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#### Positions:

**Millard Alexander Professor of Chemistry**, Department of Chemistry and Biochemistry, University of Maryland (6/05-present)  
**Full Professor**, Department of Chemistry, Boston College (9/01-6/05)  
**Associate Professor**, Department of Chemistry, Boston College (9/00-9/01)  
**Assistant Professor**, Department of Chemistry, Boston College (9/94-9/00)

#### Education:

**California Institute of Technology**, Pasadena, CA, BS in chemistry with honors, 6/86.  
**California Institute of Technology**, Pasadena, CA, MS in chemistry, 6/86.  
Advisors: Sunney I. Chan, William P. Schaefer, Dennis Dougherty.  
Thesis: "Polycyclic Peroxides and Planar Nitrogens"  
**Stanford University**, Stanford, CA, PhD in physical chemistry, 1/92.  
Advisor: Michael D. Fayer.  
Thesis: "Time-Domain Nonlinear Optics in Flames and Low-Pressure Gases: Experiments and Theory"  
**University of Texas**, Austin, TX, Postdoctoral Fellow, 10/91-2/93.  
Advisor: Mark Berg.  
**Massachusetts Institute of Technology**, Cambridge, MA, Postdoctoral Fellow, 2/93-8/94.  
Advisor: Keith A. Nelson.

#### Awards and Honors:

1. **Green Memorial Prize** for original research, 1985
2. **Schuster Memorial Prize** for excellence in chemistry, 1986
3. **National Science Foundation Graduate Fellow**, 1987-1990
4. **National Science Foundation Postdoctoral Fellow**, 1992-1994
5. **Camille and Henry Dreyfus New Faculty Award**, 1994
6. **National Science Foundation CAREER Award**, 1995
7. **Boston College Distinguished Junior Faculty Award**, 1996
8. **Beckman Young Investigator Award**, 1997
9. **Research Corporation Cottrell Scholar Award**, 1997
10. **Alfred P. Sloan Research Fellow**, 1998
11. **National Science Foundation Award Extension for Special Creativity**, 1998
12. **Camille Dreyfus Teacher-Scholar Award**, 1999
13. **Boston College Junior Distinguished Research Award**, 2000
14. **Visiting Fellow of the Joint Institute for Laboratory Astrophysics**, 2001-02
15. **Fellow of the American Physical Society**, 2002
16. **Fellow of the American Association for the Advancement of Science**, 2005
17. **Fellow of the Optical Society of America**, 2007.
18. **Regents Faculty Award for Research, Scholarship and Creative Activity**, 2012.
19. **Senior Member of SPIE**, 2020.

#### Research Experience:

**California Institute of Technology**  
Synthesized novel, highly-strained polycyclic peroxide molecules with nearly planar bridgehead nitrogen atoms. Determined the structure and conformational dynamics of these new molecules using x-ray crystallography and NMR.

### ***Stanford University***

Developed phase-locking techniques for laser pulses to perform new multiple-pulse spectroscopies. Used polarization-sensitive transient gratings to study dynamics in flames. Developed techniques for understanding polarization effects in four-wave mixing spectroscopies.

### ***University of Texas at Austin***

Used transient hole burning, permanent hole burning, and time-resolved fluorescence to perform the first detailed study of the time- and temperature-dependent dynamics of completely nonpolar solvation.

### ***Massachusetts Institute of Technology***

Developed new techniques for obtaining, in a single laser shot, pump/probe data with femtosecond time resolution and a time range of several picoseconds. Employed these techniques to study irreversible, ultrafast dynamics in condensed phases.

### ***Boston College, University of Maryland***

Research subjects include the dynamics of nanoconfined, stretched and supercooled liquids, the behavior of water near hydrophobic and hydrophilic interfaces, multiphoton microscopy, development of new contrast mechanisms for biological and materials microscopy, development of techniques for superresolution in microscopy and microfabrication, single-molecule orientational dynamics, DNA conductivity and sensing, development of nanotopographic surfaces that control cell behavior, optical data storage, patterning and observation of polymer supports for combinatorial chemistry, use of noble-metal nanoparticles as biological probes, magnetic resonance force microscopy, 3-D microfabrication, theory of light-matter interactions, and INM theories of liquids.

### **Research Support:**

1. ***National Science Foundation Postdoctoral Fellowship Startup Award***, 1994, \$32,000
2. ***Camille and Henry Dreyfus New Faculty Award***, 1994-1999, \$25,000
3. ***National Science Foundation CAREER Award***, "Controlling and Probing the Microscopic Structure and Dynamics of Liquids," 1995-1998, \$233,600
4. ***Department of Education GAANN Award***, 1995-1998, \$354,645
5. ***Boston College Distinguished Junior Faculty Award***, 1996, \$5000
6. ***Beckman Young Investigator Award***, 1997-1999, \$200,000
7. ***Research Corporation Cottrell Scholar Award***, 1997-2002, \$50,000
8. ***Sloan Research Fellowship***, 1998-2000, \$35,000
9. ***National Science Foundation Award Extension for Special Creativity***, "Controlling and Probing the Microscopic Structure and Dynamics of Liquids," 1998-2000, \$169,000
10. ***Department of Education GAANN Award*** (with Scott Miller), 1998-2001, \$302,664
11. ***Dreyfus Special Education Grant***, "University/Secondary-School Collaboration to Foster Science Education," (with Scott Miller), 1999-2000, \$25,822
12. ***Camille Dreyfus Teacher-Scholar Award***, 1999-2004, \$60,000
13. ***US Department of Energy Research Grant*** (with David Lesmes), "Complex Electrical Resistivity for Monitoring DNAPL Contamination," 1999-2002, \$155,000
14. ***National Science Foundation, International Programs***, OISE-9981390, "U.S.-Japan Cooperative Science: Vibrational Dynamics of Liquids and Liquids in Confinement," 2000-2003, \$34,299
15. ***National Science Foundation, Experimental Physical Chemistry***, CHE-0073228, "Experimental and Theoretical Studies of Microscopic Dynamics in Liquids," 2000-2003, \$398,941
16. ***Boston College Research Incentive Grant***, 2000-2001, \$15,000
17. ***National Science Foundation, Integrative Systems (Engineering)*** (lead PI with Scott Miller, Mike Naughton, Bahaa Saleh and Mal Teich), ECCS-0088438, "XYZ on a Chip: Development and Fabrication of Three-Dimensional Microdevices," 2000-2003, \$1,486,680
18. ***Boston College Junior Distinguished Research Award***, 2000, \$2,000
19. ***National Science Foundation, Experimental Physical Chemistry***, CHE-0124222, "Experimental and Theoretical Studies of Microscopic Dynamics in Liquids (supplement)," 2001, \$30,000
20. ***Air Force Office of Scientific Research, Physics and Electronics***, F49620-01-1-0455, "Development of Molecular Glasses for Use as Media for High-Density Optical Memory," 2001-2004, \$344,402

21. **National Institutes of Health, Digestive Diseases Institute** (with Shana Kelley, Michael Naughton and Zhifeng Ren), 1R01CA097945-01, "Detection of *H. pylori* Using Electrical DNA Sensing," 2002-2004, \$227,942
22. **Defense University Research Infrastructure Program**, F49620-02-1-0273, "Request for Funds for the Purchase of a Broadly-Tunable Ti:Sapphire Laser for Research in High-Density Optical Memory," 2002-2003, \$155,782
23. **National Science Foundation, Integrative Systems (Engineering)** (with Michael Naughton and Krzysztof Kempa), ECCS-0210533, "NIRT: Nanoscale Magnetic Microscopy with Multi-Photon Absorption Polymers and Y-Junction Nanotubes," 2002-2006, \$1,056,000
24. **National Science Foundation, Experimental Physical Chemistry**, CHE-0314020, "Nonlinear-Optical Spectroscopy and Microscopy of Confined Liquids," 2003-2006, \$412,097
25. **National Science Foundation, Experimental Physical Chemistry**, CHE-0314020, "Nonlinear-Optical Spectroscopy and Microscopy of Confined Liquids (supplement)," 2003, \$20,297
26. **National Institute of Standards and Technology**, "Services for Wiring Nanowire-Based Devices," 2005-2006, \$20,000
27. **National Science Foundation, Experimental Physical Chemistry**, CHE-0608045, "Probing Microscopic Structure and Dynamics in Complex Systems," 2006-2009, \$415,474
28. **Laboratory for Physical Sciences**, "Fabrication of Waveguide Resonators Using MAP," 2006-2013, \$800,000
29. **UMD Minta Martin Program** (with Ben Shapiro and Elisabeth Smela), "Electroosmotic Micro-Flow Pumping for High Stress/Strain Smart Actuator Materials," 2006-2007, \$170,000
30. **National Science Foundation, Collaborative Research in Chemistry** (with Robert Walker, John Weeks and Bruce Berne), CHE-0628178, "Molecular-Level Structure and Dynamics at Solid-Liquid Interfaces," 2006-2011, \$2,544,640
31. **National Science Foundation, Physics** (co-PI with Wolfgang Losert), PHY-0750371, "Integration of Topographical, Mechanical and Biochemical Signals in Cell Motility," 2008-2011, \$360,000
32. **National Science Foundation, Collaborative Research in Chemistry** (with Robert Walker, John Weeks and Bruce Berne), CHE-0906453, "Molecular-Level Structure and Dynamics at Solid-Liquid Interfaces (supplement)," 2009, \$32,640
33. **Air Force Office of Scientific Research** (co-PI with Ben Shapiro and Elisabeth Smela), FA95500910125, "Electroosmotically-Actuated Shape-Changing Materials with Large Stress and High Strain," 2009-2012, \$300,000
34. **DARPA** (co-PI with Edo Waks, Ben Shapiro, Glenn Solomon, and Srinivasa Raghavan), W31P4Q0910013, "Zeno Based Opto-Electronics Using Semiconductor Quantum Dots Coupled to Nanocavities," 2009-2012, \$3,220,582
35. **Maryland Industrial Partnerships**, "Biocompatible Gold Nanorods," 2010-2010, \$100,000
36. **UMd NSF MRSEC** (PI with Wolfgang Losert, Ben Shapiro and Edo Waks), "Assembly and Immobilization of Functional Nanomaterials for Device Applications," 2009-2011, \$140,000
37. **National Institutes for Health** (co-PI with Wolfgang Losert and Carole Parent), 3R01GM085574-02S1, "Using Controlled 2D and 3D Nanotopography to Unravel Tactile Senses of Motile Cells," 2010-2015, \$1,950,000
38. **DARPA** (co-PI with Edo Waks, Ben Shapiro, Nader Engheta and Sang Bok Lee), W911NF1010310, "Metactronics for Ultra-High-Speed Low-Power Nano-Circuits," 2010-2011, \$350,000
39. **National Science Foundation, Chemistry**, CHE-0969247, "EAGER: Development of Parametrically-Amplified Vibrational Sum-Frequency Generation," 2010-2011, \$290,041
40. **National Institute for Standards and Technology**, 70NANB11H012, "UMCP/NIST Professional Research Experience Program for Undergraduates, Graduate Students and Postdoctoral Researchers," 2010-2016, \$3,768,041
41. **National Science Foundation, Physics** (co-PI with Wolfgang Losert), PHY-1205965, "Probing the Wave-Like Nature of Cell Migration and Collective Behavior," 2012-2015, \$500,000
42. **National Science Foundation, PFI-BIC**, "Visible-Light Semiconductor Nanolithography," IIP-1318211, 2013-2015, \$600,000
43. **Minnesota Mining and Manufacturing Corporation**, "Negative-Contrast Photoresists for Superresolved Lithography," 2014-2015, \$100,000

