

PUBLICATIONS, PRESENTATIONS, AND AWARDS, FY 2016-2017

Publications

Peer Reviewed:

Ying-Ling Chen, Lei Shi, J W L Lewis [2017] "Eye Exam in The Virtual World: A Pilot Study". *Journal of Ophthalmic Science*. 1(3):22-35. DOI: 10.14302/issn.2470-0436.jos-17-1479.

Lei Shi, Ying-Ling Chen, J W L Lewis [2017] "The Influence Of Race, Age, And Pupil Size On The Measurement Of A Photorefractive Device". *Journal of Ophthalmic Science*. 1(3):14-21. DOI: 10.14302/issn.2470-0436.jos-17-988.

V. Pensabene, L. Costa, A. Y. Terekhov, J. S. Gnecco, J. P. Wiksw, W. H. Hofmeister, Ultrathin Polymer Membranes with Patterned, Micrometric Pores for Organs-on-Chips, *ACS applied materials & interfaces* 8, 34, 22629-22636 [2016].

T. Wulz, B.K. Canfield, L.M. Davis, S. Spanier, E. Lukosi, "Pulsed femtosecond-laser Machining and deep reactive ion etching of diamond," *Diamond & Related Materials* **74**, 108–113 (2017); <https://doi.org/10.1016/j.diamond.2017.02.018>.

B. P. de Laune, G. J. Rees, M. J. Whitaker, H-Y. Hah, C. E. Johnson, J. A. Johnson, D. E. Brown, M. G. Tucker, T. C. Hansen, F. J. Berry, J. V. Hanna, and C. Greaves, "Oxygen insertion reactions within the 1-D channels of phases related to FeSb_2O_4 ," *Inorganic Chemistry* **56** 594-607 (2017).

O.L.G. Alderman, L. Lazereva, M.C. Wilding, C.J. Benmore, S. Heald, C.E. Johnson, J.A. Johnson, H-Y. Hah, S. Sendelbach, A. Tamalonis, L.B. Skinner, J.B. Parise, J.K.R. Weber, "Local structural variation with oxygen fugacity in $\text{Fe}_2\text{SiO}_{4+x}$ fayalitic iron silicate melts," *Geochim. et Cosmochim. Acta* **203** 15-36 (2017).

O.L.G. Alderman, M.C. Wilding, A. Tamalonis, S. Sendelbach, S. Heald, C.J. Benmore, C.E. Johnson, J.A. Johnson, H-Y. Hah, J.K.R. Weber, "Iron K-edge x-ray absorption near-edge structure spectroscopy of aerodynamically levitated silicate melts and glasses," *Chemical Geology* **453** 169-185 (2017). DOI 10.1016/j.chemgeo.2017.01.020.

Sebastian Loos, Mreedula Mungra, Franziska Steudel, Bernd Ahrens, Russell Lee Leonard, Jacqueline Anne Johnson, and Stefan Schweizer, "Concentration-dependent luminescence and energy transfer in $\text{Tb}^{3+}/\text{Eu}^{3+}$ doped borate and fluorozirconate glasses." *J. Luminescence* **187** 298-303 (2017).

R.L. Leonard, A.R. Lubinsky, J.A. Johnson, "The effects of sodium fluoride content on the properties of fluorochlorozirconate glass-ceramic storage phosphors," *J. Am. Ceram. Soc.*, 100 (2017) 1551-1560.

Saeed Kamali. "Spin Structure, Magnetism, and Cation Distributions of $\text{NiFe}_{2-x}\text{Al}_x\text{O}_4$ Solid Solutions," *J. Magn. Mater.* 433 (2017) 155-161.

