface Charge of Mesoscopic Colloidal Silica Particles" Allison K. Pymer, R. Kramer Campen, Satoshi Nihonyanagi, Eric Borguet. MARM conference, May 2007

100. "Time- and Frequency Resolved Sum-Frequency Generation Studies of Free OH at Solid/Aqueous Interfaces", Satoshi Nihonyanagi, Ali Eftekhari-Bafrooei and Eric Borguet ICEI 2007 (International Conference on Electrified Interfaces 2007), Sahoro, Japan, June 2007

101. "High resolution spectroscopy using ultra-fast, time domain sum frequency generation at biologically relevant interfaces." Eric Borguet, Satoshi Nihonyanagi, Ali Eftekhari-Bafrooei, 234th ACS National Meeting, Boston MA, August 2007

102. "High Resolution Surface Vibrational Spectroscopy in the Ultrafast Time Domain, Ali Eftekhari-Bafrooei, Satoshi Nihonyanagi, and Eric Borguet, Dynamics at Surfaces, Gordon Research Conference, Proctor Academy, Andover MA, August 2007

103. "Reconciling potentiometric titration and Second Harmonic Generation Measured Diffuse Layer Potential in Aqueous Silica Suspension", R. K. Campen, A. K. Pymer, S. Nihonyanagi and E. Borguet 17th V. M. Goldschmidt Conference, Cologne Germany, 19th-24th August 2007

104. "Thermoanalysis as a tool for the evaluation of chemical composition, purity and purification protocols of carbon nanotubes", Nikolay Dementev (1st prize award), Dmitry Kazachkin, and Eric Borguet Thermal Analysis Forum of Delaware Valley, Annual Poster Session, December 2007

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

105. "TPD-MS analysis of carbon materials: temperature induced chemistry", D. Kazachkin, N. Dementev, R. Vidic, and E. Borguet. Thermal Analysis Forum of Delaware Valley, Annual Poster Session, December 2007

106. "Characterization of thin metal film growth on an organic self-assembled-monolayer using current-sensing atomic force microscopy", Sean. E. Keuleyan, Yangjun Xing, Eric Borguet ACS Poster Session, Philadelphia, PA, January 2008

107. "Nanoshaving and nanoscale current sensing atomic force microscopy of metal films on organic self-assembled monolayers", Sean Keuleyan, Yangjun Xing, Jacqueline Hines, and Eric Borguet, ACS Poster Session, Philadelphia, PA, January 2008.

108. "Ultrafast vibrational dynamics and spectroscopy of a terminal methylene group in a siloxane self-assembled monolayer", Ali Eftekhari-Bafrooei, Satoshi Nihonyanagi, and Eric Borguet ACS Poster Session, Philadelphia, PA, January 2008

109. "Production of infrared pulses for ultra-broadband sum-frequency generation spectroscopy of interfaces", Oleksandr Isaienko, Eric Borguet, ACS Poster Session, Philadelphia, PA, January 2008

110. "Measurement of Single Molecule Conductivity of Conjugated Organic Oligomers with Conjugated Thiol Linkers", Yangjun Xing, Tae-Hong Park, Michael J. Therien, and Eric Borguet, ACS Poster Session, Philadelphia, PA, January 2008

111. "Measurement of Single Molecule Conductivity of Conjugated Organic Oligomers with Conjugated Thiol Linkers", Yangjun Xing, Tae-Hong Park, Michael J. Therien, and Eric Borguet, ACS Poster Session, Philadelphia, PA, January 2008

112. "Nanoscience for Novel Hydrogen Sensors: Nanoshaving and nanoscale current sensing atomic force microscopy of metal films on organic self-assembled monolayers" Sean Keuleyan, Yangjun Xing Jacqueline Hines, and Eric Borguet, Temple Undergraduate Research Poster Presentation, Harrisburg, PA, January 2008

113. "Quantum Modeling of Hg adsorption on carbon surfaces in the presence of HCl, NO_2 or SO_2", Huiying Zhu, Joseph RV. Flora, Radisav Vidic, and Eric Borguet, ACS National Meeting, New Orleans, LA, April 2008

114. "Impact of fly ash composition and flue gas components on mercury speciation" Xihua Chen, Ravi Bhardwaj, Jason Monnell, Joseph RV. Flora, Eric Borguet, and Radisav Vidic, ACS National Meeting, New Orleans, LA, April 2008

115. "Characterization of Thin Metal Film Growth on an Organic Self-Assembled-Monolayer using Current-Sensing Atomic Force Microscopy" Sean E. Keuleyan, Yangjun Xing, Jacqueline Hines, and Eric Borguet, ACS National Meeting, New Orleans, LA, April 2008

116. "Characterization of Thin Metal Film Growth on an Organic Self-Assembled-Monolayer using Current-Sensing Atomic Force Microscopy", Sean E. Keuleyan, Yangjun Xing, and Eric Borguet, ECS National Meeting, Phoenix, AZ, May 2008

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

117. "Near-Infrared Non-Collinear Optical Parametric Amplification in Bulk Potassium-Titanyl Phosphate with >2500 cm^{-1} Bandwidth", Oleksandr Isaienko and Eric Borguet. Conference on Lasers and Electro-Optics (CLEO) in conjunction with Quantum Electronics and Laser Science Conference (QELS), San Jose, CA, May 2008

118. "Ultra-Broadband Infrared Pulses from a Potassium-Titanyl Phosphate Optical Parametric Amplifier for VIS-IR-SFG Spectroscopy", Oleksandr Isaienko and Eric Borguet, 16th International Conference on Ultrafast Phenomena (UP2008), Stresa, Lago Maggiore (Italy), June 2008

119. "Ultrafast time and frequency domain vibrational dynamics of the CaF_2/H_2O interface", Ali Eftekhari-Bafrooei, Satoshi Nihonyanagi and Eric Borguet, 16^{th} International Conference on Ultrafast Phenomena (UP2008), Stresa, Lago Maggiore (Italy), June 2008

120. "Mercury Speciation in Coal-Fired Power Plant Flue Gas - Experimental Studies and Model Development", Sun, W., Bhardwaj, R., Chen, X., Flora, J.R.V., Borguet, E., Vidic, R.D. University Coal Research Contractors Review Conference, Pittsburgh, PA, June 10-11, 2008

121. "Charge transfer study through single stranded and double stranded peptide nucleic acid (PNA) films", Amit Paul, Waldeck David, Richard Watson, Paul Lund, Catalina Achim, Yangjun Xing, and Eric Borguet, National ACS Meeting, Philadelphia, PA, August 2008

122. **"**Quantum Chemical Simulations of Acetone Adsorption on SWCNTs.**"** Y. Nishimura**,** D. Kazachkin, K. Morokuma, E. Borguet, and S. Irle, World Association of Theoretical and Computational Chemists (September 14-19, 2008) Sydney, Australia

123. "Controlling and Determining Purity of Carbon Nanotubes" Nikolay Dementev and Eric Borguet, EAS 2008, Eastern Analytical Symposium, Somerset, NJ, November 2008

124. "Pressure gap in carbon nanomaterials? The effect of temperature and pressure on the binding of simple molecules to carbon nanotubes." D. Kazachkin, Y. Nishimura, S. Irle, K. Morokuma, R. Vidic, and E. Borguet, AIChE (November 18, 2008) Philadelphia, PA

125. "Recent achievements in the purification of carbon nanotubes: dynamic annealing in air" Nikolay Dementev and Eric Borguet, Thermal Analysis Forum of Delaware Valley, Claymont, DE, December 2008

126. "Thermal study of hydrogen desorption from the surface of Pd deposited on multiwall carbon nanotubes (MWCNTs)" Andrii Buvailo, Dmitry Kazachkin, Nikolay Dementev, and Eric Borguet, Thermal Analysis Forum of Delaware Valley, Claymont, DE, December 2008

127. "Using Temperature Programmed Desorption for the Investigation of Solvent Interactions with Carbon Materials. Revealing the Pressure Gap" Dmitry V. Kazachkin, Xue Feng, Radisav Vidic, and Eric Borguet, Thermal Analysis Forum of Delaware Valley, Claymont, DE, December 2008

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

128. "Thermal oxidation to produce carbon nanotubes free of carbon impurities" Nikolay Dementev, Sebastian Osswald, Yury Gogotsi, Eric Borguet, ACS Ninth Annual Graduate Student and Fourth Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, January 2009

129. "Synthesis of SnO_2-based nanomaterials doped with Pd additives for hydrogen sensor applications" Andrii I. Buvailo, Eric U. Borguet, Igor P. Matushko, Nelly P. Maksimovich, Ludmila P. Oleksenko, ACS Ninth Annual Graduate Student and Fourth Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, January 2009

130. "Elimination of the Visible Luminescence of Carbon Nanotubes" Cheuk Fai Chiu, Nikolay Dementev, Eric Borguet, ACS Ninth Annual Graduate Student and Fourth Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, January 2009

131. "Vibrational Spectroscopy and Dynamics of the CaF_2/H_2O Interface" Poster at Molecular Energy Transfer", Ali Eftekhari-Bafrooei, Satoshi Nihonyanagi and Eric Borguet, Gordon Research Seminar, Ventura, CA, January 2009

132. "The Vibrational Dynamics of Interfacial Water at a Charged Interface" Ali Eftekhari-Bafrooei and Eric Borguet, Molecular Energy Transfer, Gordon Research Conference, Ventura, CA, January 2009

133. "Synthesis of PdO-doped SnO_2 nanomaterial for creation of an absorption-semiconductor hydrogen sensor operating at a low temperature" Andrii Buvailo, Ludmila P. Oleksenko, Nelly P. Maksimovich, Igor P. Matushko, and Eric Borguet, 237th National ACS meeting, Salt Lake, UT, March 2009

134. "Ultra-Broadband Vibrational Sum-Frequency Spectroscopy of Hydroxyl Overtones at Mineral/Aqueous Interfaces, Oleksandr Isaienko, Eric Borguet, 237th National ACS Meeting, Salt Lake, March 2009

135. "Recent achievements in the purification of carbon nanotubes: dynamic oxidation in air" Nikolay Dementev, Sebastian Osswald, Yury Gogotsi, and Eric Borguet, Thermal Analysis Forum of Delaware Valley, Drexel University, PA, March 2009

136. "Temperature and pressure dependence of solvent molecule adsorption on single wall carbon nanotubes: the existence of a 'pressure gap'", Dmitry V. Kazachkin, Yoshifumi Nishimura, Stephan Irle, Xue Feng, Radisav Vidic, and Eric Borguet, Thermal Analysis Forum of Delaware Valley, Drexel University, PA, March 2009

137. "TPD study of hydrogen desorption from the surface of a hydrogen sensor material based on Pd/MWCNTs composite", Andrii Buvailo, Dmitry Kazachkin, Nikolay Dementev, and Eric Borguet, Thermal Analysis Forum of Delaware Valley, Drexel University, PA, March 2009

138. "Quenching of Luminescence of Fluorophores on Carbon Nanotubes", Cheuk Fai Chiu, Nikolay Dementev, Eric Borguet, 2009 Intercollegiate Student Chemists Convention, Franklin & Marshall College, Lancaster, PA, April 2009

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

139. "The effect of ordering on the vibrational dynamics of interfacial water", Ali Eftekhari-Bafrooei, and Eric Borguet, Fourteenth International Conference on Time-Resolved Vibrational Spectroscopy (TRVS-XIV), Meredith, NH, May 2009

140. "Tuning and Switching the Visible Luminescence of Carbon Nanotubes", Cheuk Fai Chiu, Nikolay Dementev, Eric Borguet, ECS National Meeting, San Francisco, May 2009

141. "The use of metal oxide and polymer based composite materials for SAW sensor applications", Andrii Buvailo, Yangjun Xing, Jacqueline Hines, Eric Borguet, ECS National Meeting, San Francisco, May 2009

142. "Single Molecular Redox Reaction of Porphyrin in a Self-Assembled Monolayer", Yangjun Xing, Yufan He, Eric Borguet, ECS National Meeting, San Francisco, May 2009

143. "Dynamic Annealing: A Route toward Analytically Pure Carbon Nanotubes", Nikolay Dementev, Sebastian Osswald, Yury Gogotsi, Eric Borguet, ECS National Meeting, San Francisco, May 2009

144. "Measurement of Charge Transfer through Single Molecules", Yangjun Xing and Eric Borguet, The 69th Physical Electronics Conference on the Physics and Chemistry of Surfaces and Interfaces, Rutgers University, June 2009

145. "Ultrafast Vibrational Dynamics of Interfacial Water", Ali Eftekhari-Bafrooei and Eric Borguet, The 69th Physical Electronics Conference on the Physics and Chemistry of Surfaces and Interfaces, Rutgers University, June 2009

146. "Identification and Quantification of Oxygen-Containing Functionalities on the Surface of Carbon Nanotubes by Fluorescence Labeling of Surface Species (FLOSS)", Nikolay Dementev, Xue Feng and Eric Borguet, 69th Physical Electronics Conference on the Physics and Chemistry of Surfaces and Interfaces, Rutgers University, June 2009

147. "Carbon Nanotube Based Solar Cell Using Dye-Sensitized Technology", Cheuk Fai Chiu, Nikolay Dementev, Eric Borguet, Eastern Analytical Symposium, Somerset, NJ, November 2009

148. "Surface Characterization of Piezoelectric Microcantilever Sensor (PEMS) via Atomic Force Microscopy and Fluorescence", Aseem Malhotra, LiNa Loo, Wei Wu, Wei-Heng Shih, Wan Y. Shih, Gregory P. Adams, Hossein Borghaei, and Eric Borguet, Philadelphia Section ACS 10th Annual Graduate Student and 5th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, January 2010

149. "Dye-sensitized Carbon Nanotubes for Light Energy Conversion", Gordon (Cheuk Fai) Chiu, Nikolay Dementev and Eric Borguet, Philadelphia Section ACS 10th Annual Graduate Student and 5th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, January 2010

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

150. "Electrochemical Detection of Nitric Oxide by Carbon Nanopipettes", Fei Li, Nikolay Dementev, Roozbeh Ghavami, Riju Singhal, Yury Gogotsi and Eric Borguet, Philadelphia Section ACS 10th Annual Graduate Student and 5th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, January 2010

151. "Influence of surface chemistry and nanoscale morphology on neuronal adhesion and differentiation**",** Guillaume Lamour, Ali Eftekhari-Bafrooei, Eric Borguet, Sylvie Souès, and Ahmed Hamraoui, Philadelphia Section ACS 10th Annual Graduate Student and 5th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, January 2010

152. "Electrochemical Grafting of Amines to Carbon Nanopipettes", Roozbeh Ghavami, Fei Li, Nikolay Dementev, and Eric Borguet, Philadelphia Section ACS 10th Annual Graduate Student and 5th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, January 2010

153. "Identification and quantification of functional groups on carbon nanopipettes via fluorescence labeling, Nikolay Dementev, Cheuk Fai Chiu, Roozbeh Ghavami, Fei Li, and Eric Borguet, Philadelphia Section ACS 10th Annual Graduate Student and 5th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, January 2010

