CURRICULUM VITAE

NAME
Azer Philip Yalin

ADDRESS
1374 Campus Delivery
Fort Collins, CO 80523-1374
azer.yalin@colostate.edu

EDUCATION

2000 Ph.D., Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ, USA
1997 M.A., Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ, USA
- Guggenheim Fellow
- Thesis: Gas Phase and Plasma Diagnostics based on Resonant Atomic Vapor Filters
- Advisor: Richard B. Miles

1995 B.Sc. (Honors) 1st Class, Engineering Physics, Queen's University, Kingston, ON, Canada
- Canada Scholar
- Queen's Provincial Scholar

ACADEMIC POSITIONS

2014- Professor, Department of Mechanical Engineering, Colorado State University, Fort Collins, CO, USA
Research focuses on laser-based diagnostics of gases and plasmas for electric propulsion, plasma science and combustion, as well as laser induced plasmas and laser ignition.
Director, Laser Plasma Diagnostics Laboratory: http://www.engr.colostate.edu/lpdl/
Director, Center for Laser Sensing and Diagnostics
Director, CSU Affiliate of NASA Space Grant

2008-2014 Associate Professor, Department of Mechanical Engineering, Colorado State University, Fort Collins, CO, USA

2008-2011 Associate Department Head for Graduate Studies, Department of Mechanical Engineering, Colorado State University, Fort Collins, CO, USA
Summary of achievements: Introduced core courses, quantified TA selection process, conducted self study, introduced publication requirements, increased PhD graduation rate per faculty by >100%.

2002-2008 Assistant Professor, Department of Mechanical Engineering, Colorado State University, Fort Collins, CO, USA

2000-2002 Postdoctoral Research Associate, High Temperature Gas Dynamics Lab, Stanford University, CA, USA
Collaboration between Professor R.N. Zare, Department of Chemistry, and Professor C.H. Kruger, Department of Mechanical Engineering: Laser diagnostics and ionization and recombination mechanisms in pulsed atmospheric pressure discharges.

1995-2000 Graduate Student and Research Associate, Applied Physics Group, Princeton University, Princeton, NJ, USA

Development of novel laser diagnostics for plasma and gas phase measurements, and to study relevant plasma processes.

HONORS AND AWARDS

- 2025, Educator of the Year Award (College/University), Rocky Mountain Section of AIAA
- 2023, Walter Lempert Best Student Paper Award – Honorable Mention, Citation: J. Gottfried, S. Antozzi, C. Dumitrache, A.P. Yalin "Preliminary Krypton Measurements by Two-Photon Absorption Laser Induced Fluorescence (TALIF) in Cold Flow and a Hollow Cathode Plasma" AIAA 2023-0221, AIAA SciTech Forum, National Harbor, MD January 2023
- 2022, Journal Highlight: American Association for Aerosol Research (AAAR), Spring 2022 Newsletter, https://aaarpubs.org/issues/spring-2022/ (citing Sipich et al., Aer Sci Tech 2022)
- 2019, AIAA Plasmadynamics and Lasers Best Paper Award (from papers presented at Aviation 2019 and Scitech 2020, citation: Carter Butte, Ciprian Dumitrache, Azer P. Yalin "Dual-Pulse Laser Ignition Using Oxygen REMPI Preionization," AIAA-2019-3117, presented at Aviation 2019)
- 2017-, Review Editor for Frontiers Community in Plasma Physics, part of the journal(s) Frontiers in Physics and Astronomy and Space Sciences.
- 2016, Invited Speaker for Environmental Sensing Technical Group Special Talk, Frontiers in Optics – OSA Annual Meeting, Rochester, NY
- 2016, co-author of 2016 AIAA Best Plasmadynamics and Lasers Student Paper Award (A. Friss, C. Limbach, A.P. Yalin "Development of a Cavity Enhanced Thomson and Raman Scattering Diagnostic," AIAA 2016-1698)
- 2015, Senior Member, Optical Society of America
- 2014, Associate Fellow, American Institute of Aeronautics and Astronautics (AIAA)
- 2014, Bronze Educational Award - Edmund Optics ($5k optical components), recognizes outstanding undergraduate and graduate optics programs in science, technology, engineering and mathematics at non-profit colleges and universities.
- 2014, Invited Speaker, Frontiers in Spectroscopy, Chemical Physics graduate program, Ohio State University, multi-day lectures and honorarium, Jan. 29-31 2014
- 2013, Nominated by Colorado State University for Blavatnik National Award in Physical Sciences and Engineering category
- 2012, George T. Abell Outstanding Teaching & Service Faculty Award, awarded by the College of Engineering, Colorado State University
- 2011, Oliver R. Pennock Service Award, Colorado State University. The award recognizes meritorious and outstanding achievement over a five-year period by full-time members of the academic faculty and administrative professional staff.
- 2009, Cover Article for Applied Spectroscopy 63 (5). (Citation: S. Joshi et al. "Laser Induced Breakdown Spectroscopy for In-Cylinder Equivalence Ratio Measurements in Laser Ignited Natural Gas Engines" 63 (5) 2009)
- 2009, Best Poster – 2009 Society of Vacuum Coaters TechCon. (Citation: A.P. Yalin, L. Tao, N. Yamamoto, 2009 "Laser-Based Sensor for Real Time Sputter Monitoring and End Point Detection in Ion Beam Etch Systems", 2009 Society of Vacuum Coaters TechCon, Santa Clara, CA, USA)
- 2009, SAE Ralph R. Teetor Educational Award (Aerospace Program)
- 2009 and 2008 and 2006 and 2005, Nominated for Best Teacher Award, CSU Alumni Association and Student Alumni Connection, Colorado State University
- 2007, Abell Outstanding Early-Career Faculty Award, College of Engineering, Colorado State University