Serrano, Pauline; Wang, Hongxin; Crack, Jason; Prior, Christopher; Hutchings, Matthew; Thomson, Andrew; Kamali, Saeed; Yoda, Yoshitaka; Zhao, Jiyong; Hu, Michael; Alp, Ercan; Oganessian, Vasily; Le Brun, Nick; Cramer, Stephen, "Nitrosylation of Nitric Oxide-Sensing [4Fe-4S] Cluster Regulatory Proteins Results in a Mixture of Iron-Nitrosyl Products," *Angew. Chem. Int. Ed.* 55 (2016) 14575-14579.

J. Linden, E. Rautama, M. Karppinen, S. Kamali, "Erratum to: A⁵⁷Fe Mossbauer study on the FeSe and Fe(Se,Te) superconductors: Discontinuities in the hyperfine parameters at T," [Hyp. Int. 208, 133 (2012), Hyp. Int. 237 (2016) 62.

Bobby J. Wimberly, James O. Hornkohl, Christian G. Parigger, "Measurement of Strontium Monoxide in Methane – Air Flames," *Applied Spectroscopy* **71** (2), pp. 267 – 278 (2017); DOI: <https://doi.org/10.1177/0003702816653132>.

Stefan Trautner, Juraj Jasik, Christian G. Parigger, Johannes D. Pedarnig, Wolfgang Spindelhofer, Johannes Lackner, Pavel Veis, Johannes Heitz, "Laser-induced optical breakdown spectroscopy of polymer materials based on evaluation of molecular emission bands," *Spectrochimica Acta Part A: Molecular and biomolecular spectroscopy* **174** (2017), pp. 331 – 338; <http://dx.doi.org/10.1016/j.saa.2016.11.045>.

Christian G. Parigger, Alexander C. Woods, Atomic hydrogen and diatomic titanium-monoxide molecular spectroscopy in laser-induced plasma," *American Institute of Physics Conference Proceedings* **1811**, 19011 (2017); DOI: <https://doi.org/10.1063/1.4975754>.

Christian G. Parigger, Ghaneshwar Gautam, David M. Surmick, "Radial electron density measurements in laser-induced plasma from Abel inverted hydrogen Balmer beta line profiles," *International Review of Atomic and Molecular Physics* **6** (1), pp. 43-55 (2015); published in 2016; https://www.auburn.edu/cosam/departments/physics/iramp/6_1/parigger_et_al.pdf.

David M. Surmick, Christian G. Parigger, "Self-absorption corrections to hydrogen and aluminum line profiles in laser-induced plasma," *International Review of Atomic and Molecular Physics* **6** (2), pp. 101 - 115 (2015); published in 2017; https://www.auburn.edu/cosam/departments/physics/iramp/6_2/surmick_parigger.pdf.

Ghaneshwar Gautam, Christian G. Parigger, "Laser-induced plasma tomography of electron density and temperature" *International Review of Atomic and Molecular Physics* **6** (2), pp. 83 – 90 (2015); published in 2017; https://www.auburn.edu/cosam/departments/physics/iramp/6_2/gautam_parigger.pdf.

Christian G. Parigger, David M. Surmick, Ghaneshwar Gautam, "Self-absorption characteristics of measured laser-induced plasma line shapes," *Journal of Physics: Conference Series* **810**, 012012 (2017); <http://iopscience.iop.org/article/10.1088/1742-6596/810/1/012012>.

David M. Surmick, Christian G. Parigger, "Self-absorbed Al lines in laser-induced plasma," *Journal of Physics: Conference Series* **810**, 012054 (2017); <http://iopscience.iop.org/article/10.1088/1742-6596/810/1/012054>.

Ghaneshwar Gautam, Christian G. Parigger, "Electron density and temperature diagnostics in laser-induced hydrogen plasma," *Journal of Physics: Conference Series* **810**, 012055 (2017); <http://iopscience.iop.org/article/10.1088/1742-6596/810/1/0120545>.

Ashraf M. EL Sherbini, Mohamed M. EL Faham, Christian G. Parigger, "First ionization potential measurements using laser-induced breakdown spectroscopy," arXiv: 1612.07205v1 [physics.atom-ph] December 9, 2016; <https://arxiv.org/pdf/1612.07205v1.pdf>.