154. "Detection of antibody binding events via atomic force and fluorescence microscopy for calibration of piezoelectric microcantilever sensor (PEMS) response", Aseem Malhotra, Lina Loo, Wei Wu, Wei-Heng Shih, Wan Y. Shih, Gregory P. Adams, Hossein Borghaei, Eric Borguet, American Medical Student Association 2010 Annual Convention, Anaheim, CA, March 2010

155. "The effect of hydrogen bond strength on the vibrational relaxation of interfacial water", Ali Eftekhari-Bafrooei and Eric Borguet, ACS 239th National Meeting, San Francisco, March 2010

156. "Detection of Antibody Binding Events via AFM and Fluorescence Microscopy for Calibration of Piezoelectric Microcantilever Sensor (PEMS) Response", Aseem Malhotra and Eric Borguet, Temple University Access to Excellence, Harrisburg, PA March 2010

157. "A New Method for Supersolublization of Ultrapure Carbon Nanotubes" N. Dementev and E. Borguet, ECS National Meeting, Vancouver, Canada, April 2010

158. "Electrochemical Detection of Nitric Oxide by Carbon Nanopipettes", F. Li, N. Dementev, R. Ghavami, R. Singhal, Y. Gogotsi and E. Borguet, ECS National Meeting, Vancouver, Canada, April 2010

159. "Non-Collinear Optical Parametric Amplification of Near-IR pulses in $KTiOPO_4$ at a High Repetition Rate", Oleksandr Isaienko, Eric Borguet and Peter Voehringer, 17th International Conference on Ultrafast Phenomena (UP20010), Snowmass, CO, June 2010

160. "Spectroscopy and dynamics of the multiple free OH species at the aqueous/hydrophobic SAMs interface", Ali Eftekhari-Bafrooei, Satoshi Nihonyanagi, and Eric Borguet, Vibrational Spectroscopy Gordon Research Conference, University of New England, August 2010

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

161. "Interfacial depth profiling and effect of electric fields at a charged solid-liquid interface via vibrational relaxation of water", Ali Eftekhari-Bafrooei, Shalaka Dewan, and Eric Borguet, Vibrational Spectroscopy Gordon Research Conference, University of New England, August 2010

162. "Ultra-broadband sum-frequency generation spectroscopy of silica – water interfaces", Oleksandr Isaienko and Eric Borguet, Vibrational Spectroscopy Gordon Research Conference, University of New England, August 2010

163. "Ultrafast vibrational relaxation of interfacial water", Ali Eftekhari-Bafrooei and Eric Borguet, Water and Aqueous Solutions Gordon Research Conference, University of New Holderness, NH, August 2010

164. "In Situ Vibrational Sum Frequency Spectroscopy of the Electrolyte/Electrode Interface for Modeling Structure, Dynamics and Reactivity of a Working Fuel Cell", Heather Vanselous, Shalaka Dewan, Oleksandr Isaienko, and Eric Borguet. Philadelphia Section ACS 11th Annual Graduate Student and 6th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, February 2011

165. "Purification of Multiwalled Carbon Nanotubes by Dynamic Oxidation", Lan Nguyen, Nikolay Dementev, Eric Borguet, Philadelphia Section ACS 11th Annual Graduate Student and 6th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, February 2011

166. "In situ Observation of Morphological Changes of Pd Nanoparticles Under Hydrogen Exposure", Devika Sil, Douglas Hausner and Eric Borguet, Philadelphia Section ACS 11th Annual Graduate Student and 6th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, February 2011

167. "Vibrational Sum-Frequency Generation Spectroscopy of Mineral/Water Interfaces". Shalaka Dewan, Oleksandr Isaienko, Ali Eftekhari-Bafrooei and Eric Borguet, Philadelphia Section ACS 11th Annual Graduate Student and 6th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, February 2011

168. "Purification of Multiwalled Carbon Nanotubes by Dynamic Oxidation", Lan Nguyen, Nikolay Dementev, Eric Borguet, Thermal Analysis Forum of Delaware Valley, ASTM Headquarters, Conshohocken PA, March 2011

169. "Interfacial depth profiling and the effect of electric fields at a charged solid-aqueous interface on the ultrafast vibrational relaxation of water", Ali Eftekhari-Bafrooei and Eric Borguet, Fifteenth International Conference on Time-Resolved Vibrational Spectroscopy (TRVS-XV), Ascona, Switzerland, June 2011

170. "Surface energy and its spatial variation: A new criterion to study nanoscale surface effects on cell adhesion and differentiation" Guillaume Lamour, Ali Eftekhari-Bafrooei, Eric Borguet, Sylvie Souès, and Ahmed Hamraoui, Science of Adhesion Gordon Research Conference, Bates College Lewiston, ME, July 2011

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

171. "In situ vibrational sum frequency spectroscopy of the electrolyte/electrode interface for modeling structure, dynamics and reactivity of a fuel cell" Heather Vanselous, Shalaka Dewan, Oleksandr Isaienko, and Eric Borguet, ACS 242nd National Meeting, Denver, CO, August 2011

172. "From Molecular Imaging to Single Molecule Electrical Properties" Zhihai Li and Eric Borguet, NBIC Symposium: Local Probes at the Frontiers of Energy Systems and Biotechnology, University of Pennsylvania, October 2011

173. "IR Stealth Effect for Molecules Adsorbed on Single-Walled Carbon Nanotubes", Yoshifumi Nishimura, Dmitry V. Kazachkin, Henryk A. Wirek, Eric Borguet, and Stephan Irle, Nagoya University Global COE International Symposium on Elucidation and Design of Materials and Molecular Functions, Nagoya, Japan, November, 2011.

174. "Ordering of water molecules near a silica surface as function of bulk water pH" Shalaka Dewan and Eric Borguet, Philadelphia Section ACS 12th Annual Graduate Student and 7th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, February 2012

175. "Application of Pd Nanoparticles for Rapid H_2 Detection", Devika Sil, Uduak Udeoyo, Aseem Malhotra, Olivier Katz, Jacqueline Hines and Eric Borguet, Philadelphia Section ACS 12th Annual Graduate Student and 7th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, February 2012

176. "Thin Films of Organic Semiconductors for Hydrazine Detection", Ashley Truxal, Nicole Haloupek, Devika Sil, Jacqueline Hines and Eric Borguet, Philadelphia Section ACS 12th Annual Graduate Student and 7th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, February 2012

177. "Application of Pd Nanoparticles for Rapid H_2 Detection", Uduak Udeoyo, Devika Sil, Aseem Malhotra, Olivier Katz, Jacqueline Hines and Eric Borguet, Temple Undergraduate Research Forum (TURF), April 2012

178. "Broadband Sum-Frequency Generation Spectroscopy of High-Frequency Vibrations of Water Molecules at Silica Surfaces", Oleksandr Isaienko, Satoshi Nihonyanagi, Devika Sil and Eric Borguet, "Spectroscopy of Liquid and Cluster Interfaces" mini-symposium, Ohio State International Symposium on Molecular Spectroscopy, June 2012

179. "Structure of water at charged surfaces", Shalaka Dewan, Ali Eftekhari-Bafrooei, Vincenzo Carnevale, Michael Klein and Eric Borguet, Water and Aqueous Solutions Gordon Research Conference, University of New Holderness, NH, August 2012

180. "Thin Films of Organic Semiconductors for Hydrazine Detection", Ashley Truxal, Nicole Haloupek, Devika Sil, Jacqueline Hines and Eric Borguet, ACS 244th National Meeting, Philadelphia, PA, August 2012

181. "Nonlinear Vibrational Spectroscopy of Overtones of Interfacial Species", Devika Sil, Aziz Boulesbaa and Eric Borguet, ACS 244th National Meeting, Philadelphia, PA, August 2012

Contributed Papers (contd.) (Presenter Underlined, Undergraduate author)

182. **"**Vibrational dynamics of interfacial water by free induction decay sum-frequency generation (FID-SFG)**",** Aziz Boulesbaa and Eric Borguet, ACS 244th National Meeting, Philadelphia, PA, August 2012

183. "Fabrication of two dimensional supramolecular structures via pH-induced hydrogen-bonding: An electrochemical scanning tunneling microscopy study", Sepideh Afsari Mamaghani, Zhihai Li, and Eric Borguet, ACS 244th National Meeting, Philadelphia, PA, August 2012

184. "Effect of salt and pH on water arrangement at the water/silica interface", Shalaka Dewan, Mohsen S Yeganeh and Eric Borguet, ACS 244th National Meeting, Philadelphia, PA, August 2012

185. "Structure of water at charged surfaces: a molecular picture", Shalaka Dewan, Ali Eftekhari-Bafrooei, Vincenzo Carnevale, Giacomo Fiorin, Michael L. Klein, and Eric Borguet, ACS 244th National Meeting, Philadelphia, PA, August 2012

186. "Synthesis and characterization of functionalized graphite nanofibers", Robert M Giuliano, Tim Pellenbarg, John A Hull, and Eric Borguet, ACS 244th National Meeting, Philadelphia, PA, August 2012

187. "Charge transport pathways through single porphyrins in electrode-molecule-electrode junctions", Zhihai Li and Eric Borguet, ACS 244th National Meeting, Philadelphia, PA, August 2012

188. "Quantitative Analysis of Impurities in Carbon Nanotubes using Thermo Gravimetric Analysis", My Hoang, Lan Nguyen and Eric Borguet, Thermal Analysis Forum of Delaware Valley, University of Pennsylvania, Philadelphia PA, December 2012

189. Electrochemical Scanning Tunneling Microscopy Study of Porphyrins on Au (111) and HOPG Substrates under Control of Potential, Sedigheh Sadegh Hassani, Youn-Geun Kim and Eric Borguet, 19th Iranian seminar of analytical chemistry, Ferdowsi University of Mashhad, Iran, February 2013

190. "Impact of Fresnel Factors on SFG Spectra from Solid-Liquid Interfaces", A. Tuladhar, and E. Borguet; 8th Annual Chautauqua on Nonlinear Optics, Purdue University, West Lafayette, Indiana, USA, June 2013

191. "The Application of Au, Au-Pd Nanoparticle Films to Hydrogen Sensing", Devika Sil, Kyle Gilroy, Svetlana Neretina, Eric Borguet, 2013 MRS Fall Meeting, Boston, MA, December 2013

192. "Bottom-up Construction of Surface Nano-Materials toward Functional Molecular Devices", Zhihai Li, Thomas Wandlowski and Eric Borguet, 88th ACS Colloid and Interface Science Symposium, Philadelphia PA, June 2014

193. "Potential Induced On/Off Single Molecule Switch", Sepideh Afsari and Eric Borguet, 88th ACS Colloid and Interface Science Symposium, Philadelphia PA, June 2014

Contributed Papers (contd.) (Presenter Underlined. Undergraduate author)

194. "Hot Electron Based Gold Nanoplasmonic Optical Hydrogen Sensor", Devika Sil, Kyle D. Gilroy, Aurelia Niaux, Abdelaziz Boulesbaa, Svetlana Neretina and Eric Borguet, Plasmonics Gordon Research Seminar and Conference, Newry, ME, July 2014

195. "IR-Second Harmonic Generation Spectroscopy of Mineral-Water Interfaces Probing Overtones", Aashish Tuladhar, James J. Choi, Devika Sil, Shalaka Dewan, Daniel P. Cherney, Shawn M Dougal, Mohsen S. Yeganeh, and Eric Borguet, Vibrational Spectroscopy Gordon Research Seminar and Conference, University of New England, ME August 2014

196. "Orientation-Controlled Single Molecule Junctions", Sepideh Afsari, Zhihai Li and Eric Borguet, Electron Donor-Acceptor Interactions Gordon Research Seminar and Conference, Newport RI, August 2014

197. "Hot Electron Induced Dissociation of Hydrogen on Gold Nanoparticles", Aurelia Niaux, Devika Sil, Kyle D. Gilroy, Abdelaziz Boulesbaa, Svetlana Neretina and Eric Borguet, Mid-Atlantic Seaboard Inorganic Symposium (MASIS), Temple University, Philadelphia, PA, July 2014

198. "Hot Electron Induced Hydrogenation of Acridine Orange", Colin Murphy, Aurelia Niaux, Devika Sil and Eric Borguet, Mid-Atlantic Seaboard Inorganic Symposium (MASIS), Temple University, Philadelphia, PA, July 2014

199. "In-situ investigation of calcite dissolution in aqueous environments", Aashish Tuladhar, James J Choi, Daniel P. Cherney, Shawn M. Dougal, Mohsen S. Yeganeh and Eric Borguet, ACS 248th National Meeting, San Francisco, August 2014

200. "The Effect of Electrochemical Potential on Single Molecule Conductance", Esteban Sanchez, Rocio Aguilar, Sepideh Afsari, Zhihai Li and Eric Borguet, AVS 61st International Symposium, Baltimore, MD, November 2014

201. "Shape Engineering Periodic Arrays of Substrate-Based Plasmonic Nanostructures", Kyle D. Gilroy, Pouyan Farzinpour, Aarthi Sundar, Devika Sil, Eric Borguet, Robert A. Hughes, Svetlana Neretina, 2014 MRS Fall Meeting, Boston, MA, December 2014

202. "Localized Surface Plasmon Resonance (LSPR) Optical Detection of Hydrogen", Devika Sil, Kyle D. Gilroy, Safiya Sylla, Svetlana Neretina and Eric Borguet, ACS 249th National Meeting, Denver, CO, March 2015

203. "Localized Surface Plasmon (LSPR) Based Optical Detection of Ions in Aqueous Solution", Devika Sil, Kyle D. Gilroy, Safiya Sylla, Svetlana Neretina and Eric Borguet, ACS 249th National Meeting, Denver, CO, March 2015

204. "Ultrafast Laser Induced Synthesis of Narrowly Distributed Sub-5 nm Surfactant-Free Au-Pd Nanoparticles", Devika Sil, Katharine Moore Tibbetts, Johanan H. Odhner, Robert J. Levis and Eric Borguet, ACS 249th National Meeting, Denver, CO, March 2015

Contributed Papers (contd.) (Presenter Underlined. Undergraduate author)

205. "Sensitivity of ultrafast vibrational dynamics of interfacial water to cations at silica/water interfaces", Shalaka Dewan, Aashish Tuladhar, and Eric Borguet, APS March Meeting, San Antonio, Texas, March 2015

206. "Potential induced on/off single molecule electromechanical switch", Loranne Vernisse, Sepideh Afsari and Eric Borguet, Gordon Research Seminar and Conference on Artificial Molecular Switches & Motors, Stonehill College, Easton, MA, June 2015

207. "Fabricating single molecule switches based on anisotropic conductivity at the molecular scale", Sepideh Afsari and Eric Borguet, Gordon Research Seminar and Conference on Artificial Molecular Switches & Motors, Stonehill College, Easton, MA, June 2015

208. "Vibrational Dynamics of Chemisorbed Species at α-Al_2O_3(11-20)/H_2O", A. Tuladhar, S. Dewan, J.D. Kubicki, and E. Borguet; Time-Resolved Vibrational Spectroscopy (TRVS-XVII), June 21-26, 2015, University Wisconsin-Madison, WI, USA

209. "Pump-Probe Transient Optical Reflectivity to Measure Coherent Optical Phonons in Two-Dimensional Materials", Jason Tran, Natalia Molina, Laszlo Frazer, and Eric Borguet, 99th Annual Meeting of the Optical Society of America, San Jose CA, October 2015

210. "Investigation of Manganese Dioxide Nanosheets by STM and AFM", Loranne Vernisse, Sepideh Afsari, Samantha L. Shumlas, Akila C. Thenuwara, Daniel R. Strongin, Eric Borguet, AVS 62nd International Symposium, San Jose, CA, October 2015

211. "Mechanism of Hot Electron Mediated Optical Detection of Hydrogen", Devika Sil, Christopher Lane, Kyle Daniel Gilroy, Ethan Glor, Safiya Sylla, Stefan Piontek, Maryam Hajfathalian, Svetlana Neretina, Bernardo Barbiellini, Zahra Fakhraai, Arun Bansil, Eric Borguet, 2015 MRS Fall Meeting, Boston, MA, December 2015

212. "Optical Characterization of Functional Layered Materials", Frazer, L., McKendry, I., Pellegrino, A., Shumlas, S., Thenuwara, A., Trainer, D., Iavarone, M., Karapetrov, G., Strongin, D., Wolak, M., Zdilla, M., Borguet, E. International Conference on Nanoscience and Nanotechnology, Canberra, Australia, February 7 - February 11, 2016.