- 2005, Top ranked project: Department of Energy, Advanced Reciprocating Engine Program (Distributed Energy Peer Review, December 2005)
- 1995-, Guggenheim Fellow, Princeton University
- 1991-1995, Canada Scholarship (4 year undergraduate scholarship), Queen's University, Kingston, Canada
- 1991-1995, Queen's Provincial Scholarship (4 year undergraduate scholarship), Queen's University, Kingston, Canada
- 1991, A.B. Lillie Award (top performance in first year calculus in engineering class of 450 students), Queen's University, Kingston, Canada
- 1991, Hewlett Packard Award (given to top 10 students in first year engineering class of 450 students), Queen's University, Kingston, Canada

PUBLISHED WORKS

Refereed Journal Articles

1. P. Lokini, C. Dumitrache, A. Yalin, B. Windom "Influence of Laser Energy and Ignition Location on Spray Flame Evolution" in submission to AIAA Journal of Thermophysics and Heat Transfer (JTHT)
2. R. Rosser, V. Blanchard, G. Urdaneta Rincon, A. Yalin and A. Dogariu 2025 "Non-equilibrium temperature dynamics in femtosecond filament using Hybrid Coherent Anti-Stokes Raman Scattering" in submission to Optics Letters (minor revisions as of 9/11/25)
3. M.B. Khan, C. L'Orange, C.H. Lim, D. Kwon, A.P. Yalin 2024 "Open-Path Cavity Ring-Down Spectroscopy for Simultaneous Detection of Hydrogen Chloride and Particles in Cleanroom Environment" Sensors (2024) 24(17), 5611; https://doi.org/10.3390/s24175611
4. P. Lokini, C. Dumitrache, B.C. Windom, A.P. Yalin 2024 "Laser-Induced Breakdown Spectroscopy and Shadowgraphy of Acoustically Levitated Heptane Droplets" (2024) Photonics 11, 1044. https://doi.org/10.3390/photonics11111044
5. J.A. Gottfried, S. Antozzi, J. Stienike, S.J. Thompson, J. D. Williams, A.P. Yalin 2024 "Temporally resolved relative krypton neutral density during breathing mode of a hall effect thruster recorded by TALIF" Journal of Electric Propulsion (2024) 3:9, https://doi.org/10.1007/s44205-024-00070-5
6. N. Yamamoto and A.P. Yalin 2024 "Portable Thomson scattering system for temporally resolved plasma measurements under low density conditions" Rev. Sci. Instrum. 95, 033502 (2024), https://doi.org/10.1063/5.0180534
7. J. Gottfried and A.P. Yalin 2024 "Krypton tagging velocimetry in the plume of a plasma hollow cathode" *Optics Continuum*, 3 (15), 9-21; https://doi.org/10.1364/OPTCON.503138
8. S. Shadman, T. Miller, A.P. Yalin 2023 "Open-Path Laser Absorption Sensor for Mobile Measurements of Atmospheric Ammonia" *Sensors*, 23(11), 6498; https://doi.org/10.3390/s23146498
9. A.J. Puga, A.P. Yalin 2023 "Ozone Detection via Deep-Ultraviolet Cavity-Enhanced Absorption Spectroscopy with a Laser Driven Light Source" *Sensors*, 23(11), 6498; https://doi.org/10.3390/s23114989
10. J. Sipich, C. L'Orange, J. Volckens, A. Yalin 2022 "In-Site Elemental Composition Analysis of Large Inhalable Aerosol Using Laser Induced Breakdown Spectroscopy" *Applied Spectroscopy*, 77(3) 261-269, https://doi.org/10.1177/00037028221146804
11. J.A. Gottfried, C.E. Rose, S. Simpson, A.P. Yalin 2022 "Collective Thomson scattering measurement of plasma evolution during the current pulse in a laser-triggered switch" *Applied Physics Letters*, 121, 244101; https://doi.org/10.1063/5.0131471
12. J. Sipich, C. L'Orange, K. Anderson, C. Limbach, J. Volckens, A.Yalin 2021 "A direct-reading particle sizer with elemental composition analysis for large inhalable particles" *Aerosol Science & Technology*, 56:3, 223-233, https://doi.org/10.1080/02786826.2021.2002255
13. X. Zhou, X. Peng, A. Montazeri, L.E. McHale, Simon Gassner, D.R. Lyon, AP. Yalin and J.D. Albertson 2021 "Mobile Measurement System for the Rapid and Cost-Effective Surveillance of