44. **National Science Foundation, Scalable Nanomanufacturing** (with Amy Mullin, Daniel Falvey and Gottlieb Oehrlein), CMMI-1449309, “Three-Color Photolithography for Scalable, Large-Area, Low-Cost Nanomanufacturing,” 2014-2019, \$1,500,000
45. **National Science Foundation, Chemistry**, CHE-1362215, “Nonlinear Optical and Simulation Studies of Perturbed Liquids,” 2015-2018, \$482,211
46. **Air Force Office of Scientific Research MURI**, (co-pI with PI Wolfgang Losert and 3 co-PIs), “Understanding and Controlling the Coupled Electrical, Chemical & Mechanical Excitable Networks of Living Systems,” 2/15/16-2/14/21, \$7,500,000
47. **Air Force Office of Scientific Research DURIP**, (co-pI with PI Wolfgang Losert and co-PI Patrick Kanold), “Broadband CARS System for Label-Free Imaging of Intracellular Dynamics,” 7/15/16-7/14/16, \$425,477
48. **UMD/UMB Seed Grant** (co-pI with PI Wolfgang Losert and Stuart Martin), “Nanotopographic Diagnostic Panel for Breast Cancer Metastasis,” 8/15/15-8/14/17, \$150,000
49. **NCI-UMD Seed Grant** (co-pI with PI Wolfgang Losert, Carole Parent and Stanley Lipkowitz), “Contact Guidance During Breast Cancer Cell Metastasis,” 9/01/15-8/31/17, \$100,000
50. **National Institute for Standards and Technology**, “UMCP/NIST Professional Research Program for Postdoctoral Researchers, Graduate Students, and Undergraduates,” 1/1/16-12/31/21, \$12,251,294
51. **National Institutes for Health** (co-PI with PI Arpita Upadhyaya and co-PI Wenxia Song, “Nanotopographic Modulation of B Cell Signaling Activation,” 06/01/2016 - 05/31/2019, \$450,742
52. **Minnesota Mining and Manufacturing Corporation**, “Superresolved Lithography for the Creation of Diffractive Optical Elements,” 2/1/17-1/31/18, \$100,000
53. **National Institutes of Health** (senior personnel with Wolfgang Losert on subcontract from JHU), “Feedback and Crosstalk in Eukaryotic Chemotaxis,” 9/1/18-6/30/22, \$152,000
54. **National Institute for Standards and Technology**, “UMCP/NIST Gaithersburg Professional Research Experience Program (PREP Gaithersburg) for Postdoctoral Researchers, Graduate Students, Undergraduates, Post-Baccalaureate Researchers, Post-Master’s Researchers, and Academic Affiliates,” 1/1/18-12/31/23, \$119,970,954
55. **National Science Foundation, Chemistry**, “New Nonlinear Optical Approaches for Probing the Microscopic Nature of Liquids and Solutions,” 8/1/18-7/31/21, \$477,535
56. **Department of Energy, Energy Frontier Research Center** (co-PI with 15 others, headed by MIT), “The Center for Enhanced Nanofluidic Transport (CENT),” 8/1/18-7/31/22, \$480,000
57. **National Science Foundation, Physics** (co-PI with PI Wolfgang Losert), “Triggering Cell-type Specific Behaviors with Rationally Designed Nanoenvironments,” 9/1/20-8/31/24, \$628,688
58. **Research Corporation Cottrell Scholar Award** for postdoctoral researcher Nikolaos Liaros, 9/1/20-8/31/21, \$75,000
59. **Air Force Office of Scientific Research DURIP**, “DURIP: High-Power Ti:Sapphire Laser for Rapid Fabrication of Nanotopographic Surfaces for Biophysical Applications,” 9/1/20-8/31/21, \$128,650

**Professional Affiliations:**

1. *American Association for the Advancement of Science*
2. *American Chemical Society*
3. *American Physical Society*
4. *Materials Research Society*
5. *National Organization for the Professional Advancement of Black Chemists and Chemical Engineers*
6. *Optical Society of America*
7. *Sigma Xi*
8. *SPIE*

**Journal Referee for:**

1. *Accounts of Chemical Research*
2. *ACS Applied Materials & Interfaces*
3. *ACS Nano*

4. *ACS Photonics*
5. *Acta Biomaterialia*
6. *Advanced Functional Materials*
7. *Advanced Materials*
8. *Advanced Materials Technologies*
9. *Advanced Optical Materials*
10. *Analytical Chemistry*
11. *Angewandte Chemie*
12. *Applied Optics*
13. *Applied Physics A*
14. *Applied Physics Letters*
15. *Australian Journal of Chemistry*
16. *Bioactive Materials*
17. *Biomacromolecules*
18. *Biomedical Optics Express*
19. *Biophysical Journal*
20. *Chemical Communications*
21. *Chemical Physics Letters*
22. *ChemPhysChem*
23. *Composite Interfaces*
24. *European Physical Journal D*
25. *European Polymer Journal*
26. *IEEE Access*
27. *International Reviews of Physical Chemistry*
28. *IOP Nanotechnology*
29. *Journal of the American Chemical Society*
30. *Journal of Applied Physics*
31. *Journal of Biomedical Materials Research A*
32. *Journal of Biomedical Optics*
33. *Journal of Biotechnology*
34. *Journal of Chemical Physics*
35. *Journal of Combinatorial Chemistry*
36. *Journal of the Electrochemical Society*
37. *Journal of the European Optical Society*
38. *Journal of Luminescence*
39. *Journal of Materials Chemistry B*
40. *Journal of Materials Chemistry C*
41. *Journal of Micro/Nanolithography, MEMS, and MOEMS*
42. *Journal of Micromechanics and Microengineering*
43. *Journal of Modern Optics*
44. *Journal of Molecular Graphics and Modelling*
45. *Journal of Nanoparticles*
46. *Journal of Nonlinear Optical Physics & Materials*
47. *Journal of Photochemistry and Photobiology A: Chemistry*
48. *Journal of Physical Chemistry*
49. *Journal of Physical Chemistry A*
50. *Journal of Physical Chemistry B*
51. *Journal of Physical Chemistry C*
52. *Journal of Physical Chemistry Letters*
53. *Journal of Physics B: Condensed Matter*
54. *Journal of Polymer Science Part B*
55. *Journal of Radiation Research and Applied Sciences*
56. *Journal of Raman Spectroscopy*
57. *Journal of Selected Topics in Quantum Electronics*
58. *Langmuir*
59. *Laser & Photonics Reviews*

60. *Light: Science & Applications*
61. *Macromolecular Chemistry and Physics*
62. *Macromolecules*
63. *Materials Chemistry and Physics*
64. *Materials Letters*
65. *Molecular Simulation*
66. *MRS Advances*
67. *NanoLetters*
68. *Nanophotonics*
69. *Natural Science*
70. *Nature*
71. *Nature Communications*
72. *Nature Materials*
73. *Nature Photonics*
74. *Optica*
75. *Optical Materials*
76. *Optics & Laser Technology*
77. *Optics Communications*
78. *Optics Express*
79. *Optics Letters*
80. *Photonics Research*
81. *Photonics Technology Letters*
82. *Physical Chemistry Chemical Physics*
83. *Physical Review A*
84. *Physical Review B*
85. *Physical Review E*
86. *Physical Review Letters*
87. *Physics Reports*
88. *Plasmonics*
89. *PLoS ONE*
90. *Proceedings of the National Academy of Sciences, USA*
91. *Research*
92. *Science*
93. *Science Advances*
94. *Scientific Reports*
95. *Sensors and Actuators B: Chemical*
96. *Small*
97. *Soft Matter*

#### **Meetings Organized:**

1. “Experimental and Theoretical Approaches to Supercooled Liquids: Advances and Novel Applications,” ACS National Meeting, 8/25/96-8/29/96, Orlando, FL, with Daniel Kivelson, Udayan Mohanty and Keith Nelson.
2. “Liquid Dynamics: Into the New Millenium,” ACS National Meeting, 8/20/00-8/25/00, Washington, DC, with Michael Fayer.
3. “Chemistry in Complex Environments,” 6/23/03-6/27/03, Telluride, CO, with Rigoberto Hernandez.
4. “Dynamics in Small Confining Systems 2003,” MRS National Meeting, 12/1/03-12/5/03, Boston, MA, with Pierre Levitz, Michael Urbakh and Kathryn Wahl.
5. “Nanophotonic Materials, Nonlinear Optics and Spectroscopy,” APS National Meeting, 3/21/05-3/25/05, Los Angeles, with Robert Dickson and Mike Barnes.
6. “Chemistry in Complex Environments,” 6/20/05-6/23/05, Telluride, CO, with Rigoberto Hernandez.
7. “Behavior of Liquids Confined on the Nanometer Scale,” APS March Meeting, 3/14/21-3/19/21, virtual, with Mark Reed.