James O. Hornkohl, Christian G. Parigger, Rotational Line strengths for the CN B²Σ – X²Σ⁺ (5,4) band," arXiv: 1701.08704v1 [physics.atom-ph] January 23, 2017; <https://arxiv.org/pdf/1701.08704v1.pdf>.

Stefan Trautner, Juraj Jasik, Christian G. Parigger, Johannes D. Pedarnig, Wolfgang Spindelhofer, Johannes Lackner, Pavel Veis, Johannes Heitz, "Corrigendum to 'Laser-induced optical breakdown spectroscopy of polymer materials based on evaluation of molecular emission bands' [Spectrochim. Acta A Mol. Biomol.

Spectrosc. 174 (2017) 331–338],” *Spectrochimica Acta Part A: Molecular and biomolecular spectroscopy* **179** (2017), p. 73; <http://dx.doi.org/10.1016/j.saa.2017.02.016>.

Ashraf M. EL Sherbini, Abdelnasser M. Aboufotouh, Christian G. Parigger, “Electron number density measurements using laser-induced breakdown spectroscopy of ionized nitrogen spectral lines,” *Spectrochimica Acta Part B: Atomic Spectroscopy* **125**, pp. 152 – 158 (2016); <https://doi.org/10.1016/j.sab.2016.10.003>.

Ashraf M. EL Sherbini, Christian G. Parigger, “Nano-material size dependent laser-plasma thresholds,” *Spectrochimica Acta Part B: Atomic Spectroscopy* **124**, pp. 79 – 81 (2016); <https://doi.org/10.1016/j.sab.2016.08.015>.

S.M. Steen III, J. Mo, Z. Kang, G. Yang, and F.-Y. Zhang, Investigation of titanium liquid/gas diffusion layers in proton exchange membrane electrolyzer cells, *International Journal of Green Energy*. 14 2 (2017) 162-170.

Mo, J., Z. Kang, S.T. Retterer, D.A. Cullen, T.J. Toops, J.B. Green, M.M. Mench, and F.-Y. Zhang, Discovery of true electrochemical reactions for ultrahigh catalyst mass activity in water splitting. *Science Advances*, 2016. 2(11): e1600690.

B. Han, J. Mo, Z. Kang, G. Yang, W. Barnhill and F.-Y. Zhang, Modeling of two-phase transport in proton exchange membrane electrolyzer cells for hydrogen energy. *Int J Hydrogen Energ*, 2017. (IF:3.59)

Kang, Z., J. Mo, G. Yang, S.T. Retterer, D.A. Cullen, T.J. Toops, J.B. Green, M.M. Mench, and F.-Y. Zhang, Investigation of thin/well-tunable liquid/gas diffusion layers exhibiting superior multifunctional performance in low-temperature electrolytic water splitting, *Energy & Environmental Science*. 2017, **10**, 166 - 175.

G. Yang, J. Mo, Z. Kang, F.A. List, J.B. Green, S.S. Babu, and F.-Y. Zhang, Additive manufactured bipolar plate for high-efficiency hydrogen production in proton exchange membrane electrolyzer cells, *International Journal of Hydrogen Energy*. 42 21 (2017) 14734-14740.

Publications

Accepted and in Press:

B. P. de Laune, G. J. Rees, J.F. Marco, H-Y. Hah, C. E. Johnson, J. A. Johnson, F. J. Berry, J. V. Hanna, and C. Greaves, “Topotactic fluorine insertion into the channels of FeSb_2O_4 -related materials,” *Inorganic Chemistry* [accepted].

Joshua Greenfield, Colin Unger, Michael Chen, Nezhueyotl Izquierdo, Katherine Woo, Vasile Garlea, Saeed Kamali, and Kirill Kovnir, “A series of chiral, polar, homospin topological ferrimagnets: $\text{M}_3(\text{OOCH})_3\text{Cl}(\text{OH}_2)$ (M = Fe, Co, Ni).” [Accepted for publication in *Chemistry of Materials*].