Methane and Volatile Organic Compound Emissions from Oil and Gas Production Sites" *Env. Sci Tech*. 55,1 581-592
14. C. Dumitrache, C. Butte and A.P. Yalin 2020 "Resonant dual-pulse laser ignition technique based on oxygen REMPI pre-ionization" *Nature Scientific Reports*, 10: 19916.
15. C. Dumitrache and A.P. Yalin 2020 "Gas Dynamic Regimes Observed in Dual-Pulse Laser Ignition" *Int. J. Heat Mass Transfer*, 161 120302.
16. W. Lassman, J.L. Collett, J.M. Ham, A.P. Yalin, J.R. Pierce 2020 "Exploring new Methods of estimating deposition using atmospheric concentration measurements: a modelling case study of ammonia downwind of a feedlot" *Agricultural and Forest Meteorology*, 290, 107989
17. C. Dumitrache and A.P. Yalin 2020 "Gas Dynamics and Vorticity Generation in Laser-Induced Breakdown of Air" *Optics Express*, 28 (4), 5835-5850
18. B. Martinez, T.W. Miller, A.P. Yalin 2020 "Cavity Ring-Down Methane Sensor for Small Unmanned Aerial Systems" *Sensors*, 20, 254
19. E.A. Wendt, C.W. Quinn, D. D. Miller-Lionberg, J. Tryner, C. L'Orange, B. Ford, A.P. Yalin, J. R. Pierce, S. Jathar, and J. Volckens 2019 "A low-cost monitor for measurement of fine particulate matter and aerosol optical depth. Part 1: Specifications and testing" *Atmospheric Measurement Techniques*, 12, 5431–5441
20. L.E. McHale, B. Martinez, T.W. Miller, A.P. Yalin 2019 "Open-path cavity ring-down methane sensor for mobile monitoring of natural gas emissions" *Optics Express* 27 (14), 20084-20097
21. A.J. Friss and A.P. Yalin 2018 "Cavity enhanced Thomson scattering measurements of electron density and temperature in a hollow cathode discharge" *Optics Letters*, 43 (21), pp. 5343-5346
22. A. Pendurthi, S. Movafaghi, W. Wang, S. Shadman, A.P. Yalin, and A.K. Kota 2017 "Fabrication of Nanostructured Omniphobic and Superomniphobic Surfaces with Inexpensive CO2 Laser Engraver" *ACS Appl. Mater. Interfaces*, 2017, 9 (31), pp 25656–25661
23. C. Dumitrache, R. VanOsdol, C.M. Limbach, A.P. Yalin 2017 "Control Of Early Flame Kernel Growth By Multi-Wavelength Laser Pulses For Enhanced Ignition" *Nature Scientific Reports*, 7: 10239.
24. Anthony DeMario, Pete Lopez, Eli Plewka, Ryan Wix, Hai Xia, Emily Zamora, Dan Gessler, and Azer P. Yalin 2017 "Water Plume Temperature Measurements by an Unmanned Aerial System (UAS)" *Sensors* 17, 306; doi:10.3390
25. C. Dumitrache, C.M. Limbach, A.P. Yalin 2016 "Threshold characteristics of ultraviolet and near infrared nanosecond laser induced plasmas" *Physics of Plasmas* 23 093515
26. C. Dumitrache, M. Baumgardner, A. Boissiere, A. Maria, J. Roucis, A. Marchese, A.P. Yalin 2017 "A study of laser induced ignition of methane–air mixtures inside a Rapid Compression Machine" Proc. Comb. Inst. 36, 3431-3429
27. A.J. Friss, C.M. Limbach, A.P. Yalin 2016 "Cavity-enhanced rotational Raman scattering in gases using a 20 mW near-infrared fiber laser" *Optics Letters* 41 (14), 3193-3196
28. S. Shadman, C. Rose and A.P Yalin, 2016 "Open-path cavity ring-down spectroscopy sensor for atmospheric ammonia" *Appl. Phys. B* 122 (7)
29. Laura E. McHale, Arsineh Hecobian and Azer P. Yalin, 2016 "Open-path cavity ring-down spectroscopy for trace gas measurements in ambient air" *Optics Express* 24 (5), 5523-5535
30. J.S. Li, B. Yu, H. Fischer, W. Chen and A.P. Yalin, 2015 "Contributed Review: Quantum cascade laser based photoacoustic detection of explosives" *Review of Scientific Instruments* 86 031501
31. A.P. Yalin, N. Wilvert, C. Dumitrache, S. Joshi, M.N. Shneider , 2014 "Laser plasma formation assisted by ultraviolet pre-ionization" *Physics of Plasmas* 21 103511
32. C. Dumitrache, J. Rath and A.P. Yalin, 2014 "High Power Spark Delivery System Using Hollow Core Kagome Lattice Fibers" *Materials*, 7, 5700-5710
33. C.L. Hagen, B.C. Lee, I.S. Franka, J. L. Rath, T.C. VandenBoer, J.M. Roberts, S.S. Brown and A. P. Yalin, 2014 "Cavity Ring-Down Spectroscopy Sensor for Detection of Hydrogen Chloride" *Atmos. Meas. Tech.*, 7, 345-357
34. B. Lee, K. Lehmann, J. Taylor and A. Yalin, 2014 "A High-finesse Broadband Optical Cavity using Calcium Fluoride Prism Retro-reflectors" *Optics Express,* 22 (10), pp. 11583-11591.