213. "Structure and Dynamics of Water Next to Mineral Surfaces", A. Tuladhar, S. Dewan, S.M Piontek, J.D. Kubicki, and E. Borguet; 2016 Gordon Research Conference/Seminar on Vibrational Spectroscopy, July 16-21, 2016, University of New England, Biddeford, Maine, USA

214. "Control of exciton and trion dynamics in a molybdenum disulfide monolayer with interfacial dielectrics", Yaroslav V. Aulin, Dan Trainer, Laszlo Frazer, Johanan H. Odhner, Robert J. Levis, Richard Schaller, Maria Iavarone and Eric Borguet, ACS 252nd National Meeting, Philadelphia, PA, August 2016

Contributed Papers (contd.) (Presenter Underlined. Undergraduate author)

215. "Interaction of Hydrogen with Au under optical plasmonic excitation", Safiya Sylla, Devika Sil, Christopher Lane, Ethan Glor, Kyle D. Gilroy, Bernardo Barbiellini, Robert Markiewicz, Svetlana Neretina, Arun Bansil, Zahra Fakhraai, and Eric Borguet, ACS 252nd National Meeting, Philadelphia, PA, August 2016

216. "Structure and dynamics of water at alumina surfaces", Aashish Tuladhar, Shalaka Dewan, James D. Kubicki and Eric Borguet, ACS 252nd National Meeting, Philadelphia, PA, August 2016

217. "Effects of cations on the structure and vibrational dynamics of mineral/water interfaces", Stefan Piontek, Aashish Tuladhar, Shalaka Dewan, James D. Kubicki and Eric Borguet, ACS 252nd National Meeting, Philadelphia, PA, August 2016

218. "Single molecule electronics: Fabricating an on/off electromechanical single molecule conductance switch", P. Yasini, S. Afsari, L. Vernisse, P. Pikma, and Eric Borguet, ACS 252nd National Meeting, Philadelphia, PA, August 2016

219. "Optimization of an Ultrashort Pulse Prism Compressor for Plasmon Dephasing Experiments", Ares Aguilera, Yaroslav V. Aulin, Stefan Piontek, and Eric Borguet, 100th Annual Meeting of the Optical Society of America, Rochester NY, October 2016

220. "Interaction of atomic hydrogen with Au under optical plasmonic excitation", Christopher Lane, Devika Sil, Ethan Glor, Kyle D. Gilroy, Safiya Sylla, Bernardo Barbiellini, Robert Markiewicz, Svetlana Neretina, Arun Bansil, Zahra Fakhraai, and Eric Borguet, APS March Meeting, New Orleans, LA, March 2017

221. "Monitoring the oxidation kinetics and size evolution of sapphire-immobilized hemispherical Ag nanoparticles at aqueous interfaces" Thao U. Duong, Isabella Goodenough, Mélissandre Richard, Stefan Piontek, Maryam Hajfathalian, Eredzhep Menumerov, Svetlana Neretina, and Eric Borguet. ACS 254th National Meeting, Washington, DC, August 2017

222. "Catalytic applications of $Cu_{2-x}Se$ nanoparticles in redox reactions", Mélissandre Richard, Xing Yee Gan, Jill Millstone, Eric Borguet. ACS 254th National Meeting, Washington, DC, August 2017

223. "Effect of the interlayer spacing and charge of 1T-MoS_2 on the electrocatalytic activity for the hydrogen evolution reaction", Akila Thenuwara, Abhirup Patra, Yaroslav Aulin, Himanshu Chakraborty, Eric Borguet, Michael Klein, John Perdew, Daniel Strongin, ACS 254th National Meeting, Washington, DC, August 2017

224. "Molecular dynamics simulations of alkali halide adsorption to water-alumina interfaces", Ruiyu Wang, Kevin Millan, Richard Remsing, Stefan Piontek, Aashish Tuladhar, Leah Magidson, Vincenzo Carnevale, Michael Klein, Eric Borguet, ACS 254th National Meeting, Washington, DC, August 2017

Contributed Papers (contd.) (Presenter Underlined. Undergraduate author)

225. "Monovalent and divalent cations at the α-Al_2O_3(0001)/water interface: How cation identity affects interfacial ordering and vibrational dynamics", Stefan Piontek, Ruiyu Wang, Kevin Millan, Aashish Tuladhar, Richard Remsing, Vincenzo Carnevale, Michael Klein, Eric Borguet, ACS 254th National Meeting, Washington, DC, August 2017

226. "Second Harmonic Generation Spectroscopy of Substrate- Based Surfactant Free Gold and Silver Nano-Hemispheres", Tim Marshall, Yaroslav Aulin, Kyle Gilroy, Svetlana Neretina, Eric Borguet, ACS 254th National Meeting, Washington, DC, August 2017

227. "Interaction of UiO-67 MOF with Industrial Solvents and CWA Simulants: TPD and FTIR Study", Isabella Goodenough, Mélissandre Richard, Tian-Yi Luo, Nathaniel L. Rosi, Eric Borguet, DTRA Surface Science Review, NC State University, Raleigh, NC, September 2017

228. "Single Molecule Junction: Chemical Optimization of Charge Transport through Single Benzene Derivatives", Parisa Yasini, Sepideh Afsari, Piret Pikma and Eric Borguet, AVS 64th International Symposium, Tampa, FL, October 2017

229. "Design of Stratified Hybrid Metal Organic Frameworks for Chemical Detection and Destruction", Jonathan Ruffley, Tianyi Luo, Isabella Goodenough, Mélissandre Richard, Eric Borguet, Nathaniel L. Rosi and J. Karl Johnson, 2017 AIChE Annual Meeting, Minneapolis, MN, October 2017

230. "Effect of Structure and Functional on the SFG Spectrum at the Alumina-Water Interface", Mark DelloStritto, Stefan M. Piontek, Eric Borguet and Michael Klein, APS March Meeting, Los Angeles, CA, March 2018

231. "Fabrication of Single Molecule Polycyclic Aromatic Hydrocarbon Switches at an Electrochemical Interface", Piret Pikma, Parisa Yasini, and Eric Borguet, 22nd Topical Meeting of the ISE, Tokyo, Japan, March 2018

232. "A Combined Thermal and Spectroscopic Analysis of UiO-67 Metal-Organic Frameworks", Mikaela Boyanich, Isabella Goodenough, Mélissandre Richard, Tianyi Luo, Nathaniel L. Rosi and Eric Borguet, Thermal Analysis Forum of the Delaware Valley, Rutgers Camden, NJ, April 2018

233. "Thermal Analysis of Hazardous Chemical Agent Interactions with Metal-Organic Frameworks under Ultra-High Vacuum", Isabella Goodenough, Mikaela Boyanich, Mélissandre Richard, Tianyi Luo, Nathaniel L. Rosi and Eric Borguet, Thermal Analysis Forum of the Delaware Valley, Rutgers Camden, NJ, April 2018

234. "A thermal study of interactions between covalently bonded organic frameworks and industrially important analytes", Venkata Swaroopa Datta Devulapalli, Isabella Goodenough, Melissandre Richard, Debanjan Chakraborty, Dinesh Mullangi, Ramanathan Vaidhyanathan, Eric Borguet. Thermal Analysis Forum of Delaware Valley, April 2018, Rutgers University, Camden, NJ, USA.

Contributed Papers (contd.) (Presenter Underlined. Undergraduate author)

236. "Catalytic Degradation of Methyl Orange by Robust Nanoparticle Covalent Organic Framework (NP-COF) Hybrid", Venkata Swaroopa Datta Devulapalli, Edwin Ovalle, Debanjan Chakraborty, Ramanathan Vaidhyanathan, Eric Borguet, Philadelphia Inorganic Colloquium, Spring 2018, Philadelphia, PA, USA.

237. "Nerve-agent Simulant Interactions with Functionalized UiO-67 Metal-Organic Frameworks: A TPD, FTIR and Catalytic Study", Isabella Goodenough, Venkata Swaroopa Datta Devulapalli, Mélissandre Richard, Tian-Yi Luo, Jonathan Ruffley, J. Karl Johnson, Nathaniel L. Rosi, Eric Borguet, DTRA Surface Science Review, Harvard University, Boston, MA, August 2018

238. "Combining vibrational sum frequency generation and molecular dynamics simulations to probe the effect of ions on solvent structure at mineral-aqueous interfaces" Eric Borguet, ACS 256th National Meeting, Boston, MA, August 2018

239. "Thermal stability of zirconium MOFs and their interactions with ammonia: A temperature programmed in-situ IR study", Venkata Swaroopa Datta Devulapalli, Isabella Goodenough, Mikaela Boyanich, Tian-Yi Luo, Nathaniel L. Rosi, Eric Borguet, Thermal Analysis Forum of Delaware Valley, University of Pennsylvania, Philadelphia, PA, December 2018,

240. "Volume-Dependent Atomic Polarizabilities for Vibrational Spectroscopy", Mark DelloStritto, Ruiyu Wang, Michael Klein and Eric Borguet, APS March Meeting, Boston, MA, March 2019

241. "Ions Induce Order in the Interfacial Water Structure and Change Dynamics at Silica Surfaces, Aashish Tuladhar, Shalaka Dewan, Simone Pezzotti, Flavio Siro Brigiano, Marie-Pierre Gaigeot, and Eric Borguet, ACS 257th National Meeting, Orlando, FL, April 2019 (A. Tuladhar as invited speaker)

242. "Nerve Agent Simulant Interactions with Functionalized UiO-67 Metal-Organic Frameworks: An TPD, FTIR and Catalytic Study", Isabella Goodenough, Venkata Swaroopa Datta Devulapalli, Melissandre Richard, Tianyi Lou, Jonathan Ruffley, J. Karl Johnson, Nathaniel L. Rosi, Eric Borguet, Philadelphia Inorganic Colloquium, Temple University, Philadelphia PA, May 2019

243. "Thermal stability of UiO-67 zirconium MOFs: the effects of linker functionalization", Venkata Swaroopa Datta Devulapalli, Isabella Goodenough, Mikaela Boyanich, Tianyi Luo, Nathaniel L. Rosi and Eric Borguet, Thermal Analysis Forum of the Delaware Valley, University of Pennsylvania, PA, May 2019

244. "Functionalized UiO-67 Metal-Organic Frameworks: An Ultra-High Vacuum Study", Isabella Goodenough, Venkata Swaroopa Datta Devulapalli, Mikaela Boyanich, Tianyi Luo, Mélissandre Richard Nathaniel L. Rosi and Eric Borguet, Nanoporous Materials and Their Application Gordon Research Seminar, Proctor Academy, Andover, NH, August 3, 2019.

Contributed Papers (contd.) (Presenter Underlined. Undergraduate author)

245. "Interactions between ammonia and UiO-67 zirconium MOFs", Venkata Swaroopa Datta Devulapalli, Isabella Goodenough, Tianyi Luo, Nathaniel L. Rosi and Eric Borguet, Nanoporous Materials and Their Application Gordon Research Seminar, Proctor Academy, Andover, NH, August 3, 2019.

246. "Interactions of the Chemical Warfare Agent Simulant, Dimethyl Methylphosphonate, with Functionalized UiO-67 Metal-Organic Frameworks", Isabella Goodenough, Jonathan Ruffley, Tianyi Lou, Mélissandre Richard, Nathaniel L. Rosi, J. Karl Johnson and Eric Borguet, Nanoporous Materials and Their Application Gordon Research Conference, Proctor Academy, Andover, NH, August 4-9, 2019.

247. "Hydrolysis of nerve agent simulant DMNP by zirconium MOFs – Identification of active species", Venkata Swaroopa Datta Devulapalli, Mélissandre Richard, Tianyi Lou, Nathaniel L. Rosi, and Eric Borguet, Nanoporous Materials and Their Application Gordon Research Conference, Proctor Academy, Andover, NH, August 4-9, 2019

248. Probing the Acidity and Basicity of Thermally Activated Zirconium Metal-Organic Frameworks, McDonnell, R.P., Devulapalli, V.S.D., De Souza, M., Luo, T-Y., Rosi, N.L., Borguet, E. 1st Eastern Analytical Symposium September Virtual Student Symposium (EAS 2020), September 2020

249. "On the Role of α-Alumina in the Origin of Life: Surface Driven Assembly of Amino Acids", Ruiyu Wang, Rick Remsing, Michael Klein, Eric Borguet, and Vincenzo Carnevale, ACS National Meeting, April 2021

250. "Water hydrophilic behavior at water/alumina interfaces", Ruiyu Wang, Rick Remsing, Michael Klein, Eric Borguet, and Vincenzo Carnevale, ACS National Meeting, April 2021

251. "An In-Situ Investigation of the Binding Preferences of Polar Molecules with the UiO-type Metal-Organic Framework", Binh-An Nguyen, Isabella Goodenough, Mikaela Boyanich, Venkata Swaroopa Datta Devulapalli, Mattheus De Souza, Nathaniel Rosi, and Eric Borguet, ACS National Meeting, April 2021

252. "Effect of Denticity and Orientation Control on Single Molecule Charge Transport", Parisa Yasini, Tim Albrecht, Manuel Smeu, Eric Borguet, ACS National Meeting, April 2021

253. "An In-Situ Investigation of the Binding Preferences of Polar Molecules with the UiO-type Metal-Organic Framework", Binh-An Nguyen, Isabella Goodenough, Mikaela Boyanich, Venkata Swaroopa Datta Devulapalli, Mattheus De Souza, Nathaniel Rosi, Eric Borguet, ACS National Meeting, April 2021

254. "Probing UiO-67 Metal-Organic Framework Defects through the Diffusion of Acetonitrile", Ryan McDonnell, Venkata Swaroopa Datta Devulapalli, Isabella Goodenough, Prasenjit Das, Nathaniel L. Rosi, Eric Borguet, ACS National Meeting, April 2021

Contributed Papers (contd.) (Presenter Underlined. Undergraduate author)