8. "Frontiers in Laser Applications 2," summer of 2021, virtual, with Koji Sugioka, Henry Helvajian, and Yongfeng Lu.
8. "The Physics of Clean Water," AAAS Annual Meeting, 2/17/22-2/20/22.

### Other Professional Activities

1. NSF Integrating Themes for New Funding Opportunities Workshop, 9/18/98-9/21/98.
2. Austen Angell 65th Birthday Symposium, panel member, 9/26/98.
3. National Academy of Sciences Frontiers of Science Symposium, 11/19/98-11/21/98.
4. National Academy of Sciences Frontiers of Science Symposium, 9/8/01-9/10/01.
5. Senior Editor, *Journal of Physical Chemistry*, 7/1/02-12/31/19.
6. NSF Postdoctoral Appointments: Roles and Opportunities panel member, 5/11/03-5/13/03.
7. Beckman Scholar Advisory Committee, 2004-2005
8. Beckman Young Investigator Advisory Committee, 2005-2009
9. Secretary/Treasurer, APS Division of Laser Science, 2005-2008
10. Scientific Advisory Council, Arnold and Mabel Beckman Foundation, 2009-2014
11. Board of Directors, Telluride Science Research Center, 2009-2011
12. Editorial Board, *ad hoc* member, *Annual Reviews of Physical Chemistry*, 2009
13. Chair, Executive Committee, Beckman Young Investigator Program, 2011-2012
14. Arthur Schawlow Prize Committee, American Physical Society, 2010-2011 (Chair, 2011)
15. Editorial Board, *Laser & Photonics Reviews*, 2013-present.
16. Vice Chair, APS Division of Laser Science, 2012-2013.
17. Chair Elect, APS Division of Laser Science, 2013-2014.
18. Chair, APS Division of Laser Science, 2014-2015.
19. Past Chair, APS Division of Laser Science, 2015-2016.
20. Member, Program Committee, 3D Laser Manufacturing (SPIE Photonics West), 2014-
21. Member, BYI Site Visit Committee, University of Texas, 2016
22. Nominating Committee, APS Division of Laser Science, 2018
23. Member, Program Committee, Advanced Manufacturing Technologies for Micro- and Nanosystems in Security and Defence (SPIE Security + Defence), 2018-
24. Councilor, APS Division of Laser Science, 2019-
25. American Physical Society member representative to the American Institute of Physics, 2020-
26. Steering Committee, American Physical Society Council of Representatives, 2020-2022.
27. Specialty Chief Editor for Nanofabrication, *Frontiers in Nanotechnology*, 2020-.

### Books Edited:

1. "Supercooled Liquids: Advances and Novel Applications," John T. Fourkas, Daniel Kivelson, Udayan Mohanty and Keith A. Nelson, eds. (ACS Books, Washington, 1997).
2. "Liquid Dynamics: Experiment, Simulation and Theory," John T. Fourkas, ed. (ACS Books, Washington, 2002).
3. "Dynamics in Small Confining Systems 2003," John T. Fourkas, Pierre Levitz, Michael Urbakh and Kathryn Wahl eds. (Materials Research Society, Pittsburgh, 2004).

### Book Chapters:

1. "A Brief Introduction to Supercooled Liquids," J. T. Fourkas, D. Kivelson, U. Mohanty, and K. A. Nelson, in *Supercooled Liquids: Advances and Novel Applications* (ACS Books, Washington, 1997), J. T. Fourkas, D. Kivelson, U. Mohanty, and K. A. Nelson, eds; pp. 2-12.
2. "Multiple Time Scales in the Nonpolar Solvation Dynamics of Supercooled Liquids," J. Ma, J. T. Fourkas, D. A. Vanden Bout, and M. Berg, in *Supercooled Liquids: Advances and Novel Applications* (ACS Books, Washington, 1997), J. T. Fourkas, D. Kivelson, U. Mohanty, and K. A. Nelson, eds; pp. 199-211.
3. "Nonresonant Intermolecular Spectroscopy of Liquids," John T. Fourkas in *Ultrafast Infrared and Raman Spectroscopy* (Marcel Dekker, New York, 2001), Michael D. Fayer, ed; pp. 473-512.

4. "New Perspectives on Liquid Dynamics," John T. Fourkas, in *Liquid Dynamics: Experiment, Simulation and Theory*, (ACS Books, Washington, 2002), John T. Fourkas, ed; pp. 2-11.
5. "Vibrational Dynamics in Porous Silica Glasses Studied by Time-Resolved Coherent Anti-Stokes Raman Scattering," Keisuke Tominaga, Hiroaki Okuno, Hiroaki Maekawa, Tadashi Tomonaga, Brian J. Loughnane, Alessandra Scodinu and John T. Fourkas in *Liquid Dynamics: Experiment, Simulation and Theory*, (ACS Books, Washington, 2002), John T. Fourkas, ed.; p. 160-168.
6. "Reorientational Dynamics of Water Confined in Nanopores," Alessandra Scodinu and John T. Fourkas, *Dynamics and Friction in Sub-Micrometer Confining Systems*, (ACS Books, Washington, 2004), Y. Brainman, J. M. Drake, F. Family and J. Klafter, eds.; pp. 193-204.
7. "Three-Dimensional Nanofabrication Using Multiphoton Absorption," Tommaso Baldacchini, and John T. Fourkas, *Dekker Encyclopedia of Nanoscience and Nanotechnology* (Marcel Dekker, New York, 2004), James A. Schwarz, Cristian I. Contescu and Karol Putyera, eds.; pp. 3905-3915.
8. "Fabrication of High-Performance Optical Devices Using Multiphoton Absorption Polymerization," Linjie Li, Rafael Gattass, George Kumi, Erez Gershgoren, Wei-Yen Chen, P.-T. Ho, Warren N. Herman and John T. Fourkas, in *Organic Thin Films for Photonic Applications* (American Chemical Society Books, Washington, 2010), Warren N. Herman, Steven R. Flom and Stephen H. Foulger, eds; pp. 129-138.
9. "Optical Spectroscopy of Liquids in and Near Inorganic Oxides," John T. Fourkas, in *Spectroscopic Properties of Inorganic and Organometallic Compounds, Vol. 41*, (RSC Publishing, Cambridge, UK, 2010), Jack Yarwood, Richard Douthwaite and Simon B. Duckett, eds.; pp. 150-170.
10. "Multiphoton Lithography and Processing of Photonic Structures," John T. Fourkas, in *Laser Growth and Processing of Photonic Devices* (Woodhead Publishing, Cambridge, UK, 2012) Nikos Vainos, ed., 139-161.
11. "Fundamentals of Two-Photon Fabrication" John T. Fourkas, in *Three-Dimensional Microfabrication Using Two-photon Polymerization* (Elsevier, Amsterdam, 2016) Tommaso Baldacchini, Ed., 45-61.
12. "Cell Motility and Nanolithography" Xiaoyu Sun, Satarupa Das, John T. Fourkas and Wolfgang Losert, in *Three-Dimensional Microfabrication Using Two-photon Polymerization* (Elsevier, Amsterdam, 2016) Tommaso Baldacchini, Ed., 335-344.
13. "STED-Inspired Approaches to Resolution Enhancement," John T. Fourkas, in *Multiphoton Lithography: Techniques, Materials, and Applications* (Wiley-VCH, Weinheim, Germany, 2016) Jürgen Stampfl, Robert Liska and Aleksandr Ovsianikov, eds., pp. 111-129.
14. "Fundamentals of Two-Photon Fabrication," John T. Fourkas, in *Three-Dimensional Microfabrication Using Two-photon Polymerization, 2<sup>nd</sup> ed.* (Elsevier, Amsterdam, 2020) Tommaso Baldacchini, ed., pp. 57-76.
15. "Cell Motility and Nanolithography," Xiaoyu Sun, Satarupa Das, John T. Fourkas and Wolfgang Losert, in *Three-Dimensional Microfabrication Using Two-photon Polymerization, 2<sup>nd</sup> ed.* (Elsevier, Amsterdam, 2020) Tommaso Baldacchini, ed., pp. 527-540.