Ghaneshwar Gautam, Christopher M. Helstern, Kyle A. Drake, Christian G. Parigger, “Imaging of laser-induced plasma expansion dynamics in ambient air,” *International Review of Atomic and Molecular Physics*, 2017 (in press).

Ashraf M. EL Sherbini, Mohamed M. EL Faham, Christian G. Parigger, “Measurements of ionization potentials with laser-induced plasma spectroscopy,” *International Review of Atomic and Molecular Physics*, 2017 (in press).

James O. Hornkohl, Christian G. Parigger, “On parity in diatomic molecules and application of a rigorous algorithm for the prediction of nitric oxide spectra,” *International Journal of Molecular and Theoretical Physics*, 2017 (in press).

James O. Hornkohl, Christian G. Parigger, "Rotational line strengths for the cyanide $B^2\Sigma - X^2\Sigma^+$ (5, 4) band," *International Journal of Molecular and Theoretical Physics*, 2017 (in press).

Christian G. Parigger, László Nemes, "In memoriam: James O. Hornkohl," *International Journal of Molecular and Theoretical Physics*, 2017 (in press).

Ashraf M. EL Sherbini, Ahmed T. Hassan, Christian G. Parigger, "Laser-induced plasma spectroscopy of singly ionized nitrogen lines for determination of transient plasma parameters," *Journal of Analytical Atomic Spectrometry*, 2017 (accepted).

Conference Proceedings:

Ying-Ling Chen, Lei Shi, J W L Lewis. "Pilot testing of a miniature autorefractor" *Investigative Ophthalmology & Visual Science* June 2017, Vol.58, 1135.

L. Costa, M. Al-Hashimi, M. Heeney, A. Terekhov, D. Rajput, W. Hofmeister, A. Verma; **Template-Synthesis of Conjugated Poly(3-Hexylselenophene) (P3HS) Nanofibers Using Femtosecond Laser Machined Fused Silica Templates**; MRS Advances, Materials Research Society, 2017 MRS Spring Meeting & Exhibit, April 17 – 21, 2017, Phoenix, Arizona.

Kang, Z., Mo, J., Yang, G., Retterer, S. T., Cullen, D. A., and Zhang, F.-Y. "Micro/Nano Manufacturing of Novel Multifunctional Layers for Hydrogen Production from Water Splitting," IEEE 12th Annual International Conference on Nano/Micro Engineered and Molecular Systems (NEMS). Los Angeles, USA, 2017, pp. 126-130.

Yang, G., Mo, J., Kang, Z., Dohrman, Y, Eilbeigi, S., Farahanipad, F., Huang, H., and Zhang, F.-Y. "Additive Manufactured Micro-Sensor from Silver Nanoparticles for Measuring Shear Stress and Pressure" IEEE 12th Annual International Conference on Nano/Micro Engineered and Molecular Systems (NEMS). Los Angeles, USA, 2017, pp. 164-168

J. Mo, Z. Kang, G. Yang, D. Talley, W. Barnhill, and F.-Y. Zhang, "Visualization on Rapid and Micro-Scale Dynamics of Oxygen Bubble Evolution in PEMECs", The 12th IEEE Annual International Conference on Nano/Micro Engineered and Molecular System (NEMS). Los Angeles, CA, USA, April 9-12, 2017, pp: 101-105.

Kang, Z., Mo, J., Yang, G., Talley, D., Li, Y., Retterer, S. T., Cullen, D. A., and Zhang, F.-Y. "Investigation of Pore Shape Effects of Novel Thin LGDLs for High-Efficiency Hydrogen/Oxygen Generation and Energy Storage," AIAA paper 2017-4873, *AIAA Propulsion and Energy Forum and Exposition*, Atlanta, Georgia, 10-12 July 2017.