255. "Tuning the Lewis Acidity of Metal-Organic Frameworks for Enhanced Catalysis", Venkata Swaroopa Datta Devulapalli, Melissandre Richard; Tian-Yi Luo; Mattheus L. De Souza; Nathaniel. L Rosi; Eric Borguet, ACS National Meeting, April 2021

256. "Catalytic degradation of organic pollutants using hybrid covalent organic frameworks", Venkata Swaroopa Datta Devulapalli, Edwin Ovalle; Debanjan Chakraborty; Ramanathan Vaidhyanathan; Eric Borguet, ACS National Meeting, April 2021

257. "The Intrinsic Thermal Framework Stability of UiO-67 Metal-Organic Frameworks", Isabella Goodenough, Venkata Swaroopa Datta Devulapalli, Wenqian Xu, Mikaela Boyanich, Tian-yi Luo, Mattheus L. De Souza, Melissandre Richard, Nathaniel L. Rosi, Eric Borguet, ACS National Meeting, April 2021

258. "Influence of the spatially heterogeneous charge distribution on α-Al2O3(0001) on the interfacial organization of acetonitrile-water mixtures", Somaiyeh Dadashi, Bijoya Mandal and Eric Borguet, ACS National Meeting, April 2021

259. "Probing the interfacial solvent environment by measuring the vibrational lifetime of SCN^- at the α-Al_2O_3(0001)-aqueous interface", Bijoya Mandal, Somaiyeh Dadashi, Mark DelloStritto, Michael Klein, Eric Borguet, ACS National Meeting, April 2021

260. "In Situ Thermal Analysis of Zirconium Metal-Organic Frameworks: A Complementary Approach", Goodenough, I., Borguet, E. 2021 North American Thermal Analysis Society Virtual Conference, virtual meeting, August 2021

261. "In Situ Infrared Study of Acetonitrile Diffusion into UiO-67 Metal-Organic Frameworks" L. McDonnell, E. Perkins, R.P. McDonnell, V.S.D. Devulapalli, I. Goodenough, P. Das, N.L. Rosi, E. Borguet, Eastern US YCC Partnership Research Symposium and Chemistry Career Expo, August 2021

262. "Simple Analytical Tools to Understand and Evaluate the Impact of Lewis Acidity on the Catalytic Activity of Metal Oxyhydroxides", Venkata Swaroopa Datta Devulapalli and Eric Borguet, Fall Eastern Analytical Symposium, Crowne Plaza Princeton-Conference Center, Plainsboro, NJ, November 2021

263. "Probing Thermally Activated Defects in UiO-67 Metal-Organic Frameworks Using Temperature-Programmed Spectroscopy", L. McDonnell, E. Perkins, R.P. McDonnell, V.S.D. Devulapalli, I. Goodenough, P. Das, N.L. Rosi, E. Borguet, TAFDV Virtual Student Poster Session and Business Meeting, January 2022

264. "Probing the vibrational density of states (VDOS) at oxide aqueous interfaces", Yunqian (Joy) Zou, Bijoya Mandal, Somaiyeh Dadashi, Mark DelloStritto, Michael Klein, Eric Borguet, ACS National Meeting, San Diego, CA, March 2022

265. "Detecting centrosymmetric molecules at interfaces by vibrational sum frequency generation spectroscopy", Bijoya Mandal, Somaiyeh Dadashi, and Eric Borguet, ACS National Meeting, San Diego, CA, March 2022

Contributed Papers (contd.) (Presenter Underlined. Undergraduate author)

266. "Impact of nuclear quantum effects on interfacial hydrogen bonding network", Somaiyeh Dadashi, Bijoya Mandal, Aashish Tuladhar and Eric Borguet, ACS National Meeting, San Diego, CA, March 2022

267. "Understanding Binding Sites and Defects in UiO-67 Metal-Organic Frameworks: An in-situ Infrared Spectroscopic Study", Venkata Swaroopa Datta Devulapalli, Ryan McDonnell, Isabella Goodenough, Prasenjit Das, Nathaniel L. Rosi, Eric Borguet, Summer ACS-Middle Atlantic Regional Meeting, New Jersey Institute of Technology, Trenton, NJ, June 2022

268. "Charged solutes show faster vibrational relaxation at oxide/water interfaces" Bijoya Mandal, Somaiyeh Dadashi, Mark DelloStritto, Michael Klein, Eric Borguet, 10th International Conference on Coherent Multidimensional Spectroscopy (CMDS), UT Austin, Texas, June 2022

269. "Charged solutes show faster vibrational relaxation at oxide/water interfaces" Bijoya Mandal, Somaiyeh Dadashi, Mark DelloStritto, Michael Klein, Eric Borguet, 2022 Early Career Symposium at CMDS, UT Austin, Texas, June 2022

270. "Determining interfacial refractive index of water using surface specific vibrational sum frequency spectroscopy" Somaiyeh Dadashi, Aashish Tuladhar, Bijoya Mandal, Olivia Martin, Rick Remsing and Eric Borguet; 2022 Gordon Research Seminar on Vibrational Spectroscopy, University of New England, Biddeford, Maine, July 2022

271. "Nuclear quantum effects on vibrational relaxation of interfacial water", Somaiyeh Dadashi, Narendra M Adhikari, Stefan Piontek, Zheming Wang and Eric Borguet; 2022 Gordon Research Conference on Vibrational Spectroscopy, University of New England, Biddeford, Maine, July 2022

272. "Understanding the pH dependence of hydroxyls stretch at CaF_2/H_2O interfaces", Yunqian (Joy) Zou, Ali Eftekhari-Bafrooie and Eric Borguet; 2022 Gordon Research Seminar on Water and Aqueous Solutions, Holderness, NH, July 2022

273. "The dynamics of solutes modulated by the interface solvent density of states", Yunqian (Joy) Zou, Bijoya Mandal, Somaiyeh Dadashi, Mark DelloStritto, Michael Klein, and Eric Borguet; 2022 Gordon Research Conference on Water and Aqueous Solutions, Holderness, NH, July 2022

274. "Zirconium oxyhydroxide catalyzed oxidation of cysteine," Caitlin My Hanh Le, Venkata Swaroopa Datta Devulapalli, Ayan Bhattacharyya, Sharan Dhar, Pragalbh Sekhar, Ramanathan Vaidhyanathan, and Eric Borguet, Philadelphia Inorganic Colloquium. The College of New Jersey, NJ, April 2023.

275. "Sorption Capacity of DMMP on an Amino-Functionalized UiO-68 Metal-Organic Framework", Lauren Towers, Hao Li, Sharan Dhar, Edward Jang, and Eric Borguet, Philadelphia Inorganic Colloquium. The College of New Jersey, NJ, April 2023

276. "Amine-group engineering of UIO-68 towards sorption of nerve-agent simulant", Hao Li, Sharan Dhar, Lauren Towers, Edward Jang, and Eric Borguet, Philadelphia Inorganic Colloquium. The College of New Jersey, NJ, April 2023

Contributed Papers (contd.) (Presenter Underlined. Undergraduate author)

277. "Temperature programmed desorption study to evaluate MOFs potential for CO_2 capture", Sharan Dhar, Venkata Swaroopa Datta Devulapalli, Giao Vu, Hao Li, Eric Borguet, Philadelphia Inorganic Colloquium. The College of New Jersey, NJ, April 2023

278. "Self-Assembled Monolayers of Alkanethiols on SiO_2", Wasim Nawaj, Ayan Bhattacharyya, Somaiyeh Dadashi, Belinta Naomi Simiyu, and Eric Borguet, Philadelphia Inorganic Colloquium. The College of New Jersey, NJ, April 2023

279. "Zirconium oxyhydroxide catalyzed oxidation of cysteine," Caitlin My Hanh Le, Venkata Swaroopa Datta Devulapalli, Ayan Bhattacharyya, Sharan Dhar, Pragalbh Sekhar, Ramanathan Vaidhyanathan, and Eric Borguet, Intercollegiate Student Chemists Convention (ISCC). Lebanon Valley College, Annville, PA, April 2023.

280. "Using Acetone to Probe Changes in Adsorption Properties of UiO-68-(NH2)2 Caused by Water Diffusion", Edward Jang, Hao Li, Sharan Dhar, Lauren Towers, and Eric Borguet, Intercollegiate Student Chemists Convention (ISCC). Lebanon Valley College, Annville, PA, April 2023.

281. "Deposition and Self-Assembly of Thiols on SiO_2 Surfaces", Belinta Simiyu, Wasim Nawaj, Ayan Bhattacharyya, Somaiyeh Dadashi, and Eric Borguet Intercollegiate Student Chemists Convention (ISCC). Lebanon Valley College, Annville, PA, April 2023.

282. "Adsorption of polymers at carbon surfaces probed by vibrational sum frequency generation spectroscopy", Max Thurm, Somaiyeh Dadashi, Ziyad Thekkayil, and Eric Borguet, Intercollegiate Student Chemists Convention (ISCC). Lebanon Valley College, Annville, PA, April 2023.

283. Developing Cost-Effective Homemade Goniometer of Static and Dynamic Contact Angles, Naomi Ross, Yunqian(Joy) Zou and Eric Borguet, Intercollegiate Student Chemists Convention (ISCC). Lebanon Valley College, Annville, PA, April 2023.

284. "Sorption Capacity of DMMP on an Amino-Functionalized UiO-68 Metal-Organic Framework", Lauren Towers, Hao Li, Sharan Dhar, Edward Jang, and Eric Borguet, Intercollegiate Student Chemists Convention (ISCC). Lebanon Valley College, Annville, PA, April 2023.

285. "Zirconium oxyhydroxide catalyzed oxidation of cysteine," Caitlin My Hanh Le, Venkata Swaroopa Datta Devulapalli, Ayan Bhattacharyya, Sharan Dhar, Pragalbh Sekhar, Ramanathan Vaidhyanathan, and Eric Borguet, ACS National Meeting. San Francisco, CA August 2023.

External Research Collaborations

Professor Marie-Pierre Gaigeot (Université Paris-Saclay, France) is an expert in the simulations of the structure of the solid-aqueous interfaces. We are collaborating on understanding how ions affect the organization of water molecules and the resulting vibrational Sum Frequency spectra. We have published one joint paper.

Dr. Mohsen Yeganeh, a Senior Scientist at Exxon-Mobil and expert in nonlinear optical studies of surfaces, has been collaborating with us on the effect of ions on solvent structure and reactivity at of aqueous mineral interfaces. We have published one joint paper.

Professor J. Karl Johnson (Chemical Engineering, University of Pittsburgh) and I have been investigating the role of chemical functionality and topological heterogeneity on adsorption of simple gases on carbon materials. We have 3 joint papers. Together with Jill Millstone, Nat Rosi (Chemistry, Pitt) we are collaborating on a DTRA funded project on plasmonic catalysis and sensing that has yielded 3 additional joint papers.

Professor Svetlana Neretina (Temple, Engineering) is an expert in creating sophisticated supported metal nanostructures. We have used these for plasmonic catalysis and sensing.
We have published three joint papers.

Professor Manuel Smeu (Binghamton University) is expert in electronic structure and transport calculations. Together we have investigated how molecular orientation and denticity electronic properties of molecular junctions can influence charge transport. We have published one joint paper and have three others submitted or in preparation.

Dr. Jacqueline H. Hines (Applied Sensor Research & Development Corporation, Arnold, MD) and my group have been investigating the development of chemical and biological sensors based on surface acoustic wave sensor devices. We have obtained NASA STTR and DTRA funding to support this work. We have published four joint papers.

External Research Collaborations (contd.)

Former collaborations:

- Dr. Eric Freysz (CPMOH, CNRS, Bordeaux, France) and my group used nonlinear optics to probe the spectroscopy and dynamics of interfaces. A particular focus of common interest was the development of Infrared Second Harmonic Generation (IR SHG) spectroscopy, an extension of spectroscopic SHG to the IR. We used this to probe semiconductor interfaces (as reported in our 2003 JCP paper) near the bandgap.

- Dr. Evgeni Gousev (IBM, Advanced Gate Dielectrics Microelectronics Division, TJ Watson Research Center now at Qualcomm) is an expert in the development of novel high k dielectrics for the next generation of microelectronic devices. Our collaboration combines our expertise in the organic and inorganic modification semiconductor interfaces as well as optical probing of interfacial charge and electric fields with IBM and Qualcomm's materials development capabilities. A manuscript reporting our results was published in the Journal of Applied Physics in 2005.

- Professor James Kubicki's group (Penn State, Geosciences) structure and dynamics at charged mineral/liquid interfaces. We jointly advised a student, Kramer Campen (PSU), who used SHG to probe adsorption on charged colloidal particles in suspension. We published several publications combining experiment and theory.

- Professors Stephan Irle (Nagoya) and Keiji Morokuma (Emerson Center for Scientific Computation at Emory University) perform theoretical investigations of single-walled carbon nanotube (SWNT) oxidization and its influence on nanotube adsorption capacity in close collaboration with our experiments. Their objective is the development of a thorough understanding of SWNT oxidization at the atomic level, and the elucidation of the strong influence of oxidization on nanotube adsorption properties observed in our experiments. We published 4 joint papers.

- Professor Robert Giuliano's group (Villanova, Chemistry) is interested in the chemical functionalization of graphitic carbon nanofibers. We have used Fluorescence Labeling of Surface Species (FLOSS) to determine the oxygen functionality present and how it evolves as a function of chemical treatment. We published one joint paper.

- Professor Radisav Vidic (Civil and Environmental Engineering, University of Pittsburgh) and I investigated the role of chemical functionality and topological heterogeneity of nanoporous carbon materials, including single-walled carbon nanotubes (SWNTs), on adsorption and capture of volatile species. Our DOE funded research focused on environmental applications. We co-advised three Ph.D. students: Dr. Seokjoon Kwon, Dr. Xue Feng and Dr. Wenguo (Wayne) Feng. We have more than ten joint papers.

- Professor Remi Chauvin and Dr. Valérie Maraval (Laboratoire de Chimie de Coordination du CNRS, Toulouse) are experts in the synthesis of *carbo*-mers, intrinsically interesting chemical species with potential nanoelectronics applications. We are exploring their properties at the single molecule level, and have published one joint paper.

External Research Collaborations (contd.)

Former collaborations:

- Professor Mike Therien's group (Duke, Chemistry) has synthesized novel molecular wires focusing on the optimization of the molecular core and the functional groups that connect the molecular wires to electrodes. Our group is measuring the single molecule conductivity of these wires. Together we are refining the structure of the molecular wires to optimize conductivity and other functions. We have published three joint papers.

- Professor Mark Ratner and Dr. Manuel Smeu (Northwestern University) are providing computational insight into the microscopic details of our single molecule measurements. We have published four joint papers.

Internal Collaborations

Professor Michael Klein and Dr. Vincenzo Carnevale are experts in molecular dynamics simulations of aqueous systems. Together we have investigated how charge localization can influence water structuring and ion adsorption at interfaces. We have published nine joint papers.

Professor Robert Levis (Temple, Chemistry) is an expert in the coherent control of laser driven process. We have used this for making tailored nanoparticles. We have one joint paper published and one submitted.

Professors Daniel Strongin and Michael Zdilla (Temple, Chemistry) is an expert in the catalytic properties of metal oxides. We have used these for oxygen evolution reactions. We have published eight joint papers.