#### Articles in Refereed Journals:

1. "Structure of Hexamethylene Triperoxide Diamine," William P. Schaefer, John T. Fourkas and Bruce G. Tiemann, *J. Am. Chem. Soc.* **107**, 2461-2463 (1985).
2. "The Structure of a Tricyclic Peroxide," John T. Fourkas and William P. Schaefer, *Acta Cryst. C* **42**, 1395-1397 (1986).
3. "Structure of Cyclohexane Tetramethylene Diperoxide Diamine," John T. Fourkas, William P. Schaefer and Richard E. Marsh, *Acta Cryst. C* **43**, 278-280 (1987).
4. "The Structure of Hexamethylene Diperoxide Diamine," John T. Fourkas, William P. Schaefer and Richard E. Marsh, *Acta Cryst. C* **43**, 2160-2162 (1987).
5. "Picosecond Time-Scale Phase-Related Optical Pulses: Measurement of Sodium Optical Coherence Decay by Incoherent Fluorescence," John T. Fourkas, William L. Wilson, G. Wäckerle, Amy E. Frost and M. D. Fayer, *J. Opt. Soc. Amer. B* **6**, 1905-1910 (1989).
6. "Picosecond Time-Resolved Four-Wave Mixing Experiments in Sodium-Seeded Flames," John T. Fourkas, Timothy R. Brewer, Hackjin Kim and M. D. Fayer, *Opt. Lett.* **16**, 177-179 (1991).
7. "Picosecond Polarization-Sensitive Transient Grating Experiments in Sodium-Seeded Flames," John T. Fourkas, Timothy R. Brewer, Hackjin Kim and M. D. Fayer, *J. Chem. Phys.* **95**, 5775-5784 (1991).
8. "The Transient Grating: A Holographic Window to Dynamic Processes," John T. Fourkas and M. D. Fayer, *Acc. Chem. Res.* **25**, 227-233 (1992).



9. "The Grating Decomposition Method: A New Approach for Understanding Polarization Selective Transient Grating Experiments. I. Theory," John T. Fourkas, Rick Trebino and M. D. Fayer, *J. Chem. Phys.* **97**, 69-77 (1992).
10. "The Grating Decomposition Method: A New Approach for Understanding Polarization Selective Transient Grating Experiments. II. Application," John T. Fourkas, Rick Trebino and M. D. Fayer, *J. Chem. Phys.* **97**, 78-85 (1992).
11. "Flame Temperature Measurement Using Picosecond Transient Grating Experiments," Timothy R. Brewer, John T. Fourkas and M. D. Fayer, *Chem. Phys. Lett.* **203**, 344-348 (1993).
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43. "Thin Films for High-Resolution, 3-Color Lithography," Sandra A. Gutierrez Razo, Adam Pranda, Nikolaos Liaros, Samuel R. Cohen, John T. Fourkas, Gottlieb S. Oehrlein, Hannah M. Ogden, Amy Mullin, Steven M. Wolf, Daniel Falvey, and John Petersen, in *Novel Patterning Technologies 2018*, (SPIE, Bellingham, 2018), Eric M. Panning and Martha I. Sanchez, eds., 1058418.
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45. "Benchmarking 3-Color Photoresists for Multiphoton Absorption Lithography," Nikolaos Liaros, Sandra A. Gutierrez Razo, Zuleykhan Tomova, John S. Petersen, John T. Fourkas, in *Novel Patterning Technologies 2018*, (SPIE, Bellingham, 2018), Eric M. Panning and Martha I. Sanchez, eds., 1058417.
46. "In Situ Polymerization Threshold Detection of 3-Color Systems and a Study of the Time Dependence," Hannah M. Ogden, Amy S. Mullin, Sandra A. Gutierrez Razo, Nikolaos Liaros, John T. Fourkas, John Peterson, in *Novel Patterning Technologies 2018*, (SPIE, Bellingham, 2018), Eric M. Panning and Martha I. Sanchez, eds., 1058419.
47. "Oxygen Effects in Thin Films for High-Resolution , 3-Color Lithography," Sandra A. Gutierrez Razo, Nikolaos Liaros, Adam Pranda, Gottlieb Oehrlein, John T. Fourkas, and John Petersen, in *Novel Patterning Technologies for Semiconductors, MEMS/NEMS, and MOEMS 2019*, (SPIE, Bellingham, 2019), Martha I. Sanchez and Eric M. Panning, eds., 1095814.
48. "2-Beam Action Spectroscopy for Probing Multiphoton Absorption Processes in Photonic Materials," Nikos Liaros, Zuleykhan Tomova, Sandra A. Gutierrez Razo, Samuel R. Cohen, and John T. Fourkas, in *Nonlinear Optics 2019*, (OSA, Washington, DC, 2019), NTu4A.22.

#### Presentations:

1. "Picosecond Transient Gratings in Atmospheric Flames," SRI International, Menlo Park, CA, 1/17/91.
2. "Picosecond Dynamics in Sodium-Seeded Flames," 38th Annual Conference of the Western Spectroscopy Association, 1/30/91-2/1/91, Pacific Grove, CA (poster).
3. "Picosecond Four-Wave Mixing in Sodium-Seeded Flames," Conference on Quantum Electronics and Laser Science, Baltimore, MD, 5/12/91-5/17/91.
4. "Pulse-Length-Induced Extra Resonances in Time-Domain Transient Grating Experiments," 7th Annual Interdisciplinary Laser Science Conference, Monterey, CA, 9/15/91-9/19/91 (poster).
5. "Probing Picosecond Flame Dynamics with Transient Grating Experiments," International Conference on Lasers '91, San Diego, CA, 12/9/91-12/13/91 (invited).
6. "Picosecond Four-Wave Mixing Experiments in Flames: Probing Dynamics and Spectroscopy," Department of Chemistry, Colorado State University, Fort Collins, CO, 1/10/93.

7. "Picosecond Four-Wave Mixing Experiments in Flames: Probing Dynamics and Spectroscopy," Department of Chemistry, Ohio State University, Columbus, OH, 1/13/93.
8. "Picosecond Four-Wave Mixing Experiments in Flames: Probing Dynamics and Spectroscopy," Department of Chemistry, California Institute of Technology, Pasadena, CA, 5/12/92.
9. "Extra Resonances in Time-Domain Nonlinear Spectroscopies," Nonlinear Optics: Materials, Fundamentals and Applications, 2nd Topical Meeting, Lahaina, HI, 8/17/92-8/21/92 (poster).
10. "A Novel Single-Shot Ultrafast Transient Grating Technique," International Conference on Lasers '92, Houston, TX, 12/7/92-12/11/92 (invited).
11. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, University of Minnesota, Minneapolis, MN, 1/7/93.
12. "Picosecond Four-Wave Mixing Experiments in Flames: Probing Dynamics and Spectroscopy," Department of Chemistry, University of Washington, Seattle, WA, 2/9/93.
13. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, Harvard University, Cambridge, MA, 3/24/93.
14. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, University of California at Los Angeles, Los Angeles, CA, 3/26/93.
15. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Applied Physics, Yale University, New Haven, CT, 4/23/93.
16. "Ultrafast Transient-Grating Spectroscopy in a Single Laser Shot," Conference on Quantum Electronics and Laser Science, Baltimore, MD 5/2/93-5/7/93 (poster).
17. "Completely Nonpolar Solvation as a Probe of Mechanical Relaxation in Glass-Forming Liquids," Second International Discussion Meeting on Relaxations in Complex Systems, Alicante, Spain, 6/28/93-7/8/93 (poster).
18. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, Rutgers University, Piscataway, NJ, 10/25/93.
19. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, San Diego State University, San Diego, CA, 11/11/93.
20. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, Cornell University, Ithaca, NY, 12/2/93.
21. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, Yale University, New Haven, CT, 12/6/93.
22. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, Boston College, Chestnut Hill, MA, 1/11/94.
23. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, University of South Carolina, Columbia, SC, 1/12/94.
24. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, University of Notre Dame, South Bend, IN, 1/19/94.
25. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, University of California at Santa Barbara, 2/14/94.
27. "Dephasing-Induced Vibrational Spectroscopy," Nonlinear Optics: Materials, Fundamentals and Applications, 3rd Topical Meeting, Waikoloa, HI, 7/25/94-7/29/94.
28. "Are Time and Frequency-Domain Nonlinear Spectroscopies Related by a Fourier Transform?," Nonlinear Optics: Materials, Fundamentals and Applications, 3rd Topical Meeting, Waikoloa, HI, 7/25/94-7/29/94.
29. "Single-Shot Spectroscopy of Chemical Reactions in Solids," American Chemical Society National Meeting, Washington, DC, 8/21/94-8/26/94 (invited).
30. "Dephasing-Induced Phenomena in Nonlinear Vibrational Experiments," International Workshop on Laser Physics, New York, NY, 10/10/94-10/14/94 (invited).
31. "Making Movies of Chemical Reactions in Solids," SUNY Albany, Albany NY, 10/17/94.
32. "Making Movies of Chemical Reactions in Solids," University of Massachusetts at Boston, Boston, MA, 10/25/94.
33. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, Boston University, Boston, MA, 10/31/94.
34. "The Ultrafast Dynamics of Completely Nonpolar Solvation," Department of Chemistry, Brandeis University, Waltham, MA, 3/22/95.
35. "Making Movies of Chemical Reactions in Solids," Department of Chemistry, Tufts University, Somerville, MA, 4/25/95.