35. B.C. Lee, W. Huang, L. Tao, N. Yamamoto, A.D. Gallimore, and A.P. Yalin, 2014 Review of Scientific Instruments "A cavity ring-down spectroscopy sensor for real-time Hall thruster erosion measurements" *Review of Scientific Instruments* 85, 053111
36. H. Dragnea, I.D. Boyd, B. Lee, A. Yalin, 2014 "Characterization of Eroded Boron Atoms in the Plume of a Hall Thruster" *IEEE Transactions on Plasma Science – Special Issue on Plasma Propulsion* Instruments 43 (1) 35-44
37. A.P. Yalin, 2013 "High Power Fiber Delivery for Laser Ignition Applications" *Optics Express (Energy Express Supplement)* 21 (S6) A1102-1112
38. C.L. Hagen, B.C. Lee, I.S. Franka, J. L. Rath, T.C. VandenBoer, J.M. Roberts, S.S. Brown and A. P. Yalin, 2013 "Cavity Ring-Down Spectroscopy Sensor for Detection of Hydrogen Chloride" *Atmos. Meas. Tech. Discuss*., 6, 7217-7250, 2013
39. S. Joshi, N. Wilvert, A. Yalin, 2012 "Delivery of High Intensity Beams with Large Clad Step-Index Fibers for Engine Ignition" Applied Physics B – Lasers & Optics, 108 (4), pp. 925-932
40. F. Loccisano, S. Joshi, I. Franka, Z. Yin, W. Lempert, A.P. Yalin, 2012 "Fiber Coupled Ultraviolet Planar Laser Induced Fluorescence for Combustion Diagnostics", Applied Optics, 51 (27) pp. 6691-6699
41. S. Joshi, F. Loccisano, A.P. Yalin, D.T. Montgomery, 2011 "On comparative performance testing of prechamber and open chamber laser ignition" Journal Of Engineering For Gas Turbines And Power-Transactions Of The ASME, 133 (12) Article Number: 122801
42. Sullenberger RM, Munoz WM, Lyon MP, Vogel K, Yalin AP, Korman V, Polzin KA. Optical mass gauging system for measuring liquid levels in a reduced-gravity environment Journal of Spacecraft and Rockets. 48: 528-533. DOI: 10.2514/1.51560
43. S. Hurand, L-A. Chauny, H. El-Rabii, S. Joshi, A.P. Yalin, 2011 "Mode coupling and output beam quality of 100-400 mu m core silica fibers", Applied Optics 50 (4) pp. 492-499
44. S. Joshi, H.El-Rabii, C. Dumitrescu, P.V.Puzinauskas, A.P.Yalin, 2011 "Temperature and Electron Density Measurements of Laser Induced Plasmas in Air at Elevated Pressures", Spectroscopy Letters, 44 (2) pp.103-112
45. N. Yamamoto, L. Tao, A.P. Yalin, 2010 "Development of Real-time Erosion Monitoring System for Hall Thrusters by Cavity Ring-Down Spectroscopy", Transactions Of The Japan Society For Aeronautical And Space Sciences, Aerospace Technology Japan, Vol. 8 No. ists27 pp.Pb_39-Pb_44
46. N. Yamamoto, L. Tao, B. Rubin, J.D. Williams, A.P. Yalin, 2010 "Real-time Sputter Erosion Sensor for Anode Layer Type Hall Thrusters Using Cavity Ring-Down Spectroscopy" Journal of Propulsion and Power, 26 (1) p.142-148
47. B. Rubin, J.L. Topper, A.P. Yalin, 2009 "Total and differential sputter yields of boron nitride measured by quartz crystal microbalance", J. Phys. D: Appl. Phys. 42 (20) 205205
48. B. Rubin, J.L. Topper, C.C. Farnell, A.P. Yalin, 2009 "Quartz Crystal Microbalance Based System for High-Sensitivity Differential Sputter Yield Measurements", *Review of Scientific Instruments*, 80 (10), 103506
49. N. Yamamoto, L. Tao, A.P. Yalin 2009 "Single-mode delivery of 250 nm light using a large mode area photonic crystal fiber" Optics Express 17 (19) pp. 16933-16940
50. N. Yamamoto, A.P.Yalin, L. Tao, T.B. Smith, A.D. Gallimore, Y. Arakawa 2009 "Development of Real-time Boron Nitride Erosion Monitoring System for Hall Thrusters by Cavity Ring-Down Spectroscopy" Transactions Of The Japan Society For Aeronautical And Space Sciences, Space Technology Japan, 7 (ists26) pp.Pb_1-Pb_6
51. S. Joshi, D.B. Olsen, C. Dumitrescu, P.V. Puzinauskas, A.P. Yalin, 2009 "Laser Induced Breakdown Spectroscopy for In-Cylinder Equivalence Ratio Measurements in Laser Ignited Natural Gas Engines" Applied Spectroscopy 63 (5) pp. 549-554
52. H. El-Rabii, S.B. Victorov, A.P. Yalin, 2009 "Properties of an air plasma generated by ultraviolet nanosecond laser pulses" J. Phys. D.: App. Phys. 42 (7) 075203
53. L. Tao, N. Yamamoto, A.P. Yalin, 2008 "Cavity Ring-Down Spectroscopy Sensor for Ion Beam Etch Monitoring and End-Point Detection of Multilayer Structures" Review of Scientific Instruments 79 115107