Richard J. Thompson and Trevor Moeller, "Flux Treatment Methods for the Coupled Navier-Stokes and Maxwell Equations, AIAA 2017-4014, *AIAA Aviation Forum*, , Denver, Colorado, 5-9 June 2017.

Christian G. Parigger, "Measurement of electron temperature and density in laser-induced hydrogen and laboratory air plasma," 9th *Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy* (EMSLIBS 2017), Proceedings Booklet, Pisa, Italy, (June 11–16, 2017); <http://www.emslibs.org/>.

Christian G. Parigger, Ghaneshwar Gautam, Christopher M. Helstern, Kyle A. Drake, "Electron density and temperature distribution in expanding laser-induced plasma," 9th *Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy* (EMSLIBS 2017), Proceedings Booklet, Pisa, Italy, (June 11 – 16, 2017); <http://www.emslibs.org/>.

Ashraf M. EL Sherbini, Fatimah H. Alkallas, Christian G Parigger, "On nanoparticle enhanced laser-induced emission spectroscopy," 9th *Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy* (EMSLIBS 2017), Proceedings Booklet, Pisa, Italy, (June 11 – 16, 2017); <http://www.emslibs.org/>.

Stefan Trautner, Christoph M. Ahamer, Norbert Huber, Wolfgang Spindelhofer, Johannes Lackner, Simon Eschlböck-Fuchs, Johannes Heitz, Christian G. Parigger, Johannes D. Pedarnig, "Detection of sulphur and zinc in tyre materials by laser-induced breakdown spectroscopy in helium atmosphere and in air," 9th *International*

Conference on Laser-Induced Breakdown Spectroscopy (LIBS), Proceedings booklet, Chamonix, France, (September 12 – 16, 2016); <http://libs2016-france.org/en/pages/libs-2016-program>.

Ghaneshwar Gautam, Christian G. Parigger, “Radial distribution of electron density and temperature in laser-induced plasma,” *Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), The Great Scientific Exchange (SciX)*, Proceedings e-booklet, Minneapolis, Minnesota (September 17 – 23, 2016), paper# 8061; <https://www.scixconference.org/program/archive-search?paperid=8061>.

David M. Surmick, Christian G. Parigger, “Spatial characterizations of aluminum laser-induced plasma,” *Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), The Great Scientific Exchange (SciX)*, Proceedings e-booklet, Minneapolis, Minnesota (September 17 – 23, 2016), paper# 8142; <https://www.scixconference.org/program/archive-search?paperid=8142>.

Ghaneshwar Gautam, Christian G. Parigger, “Measurement of radially and temporally distributed laser-induced plasma parameters,” *83rd Annual Meeting of the American Physical Society (APS) Southeastern Section (SES)*, Bulletin of the American Physical Society 61 (19) BAPS.2016.SES.G4.4, Charlottesville, Virginia (November 10 – 12, 2016); <http://meetings.aps.org/Meeting/SES16/Session/G4.4>.

Kang, Z., Mo, J., Yang, G., Retterer, S. T., Cullen, D. A., and Zhang, F.-Y. “Micro/Nano Manufacturing of Novel Multifunctional Layers for Hydrogen Production from Water Splitting,” IEEE 12th Annual International Conference on Nano/Micro Engineered and Molecular Systems (NEMS). Los Angeles, USA, 2017, pp. 126-130.

Yang, G., Mo, J., Kang, Z., Dohrman, Y., Eilbeigi, S., Farahanipad, F., Huang, H., and Zhang, F.-Y. “Additive Manufactured Micro-Sensor from Silver Nanoparticles for Measuring Shear Stress and Pressure” IEEE 12th Annual International Conference on Nano/Micro Engineered and Molecular Systems (NEMS). Los Angeles, USA, 2017, pp. 164-168

J. Mo, Z. Kang, G. Yang, D. Talley, W. Barnhill, and F.-Y. Zhang, “Visualization on Rapid and Micro-Scale Dynamics of Oxygen Bubble Evolution in PEMECs”, The 12th IEEE Annual International Conference on Nano/Micro Engineered and Molecular System (NEMS). Los Angeles, CA, USA, April 9-12, 2017, pp: 101-105.