36. "Theory of Vibrational Echo Phenomena in Harmonic and Weakly Anharmonic Oscillators," 7th International Conference on Time-Resolved Vibrational Spectroscopy, Santa Fe, NM, 6/12/95-6/16/95 (invited).
37. "Making Movies of Chemical Reactions in Solids," Department of Chemistry, University of Massachusetts at Dartmouth, Dartmouth, MA, 10/4/95.
38. "The Dynamics of Intermolecular Vibrations," Recent Developments in Ultrafast Nonlinear Spectroscopy of Liquids, Okazaki, Japan, 2/23/96.
39. "Ultrafast Nonlinear Spectroscopy of Liquids," Department of Physics, Boston College, 4/10/96.
40. "The Temperature-Dependent Dynamics of CS<sub>2</sub>: An OHD-RIKES Study," Ultrafast Phenomena, Tenth International Meeting, San Diego, CA, 5/28/96-6/1/96 (poster).
41. "Long-Range Hydrophobic Interactions in Aqueous Solutions," Gordon Research Conference on Physics and Physical Chemistry of Water and Aqueous Solutions, Plymouth, NH, 8/4/96-8/9/96 (poster).
42. "The Role of Microscopic Dynamics in the Macroscopic Behavior of Liquids," Department of Chemistry, College of the Holy Cross, Worcester, MA, 11/7/96.
43. "Temperature-Dependent Dynamics of Microconfined CS<sub>2</sub>," Materials Research Society Fall Meeting, Boston, 12/2/96-12/6/96 (poster).
44. "The Intermolecular Dynamics of Liquids," Department of Chemistry, Duquesne University, 1/17/97.
45. "Solutes and Solubility: A Tale of Hydrophobic Forces," Department of Chemistry, Boston University, 1/30/97.
46. "Bubble Coalescence: The Effects of Solutes, Temperature and Pressure on Hydrophobic Forces," Gordon Conference on the Chemistry and Physics of Liquids, Plymouth, NH, 8/3/97-8/8/97 (invited).
47. "Implementation of Instantaneous Normal Modes with Flexible Molecules: The Low-Frequency Raman Spectrum of CS<sub>2</sub>," Gordon Conference on the Chemistry and Physics of Liquids, Plymouth, NH, 8/3/97-8/8/97 (poster).
48. "The Behavior of Liquids in the World's Smallest Beakers," American Chemical Society Undergraduate Day, Boston University, 11/8/97 (invited).
49. "The Ultrafast Dynamics of Microconfined Liquids," Department of Chemistry, Kyoto University, 1/19/98.
50. "Higher-Order Nonresonant Spectroscopy: Polarization Selectivity and the Effects of Temperature and Density," Okazaki Conference on Frontiers in Liquid Dynamics Studied by Time-Resolved Vibrational Spectroscopy, Okazaki, Japan, 1/21/98-1/23/98 (invited).
51. "The Ultrafast Dynamics of Microconfined Liquids," National Institute of Standards and Technology, Gaithersburg, MD, 3/6/98.
52. "The Ultrafast Dynamics of Microconfined Liquids," American Chemical Society National Meeting, Dallas, 3/29/98-4/2/98 (invited).
53. "The Ultrafast Dynamics of Microconfined Liquids," Department of Chemistry, University of Texas at Austin, 4/3/98.
54. "An Instantaneous Normal Mode Study of the Intermolecular Raman Spectra of CS<sub>2</sub>," Gordon Conference on Vibrational Spectroscopy and Molecular Dynamics, Plymouth, NH, 7/26/98-7/31/98 (poster).
55. "Two-Photon Microscopy of Single Molecules," Gordon Conference on Vibrational Spectroscopy and Molecular Dynamics, Plymouth, NH, 7/26/98-7/31/98 (poster).
56. "The Ultrafast Dynamics of Microconfined Liquids," American Chemical Society National Meeting, Boston, 8/23/98-8/27/98 (poster).
57. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Departments of Chemistry and Physics, University of Pennsylvania, 9/10/98.
58. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, University of Washington, 9/30/98.
59. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Rice University, 10/6/98.
60. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Colorado State University, 10/8/98.
61. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, University of Colorado, 10/9/98.
62. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Georgia Institute of Technology, 10/15/98.

63. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Emory University, 10/16/98.
64. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, University of Illinois, 10/28/98.
65. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Northwestern University, 10/30/98.
66. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, University of Southern California, 11/16/98.
67. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, University of California at San Diego, 11/17/98.
68. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, University of California at Los Angeles, 11/18/98.
69. "Rotational Diffusion of Microconfined Liquids," Materials Research Society Fall Meeting, Boston, 11/30/98-12/4/98 (invited).
70. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Brown University, 1/28/99.
71. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Stanford University, 2/1/99.
72. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, University of California at Santa Barbara, 2/4/99.
73. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Columbia University, 2/8/99.
74. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Princeton University, 2/9/99.
75. "Orientational Dynamics of Liquids Confined in Nanoporous Sol-Gel Glasses," American Chemical Society National Meeting, Anaheim, CA, 4/21/99-4/25/99.
76. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, University of Rochester, 4/5/99.
77. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Cornell University, 4/6/99.
78. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Massachusetts Institute of Technology, 4/13/99.
79. "Coordinate Dependence in INM Calculations," CECAM Workshop on The Instantaneous Normal Mode Approach to Liquid Dynamics, Lyon, France, 7/8/99-7/11/99 (invited).
80. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Physics, University of Leipzig, 7/13/99.
81. "Two-Photon Microscopy of Single Molecules (And Other Applications)," Beckman Young Investigators Symposium, Irvine, CA 8/21/99.
82. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Boston College, 9/9/99.
83. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, University of Massachusetts at Amherst, 9/23/99.
84. "Ultrafast Nonresonant Fifth-Order Spectroscopy: Theoretical Perspectives," Frontiers in Optics/Laser Science, San Jose, CA, 9/26/99-9/30/99 (invited).
85. "Probing the Microscopic Dynamics of Liquids and the Dynamics of Microscopic Liquids," Department of Chemistry, Rutgers University, 10/29/99.
86. "Chemical Applications of Multiphoton Microscopy," Department of Biophysics, Brandeis University, 4/11/00.
87. "Seeing and Shaping the Microscopic World with Multiphoton Absorption," Department of Chemistry, Georgia Institute of Technology, 4/24/00.
88. "Using Poster Sessions as a Teaching Tool for Upper-Level Undergraduate Courses," Cottrell Scholars Meeting, Tucson, 7/8/00.
89. "Two-Photon Microscopy of Single Molecules," Microscopy & Microanalysis - 2000, Philadelphia, 8/13/00-8/17/00 (invited).
90. "Integrating Research and Education in Chemistry: Every Student, Every Level," American Chemical Society National Meeting, Washington, DC, 8/20/00-8/24/00 (invited).

91. "Exploring the Microscopic World with Multiphoton Absorption," Department of Chemistry, Boston College, 9/21/00.
92. "High-Density Optical Data Storage in Molecular Glasses with Ultrafast Multiphoton Microscopy," Frontiers in Optics/Laser Science, Providence, RI, 10/22/00- 10/26/00.
93. "Preparation and Applications of Multi-Shelled Polymer Beads," Materials Research Society Fall Meeting, Boston, 11/27/00-12/1/00.
94. "Vibrational Dynamics of Confined Liquids," Materials Research Society Fall Meeting, Boston, 11/27/00-12/1/00.
95. "Exploring the Microscopic World with Multiphoton Absorption," Department of Chemistry, Harvard University, 2/8/01.
96. "Developing a Microscopic Picture of Confined Liquids," 6th International Conference on Molecular Reaction Dynamics in Condensed Matter, Laguna Beach, CA, 2/28/01-3/2/01 (invited).
97. "Reorientational Dynamics of Nanoconfined Liquids," American Physical Society March Meeting, Seattle, 3/12/01-3/16/01 (invited).
98. "Exploring the Microscopic World with Multiphoton Absorption," Department of Chemistry, University of Oregon, 4/2/01.
99. "Exploring the Microscopic World with Multiphoton Absorption," Department of Chemistry, Brandeis University, 4/30/01.
100. "Exploring the Microscopic World with Multiphoton Absorption," Department of Chemistry, Boston University, 5/14/01.
101. "Light Scattering in Supercooled Liquids: An INM Perspective," 4th International Discussion Meeting on Relaxation in Complex Systems, Heraklion, Greece, 6/18/01-6/26/01 (invited).
102. "Connections between the Kinetics and Thermodynamics of Supercooled Liquids and Polymers," Workshop on Chemistry & Dynamics in Complex Environments, Telluride, CO, 7/15/01-7/21/01 (invited).
103. "Exploring the Microscopic World with Multiphoton Absorption," Department of Chemistry, University of California, Irvine, 7/23/01.
104. "Making Things with Light," Department of Chemistry, University of California, Los Angeles, 9/7/01.
105. "Single-Molecule Detection and Spectroscopy," National Academy of Science Frontiers of Science Symposium, Irvine, CA, 9/8/01-9/10/01 (invited).
106. "Multiphoton Photopolymerization with a Ti:sapphire Oscillator," SPIE Photonics West, San Jose, CA, 1/19/02-1/25/02 (invited).
107. "The Ultrafast Dynamics of Nanoconfined Liquids," Joint Institute for Laboratory Astrophysics, University of Colorado, 2/6/02.
108. "Seeing and Shaping the Microscopic World with Multiphoton Absorption," Department of Physics, Boston College, 2/26/02.
109. "Nonlinear Microscopy: A Tutorial," American Physical Society March Meeting, Indianapolis, IA 3/18/02-3/22/02.
110. "Harnessing Optical and Chemical Nonlinearity for Nanofabrication," American Physical Society March Meeting, Indianapolis, IA 3/18/02-3/22/02.
111. "Multiphoton Fabrication: Making Things With Light," Materials Research Society Spring Meeting, San Francisco, CA, 4/1/02-4/5/02 (invited).
112. "Ultrafast Dynamics and Microscopic Structure of Nanoconfined Liquids," American Chemical Society National Meeting, Orlando, FL, 4/7/02-4/11/02 (invited).
113. "Seeing and Shaping the Microscopic World with Multiphoton Absorption," Department of Chemistry, Yale University, 10/15/02.
114. "High-Quantum-Efficiency Photoluminescence Induced by Multiphoton Absorption in Gold Nanoparticles," American Physical Society March Meeting, Austin, TX 3/3/03-3/7/03.
115. "Controlling the Physical Properties of 3-D Polymeric Microstructures Created with Multiphoton Absorption," American Physical Society March Meeting, Austin, TX 3/3/03-3/7/03.
116. "Microscopic Dynamics of Liquid Mixtures," American Chemical Society National Meeting National Meeting, New Orleans, LA 3/23/03-3/27/03.
117. "Seeing and Shaping the Microscopic World with Multiphoton Absorption," Department of Chemistry, University of Maryland, 4/11/03.
118. "The Ultrafast Dynamics of Nanoconfined Liquids," Chemistry in Complex Environments, Telluride, CO, 6/23/03-6/27/03 (invited).