54. A.P. Yalin, S. Joshi, M. DeFoort, B. Willson, 2008 "Towards Multiplexed Fiber Delivered Laser Ignition For Natural Gas Engines", Technical Brief in ASME Journal of Engineering for Gas Turbines and Power, 130 (4) Article Number: 044502
55. C. Dumitrescu, P.Puzinauskas, S. Olcmen, S.G. Buckley, S. Joshi, A.P. Yalin, 2007 "Fiber-Optic Spark Delivery for Gas-Phase Laser Induced Breakdown Spectroscopy", Applied Spectroscopy 61 pp. 1338-1343
56. V. Surla, A.P. Yalin, 2007, "Differential Sputter Yield Measurements using Cavity Ring-Down Spectroscopy", *Applied Optics* 46, (19), pp. 3987-3994.
57. S. Joshi, A.P. Yalin, A. Galvanauskas, 2007, "On the Use of Hollow Core Fibers, Fiber Lasers, and Photonic Crystal Fibers for Spark Delivery and Laser Ignition in Gases" *Applied Optics* 46, (19), pp. 4057-4064
58. A.P. Yalin, J.D. Williams, V. Surla, and K.A. Zoerb, 2007, "Differential Sputter Yield Profiles of Molybdenum due to Bombardment by Low Energy Xenon Ions at Normal and Oblique Incidence," *Journal of Physics D – Applied Physics* 40, pp. 3194-3202.
59. A.P. Yalin, V. Surla, 2005, "Velocity Measurements by Cavity Ring-Down Spectroscopy," *Optics Letters* 30, pp. 3219-3221.
60. A.P. Yalin, M. Defoort, B. Willson, Y. Matsuura, M. Miyagi, 2005, "Use of Hollow Core Fibers to Deliver Nano-second Nd:YAG Laser Pulses for Spark Formation*," Optics Letters* 30, pp. 2083-2085.
61. R. Rahul et al, 2005, "Optical and RF Electrical Characteristics of Atmospheric Pressure Open Air Hollow Slot Microplasmas," *Journal of Physics D: Applied Physics* 38, pp. 1750-1759.
62. A.P. Yalin, V. Surla, M. Butweiller, J.D. Williams, 2005, "Detection of Sputtered Metals using Cavity Ring-Down Spectroscopy," *Applied Optics* 44, (30), pp. 6496-6505.
63. A.P. Yalin et al, 2005, "Radio Frequency Driven Slot Micro-Discharges Operating in Open Air," *IEEE Transactions on Plasma Science* 33, (2), pp. 562-563.
64. V. Surla, P.J. Wilbur, J.D. Williams, M. Johnson, A.P. Yalin, 2004, "Sputter Erosion Measurements of Titanium and Molybdenum by Cavity Ring-Down Spectroscopy," *Review of Scientific Instruments* 75, (9), pp. 3025-3030.
65. A. Rahman, A.P. Yalin, V.Surla, O. Stan, K. Hoshmiya, Z. Yu, G.J. Collins, 2004, "Absolute UV and VUV Emission in the 110-400 nm Region from 13.56 MHz Driven Hollow Slot Microplasmas Operating in Open Air," *Plasma Sources Science and Technology* 13, pp. 537-547.
66. A. P. Yalin, 2004, "Laser Lineshape Effects on Cavity Enhanced Absorption Spectroscopy Signals," *Applied Physics B - Lasers and Optics* 78, (3-4), pp. 477-483.
67. A. P. Yalin, Z.Q. Yu, O. Stan, K. Hoshimiya, R. Abdur, V. Surla and G.J. Collins, 2003, "Electrical and Optical Emission Characteristics of RF Driven Hollow Slot Microplasmas Operating in Open Air," *Applied Physics Letters* 83, (14), pp. 2766-2768.
68. A.P. Yalin, R.N. Zare, C.O. Laux, C.H. Kruger, 2002, "Temporally resolved cavity ring-down spectroscopy in a pulsed nitrogen plasma," *Applied Physics Letters* 81, (8), pp. 1408-1410.
69. A.P. Yalin, R.N. Zare, C.O. Laux, C.H. Kruger, 2002, "Spatial Profiles of N2+ Concentration in an Atmospheric Pressure Nitrogen Glow Discharge," *Plasma Sources Science and Technology* 11, (3), pp. 248-253.
70. A.P. Yalin, R.N. Zare, 2002, "Effect of laser lineshape on the quantitative analysis of cavity ring-down signals*," Laser Physics* 12, (8), pp. 1065-1072.
71. S.H. Zaidi, Z. Tang, A.P. Yalin, P. Barker, R.B. Miles, 2002, "Filtered Thomson Scattering in an Argon Plasma," *AIAA Journal* 40, (6), pp. 1087-1093.
72. A.P Yalin, Y.Z. Ionikh, R.B. Miles, 2002, "Temperature measurements in weakly ionized glow discharges using filtered Rayleigh scattering," *Applied Optics* 41, (18), pp. 3753-3762.
73. S.O. Macheret, Y.Z. Ionikh, N.V. Chernysheva, A.P. Yalin, L. Martinelli, R.B. Miles, 2001, "Shock wave propagation and dispersion in glow discharge plasmas," *Physics of fluids* 13. (9), pp. 2693-2705.
74. R.B. Miles, A.P. Yalin, Z. Tang, S. Zaidi, J.N. Forkey, 2001, "Flow field imaging through sharp-edged atomic and Molecular notch filters," *Measurement Science and Technology*, 12, (4) pp. 442-451.