Professor John Perdew and Dr. Haowei Peng are experts in electronic structure calculations. Together we have investigated how the electronic properties of molecular junctions can influence charge transport. We have published two joint papers.

Teaching Activities

Undergraduate Teaching at Temple University

SCTC 1002 STEM Scholars Seminar	Fall 2017-2021, Spring 2018-2022
Chem 0821 Chemistry of Wine (co-instructor R. J. Levis in 2012)	Fall 2012, 2013, 2014
Chem 1951 Honors General Chemistry	Fall 2008
Chem 1952 Honors General Chemistry	Spring 2009
Chem 2891 Introduction to Undergraduate Research (co-instructor R. J. Levis)	Fall 2012
Chem 3302 (232) Physical Chemistry II	Fall 2005, 2009, 2010, 2018- 2021, 2023
Chem 3301 (231) Physical Chemistry I	Fall 2004, 2006, 2007, 2023 Spring 2011, 2012
SCTC 1001 CST First Year Seminar	Fall 2019

Graduate Teaching at Temple University

Chem 5305 Chemical Kinetics	Spring 2016, 2017, Fall 2017, Spring 2018
Chem 8301 Molecular Spectroscopy	Spring 2006-2008, 2013-2014, 2020-2023 Fall 2011
Chem 8310 Fundamentals of Condensed Phase Behavior	Spring 2018, 2019
(co-instructors Dr. Vincenzo Carnevale and Dr. Richard Remsing)	

Undergraduate Teaching at the University of Pittsburgh

Chem 0810 Contemporary Issues and Public Policy	Spring 1997
Chem 1410 Physical Chemistry I	Fall 1998, 1999, 2001, 2002, Spring & Fall 2003
Chem 1420 Physical Chemistry II	Spring 1999, 2000, 2001, 2002, 2004
Chem 1710 Independent Undergraduate Research	1996-2003
Phys 1160 Photonics	Fall 2000
(co-instructors Professors David Snoke, David Waldeck, Hong Koo Kim)	
NSF-REU Research Experience for Undergraduates	Summer 1998-2003

Graduate Teaching at the University of Pittsburgh

Chem 2420 Graduate Quantum Mechanics	Fall 1996, 1997
Chem 2490 Seminar in Physical Chemistry	1997-2003
Chem 3520 Frontiers in Surface Science	Spring 1999, 2000, 2001, 2002, 2003
(co-instructor Professor John T. Yates, Jr.)	
Perspectives in Chemical Science	1998-2003

Student Mentoring and Advising
•Undergraduate Student Research Associates (109 total – 20 are co-authors on papers*, 45 continued to graduate/professional school#)
8 Temple CARAS awards, 6 Temple Diamond Scholars, 8 Temple President's Scholars, 2 Temple Provost's Scholars, 2 Temple University Frances Velay Fellowships

1) Mr. Robert Bartosh ('96-'97) Pitt B.Sc. ('97) Working in chemical industry.

2) Mr. Richard Query ('98) Pitt B.Sc. ('98) Consultant

3) #Dr. Andy Vagdani (Physics-REU '98 from Cornell) PhD. Harvard Applied Physics. Associate Technology Officer, MIT Lincoln Laboratory

4) #Dr. Bill Lokar (Chemistry-REU '98) B.Sc. Allegheny College ('99), Ph.D. in Chemistry Virginia Tech. Assistant Professor Chemistry, Lynchburg College

5) Mr. Michael James ('98) Pitt B.Sc. ('99)

6) #Ms. Ella Moore ('98-'99) Pitt B.Sc. ('99) Graduate School of Education Pitt

7) *Mr. Russ Dudek ('99) Pitt B.Sc. ('99) R&D scientist at Compunetics.

8) #Dr. An Ngo Thien (Physics REU '99) Ph.D. Chemistry McGill (2010) Postdoc NRC Ottawa

9) #Mr. Christopher Lea (Chemistry REU '99) B.Sc. Hampton Sidney ('01) Chemistry graduate studies at UIUC

10) *Mr. Darren Wynn (Spring & Summer '00) Pitt B.Sc. ('00) Working in chemical industry.

11) *#Dr. Cédric Hurth (Summer '00) Ecole Normale Supérieure de Cachan, France. Ph.D. in Chemistry from Texas A&M/Bordeaux ('05) Post-Doctoral Fellow at the University of Texas ('06), Post-Doctoral Fellow at Arizona State University ('08)

12) *Mr. Justin Russell (Physics REU '00) B.Sc. University of West Georgia ('01)

13) *#Dr. Catherine Faler ('00-'01) Pitt B.Sc. ('01) Ph.D. in Chemistry from Penn ('07) Research position with ExxonMobil in Houston TX ('07)

14) *#Dr. Eric McArthur ('00-'02) Pitt B.Sc., Ph.D. in Chemistry from Columbia University ('08) Post-Doctoral Fellow at Northwestern University ('08)

15) #Dr. Lindsay Bombalski ('01-'02) Pitt B.Sc. PhD in Chemistry from CMU ('07) Post-Doctoral fellow at NETL ('08)

16) *#Dr. Julie Fiore ('01-'02) Pitt B.Sc. Chemistry graduate studies at U. Colorado - Boulder. (Fall'03) Ph.D. Chemical Physics (2011)

Undergraduate Student Mentoring and Advising (Contd.)

17) *#Dr Arthur McClelland ('02) Pitt B.Phil. Ph.D. in Applied Physics, University of Michigan. (2009) Postdoctoral fellow Northeastern University (2009-)
Arthur defended a B.Phil. thesis, Pitt's undergraduate Honors thesis, "Femtosecond Time-Resolved Second Harmonic Generation Investigations of Hot Carrier Dynamics at Germanium Interfaces".

18) #Dr. Florent Dauchy ('02) Université Paris VI-Jussieu, France. Ph.D. in Materials Chemistry Cranfield England ('08)

19) #Ms. Tiffany Newsome (Physics REU '02) B.S. in Computer Science from Bennett College ('07) MS in Computer Science

20) #Ms. Jasmine Ma (Physics REU '03 and Fall '03) Senior at Carnegie Mellon University. Ph. D. graduate studies in Physics at U Texas-Austin.

21) #Dr. Kessler McCoy-Simandle (Fall '03) Northwestern University School of Medicine ('07), IRACDA Postdoctoral Research and Teaching Fellow at Albert Einstein College of Medicine

22) #Ms. Jennifer O'Patchen (Spring &Summer'04) Post-bac at Pitt. Chemistry graduate studies at Colorado State University. (Fall'04)

23) Ms. Ian Won Law (Fall 2004) B.Sc. Temple

24) #Dr. Roozbeh Ghavami (Fall 2004, Spring 2005) B.Sc. Temple 2007, M.Sc. Philadelphia College of Osteopathic Medicine (2009). Medical School (2010-)

25) #Ms. Kishwer Vikaas (Spring 2005) Diamond Scholar, B.A. English Temple (2007),

26) *#Dr. Allison Pymer (Summer 2005 – Summer 2008), B.Sc. Temple ('08), Diamond Scholar. Philadelphia Section Poster Prize awardee (2006). Henry A. Sloviter Student Research Award in Chemistry (2006) First place at 70th Intercollegiate Student Chemists Conference (2006). Chemistry Graduate School at Berkeley (Fall 2008) Ph.D. 2014. Advanced Chemist at Eastman Chemical Company (2014-)

27) Mr. Daniel Ritterback (Summer 2005, Fall 2005) Diamond Scholar, B.Sc. Temple ('08)

28) #Dr. Hai Le (Summer 2005) Sophomore at Hartwick College, Emerson Scholarship, Chemistry Graduate School at Boston College (Fall 2008). Research chemist at Adesis, DE.

29) Mr. Fuyuo Nagayama (Summer 2005, Fall 2005) High School student (Central High School Philadelphia). Undergraduate studies at Harvard (Fall 2007)

30) Mr. Richard C. Drach (Spring 2006) B.S. in Biochemistry from Temple ('07)

31) Mr. Oleg Grapp (Summer 2006) Sophomore at Temple, Diamond Scholar

Undergraduate Student Mentoring and Advising (Contd.)

32) Mr. Victor Browne (Summer 2006) High School student participant in Physician Scientist Training Program at Temple

33) #*Dr. Sean Keuleyan (Fall 2006 - Summer 2008, REU) Started research while a junior at Temple. Richard Asher Paclin Memorial Prize winner (2008). Chemistry Graduate School at the University of Chicago (Fall 2008). Ph.D. (2013). Research Scientist at Voxtel Nano, Oregon (2014-)

34) #Dr. Elom Amoussou-Kpeto (Spring, Summer 2007, REU) Biochemistry B.Sc. (*magna cum laude*) Temple 2009. Double recipient of the 2007-08 Hazel M. Tomlinson, Ph.D. Memorial Scholarship in Chemistry, Beau and Shirley Brown Scholarship in Chemistry (2008). Awarded Camille and Bill Cosby Scholarship in Science (2008). Medical School at Penn State (Fall 2009). M.D. (2013). Family Medicine Erie, PA (2014-)

35) Mr. Heidar J Albandar (Temple'07).

36) *Mr. Vivek Prakash (Summer 2007, 2008, 2009) High School student participant in Physician Scientist Training Program at Temple. Undergraduate at Northwestern University (Fall 2010).

37) #Dr. Aseem Malhotra (Summer 2008-Spring 2011) Medical Scholars program. Started research in freshman year at Temple. URIF awardee (2010). Diamond Scholar (Summer 2009). Double CARAS grant awardee (2009, 2010). URIF Travel Grant (2010) Medical School at Temple (Fall 2012). Urology Resident University of Pennsylvania (2016)

38) *#Dr. Gordon (Cheuk Fai) Chiu (Summer 2008 - Summer 2010) Started research after sophomore year at Temple. Temple Chemistry B.Sc. 2010. Richard Asher Paclin Memorial Prize (2010). EAS Student Award (2009). Poster prize at the Nanotechnology Institute and The Energy Commercialization Institute Conference (2009). First prize at First prize at Intercollegiate Student Chemists Conference (2009). Awarded CARAS grant (2009). Chemistry graduate program at University of Pittsburgh (Fall 2010). Postdoctoral Research Associate (ORISE) at National Energy Technology Laboratory (2017) Research Scientist PPG Pittsburgh

39) *#Dr. Richard Ronca (Summer 2008) B.Sc. Temple ('08). Attending Temple Medical School (Fall 2008).

40) Ms. Baofang Zhao (Summer 2009-Spring 2010) Started research after sophomore year at Temple. Awarded CARAS grant (2010). Temple Pharmacy (Fall 2010).

41) Ms. Gwenn Pallier (Summer 2009) Ecole Supérieure d'Optique, France.

Undergraduate Student Mentoring and Advising (Contd.)

42) #Dr. Aurélie Chenel, Ecole Normale Supérieure de Cachan, France. (Spring 2010). Ph.D. Theoretical Chemistry, Université de Paris-Sud (2014)

43) #Ms. Shanshan Wu (Fall 2009-Summer 2010) Started research in junior year at Temple. Temple Pharmacy (Fall 2010)

44) #Ms. Lan Pham Nguyen (Summer 2010-Spring 2012) Temple Chemistry B.Sc. 2011 Chemistry M.Sc. at Temple University. Temple MBA program

45) Ms. Vivian Liu (Summer 2010)

46) Mr. Aleksey Shubin (Summer 2010)

47) #Dr. Heather Vanselous (Fall 2010-Spring 2011) Temple Chemistry B.Sc. 2011 Awarded CARAS grant (2011). Beau and Shirley Brown Scholarship in Chemistry (2011). Invited to ACS Physical Chemistry Symposium Workshop for Undergraduate Chemistry Majors (2011) Temple VPUS Travel Grant (2011). Worked with US Food and Drug Administration. Chemistry graduate program Cornell (Fall 2012). Research Scientist (Corning)

48) *#Ms. Uduak F. Udoeyo (Summer 2011-Spring 2013) Temple Chemistry B.Sc. 2013 Temple University NIH MARC Program (2011), REU at U. of Michigan (Summer 2012), EAS Student Award (2012). PREP program at UNC Chapel Hill (Summer 2013). Public Health Graduate program (Drexel, Fall 2014)

49) Ms. Chigoziem Oguh (Summer 2011-Fall 2011) Hazel M. Tomlinson, Ph.D. Memorial Scholarship (2011).

50) #Dr. Nicole Haloupek (Summer 2011-Spring 2012) Hazel M. Tomlinson, Ph.D. Memorial Scholarship (2011). Awarded CARAS grant (2011). Philadelphia ACS Section Scholastic Achievement Award (2012). Temple Biochemistry B.Sc. 2012. Biosciences graduate program Berkeley (Fall 2012).

51) #Dr. Ashley Truxal (Summer 2011-Spring 2013) Awarded CARAS grant (2011). REU at U. of Michigan (Summer 2012). TASSEP at UPMC, Paris France (Fall 2012). Scholarship from Master's Program of Chemistry (Université Pierre et Marie Curie) as first TASSEP exchange student in their undergraduate chemistry program (September 2012). Temple University Albert B. Brown Chemistry Scholarship (September 2012). Temple University Study Abroad Scholarship (September 2012). Honorable mention at ACS YCC Philadelphia poster session (February 2013). Philadelphia ACS Section Scholastic Achievement Award (2013). Temple Chemistry B.Sc. 2013. Chemistry graduate program Berkeley (Fall 2013).

52) Mr. Navin Rao, Penn State Abington (Summer 2012)

53) Mr. Pádraig B. Glenn (Summer 2011-Fall 2012)

Undergraduate Student Mentoring and Advising (Contd.)

54) Mr. Vu Nguyen (Summer 2011)

55) Ms. My Hoang (Summer 2012-Spring 2013)
Awarded CARAS grant (2011). Poster prize at TAFDV conference, December 2012.
Temple Chemistry B.Sc. 2013. Technical Services Technician at Biocoat (2013-2015),
Laboratory Technologist at Dow Chemical Company (2015-2017)

56) Ms. Linh Duong (Winter 2013)

57) Ms. Ellen Jaeseon Kim (Winter 2013-Spring 2014)
Diamond Scholar (Summer 2013).

58) *Ms. Safiya Sylla (Spring 2014-Summer 2016)
Temple University President's Scholar. Chemist at Arkema

59) Mr. James Choi (Spring 2014 - Spring 2015)
Temple University President's Scholar.

60) #Dr. Chey Jones (Spring 2014)
Temple University Provost's Scholar. Chemistry graduate student at Stanford.

61) Mr. Colin Murphy (Spring 2014- Spring 2015)
Temple Undergraduate Summer Research Program

62) Mr. Gregory Forkin (Spring 2015)
Temple University President's Scholar

63) Mr. Sev Leskin (Spring 2015 - Summer 2016)
Temple University President's Scholar

64) #Mr. Jason Dinh Tran (Summer 2015 - Fall 2015)
Temple Undergraduate Summer Research Program. Awarded CARAS travel grant (2015).
Physics graduate student at UMd

65) Mr. HoJun Yu (Summer 2015)
Temple Undergraduate Summer Research Program

66) Mr. Matthew A. Johnson (Winter 2016-Summer 2016)

67) #Ms. Thao Duong (Spring 2016 –Fall 2017)
Temple University President's Scholar
Temple Chemistry B.Sc. 2019. Analytical Department at Frontage Laboratories, Exton, PA
Chemistry Graduate student at UCSB

68) *#Ms. Thi Tran (Spring 2016 – Fall 2017)
Temple University President's Scholar
Temple Chemistry B.Sc. 2019. Chemistry Graduate student at UCSB

Undergraduate Student Mentoring and Advising (Contd.)