119. "Seeing and Shaping the Microscopic World with Multiphoton Absorption," Environmental Molecular Sciences Institute, Columbia University, 7/16/03.
120. "Single-Particle Dynamics in Deeply Supercooled Liquids," American Chemical Society National Meeting, New York, NY, 9/7/03-9/11/03 (invited).
121. "Seeing and Shaping the Microscopic World with Multiphoton Absorption," Department of Physics, Emory University, 9/19/03.
122. "Seeing and Shaping the Microscopic World with Multiphoton Absorption," Department of Chemistry, Arizona State University, 10/6/03.
123. "Multiphoton Fabrication of Functional Three-Dimensional Structures," Frontiers in Optics/Laser Science, Tucson, AZ, 10/5/03-10/9/03 (invited).
124. "Seeing and Shaping the Microscopic World with Multiphoton Absorption," Modern Optics and Spectroscopy seminar, MIT, 10/28/03.
125. "Making Things With Light," Materials Science Institute seminar, University of Oregon, 11/07/03.
126. "Nonlinear Microscopy: Pushing the Limits of Sensitivity, Contrast and Resolution," Optics Institute seminar, University of Oregon, 11/10/03.
127. "Three-Dimensional Microfabrication via Multiphoton Absorption," Inter-American Photochemical Society annual meeting, Tempe, AZ 1/1/04-1/4/04 (invited).
128. "Making Things With Light," Department of Chemistry, University of Maryland, 1/28/04.
129. "Making Things With Light," Department of Chemistry, University of Southern California, 2/12/04.
130. "Making Things With Light," Workshop on Correlated Materials and Mesoscale Science, Chestnut Hill, MA, 3/19/04-3/20/04.
131. "Making Things With Light," Department of Physics, University of Massachusetts, Lowell, 4/15/04.
132. "Mode Selective Impulsive Vibrational Spectroscopy," Gordon Conference on Vibrational Spectroscopy, Bristol, RI, 7/11/04-7/16/04 (invited).
133. "Ultrafast Dynamics of Liquids in Nanoporous Glasses," ACS National Meeting, Philadelphia, PA, 8/22/04-8/26/04 (invited).
134. "Making Things With Light," Spire Corporation, Bedford, MA, 9/14/04.
135. "Making Things With Light," Department of Chemistry, University of North Carolina, Chapel Hill, 9/22/04.
136. "Making Things With Light," Boston Regional Inorganic Chemistry Association Meeting, Chestnut Hill, MA, 9/23/04 (invited).
137. "Making Things With Light," Earthlink Senior Technical Staff Seminar, Atlanta, GA, 10/20/04.
138. "Making Things With Light," Department of Electrical and Computer Engineering, University of Maryland, 10/21/04.
139. "Making Things With Light," ACS Undergraduate Day, Boston University, 11/6/04.
140. "Wiring and Electronic Properties of Single Metal Nanorods," ACS National Meeting, San Diego, CA, 3/13/05-3/17/05 (invited).
141. "Laser Direct Writing for Wiring of Nanodevices," American Physical Society March Meeting, Los Angeles, CA, 3/21/05-3/25/05.
142. "Making Things With Light," Department of Chemistry, University of Maine, 4/19/05.
143. "Playing with the World's Smallest Erector Set," Town Talk, Telluride, CO, 6/21/05 (invited).
144. "Ultrafast Dynamics of Nonpolar Liquids Confined in Nanoporous Glasses," Chemistry in Complex Environments, Telluride, CO, 6/20/05-6/23/05 (invited).
145. "Ultrafast Dynamics of Nonpolar Liquids Confined in Nanoporous Glasses," Nonlinear Ultrafast Spectroscopy in Fluids, Telluride, CO, 6/27/05-7/1/05 (invited).
146. "Laser Direct Writing for the Electrical Wiring of Nanostructures and Applications in Electrically Detected Plasmon Resonance," Frontiers in Optics/Laser Science, Tucson, AZ, 10/16/05-10/20/05 (invited).
147. "Toward the Fabrication of Functional Microdevices Using Multiphoton Absorption," 13<sup>th</sup> NSF Workshop on Materials Chemistry and Nanoscience, 10/28/05-10/31/05.
148. "Ultrafast Orientational Dynamics of Nanoconfined Benzene," Materials Research Society Fall Meeting, Boston, MA, 11/28/05-12/1/05.
149. "Toward the Fabrication of Functional Microdevices Using Multiphoton Absorption," Laboratory for Physical Science, University of Maryland, 2/15/06.
150. "Making Things with Light," Institute for Physical Science and Technology, University of Maryland, 2/20/06.



151. "Making Things with Light," Department of Chemistry, University of Iowa, 3/03/06.
152. "New Directions in 3-D Multiphoton Lithography," APS National Meeting, Baltimore, MD, 3/13/06-3/17/06.
153. "Toward the Fabrication of Functional Microdevices Using Multiphoton Absorption," ACS National Meeting, Atlanta, GA, 3/26/06-3/30/06 (invited).
154. "Dynamics of Aromatic Molecules Confined in Nanoporous Silica," ACS National Meeting, Atlanta, GA, 3/26/06-3/30/06.
155. "Toward the Fabrication of Functional Microdevices Using Multiphoton Absorption," 3M Corporation, St. Paul, MN 6/14/06 (invited).
156. "New Developments in Multiphoton Absorption Polymerization," ACS National Meeting, San Francisco, CA, 9/10/06-9/14/06 (invited).
157. "Making Things with Light," Department of Chemistry, University of California Santa Cruz, 1/23/07.
158. "Soft Lithographic Replication of 3D Polymeric Microstructures Created with MAP," SPIE Photonics West, San Jose, CA, 1/24/07 (invited).
159. "Making Things with Light," Department of Chemistry, University of California Davis, 1/26/07.
160. "Effects of Reorientation in Vibrational Sum Frequency Spectroscopy," ACS National Meeting, Chicago, IL, 3/25/07-3/29/07.
161. "Making Things with Light," Department of Chemistry, University of Michigan, 4/12/07.
162. "Making Things with Light," School of Chemistry and Chemical Technology, Shanghai Jiao Tong University, Shanghai, 4/16/07.
163. "Making Things with Light," Department of Chemistry, Fudan University, Shanghai, 4/17/07.
164. "Making Things with Light," Department of Chemical Physics, University of Science and Technology, Hefei, 4/20/07.
165. "Making Things with Light," Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, 4/23/07.
166. "Making Things with Light," Institute of Physics, Chinese Academy of Sciences, Beijing, 4/25/07.
167. "Making Things with Light," Department of Chemistry, Tsinghua University, Beijing, 4/26/07.
168. "Making (Tiny, 3D) Things with Light," Maryland NanoDay, 5/11/07 (invited).
169. "Nanophotonic Devices Created with Multiphoton Absorption Polymerization," International Conference on Nanophotonics, Hangzhou, China, 6/18/07-6/21/07 (invited).
170. "Rethinking Orientational Analysis in Vibrational Sum Frequency Spectroscopy," Chemistry in Complex Environments, Telluride, CO, 6/25/07-6/29/07 (invited).
171. "Making (Tiny, 3D) Things with Light," Beckman Scholars Symposium, Irvine, CA, 7/26/07-7/28/07 (invited).
172. "Studying Reorientation with Surface-Selective Spectroscopy," Frontiers in Optics/Laser Science, San Jose, CA, 9/16/07-9/20/07 (invited).
173. "Pushing the Resolution Limit in Multiphoton Absorption Polymerization," Frontiers in Optics/Laser Science, San Jose, CA, 9/16/07-9/20/07 (invited).
174. "Making Things with Light," Department of Chemistry, Wayne State University, 10/3/07.
175. "Making Things with Light," Department of Chemistry, North Carolina State University, 11/16/07.
176. "Making Things with Light," Department of Chemistry, University of Southern California, 3/24/08.
177. "Probing Interfacial Dynamics with Higher-Order Spectroscopies," ACS National Meeting, New Orleans, LA, 4/6/08-4/10/08.
178. "Recent Progress in Multiphoton Absorption Polymerization," Department of Chemistry, University of North Carolina, 4/14/08.
179. "Making Things with Light," Department of Chemistry, Northwestern University, 4/29/08.
180. "Correlating Structure and Dynamics at Liquid/Oxide Interfaces," ACS National Meeting, Philadelphia, PA, 8/17/08-8/21/08 (invited).
181. "Fabrication of High-Performance Optical Devices Using Multiphoton Absorption Polymerization," ACS National Meeting, Philadelphia, PA, 8/17/08-8/21/08 (invited).
182. "Making Things with Light," Department of Physics, University of Maryland Baltimore County, 9/24/08.
183. "Making Things with Light," Department of Chemistry, University of Houston, 10/14/08.
184. "Making Things with Light," Department of Chemistry, Rice University, 10/15/08.
185. "Making Things with Light," Department of Chemistry, University of Texas at Austin, 10/16/08.
186. "Making Things with Light," Department of Chemistry, University of Central Florida, 10/27/08.