75. A.P. Yalin, P.F. Barker, R.B. Miles, 2000, "Characterization of laser seeding using group velocity dispersion in an atomic vapor filter," *Optics Letters* 25, (7), pp. 502-504.
76. A.P. Yalin, R.B. Miles, 2000, "Temperature measurements by Ultraviolet Filtered Rayleigh Scattering using a mercury filter," *Journal of Thermophysics and Heat Transfer* 14, (2), pp. 210-215.
77. R.B. Miles, Z. Tang, S. Zaidi, A.P. Yalin, N.D. Finkelstein, 2000, "High signal-to-noise detection of rotational Raman scattering through refluorescent and dispersive atomic filters," *Journal of Raman Spectroscopy--Nikolai Ivanovich Koroteev Memorial Issue*
78. Y.Z. lonikh, N.V. Chemysheva, A.V. Meshchanov, A.P. Yalin, R.B. Miles, 1999, "Direct evidence for thermal mechanism of plasma influence on shock wave propagation," *Physics Letters A* 259, (5), pp. 387-392.
79. A.P. Yalin, R.B. Miles, 1999, "Ultraviolet filtered Rayleigh scattering temperature measurements with a mercury filter," *Optics Letters* 24, (9), pp. 590-592.
80. N.D. Finkelstein, A.P. Yalin, R.B. Miles, 1998, "Dispersion filter for spectral and spatial resolution of pure rotational Raman scattering," *Optics Letters* 23, (20), pp.1615-1617.