Kang, Z., Mo, J., Yang, G., Talley, D., Li, Y., Retterer, S. T., Cullen, D. A., and Zhang, F.-Y. “Investigation of Pore Shape Effects of Novel Thin LGDLs for High-Efficiency Hydrogen/Oxygen Generation and Energy Storage,” AIAA paper 2017-4873, *AIAA Propulsion and Energy Forum and Exposition*, Atlanta, Georgia, 10-12 July 2017.

Presentations

Invited Presentations:

D. Rajput, L. Costa, K. Lansford, A. Terekhov, B. K. Canfield, L. M. Davis, W. Hofmeister, C. Rouleau, A. Puretzky, D. Geohegan; *Femtosecond Laser Patterned Fused Silica Templates and Replicated Polymer Structures*; Sigma Xi Annual Meeting & Student Research Conference; Atlanta, Georgia, USA; 10-13 November 2016; Sigma Xi.

E. Lukosi, T. Wulz, L.M. Davis, B.K. Canfield, S. Spanier, “3D Diamond Development at the University of Tennessee,” RD42 Collaboration Meeting, Columbus, OH, September 23, 2016.

E. Lukosi, T. Wulz, B. Canfield, L. Davis, S. Spanier, “Current Progress on 3D Diamond Detector Development at UTK”, Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC), IEEE, Strasbourg, France, November 1, 2016.

B. Wang, L.M. Davis, “Improved timing and diffusivity measurement in single-molecule recycling in a nanochannel,” SPIE BIOS 2017, International Symposium on Biomedical Optics, San Francisco, CA, 28 January -2 February 2017.

B.K. Canfield, L.M. Davis, "Evaluation of Bessel beam machining for scalable fabrication of conductive channels through diamond," SPIE LASE 2017, The industrial laser, laser source and laser application conference, San Francisco, CA, 28 January-2 February 2017.

Jacqueline Johnson, Julie King, Charles Johnson, "Iron nanoparticles for Theranostics in Glioblastoma Multiforme. UT CORNET Cancer Conference (Murfreesboro, USA November 2016).

Trevor Moeller, "Electric Arc Physics," presented at the Arnold Engineering Development Complex," January 19, 2017.

Trevor Moeller, "Trends in Engineering Education," member of panel discussion, AIAA TN Section, March 30, 2017.

Christian G. Parigger, "Measurement of electron temperature and density in laser-induced hydrogen and laboratory air plasma," 9th *Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy* (EMSLIBS), Invited oral presentation, Pisa, Italy, June 11–16, 2017.

Zhenye Kang, Jingke Mo, Gaoqiang Yang, Scott T. Retterer, David A. Cullen, Feng-Yuan Zhang, Investigation of thin-film MEAs for high-efficiency energy storage, 2016 DOE-CNMS User Meeting. August 9-12. Oak Ridge, TN.

Kang, Z., Mo, J., Yang, G., Retterer, S. T., Cullen, D. A., and Zhang, F.-Y. "Novel Liquid/Gas Diffusion Layers with Micro/nano Surface Modifications for High-efficiency Water Electrolysis," 231 ECS Meeting in New Orleans, May 28–June 2, 2017.

G. Yang, J. Mo, Z. Kang, F.A. List, J.B. Green, S.S. Babu, and F.-Y. Zhang, "3D Printed Bipolar Plate for Water Electrolysis," 231 ECS Meeting in New Orleans, May 28–June 2, 2017.

Feng-Yuan Zhang, "Well-tunable multifunctional materials exhibiting superior performance for water splitting," Vanderbilt University. 11/2016.