187. "Multiphoton Absorption Polymerization: 3-D Fabrication from the Nanoscale to the Macroscale," ACS National Meeting, Salt Lake City, UT, 3/22/09-3/26/09 (invited).
188. "Unraveling Liquid Structure and Dynamics at Solid Interfaces," Informal Statistical Physics Seminar, University of Maryland, 3/31/09.
189. "Multiphoton Absorption Polymerization: 3-D Fabrication from the Nanoscale to the Macroscale," MRS Spring Meeting, San Francisco, CA, 4/13/09-4/17/09 (invited).
190. "Replication of Complex 3D Microstructures Using PDMS Molding," MRS Spring Meeting, San Francisco, CA, 4/13/09-4/17/09.
191. "Making (Tiny 3D) Things with Light," University of Maryland OSA/SPIE Student Chapter, 4/24/09 (OSA Traveling Lecturer).
192. "Making (Tiny 3D) Things with Light," Columbia Local Section, Optical Society of America, 6/19/09 (OSA Traveling Lecturer).
193. "What is Nanotechnology?," Beckman Scholars Symposium, Irvine, CA, 7/23/09-7/25/09 (invited).
194. "Multiphoton Absorption Polymerization: 3D Fabrication from the Nanoscale to the Macroscale," Biochemical Science Division, National Institute of Standards and Technology, Gaithersburg, MD 8/21/09.
195. "Multiphoton Absorption Polymerization: 3D Fabrication from the Nanoscale to the Macroscale," Department of Chemistry, Pennsylvania State University, 10/2/09.
196. "Superresolved Fabrication with RAPID Lithography," Federation of Analytical Chemistry and Spectroscopy Societies, Louisville, KY, 10/18/09-10/22/09 (invited).
197. "Multiphoton Absorption Polymerization: 3D Fabrication from the Nanoscale to the Macroscale," Princeton Institute for the Science and Technology of Materials, Princeton University, 11/11/09.
198. "Applications of Multiphoton Absorption in Nanobiotechnology," 2010 Kaist/UMD Symposium, Songni Lake, Korea, 1/19/10 (invited).
199. "Applications of Multiphoton Absorption in Nanobiotechnology," International Conference on Advanced Functional Materials, Hanyang University, Seoul, Korea, 1/21/10 (invited).
200. "Unraveling Liquid Structure and Dynamics at Solid Interfaces," Department of Chemistry, Korea University, Seoul, Korea, 1/22/10.
201. "Pushing the Limits of Optical Lithography with Resolution Augmentation through Photo-Induced Deactivation," SPIE Photonics West, San Francisco, CA, 1/23/10-1/28/10 (invited).
202. "Multiphoton Absorption Polymerization: 3D Fabrication from the Nanoscale to the Macroscale," IEEE Photonics Society, University of Maryland, 1/27/10.
203. "Multiphoton Absorption Polymerization: 3D Fabrication from the Nanoscale to the Macroscale," Department of Physics, Boston College, 2/3/10.
204. "Determining the Mechanism of Metal-Enhanced Multiphoton Absorption Polymerization," American Physical Society March Meeting, Portland, OR, 3/15/10-3/19/10.
205. "3D Nanofabrication with RAPID Lithography," American Chemical Society National Meeting, San Francisco, 3/21/10-3/25/10 (invited).
206. "High Resolution 3-D Laser Direct-Write Patterning," Conference on Lasers and Electrooptics, San Jose, CA, 5/16/10-5/21/10 (invited).
207. "On the Connections Between and Mechanisms of Field-Enhanced Phenomena in Noble-Metal Nanostructures," Nano-Optics, Plasmonics, and Advanced Materials Workshop, NIST, 4/19/10-4/22/10.
208. "Achieving Super-Resolution in Photolithography," International Conference on Nanophotonics, Tsukuba, Japan, 5/30/10-6/3/10 (plenary lecture).
209. "Recent Advances in RAPID Lithography," Materials Research Society Spring Meeting, San Francisco, 4/25/11-4/29/11 (invited).
210. "Super-Resolved Lithography Using Visible Light," RIKEN, Tokyo, 6/6/11.
211. "Recent Advances in RAPID Lithography," 12<sup>th</sup> International Symposium on Laser Precision Microfabrication, Takamatsu, Japan, 6/7/11-6/10/11 (invited).
212. "Probing the Connections Between Structure and Dynamics of Confined and Interfacial Liquids with Experiments and Simulations," Gordon Conference on Chemistry and Physics of Liquids, Plymouth, NH, 7/24/11-7/29/11 (invited).
213. "Nonlinear Optical Spectroscopy of Liquids at the Nanoscale," OSA Workshop on Optics and Thin Films, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 11/28/11-11/29/11 (invited).
214. "Multiphoton Fabrication: From Ultrafast to Ultrasmall," OSA Workshop on Optics and Thin Films, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 11/28/11-11/29/11 (invited).

215. "Multiphoton Fabrication: From Ultrafast to Ultrasmall," Naval Research Laboratory, Washington, DC, 12/9/11.
216. "Multiphoton Fabrication: From Ultrafast to Ultrasmall," Southeast Ultrafast Conference, Orlando, FL, 1/12/12-1/13/12 (plenary lecture).
217. "Recent Advances in RAPID Lithography," Photonics West, San Francisco, CA, 1/21/12-1/26/12 (invited).
218. "Applications of Multiphoton Absorption in Nanotechnology," University of Wisconsin OSA/SPIE Student Chapter, Madison, 5/7/12 (OSA Traveling Lecturer).
219. "Applications of Multiphoton Absorption in Nanotechnology," 56<sup>th</sup> International Conference on Electron, Ion and Photon Beam Technology & Nanofabrication, Waikoloa, HI, 5/29/12-6/1/12.
220. "Optical Devices Fabricated Using Multiphoton Absorption Polymerization," Frontiers in Optics/Laser Science, Rochester, NY, 10/14/12-10/18/12 (invited).
221. "Nanoscale, Far-Field Lithography using Visible Light," Department of Chemistry, University of Miami, 2/8/13.
222. "Nanoscale Lithography using Visible Light," Industrial Affiliates Day, CREOL, The College of Optics & Photonics, University of Central Florida, 3/8/13 (plenary)
223. "Multiphoton Absorption Polymerization: The State of the Technology and its Applications," Applied Physics Laboratory, Laurel, MD, 3/15/13.
224. "Supported Amphiphilic Bilayers: Is a Methyl Group All You Need?," Departments of Chemistry and Chemical Engineering, Texas Tech University, 11/15/13.
225. "Harnessing Nonlinear Optics for Additive Micro- and Nanofabrication 1," 14<sup>th</sup> Annual Jorge André Swieca School on Quantum Optics and Nonlinear Optics, Recife, Brazil, 1/27/14 (invited).
226. "Harnessing Nonlinear Optics for Additive Micro- and Nanofabrication 2," 14<sup>th</sup> Annual Jorge André Swieca School on Quantum Optics and Nonlinear Optics, Recife, Brazil, 1/28/14 (invited).
227. "Creation of Multimaterial Micro- and Nanostructures through Aqueous-Based Fabrication, Manipulation, and Immobilization," SPIE Photonics West, San Francisco, CA, 2/1/14-2/6/14 (invited)
228. "Nanoscale Fabrication and Manipulation using Visible Light," University of California, Irvine OSA/SPIE Student Chapter, Irvine, CA, 4/9/14 (OSA Traveling Lecturer).
229. "Nonlinear Optical Spectroscopy of Liquids and Soft Matter 1," SOFT Matter – from Fundamental Aspects to Industrial Perspectives Summer School, Cargèse, France, 7/29/14 (invited).
230. "Nonlinear Optical Spectroscopy of Liquids and Soft Matter 2," SOFT Matter – from Fundamental Aspects to Industrial Perspectives Summer School, Cargèse, France, 7/30/14 (invited).
231. "Nonlinear Optical Spectroscopy of Liquids and Soft Matter 3," SOFT Matter – from Fundamental Aspects to Industrial Perspectives Summer School, Cargèse, France, 7/31/14 (invited).
232. "Nanoscale Fabrication and Manipulation using Visible Light," University of Washington, Seattle, WA, 10/22/14.
233. "Nature's Thinnest Supported, Amphiphilic Bilayers," Pacific Conference on Spectroscopy and Dynamics, Pacific Grove, CA, 1/29/15-2/1/15 (invited).
244. "Multicolor, Visible-Light Nanolithography," SPIE Advanced Lithography, San Jose, CA, 2/22/15-2/26/15 (invited).
245. "Principles and Promise of Multicolor Visible-Light Nanolithography," Electron, Ion and Photon Beam Nanolithography, San Diego, CA, 5/26/15-5/29/15 (invited).
246. "Multicolor Nanolithography: Is the Wavelength of the Future Longer than We Thought?" 2015 Lithography Workshop, Sun Valley, ID, 6/21/15-6/26/15 (invited).
247. "When Complicated Things Happen to Simple Liquids: Nitriles at Silica Interfaces" American Chemical Society National Meeting, Boston, 8/16/15-8/20/15 (invited).
248. "Multicolor Nanolithography: Is the Wavelength of the Future Longer than We Thought?" 3M Corporation, St. Paul, MN, 9/22/15.
249. "Elucidating Multicolor Lithographic Processes with Linear and Multidimensional Spectroscopy" 2015 International Chemical Congress of Pacific Basin Societies, Honolulu, HI, 12/15/15-12/20/15 (invited).
250. "Using Lasers to Engineer Surfaces that Control the Behavior of Cells" 17<sup>th</sup> International Symposium on Laser Precision Manufacturing, Xi'an, China, 5/23/16-5/27/16 (plenary).
251. "Progress Report on Photoresist Development for Multicolor Lithography," 2016 Lithography Workshop, Kamuela, HI, 11/6/16-11/10/16 (invited).
252. "Multicolor Photolithography: A Reprieve for Moore's Law?" University of Arizona, Tucson, AZ, 2/16/17.