69) Mr. Spencer Yeager (Spring 2016)
Summer 2016 REU at University of Mississippi

70) Mr. Ares Aguilera (Spring 2016 – Spring 2017)
Awarded CARAS travel grant (2016).

71) Ms. Leah Magidson (Summer 2016-Spring 2017)
Temple Undergraduate Summer Research Program joint with Dr. Vincenzo Carnevale

72) Mr. Josh Carey (Fall 2016)
Temple University Provost's Scholar

73) Ms. Monica Lessen (Fall 2017-Summer 2018)
Diamond Scholar (Summer 2018)

74) #*Ms. Mikaela Boyanich (Spring 2018- Spring 2020)
Temple University Summer Merit Scholarship (Summer 2018)
Temple Chemistry B.Sc. 2020. Chemistry graduate student at VaTech.

75) #Mr. Edwin Ovalle (Spring 2018- Spring 2020)
Temple Undergraduate Summer Research Program (Summer 2018)
Temple University NIH MARC Program (2018-2020)
Temple Chemistry B.Sc. 2020. PhD Program in Biomedical Sciences (PPBS) at U. Buffalo

76) #Mr. Khoi Tuan Hoang (Spring 2018-Spring 2020)
Temple University Provost's Scholar, German Academic Exchange Service (DAAD) research fellowship (Summer 2018)
Temple Chemistry & Physics B.Sc. 2020. Physics graduate student at U. of Maryland.

77) Ms. Shaivya Choudhary (Spring 2018-Fall 2018)
Temple University Summer Merit Scholarship (Summer 2018)

78) #*Ms. Lauren Castellana (Summer 2018-Spring 2019)
Temple University Frances Velay Fellowship
Temple Chemistry B.Sc. 2019. M.Sc. Georgetown University 2020

79) #Ms. Lidia Gebre, West Chester University (Summer 2018)
Temple University NSF Research Experience for Undergraduates
Chemistry graduate student at SUNY Binghamton.

80) Ms. Emily Reiner (Fall 2018)
Temple University Research Program (Fall 2018)

81) #*Mr. Ryan McDonnell (Spring 2019-Spring 2021)
Temple Undergraduate Summer Research Program (Summer 2019, 2020)
Temple Chemistry B.Sc. 2021 Chemistry graduate student at U Wisonsin - Madison.

Undergraduate Student Mentoring and Advising (Contd.)

82) Ms. Cheyanna Harris (Summer 2019-Fall 2019)
Temple Undergraduate Summer Research Program (Summer 2019)
Temple Chemistry B.Sc. 2020 Scientist at Johnson & Johnson

83) Mr. Paul Svitak (Summer 2019- Spring 2020)
Temple Undergraduate Summer Research Program (Summer 2019)
Temple Chemistry B.Sc. 2020

84) Mr. Connor Rolleston (Summer 2019-Fall 2020)
Temple Undergraduate Summer Research Program (Summer 2019)
Temple Chemistry B.Sc. 2021 R&D Process Chemist at Gelest, Inc.

85) Ms. Binh-An Nguyen (Spring 2020-Fall 2021)
Temple University Research Program (Spring 2020)
Temple Undergraduate Summer Research Program (Summer 2020)

86) Mr. Truman Metz (Spring 2020)
Temple University Research Program (Spring 2020)
Scientist at Thorlabs

87) Ms. Jordan Wenning (Summer 2020-Fall 2020)
Temple University President's Scholar
Temple University Summer Merit Scholarship (Summer 2020)

88) Mr. Ismail Sahraoui (Spring 2021-Fall 2021)
Temple Undergraduate Summer Research Program (Summer 2021)

89) Ms. Emma Perkins (Summer 2021)
Temple University President's Scholar
Temple Undergraduate Summer Research Program (Summer 2021)

90) #Mr. Sean Savage (Summer 2021- Spring 2022)
Temple Undergraduate Summer Research Program (Summer 2021)
Temple Physics B.Sc. 2022 Physics graduate student at Purdue U.

91) *#Ms. Naomi Ross (Summer 2021-Spring 2023)
Temple University NIH MARC Program (2021-2023)
NSF REU at CUNY (Summer 2022)
Temple Biophysics B.Sc. 2023 Chemistry graduate student at Georgia Tech

92) *Ms. Laura McDonnell (Summer 2021-)
Temple Undergraduate Summer Research Program (Summer 2021)

Undergraduate Student Mentoring and Advising (Contd.)

93) #Ms. Tyler-Rayne Nero (Fall 2021-Fall 2022)
NSF REU at U. of Rochester (Summer 2022)
Temple Chemistry B.Sc. 2022 Chemistry graduate student at GeorgiaTech.

94) Ms. Nayoung Ko (Fall 2021-Spring 2022)

95) Mr. Sanaan Mehmood (Spring 2022)

96) Ms. Caitlin My Hanh Thi Le (Spring 2022-)

97) Ms. Giao Vu (Spring 2022-Fall 2022)
Temple Chemistry B.Sc. 2022 Chemistry graduate student at GeorgiaTech

98) Ms. Samhitha Balaji (Spring 2022-Summer 2022)
Temple University Frances Velay Fellowship Summer 2022

99) Mr. Jose Mendez-Guerra (part of Summer 2022)

100) Mr. Max Thurm (Fall 2022-Spring 2023)

101) Mr. Edward Jang (Fall 2022-)

102) Mr. Logan Myers (part of Fall 2022)

103) Ms. Belinta Naomi Simiyu (Spring 2023 -)

104) Ms. Lauren Towers (Spring 2023-)

105) Ms. Jessica Kolora (Summer 2023 -)

106) Ms. Amelia Haines (Summer 2023 -) High School student

107) Ms. Samy Mohan (Fall 2023 -)

108) Mr. Robert Castillo (Fall 2023 -)

109) Mr. Liam Gannon (Fall 2023 -)

Graduate Students (31 advised total, 23 graduated with Ph.D., 2 graduated with M.Sc., 6 in group at present):
In addition, my group has welcomed visiting Ph.D. students for visits several months long.

Former Graduate Students

Dr. Seokjoon Kwon (1998-2002) University of Pittsburgh
Civil & Environmental Engineering. Co-Advisor: Prof. Radisav Vidic
Dissertation: "*Surface Chemistry of Carbonaceous Surfaces for Environmental Remediation*"
7 papers published, 4 as first author.
Supported by National Energy Technology Laboratory (NETL) student partnership program.
Subsequent position: Post-doctoral Research Fellow with Prof. Pignatello, Yale University, New Haven, CT.
Subsequent position: Research associate with Prof. Upal Ghosh, Civil & Environmental Engineering, University of Maryland, Baltimore County (UMBC), Baltimore, MD.

Dr. Dora Bodlaki (1997-2002) University of Pittsburgh
Dissertation: "*Nonlinear Optical Spectroscopy, Dynamics and Reactivity of Buried Semiconductor Interfaces*"
8 papers published, 6 as first author.
Subsequent position: Post-doctoral Research Fellow with Prof. R.J. Hamers and L. M. Smith, University of Wisconsin, Madison, developing new surface attachment chemistry for biomolecules.
Present position: Lecturer, Lebanon Valley College, PA

Dr. Vasiliy Fomenko (1997-2003) University of Pittsburgh
Dissertation: "*Optical second harmonic generation studies of charge transfer and trapping and chemical control of these phenomena at semiconductor interfaces*"
7 papers published, 4 as first author.
Subsequent position: Post-doctoral Research Fellow with Prof. D. Nesbitt, University of Colorado and JILA-NIST, Boulder, on near field optical microscopy of single quantum dots.
Present position: Research Scientist with Landauer in Stillwater, OK.

Dr. Tao Ye (1998-2003) University of Pittsburgh
Dissertation: "*Structure, Dynamics, and Reactivity of Molecular Assemblies at Interfaces*"
9 papers published, 4 as first author.
Subsequent position: Post-doctoral Research Fellow with Prof. P. Weiss, Pennsylvania State University, studying molecular motors.
Present position: Associate Professor, University of California at Merced

Dr. Xue Feng (2002-2005) University of Pittsburgh
Civil & Environmental Engineering (Pitt). Co-Advisor: Prof. Radisav Vidic
Dissertation: "*Applications of Carbon Nanotubes in Environmental Engineering: Adsorption and Desorption of Environmentally Relevant Species*"
6 papers published, 3 as first author.
Post-graduation position: Environmental Compliance Engineer with Compliance Management International in Philadelphia
Present position: Senior Engineer with Cummins near Minneapolis.

Graduate Students (Cont'd)
Former Graduate Students (Cont'd)

Dr. Wenguo (Wayne) Feng (2002-2005) University of Pittsburgh
Civil & Environmental Engineering (Pitt). Co-Advisor: Prof. Radisav Vidic
Dissertation: *Surface Chemistry of Carbonaceous Surfaces for Environmental Remediation*
5 papers published. 4 as first author.
Present position: Engineer with CDM, an engineering consulting firm.

Dr. Kramer Campen (2002-2007)
Joint with Prof. Jim Kubicki from the Pennsylvania State University, Geosciences
Dissertation: *"From Angstroms to Microns: Studies of Interfaces and Macromolecules with Geochemical Implications using Computational and Nonlinear Optical Tools"*
2 papers published from research in Borguet group.
Subsequent positions: Post-doctoral Research Fellow (2007-2010) with Professor Misha Bonn at the Institute of Atomic and Molecular Physics (AMOLF) in Amsterdam studying the physical chemistry of the membrane/liposome/water and mineral/water interfaces.
Leader of Interfacial Molecular Spectroscopy Group, Fritz Haber Institute of the Max Planck Society, Berlin, Germany
Present position: W3 Professor at University of Duisberg-Essen, Germany

Dr. Dmitry Kazachkin (2006-2009)
Ph.D. in Chemical Engineering from the University of Pittsburgh. Dmitry did his research in Borguet group at Temple. Co-Advisor: Prof. Radisav Vidic
Award: Prize for his poster at TAFDV conference, December 2008.
Dissertation: *"Investigation of chemical and adsorption properties of carbon nanotubes: building a bridge for technological applications of carbon nanotubes"*
4 papers published, 3 as first author.
Subsequent position Research Scientist for Sriya Innovations Inc (Atlanta, GA)
Present position: Senior Engineering Associate at Ingredion Inc.

Dr. Yangjun Xing (2004-2009) Temple University
Dissertation: *"Measurement and Visualization of Electron Transfer at the Single Molecule Level"*
Awards: Daniel Swern Fellowship, Temple University, Summer 2006
Prize for his poster at Philadelphia ACS conference, January 2007.
Temple College of Science and Technology Graduate Research Award, 2009
Eleven papers published, three as first author.
Subsequent position: Research Scientist with Ethicon (a Johnson & Johnson company)
Present position: Advanced Packaging R&D Engineer, Starkey Laboratories, Eden Prairie MN

Ms. Habibe Durmaz Ates (2008-2010) Temple University, Physics
Graduated with M.Sc. (Fall 2010)
Project: Nanoscale imaging

Graduate Students (Cont'd)
Former Graduate Students (Cont'd)

Dr. Ali Eftekhari-bafrooei (2005-2010) Temple University
Dissertation: *"Ultrafast Vibrational Spectroscopy and Dynamics of Water at Interfaces"*
Awards: Prize for his poster at Philadelphia ACS conference, January 2007.
Daniel Swern Fellowship, Temple University, Summer 2009
Temple University, College of Science & Technology Graduate Research Award 2010
Coblentz Society Fateley Graduate Student Award, 2010
Eight papers published, four as first author.
Subsequent position: Post-doctoral fellow in the group of Professor Richard Saykally at University of California, Berkeley, focusing on interfacial electronic spectroscopy.
Subsequent position: Applications Engineer at Newport Corporation
Present position: Applications Engineer at Apple Corporation

Dr. Nikolay Dementev (2004-2010) Temple University
Dissertation: *"Fluorescence Labeling of Surface Species as an Efficient Tool for Detection, Identification and Quantification of Oxygen Containing Functionalities on Carbon Materials"*
Awards: Prize for his poster at TAFDV conference, January 2007.
Francis H. Case Fellowship for Outstanding Research, Fall 2009.
Seven papers published, three as first author.
Subsequent position: Japan Society for the Promotion of Science post-doctoral fellow in the laboratory of Professor Naotoshi Nakashima, Kyushu University, Japan.

Dr. Oleksandr Isaienko (2006-2011) Temple University
Dissertation: *"Development of Ultra-Broadband Ultrafast Infrared Sources and Applications to Nonlinear Vibrational Spectroscopy of Interfaces"*
Awards: Temple University, College of Science and Technology Graduate Research Award
Temple University, College of Science and Technology Graduate Travel Award
Daniel Swern Fellowship, Temple University, Summer 2010
Ultrafast Phenomena XVI Graduate Travel Award
German Academic Exchange Service (DAAD) research fellowship with Professor Peter Vöhringer at the University of Bonn
Ten papers published, nine as first author. Two papers in preparation.
Subsequent position: Laser Development Scientist at Quantronix (Santa Clara, CA)
Post-doctoral fellow with Dr. Victor Klimov, Los Alamos National Laboratory (NM)
Present position: Research scientist at IPG Photonics, CA

Ms. Lan Pham Nguyen (2011-2012) Temple University
Graduated with M.Sc. (Fall 2012)
Project: Nanoscale imaging

Graduate Students (Cont'd) Former Graduate Students (Cont'd)

Dr. Aziz Boulesbaa (2011-2013) Temple University
Dissertation: "*Ultrafast vibrational dynamics at the solid/water interface"*
Four papers published, three as first author.
Subsequent position: Post-doctoral fellow at Oak Ridge National Laboratory
Present position: Faculty member California State University, Northridge.