Feng-Yuan Zhang, "Developing novel multifunctional materials for high-efficiency electrical energy storage-durability," DOE/NETL Project Review Meeting for Crosscutting Research, Gasification Systems, and Rare Earth Elements Research Portfolios. Pittsburg, PA. 03/2017.

Feng-Yuan Zhang, "In-Situ investigation of Triple-Phase Boundary Electrochemical Reactions in PEM Electrolyzer Cells." 231 ECS Meeting. New Orleans, LA. 05/2017.

Contributed Presentations:

J.E. King, J.A. Johnson, A.W. Evans and R.L. Leonard, "Optimization of Borate Silica Glass Ceramics doped with Rare Earths for Fast Neutron Scintillation," *CerSj-GOMD Joint Symposium on Glass Science and Technologies* (Kyoto, Japan November 2016).

Mreedula Mungra, Franziska Steudel, Adam Evans, Russell L. Leonard, Jacqueline A. Johnson, Bernd Ahrens, Stefan Schweizer, "Energy transfer in Tb³⁺/Eu³⁺ doped borate and fluorozirconate glasses," 12th Pacific Rim Conference on Ceramic and Glass Technology (PACRIM 12), including Glass & Optical Materials Division Meeting (GOMD 2017) (Waikoloa, Hawaii, USA May 2017).

Bond, Charles W.; Leonard, Russell L.; Wang, Renhan; Petford-Long, Amanda; Johnson, Jacqueline "Pulsed Laser Deposition of Transparent Fluoride Glass," 12th Pacific Rim Conference on Ceramic and Glass Technology (PACRIM 12), including Glass & Optical Materials Division Meeting (GOMD 2017) (Waikoloa, Hawaii, USA May 2017).

Richard J. Thompson and Trevor Moeller, “Flux Treatment Methods for the Coupled Navier-Stokes and Maxwell Equations, AIAA 2017-4014, AIAA Aviation Forum, , Denver, Colorado, 5-9 June 2017.

Christian G. Parigger, Ghaneshwar Gautam, Christopher M. Helstern, Kyle A. Drake, “Electron density and temperature distribution in expanding laser-induced plasma,” 9th *Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy* (EMSLIBS 2017), Poster presentation, Pisa, Italy, (June 11 – 16, 2017).

Ashraf M. EL Sherbini, Fatimah H. Alkallas, Christian G Parigger, “On nanoparticle enhanced laser-induced emission spectroscopy,” 9th Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy (EMSLIBS 2017), Oral presentation, Pisa, Italy, (June 11–16, 2017).

Stefan Trautner, Christoph M. Ahamer, Norbert Huber, Wolfgang Spindelhofer, Johannes Lackner, Simon Eschlböck-Fuchs, Johannes Heitz, Christian G. Parigger, Johannes D. Pedarnig, “Detection of sulphur and zinc in tyre materials by laser-induced breakdown spectroscopy in helium atmosphere and in air,” 9th *International Conference on Laser-Induced Breakdown Spectroscopy (LIBS)*, Poster presentation, Chamonix, France, (September 12–16, 2016), paper #63.

Ghaneshwar Gautam, Christian G. Parigger, “Radial distribution of electron density and temperature in laser-induced plasma,” *Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), The Great Scientific Exchange (SciX)*, Poster presentation, Minneapolis, Minnesota (September 17–23), paper #8061.

David M. Surmick, Christian G. Parigger, “Spatial characterizations of aluminum laser-induced plasma,” *Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), The Great Scientific Exchange (SciX)*, Oral presentation, Minneapolis, Minnesota (September 17–23), paper # 8142

Ghaneshwar Gautam, Christian G. Parigger, “Measurement of radially and temporally distributed laser-induced plasma parameters,” 83rd *Annual Meeting of the American Physical Society (APS) Southeastern Section (SES)*, Oral presentation, Charlottesville, Virginia (November 10 – 12, 2016), paper # BAPS.2016.SES.G4.4.