253. "Measuring Liquid Density using Optical Kerr Effect Spectroscopy," American Chemical Society National Meeting, San Francisco, 4/2/17-4/6/17 (invited).
254. "Linear and Nonlinear Spectroscopy of Multicolor Photoresists," American Chemical Society National Meeting, San Francisco, 4/2/17-4/6/17 (invited).
255. "Multicolor Photochemistry: Breathing New Life into Moore's Law," Photochemistry Gordon Research Conference, Lewiston, ME, 7/23/17-7/28/17 (invited).
256. "Multicolor Photolithography: Breathing New Life into Moore's Law," Rensselaer Polytechnic Institute, Troy, NY, 10/4/17.
257. "Multicolor Photolithography: Breathing New Life into Moore's Law," Sun-Yat Sen University, Guangzhou, China, 11/8/17.
258. "Nanoscience for Health," Workshop on Nanoscience for Energy, Health, and Environment, Zhaoqing, China, 11/9/17 (invited).
259. "Elucidating Nonlinear Processes in Light-Harvesting Materials using 2-Beam Action Spectroscopies," Asia Conference on Communications and Photonics 2017, Guangzhou, China, 11/10/17-11/13/17 (invited).
260. "Multicolor Photolithography: Breathing New Life into Moore's Law," National Institute of Standards and Technology, Gaithersburg, MD, 2/15/18.
261. "The State of the Art in Multicolor Visible Photolithography," SPIE Advanced Lithography, San Jose, CA, 2/26/18-3/1/18 (invited).
262. "Multicolor Superresolved Lithography," APS March Meeting, Los Angeles, CA, 3/5/18-3/9/18 (invited).
263. "Nanotopographic Control of Cytoskeletal Dynamics," ACS National Meeting, New Orleans, LA, 3/18/18-3/22/18.
264. "When Complicated Things Happen to Simple Liquids: Nitriles at Silica Interfaces," Molecular Photoscience Research Center, Kobe University, Kobe, Japan, 4/13/18.
265. "2-Beam Action Spectroscopies: A Powerful New Approach for Characterizing Nonlinear Absorption," Frontiers in Laser Applications 2018, Ishigaki, Japan, 4/16/18-4/19/18 (keynote).
266. "Nanotopographic Control of Cytoskeletal Dynamics," Imec, Leuven, Belgium, 9/7/18.
267. "Multicolor Lithography: A New Approach to Scalable Nanomanufacturing," Imec, Leuven, Belgium, 9/7/18.
268. "Towards Large-Area Nanopatterning using Visible-Light, Multicolor Lithography," SPIE Security + Defence, Berlin, Germany, 9/10/18-9/13/18 (invited).
269. "When Complicated Things Happen to Simple Liquids: Nitriles at Silica Interfaces," Max Planck Institute for Polymer Research, Mainz, Germany, 9/13/18 (invited).
270. "Towards Large-Area Nanopatterning using Visible-Light, Multicolor Lithography," Workshop on Ultrafast Spectroscopy, Molecular Dynamics, and Wave Interactions, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 10/25/18-10/26/18 (invited).
271. "The Characterization of Absorptive Nonlinearities," Workshop on Ultrafast Spectroscopy, Molecular Dynamics, and Wave Interactions, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 10/25/18-10/26/18 (invited).
272. "Towards Large-Area Nanopatterning using Visible-Light, Multicolor Lithography," 13th Annual Symposium on Lasers and their Applications, Universidade Federal de Pernambuco, Recife, Brazil, 10/30/18-11/2/18 (invited).
273. "The Characterization of Absorptive Nonlinearities," 13th Annual Symposium on Lasers and their Applications, Universidade Federal de Pernambuco, Recife, Brazil, 10/30/18-11/2/18 (invited).
274. "Nanotopographic Control of Cytoskeletal Dynamics," 42<sup>nd</sup> Annual Meeting of the Brazilian Chemical Society, Brazil, 5/27/19-5/30/19 (keynote).
275. "Measuring Liquid Density using Optical Kerr Effect Spectroscopy," Department of Physics, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 5/31/19.
276. "Nanotopographic Control of Cytoskeletal Dynamics," Department of Chemistry, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 6/3/19.
277. "How Far Can We Push the Resolution of Multiphoton Absorption Polymerization?," 15<sup>th</sup> International Conference on Laser Ablation, Kaanapali, Hawaii, 9/8/19-9/13/19 (keynote).
278. "Towards Large-Area Nanopatterning using Visible-Light, Multicolor Lithography," Ephraim and Wilma Shaw Roseman Colloquium Series, Department of Chemistry, Johns Hopkins University, 10/1/19.

279. "Nanotextured Surfaces for Studying and Controlling Cellular Behavior," ICALEO 2019, Orlando, FL, 10/7/19-10/10/19 (keynote).
280. "The Characterization of Absorptive Nonlinearities," Department of Chemistry & Biochemistry, University of Delaware, 11/1/19.
281. "The Electrical Double Layer Revisited," Department of Chemistry & Biochemistry, University of Maryland, 9/9/20.
282. "Determining the Effective Order of Absorption in Radical Photoresists for Multiphoton Absorption Polymerization," Frontiers in Laser Applications 2 (virtual), July, 2021 (keynote).
283. "New Tools for Probing Complex Triplet-State Dynamics," Pacificchem 2021 (virtual), 12/16/21-12/21/21 (invited).
284. "Determining the Order of Absorption in Multiphoton Photoresists," MRS Spring Meeting, Honolulu, 5/8/22-5/13/22 (invited).
285. "New Approaches for Characterizing Absorptive Nonlinearities," Department of Chemistry & Biochemistry, University of Maryland, 9/7/22 (invited).
286. "Multicolor Approaches for Improving the Resolution of Multiphoton Absorption Polymerization," Advanced Manufacturing Laboratory, Lawrence Livermore National Laboratory, 10/26/22.
287. "Cellular Response to Conflicting Guidance Cues," Wound Healing Society Science Symposium, Biophysical Control of Wound Repair, Sacramento, 10/27/22-10/28/22 (invited).

#### Patents:

1. "Recyclable Metathesis Catalysts," Amir Hoveyda, Jason Kingsbury, Steven Garber, Brian Lawrence Gray and John T. Fourkas, US 6,921,735 (2005)
2. "DNA-Bridged Carbon Nanotube Arrays," Shana O. Kelley, John T. Fourkas, Michael Naughton and Zhifeng Ren, US 6,958,216 (2005)
3. "High-Flux Entangled Photon Generation via Parametric Processes in a Laser Cavity," Malvin C. Teich, Bahaa E. A. Saleh, Alexander V. Sergienko, John T. Fourkas, Ralf Wolleschensky, Michael Kempe and Booth; Mark C. Booth, US 6,982,822 (2005)
4. "Methods for Three-Dimensional Optical Data Storage and Retrieval," John T. Fourkas, Christopher E. Olson and Michael J. R. Previte, US 6,998,214 (2006)
5. "Apparatus for Three-Dimensional Optical Data Storage and Retrieval," John T. Fourkas, Christopher E. Olson and Michael J. R. Previte, US 7,282,320 (2007)
6. "Recyclable Metathesis Catalysts," Amir Hoveyda, Jason Kingsbury, Steven Garber, Brian Lawrence Gray and John T. Fourkas, US 7,723,255 (2010)
7. "Methods of Fabricating Nanowires and Electrodes Having Nanogaps," John T. Fourkas, Michael J. Naughton and Richard A. Farrer, US 7,857,959 (2010)
8. "Method and System for Photolithographic Fabrication with Resolution Far Below the Diffraction Limit," John T. Fourkas, Erez H. Gershgoren, Linjie Li and Hana Hwang, US 8,432,533 (2013)
9. "Microfluidic Devices and Methods of Fabrication," John T. Fourkas and Christopher N. LaFratta, US 8,656,949 (2014)
10. "Remote Nanoscale Photochemistry using Guided Emission in Nanowires," John T. Fourkas, Linjie Li and Sanghee Nah, US 8,674,328 (2014)
11. "Carbon Nanotube Compositions and Methods of Making and Using Same," Jarrett Leeds, YuHuang Wang and John T. Fourkas, US 8,803,094 (2014)
12. "Structures and Methods for Replicating the Same," John T. Fourkas and Christopher Lafratta, US 9,370,881 (2016)
13. "Microfluidic Devices and Methods of Fabrication," John T. Fourkas and Christopher Lafratta, US 9,656,414 (2017)
14. "Recyclable Metathesis Catalysts," Amir Hoveyda, Jason Kingsbury, Steven Garber, Brian Lawrence Gray and John T. Fourkas, US 10,336,781 (2019)
15. "Multicolor Photolithography Materials and Methods," John T. Fourkas, Daniel E. Falvey, Zuleykhan Tomova, Steven Wolf, Katie Brennan, US 10,459,337 (2019)