Dr. Shalaka Dewan (2010-2015) Temple University
Dissertation: *"Ions and the Structure and Dynamics of Interfacial Water at Charged Surfaces"*
Awards: Coblentz Society Graduate Student Award, 2015
Five papers published, three as first author.
Subsequent position: Post-doctoral fellow at Johns Hopkins University, Research scientist at IPG Photonics, CA
Present position: Research scientist at Spectra Physics MKS, CA

Dr. Sepideh Afsari (2010-2015) Temple University
Dissertation: *"The Formation of Two Dimensional Supramolecular Structures and their Use in Studying Charge Transport at the Single Molecule Level at the Liquid-Solid Interface"*
Six papers published, three as first author.
Subsequent position: Post-doctoral fellow at University of California-Irvine, University of Colorado-Boulder
Present position: Post-doctoral fellow at University of Arizona

Dr. Devika Sil (2010-2015) Temple University
Dissertation: *"Synthesis and Applications of Plasmonic Nanostructures"*
Awards: ECS Colin Garfield Fink Summer Fellowship 2012.
Six papers published, three as first author.
Subsequent position: Post-doctoral fellow at National Institutes of Standards and Technology
Unit Process Engineer at IBM TJ Watson Research, NY
Engineer at TESLA Research, CA
Present position: Engineer at Applied Materials, CA

Dr. Aashish Tuladhar (2011-2016) Temple University
Dissertation: *"Structure and Dynamics of Water Next to Mineral Surfaces"*
Seven papers published, five as first author. Two papers in preparation.
Awards: Coblentz Society Graduate Student Award, 2016
Temple University Dissertation Completion Grant, 2016
Subsequent position: Post-doctoral fellow at Pacific Northwest National Laboratory
Present position: Product Engineer at HORIBA Scientific

Graduate Students (Cont'd)
Former Graduate Students (Cont'd)

Dr. Stefan Piontek (2014-2019)
Dissertation: *"Characterizing Heterogeneously Charged Mineral Oxide Surfaces Using Nonlinear Spectroscopy"*
Seven papers published, three as first author. Two submitted. One in preparation.
Subsequent position: Post-doctoral fellow of FP-RESOLV German cluster of Excellence with Prof. Poul Petersen at Ruhr University Bochum
Present position: Laser Service Engineer at Light Conversion Inc. based in Munich, Germany.

Dr. Parisa Yasini (2015-2021) Temple University
Dissertation: *"Measurement and Modulation of Charge Transport Through Small Benzene Derivatives"*
Awards: Temple University, College of Science and Technology Graduate Research Award
Daniel Swern Fellowship, Temple University
Dissertation Completion Award, Temple University
Four papers published, two as first author, another as co-first author. Two submitted.
Subsequent position: Post-doctoral fellow with Professor Marija Drndic at the University of Pennsylvania.
Present position: Process Development Engineer at Wolfspeed

Dr. Isabella A Goodenough (2016-2021) Temple University
Dissertation: *"Response of UiO Metal-Organic Frameworks to Thermal Perturbations and Molecular Interactions"*
Awards: Daniel Swern Fellowship, Temple University
Dissertation Completion Award, Temple University
North American Thermal Analysis Society (NATAS) Best student paper award, 2021
Coblentz Society Graduate Student Award, 2021
Four papers published, two as first author/co-first author. One submitted. Two in preparation.
Present position: Project Management Specialist at Boeing Defense, Space & Security

Dr. Ruiyu Wang (2017-2022) Temple University
Dissertation: *"Understanding Aqueous Solutions at α-Alumina Surfaces using Molecular Dynamics Simulations"*
Awards: Temple University, College of Science and Technology Graduate Research Award
Daniel Swern Fellowship, Temple University
Dissertation Completion Award, Temple University
Four papers published, all as first author. Two papers submitted. Two in preparation.
Present position: Post-doctoral fellow with Professor Pratyush Tiwary at the University of Maryland.

Graduate Students (Cont'd)
Former Graduate Students (Cont'd)

Dr. Bijoya Mandal (2018-2023) Temple University
Dissertation: *"Understanding Aqueous/Mineral Oxide Interfaces Using Ultrafast Nonlinear Vibrational Spectroscopy and Dynamics of IR Probe Molecules"*
Awards: Daniel Swern Fellowship, Temple University
Dissertation Completion Award, Temple University
One paper published. One paper submitted. Two in preparation.
Present position: Applications scientist at Thorlabs

Dr. Venkata Swaroopa Datta Devulapalli (Datta) (2018-2023) Temple University
Dissertation: *"The Chemistry of Metal Oxyhydroxides and their 3D Porous Hybrid Materials for the Capture, Transport and Degradation of Toxic Chemicals"*
Awards: Daniel Swern Fellowship, Temple University
Final Summer Award, Temple University
Francis H. Case Fellowship for Outstanding Research
Six papers published, three as first author. One paper submitted. Three papers in preparation.
Present position: Analytical characterization scientist at Eurofins

Current Graduate Students (6)

Ms. Somaiyeh Dadashi (2019-present) Temple University
5th year - Chemistry
Awards: Daniel Swern Fellowship, Temple University
Three papers in preparation. One paper submitted.
Project: Nonlinear Optical Microscopy of Interfaces

Ms. (Joy) Zou (2020-present) Temple University
4th year - Chemistry
One paper published. One paper submitted. One paper in preparation
Project: Nonlinear Optical Spectroscopy and Dynamics of Interfaces

Mr. Sharan Dhar (2022-present) Temple University
3rd year - Chemistry
Project: Molecular Interactions with Porous Organic Frameworks and their Catalytic Properties

Mr. Wasim Dhar (2022-present) Temple University
4th year - Chemistry
Project: Molecular Interactions with Porous Organic Frameworks and their Catalytic Properties

Graduate Students (Cont'd)
Current Graduate Students (5)

Mr. Ziyad Thekkayil (2023-present) Temple University
2nd year - Chemistry
Project: Nonlinear Optical Spectroscopy and Dynamics of Interfaces

Mr. Souvik Pramanick (2024-present) Temple University
1st year - Chemistry
Project: Nonlinear Optical Spectroscopy and Dynamics of Interfaces

Graduate Students (Cont'd)
Current Visiting Students (0)

Former Visiting Graduate Students (15)

Ms. Sandrine Cussat-Blanc (2002)
Ph.D. student from Université de Bordeaux, France
Ph.D. Advisor: Dr. Eric Freysz

Mr. Taro Uematsu (Winter 2008)
Ph.D. student from Graduate School of Engineering, Osaka University, Japan.
Ph.D. Advisor: Professor Susumu Kuwabata

Mr. Guillaume Lamour, (Summer 2008)
PhD Student in Cellular Neuro-Physics Laboratory at Université Paris Descartes (Paris 5), France. Ph.D. Advisor: Dr. Ahmed Hamraoui
Two first author papers published from research in Borguet group.
Graduated 2010. Currently post-doctoral fellow at University of British Columbia, Canada

Mr. Andrii Buvailo, (Fall 2008 –Summer 2009)
PhD student in Chemistry at Taras Shevchenko University, Kiev, Ukraine.
Ph.D. Advisor: Dr. Nelli Maksymovych
Three papers published, two as first author, from research in Borguet group.

Ms. Aurélie Chenel (2010)
M.Sc. student from Ecole Normale Supérieure de Cachan, France.

Mr. Aziz Boulesbaa (2010)
Graduate student from Emory University
Subsequently, a graduate student at Temple. (Fall 2010-Fall 2013)

Mr. Olivier Katz (Spring –Summer 2011)
M.Sc. student at Université Pierre et Marie Curie (Paris 6)

Ms. Malika EL KRYMY (Spring –Summer 2012)
M.Sc. student at Université Pierre et Marie Curie (Paris 6)

Ms. Aurelia Niaux (Spring –Summer 2014)
M.Sc. student at Université Pierre et Marie Curie (Paris 6)

Graduate Students (Cont'd)

Former Visiting Graduate Students (contd.)

Mr. Kevin Millan (Spring – Summer 2017)
Licence Université Paul Sabatier Toulouse

Mr. Esteban Sanchez (2014)
Graduate student from Benemérita Universidad Autónoma de Puebla, Mexico
Ph.D. Advisor: Dra. Rocío Aguilar Sánchez

Mr. Yaroslav Aulin, Delft University of Technology (2015-2016)
Ph.D. Advisor: Dr. Ferdinand C. Grozema and Prof. Laurens D.A. Siebbeles
Subsequently, a post-doc in Borguet group at Temple. (Spring 2016 – Fall 2017)

Mr. D. V. S. Datta (Fall 2017)
M.Sc. student from IISER-Pune as part of Dual Masters Doctoral Degree program

Mr. Dorian Louaas (Fall 2019)
Student from Ecole Centrale de Lyon, France.

Mr. Ziyad Thekkayil (Summer-Fall 2022)
M.Sc. student from IISER-Pune as part of Dual Masters Doctoral Degree program

Mr. Amuthan Dekshinamoorthy (2023)
Ph.D. Student from CSIR-Central Electrochemical Research Institute, Karaikudi, India
Ph.D. Advisor: Dr. Saranyan Vijayaraghavan

Postdoctoral Research Associates
(17 advised total, 1 in group at present):

Current Postdoctoral Research Associates

Dr. Hao Li (November 2022 - present)
Nonlinear Optics and Catalysis

Former Postdoctoral Research Associates (16)

Dr. Jean-Frédéric Lami (1997-1998)
Nonlinear Optical Spectroscopy of Interfaces
Co-author on 1 publication from Borguet group
Present position: Software engineer in Germany (’00- present).

Dr. Yufan He (2000- 2006)
Surface Probe Microscopy of Electrochemical Interfaces
Co-author on 5 publications from Borguet group, 4 as first author
Present position: Post-doctoral Research Fellow with Prof. P. Lu at Bowling Green State University.

Dr. Kyoungja Seo (2004-2006)
KOSEF Fellowship
Surface Probe Microscopy and Nanolithography of Interfaces
Co-author on 4 publications from Borguet group, 3 as first author
Subsequent position: Post-doctoral Research Fellow at Center for Smart Molecular Memory, Electronics and Telecommunications Research Institute, Daejeon, Korea
Present position: Research Faculty, Chemistry Department, Sungkyunkwan University, Korea

Dr. Satoshi Nihonyanagi (2004-2007)
Nonlinear Optical Spectroscopy and Dynamics of Interfaces
Co-author on 6 publications from Borguet group
Awarded PCCP Research Prize for his poster on Ultrafast Interfacial Dynamics Research at ICEI conference, June 2007.
Present position: Research scientist at RIKEN Institute (Molecular Spectroscopy Lab), Japan

Dr. Qun-Hui Yuan (2008- 2009)
Surface Probe Microscopy of Electrochemical Interfaces
Co-author on 1 publication from Borguet group as first author
Present position: Professor in China

Dr. Xiaoting Hong (2009 – 2010)
Sensors and Atomic Force Microscopy
Present position: Professor in China

Former Postdoctoral Research Associates (contd.)

Dr. Fei Li (2009 – 2010)
Nanoscale Electrochemistry
Present position: Professor in China

Dr. Youn-Geun Kim (July 2009 – September 2010) Research Assistant Professor
Surface Probe Microscopy
Co-author on 1 publication from Borguet group
Present position: Research faculty at Caltech

Dr. Doug Hausner (March 2010 – May 2011) Research Assistant Professor
Surface Probe Microscopy of Electrochemical Interfaces
Present position: Associate Director for Industrial Relations and Business Development at Rutgers University

Dr. Zhihai LI (August 2010 – July 2013) Research Assistant Professor
Surface Probe Microscopy and Single Molecule Conductivity
Co-author on 9 publications from Borguet group, 7 as first author
Present position: Assistant Professor, Department of Chemistry, Ball State University, Muncie, IN

Dr. Loranne Vernisse (2014- August 2016)
Surface Probe Microscopy of Two-Dimensional Materials
Co-author on 1 publication from Borguet group
Present position: Maître de conférences, Université de Poitiers, France

Dr. Laszlo Frazer (2015)
Development and Use of Ultrabroadband Infrared Optical Parametric Amplifiers
Co-author on 5 publications from Borguet group
Present position: Post-doctoral Research Associate, University of New South Wales, Australia

Dr. Piret Pikma (February 2016 – June 2017)
Surface Probe Microscopy and Single Molecule Conductivity
Co-author on 1 publication from Borguet group
Present position: Research Fellow of Physical Chemistry, University of Tartu, Estonia

Dr. Yaroslav Aulin (March 2016 – August 2017)
Development and Use of Ultrabroadband Infrared Optical Parametric Amplifiers
Co-author on 6 publications from Borguet group, including one as first author
Present position: Post-doctoral Research Associate, Rutgers University

Dr. Melissandre Richard (October 2016 - July 2018)
Plasmonic Catalysis and Sensing
Co-author on 3 publications from Borguet group. One submitted and more in preparation.
Present position: Maître de conférences, Université de Lille, France

Former Postdoctoral Research Associates (contd.)

Dr. Ayan Bhattacharyya (October 2022 – July 2023)
Development of Sensing Platforms
Two papers in preparation
Present position:

Visiting Scholars (5):

Dr. Eric Freysz (CPMOH, CNRS, Bordeaux, France)

Professor Jianguo Wang (2009-2010) Professor of Chemistry at Liaoning University, China
Electrochemistry of carbon materials

Professor Robert Giuliano (2008-2009) Professor of Chemistry at Villanova University
Covalent chemistry of carbon materials

Ms. Sedigheh Sadegh Hassani (2010)
In situ electrochemical STM

Dr. Mohsen Yeganeh (2010-) Senior Scientist Exxon-Mobil
Nonlinear optical studies of aqueous mineral interfaces

Graduate Student Committees

Ph.D. Comprehensive Exam, University of Pittsburgh

Anya Kuznetsova (December 1997)
Jason Scharf (June 1998)
Irene Popova (July 1999)
Sabah Al-Maawali (March 2000)
Sergey Mezhenny (March 2000)
Dora Bodlaki (April 2000)
Vasiliy Fomenko (September 2000)
Tykhon Zubkov (September 2000)
Jae-Gook Lee (October 2000)
Cheolhwa Kang (January 2001)
Tao Ye (February 2001)
Olivier Guise (April 2001)
Alexei Tivanski (February 2002)
Jianjun Wei (September 2002)
Larissa Stebounova (November 2002)
Tracy Thompson (January 2003)
Oleg Byl (February 2003)

Ph.D. Proposal, University of Pittsburgh

Zdenek Dohnálek (October 1997)
Edward Wovchko (July 1998)
Anthony Nicola (July 1998)
Zhenhuan Chi (August 1998)
Michael Schaeberle (1998)
Alexander Sukharevsky (January 1999)
Natasha Balabay (March 1999)
Jason Ribblett (July 1999)
Xia Dong (September 1999)
Chengfei Wang (January 2000)
Tim Korter (April 2001)
Seokjoon Kwon, Civil & Environmental Engineering (June 2001)
Patricia Secrest (November 2001)
Wei Shi, Chemical Engineering (March 2002)
Jason Bemis (June 2002)
Andrew Napper (September 2002)
Vasiliy Fomenko (February 2003)
Feng Wang (March 2003)
Tao Ye (August 2003)
Wenguo Feng, Civil & Environmental Engineering (September 2004)
Xue Feng, Civil & Environmental Engineering (September 2004)

Graduate Student Committees (Contd.)