Conference Organizing:

Trevor Moeller, Session chair, “Computational Methods: Plasma-Flow Interaction,” PDL-06, 49th AIAA Plasmadynamics and Lasers Conference, Denver, CO, June 7, 2017.

Trevor Moeller, Session chair, “Plasma and Laser Propulsion,” PDL-09, AIAA SciTech Forum, Grapevine, TX, January 11, 2017.

Christian G. Parigger, Session Chair, “Fundamentals of Laser-Induced Plasma,” Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy, Pisa, Italy, June 11–16, 2017; <http://www.emslibs.org/>

Appointments:

David M. Surmick, Sandia National Laboratories, Albuquerque, New Mexico, July–November 2016.

Christian G. Parigger, International Journal of Molecular and Theoretical Physics, Editorial Board member, March 2017; <https://symbiosisonlinepublishing.com/molecular-theoretical-physics/editorialboard.php>.

Christian G. Parigger, The Scientific Pages of Material Science, Editorial Board member, May 2017; <http://thescientificpages.org/page/physical-science/ebj.php?jid=material-science>.

Video Presentations:

Video: “Spherical melt rotating in aerodynamic levitator,” O.L.G. Alderman, M.C. Wilding, A. Tamalonis, S. Sandelbach, S.M. Heald, C.J. Benmore, C.E. Johnson, J.A. Johnson, H-Y Hah and J.K.R. Weber
<http://www.sciencedirect.com/sdfe/arp/media/1-s2.0-S000925411730044X-mm2.mp4>

Video: “Ellipsoidal melt rotating in aerodynamic levitator,” O.L.G. Alderman, M.C. Wilding, A. Tamalonis, S. Sandelbach, S.M. Heald, C.J. Benmore, C.E. Johnson, J.A. Johnson, H-Y Hah and J.K.R. Weber
<http://www.sciencedirect.com/sdfe/arp/media/1-s2.0-S000925411730044X-mm3.mp4>

Working with Companies:

Saeed Kamali, Establishing collaboration with the following international companies: RCI Pharma Development, Imerys, Amphaster, Lupin, and Mylan.

Awards:

Trevor Moeller, Selected as a Faculty Fellow in the NASA Marshall Space Flight Center Faculty Fellowship Program.

Trevor Moeller, Received the first Charles and Julie Wharton Teaching Fellow Award by the Tickle College of Engineering.

Trevor Moeller, Received Citation of Merit for being nominated for the University of Tennessee President's Award.

Trevor Moeller, Coauthor of technical paper selected as the best paper in its division at the Optical Interference Coating conference. "Ice Film Thickness Measurements on a Cryogenically Cooled Gold Mirror under High Vacuum Conditions," Optical Interference Coatings, THC 10, Optical Society of America, June 2016. Award received in August 2016.

Christian G. Parigger, IOP Publishing Reviewer Awards 2016: Journal of Physics D: Applied Physics, November 2016; <http://iopscience.iop.org/journal/0022-3727/page/IOP-Publishing-Reviewer-Awards-2016-Journal-of-Physics-D>.

Ghaneshwar Gautam, The University of Tennessee Chancellor's Honors Recipient for "Extraordinary Professional Promise," April 2017; <http://honorsbanquet.utk.edu/2017-extraordinary-professional-promise/>.

Patents, Patent applications and Disclosures

W. H. Hofmeister, L. Hofmeister, A. Y. Terekhov, L. Costa; Biomimetic Cell Culture Substrates; Publication number: US20160222345 A1; Publication type: Application; Application number: US 15/014,762; Filed on 03 February 2016.

PD 17078-07: System to Aid Visualization of Cancerous Tissue during a Lumpectomy (Leonard and Johnson)

PD 17107-07: Thin film fluoride glasses for passive temperature sensing and recording (Leonard, Johnson, Bond)