M.S. Defense, University of Pittsburgh

Seokjoon Kwon, Civil & Environmental Engineering (March 1999)
Jason Scharf (May 1999)
James Worthington (July 1999)
Ke Shen (August 2002)

Ph.D. Defense, University of Pittsburgh

Guisheng Pan (1998)
Nithya Vaidyanathan (December 1998)
Wei Liu, Civil & Environmental Engineering (December 1998)
Brian K. Mohney (July 1999)
Emil Tripa (October 2000)
Camelia Rusu (October 2000)
Anya Kuznetsova (April 2001)
David Borst (April 2001)
Seokjoon Kwon, Civil & Environmental Engineering (May 2002)
Irene Popova (July 2002)
Hiromichi Yamamoto (September 2002)
Sabah Al-Maawali (October 2002)
Dora Bodlaki (November 2002)
Sergey Mezhenny (April 2003)
Wei Shi, Chemical Engineering (May 2003)
Vasiliy Fomenko (May 2003)
Tao Ye (December 2003)
Jae-Gook Lee (April 2004)
Tykhon Zubkov (May 2004)

Graduate Student Committee, Temple University

Natalia Molina Vazquez (Willets group), Chemistry (Spring 2016-)
Taryn Anthony (Willets group), Chemistry (Spring 2016-)
Liu Juehuan (Levis group), Chemistry (Spring 2016-)
Yu Wang (Levis group), Chemistry (Spring 2016-)
Mohammad Sharifian Gh. (Dai group), Chemistry (Spring 2015-Summer 2018)

Graduate Student Committees (Contd.)

Ph.D. Proposal, Temple University

Jun Hao, Chemistry (Fall 2008)
Andro-Marc Pierre-Louis, Chemistry (April 2012)
Aziz Boulesbaa, Chemistry (January 2013)
Erin McCole, Chemistry (February 2014)
Shalaka Dewan, Chemistry (May 2014)
Devika Sil, Chemistry (June 2014)
Sepideh Afsari, Chemistry (June 2014)
Kyle Gilroy, Mechanical Engineering (February 2015)
Yiling Chen, Civil and Environmental Engineering (August 2015)
Maryam Hajfathalian, Mechanical Engineering (May 2016)

Ph.D. Defense, Temple University

Mohammad Aly, Physics (May 2006)
Patricia Solvignon, Physics (May 2006)
Jun Hao, Chemistry (January 2009)
Omer Salihoglu, Physics (February 2009)
Yangjun Xing, Chemistry (August 2009)
Ali Eftekhari-bafrooei, Chemistry (September 2010)
Nikolay Dementev, Chemistry (October 2010)
Oleksandr Isaienko, Chemistry (April 2011)
Matthew Coughlan, Chemistry (April 2012)
Johanan Odhner, Chemistry (June 2012)
Aziz Boulesbaa, Chemistry (November 2013)
Andro-Marc Pierre-Louis, Chemistry (July 2014)
Tim Bohinski, Chemistry (March 2015)
Shalaka Dewan, Chemistry (May 2015)
Kyle Gilroy, Mechanical Engineering (June 2015)
Sepideh Afsari, Chemistry (December 2015)
Devika Sil, Chemistry (December 2015)
Aashish Tuladhar, Chemistry (September 2016)
Maryam Hajfathalian, Mechanical Engineering (February 2017)
Aashish Tuladhar, Chemistry (September 2016)
Mohammad Sharifian Gh., Chemistry (July 2018)

External Examiner on Graduate Committees

- Ph.D. Defense Committee for Mr. Wenguo Feng, Civil & Environmental Engineering, University of Pittsburgh (November 2005)
- Ph.D. Defense Committee for Ms. Xue Feng, Civil & Environmental Engineering, University of Pittsburgh (November 2005)
- Ph.D. Defense Committee for Mr. Cedric Hurth, Université de Bordeaux, France, Chemistry Department (December 2005)
- Ph.D. Proposal Defense Committee for Mr. Dmitry Kazachkin, Chemical Engineering, University of Pittsburgh (April 2007)
- Ph.D. Defense Committee for Mr. Kramer Campen, The Pennsylvania State University, Geosciences (May 2007)
- Ph.D. Defense Committee for Ms. Elina Vitol, Drexel University, Electrical Engineering (May 2010)
- Ph.D. Defense Committee for Mr. Guillaume Lamour, Université de Paris V, France, Biophysics (June 2010)
- Ph.D. Proposal Defense Committee for Mr. Riju Singhal, Drexel University, Materials Science and Engineering (October 2010)
- Ph.D. Defense Committee for Mr. Riju Singhal, Drexel University, Materials Science and Engineering (January 2013)
- Ph.D. Defense Committee for Mr. Shafiul Azam, University of Alberta, Canada, Chemistry Department (April 2013)
- Ph.D. Defense Committee for Mr. Tomoyasu Mani, University of Pennsylvania, Biochemistry and Molecular Biophysics Graduate Program (August 2013)
- Ph.D. Defense Committee for Mr. Guillaume-Goubert, Laval University, Quebec, Chemistry Department (August 2014)
- Ph.D. Defense Committee for Ms. Morgane Pfeiffer-Laplaud, Université Paris-Saclay, Evry, France (September 2016)
- Ph.D. Committee for Mr. Simone Pezzotti, Université Paris-Saclay, Evry, France (September 2016)
- Ph.D. Defense Committee for Mr. Simone Pezzotti, Université Paris-Saclay, Evry, France (May 2019)
- Ph.D. Defense Committee for Ms. Janna Domenico, Drexel University, Chemistry (May 2019)

Professional Activities and Service:

-Proposal reviewer for National Science Foundation (NSF), Office of Naval Research (ONR), Air Force Office of Scientific Research (AFOSR), Department of Energy (DOE), Research Corporation, ACS-Petroleum Research Fund.

-Publication reviewer for Langmuir, Chemical Physics Letters, Journal of Applied Physics, Applied Physics Letters, Review of Scientific Instruments, Journal of Electroanalytical Chemistry, Analytical Chemistry, Journal of the American Chemical Society, Journal of Chemical Physics, Journal of Physical Chemistry,…

-Panel reviewer for Quebec Nanotechnology Canadian Innovation Fund
August 2001, Montréal, Québec, Canada

-Symposium co-organizer, with H. Petek, "Electron Dynamics at Interfaces", Interdisciplinary Laser Science Conference, Long Beach CA, October 2001

-Participant NSF Materials Chemistry Workshop, University of Wisconsin, Madison October 2001

-Symposium organizer "Physics of Chemically Modified Interfaces", American Physical Society, Indianapolis, IN, March 2002

-Participant Telluride Workshop on Semiconductor Surface Chemistry, Telluride, CO August 2002

-Symposium co-organizer, with D. Scherson, "Dynamics at Surfaces", 224th American Chemical Society National Meeting, Boston, MA, August 2002

-Participant Pennsylvania Nanotechnology 2002 Workshop, Harrisburg PA, October 2002

-Symposium organizer "Semiconductor Surfaces", 226th American Chemical Society National Meeting, New York, NY, September 2003

-Program Committee member for "Physical Chemistry of Interfaces and Nanomaterials", SPIE Annual Meeting, San Diego CA, August 2003

-Symposium co-organizer, with T. Kowalewski, "Nanoscience", 35th Central Regional Meeting, Pittsburgh PA, October 2003

-Program Committee member for "Physical Chemistry of Interfaces and Nanomaterials", SPIE Annual Meeting, Denver CO, August 2004

-Symposium co-organizer, with Gang-Yu Liu "Scanning Probe Microcopy at Solid-Liquid Interfaces", 229th American Chemical Society National Meeting, San Diego, CA March 2005

Professional Activities and Service (contd.):

-Panel reviewer for NSF, Washington DC, November 2005

-Symposium co-organizer with Yuh-Lin Wang "Surface and Interfaces in Electronic Materials and Electrochemical Processes", American Physical Society, Baltimore, MD, March 2006

-Panelist, Career/Graduate School Panel Discussion
MARM 2006, ACS Mid-Atlantic Regional Meeting, Hershey, June 4-7, 2006

-Panelist, Philadelphia ACS Local Section Graduate School Roundtable Discussion
Villanova University, Chemistry Department November 2006

-Symposium organizer, "Carbon Nanotubes", MARM 2007, ACS Mid-Atlantic Regional Meeting, Ursinus College, Collegeville, PA, May 16-18, 2007

-Temple Coordinator for ACS Philadelphia, Graduate and Undergraduate Poster Session, Temple University, January 24, 2008

-Symposium co-organizer, with David Waldeck "Biological and Biomimetic Interfacial Electron Transfer", 236th American Chemical Society National Meeting, Philadelphia, PA August 2008

-Panelist, Career/Graduate School Panel Discussion
236th American Chemical Society National Meeting, Philadelphia, PA, August 2008

-Advisory Board "In Chemistry", 2008-2009

-Temple Coordinator for ACS Philadelphia, Graduate and Undergraduate Poster Session, Temple University, January 2009

-Symposium organizer, "Nano Carbon", 38^{h} Annual Conference of North American Thermal Analysis Society, Philadelphia, PA August 2010

-Temple Coordinator for Trans-Atlantic Science Student Exchange Program (TASSEP)

-Panel reviewer for NSF, Washington DC, March 2011

-Panelist, 'What will I do with this degree?" A panel discussion on careers in the sciences
McNair Scholars Forum, Temple University, Philadelphia, PA October 2011

-Panel reviewer for NSF, Washington DC, November 2011

-Panelist, "Summer Research Opportunities for Undergraduates"
College of Science and Technology, Temple University, Philadelphia, PA January 2012

- Member, Franklin Institute Bower Award Pre-Selection Committee, 2012

Professional Activities and Service (contd.):

-Symposium co-organizer, with Andrzej Wieckowski "Structure, Dynamics and Reactivity at Charged Interfaces", 244th American Chemical Society National Meeting, Philadelphia, PA August 2012

-Organizer of Panel, "Teaching Careers at 2 and 4 Year Colleges"
College of Science and Technology, Temple University, Philadelphia, PA December 2012

-Panelist, "Summer Research Opportunities for Undergraduates"
College of Science and Technology, Temple University, Philadelphia, PA January 2013

Member at Large, Executive Committee of ACS Colloid and Surface Chemistry Division, with responsibilities for promotion of Surface and Colloid programming at Regional ACS meetings, 2013-2016

-Panelist, "Graduate Research and Scientific Careers"
MARC Regional Meeting, Temple University, Philadelphia, PA July 2013

-Symposium co-organizer, with Christopher Matranga "Plasmonic Catalysis and Sensing", 249th American Chemical Society National Meeting, Denver, CO March 2015

-Participant, Strategic Planning Meeting of the Colloid and Surface Chemistry Division of the American Chemical Society January 2016

-Vice-Chair and Member of Executive Committee of the Colloid and Surface Chemistry Division of the American Chemical Society 2016

-Panel reviewer for NSF, Washington DC October 2016

-Chair-elect and Member of Executive Committee of the Colloid and Surface Chemistry Division of the American Chemical Society 2017

-Workshop co-organizer, with Rick Remsing, "Experimental and Computational Approaches to Understanding Aqueous Interfaces", Temple University March 2017

-Chair and Member of Executive Committee of the Colloid and Surface Chemistry Division of the American Chemical Society 2018

-Past-Chair and Member of Executive Committee of the Colloid and Surface Chemistry Division of the American Chemical Society 2019

-2020 Mesilla Chemistry Workshop on Aqueous Solution/Oxide Interfaces, co-organizer James Kubicki, Mesilla, Texas February 2020

-Symposium co-organizer, with Hai-Lung Dai and Ilja Siepmann "Computer simulations of soft matter and interfaces: Symposium in honor of Michael Klein at 80", American Chemical Society National Meeting, Philadelphia, PA - postponed due to meeting cancellation March 2020

Professional Activities and Service (contd.):

- Director, Mesilla Chemistry Workshop 2019-

- Committee for COLL - Primarily Undergraduate Institution Student Award, Colloid and Surface Chemistry Division (COLL) of the American Chemical Society 2019-

- Discussion Leader for "International Opportunities" forum at Conference for Undergraduate Women in Physics (CUWiP), Temple University, Philadelphia, PA January 2020

- Panel reviewer for NSF, Washington DC May 2020

-Virtual Workshop on Aqueous Solution/Oxide Interfaces, co-organizers Julianne Gibbs (University of Alberta), Vicki H. Grassian (University of California San Diego), Anastasia Ilgen (Sandia National Laboratories), Young-Shin Jun (Washington University in St. Louis), Nadine Kabengi (Georgia State University), James D. Kubicki (The University of Texas at El Paso) June 2021

- 2023 Mesilla Chemistry Workshop on Aqueous Solution/Oxide Interfaces, co-organizer James Kubicki, Mesilla, Texas February 2023

-2023 International Conference on Interfacial Nonlinear Optics, co-organizer Hai-Lung Dai, Rome, Italy June 2023

- Panel reviewer for NSF, Washington DC June 2023

- AMRS2024 Materials for Environment, Water, Sanitation, session co-organizer Kigali, Rwanda December 2024

- Editorial Advisory Board: Chemical Physics, Journal of Chemical Physics

University and Departmental Service

University of Pittsburgh

Physical Chemistry Colloquium Coordinator	1997- 2003
Organizing Committee, Yates Symposium	2000
Co-director, NSF-REU Physics Program, Focus on Minorities and Women	2000-2004
Safety Committee, Department of Chemistry	1999-2001
Budget and Finance Committee, Department of Chemistry	2002-2003
Faculty Development and Long-Range Planning	2002-2003
Graduate Recruiting Committee, Department of Chemistry	1997-1998
Discussion leader, University of Pittsburgh Grantspersonship Workshop	2000
Undergraduate Advising, University of Pittsburgh	1996-2004

Temple University

Chair, Graduate Recruiting Committee, Department of Chemistry	2004-2008
Graduate Recruiting Committee, Department of Chemistry	2004-present
Chair, Graduate Admissions Committee, Department of Chemistry	2020-present
Graduate Admissions Committee, Department of Chemistry	2004-present
Faculty Advisor to ACS-Student Affiliates, Department of Chemistry	2004-2010
Chair Selection Advisory Committee, Department of Chemistry	2005
Faculty Recruiting Committee, Department of Chemistry	2005-present
Chair, Faculty Recruiting Committee, Department of Chemistry	2008-2009
Departmental Review ad-hoc Committee, Department of Chemistry	2005-2006
Mentor, Temple Diamond Scholars Program	2005-2006
Alliance for Minority Participation Summer Research Faculty Advisor	2005-present
Physician Scientist Training Program Summer Research Faculty Advisor	2006-2008
Department Chair Selection Advisory Committee, Department of Chemistry	2007
Dean's Advisory Committee, College of Science and Technology	2007-2009
Provost's Workgroup on Developing the Academic Community	2007-2009
Ad-Hoc Bylaws Committee, College of Science and Technology	2007-present
Organizing Committee, CST 10th Anniversary Celebration Symposium	2008
Organizing Committee, NanoBioMed Symposium	2008
Invention and Patent Committee	2010-present
Coordinator for Trans-Atlantic Science Student Exchange Program (TASSEP)	2010-present
Mentor, NIH Minority Access to Research Careers (MARC) Program	2011-present
Founding Member, Provost's Undergraduate Mentors	2012-present
Advisory Committee, Temple Science Scholars	2012-present
Faculty Recruiting Committee, Department of Physics	2011-2012
Faculty Recruiting Committee, Department of Mechanical Engineering	2012-2013
Deputy-director, DOE-EFRC Center for Computational Design of Functional Layered Materials	2015-present
Provost Committee on Study Abroad	2015-present
Faculty Senate Committee for International Programs	2016-present
STEM Faculty Advisor for International Affairs	2019-present
Ad-Hoc Departmental Promotion and Tenure Committee	2019, 2021
Chair, Faculty Awards Committee, Department of Chemistry	2023-present