Refereed Chapters in Books:

1. B. N. Ganguly, W.R. Lempert, K. Akhtar, J.E. Scharer, F. Leipold, C.O. Laux, R.N. Zare, A.P. Yalin, 2005, Chapter 8: Plasma Diagnostics, In: Non-equilibrium Air Plasmas at Atmospheric Pressure, Editors: K.H. Becker, U. Kogelschatz, K.H. Schoenbach, and R.J. Barker, Taylor and Francis, Institute of Physics–Series in Plasma Physics, pp.446-536

Conference Proceedings/Transactions (Invited talks at conferences listed here and again in Invited Talks section)

(* indicates I presented paper at Conference)

1. V.P. Blanchard, R. Rosser, G. Urdaneta, A. Dogariu, A.P. Yalin 2025 "Characterization of a Femtosecond Plasma Filament in Air by fs/ps Hybrid Coherent Anti-Stokes Raman Scattering" AIAA 2025-1392, AIAA SciTech 2025
2. S. Wilson, V.P. Blanchard, A.P. Yalin, C. Dumitrache 2025 "Modeling and Experimental Study of Nitrogen Plasma Kinetics in Femtosecond Laser Filaments at Atmospheric Conditions" AIAA 2025-1393, AIAA SciTech 2025
3. J. Gottfried, S. Antozzi, J. Stienike, S. Thompson, J. Williams, A.P. Yalin 2024 "Temporally Resolved Neutral Density Measurements of Hall Effect Thruster Breathing Mode by Two-Photon Absorption Laser Induced Fluorescence (TALIF)" AIAA 2024-0802, AIAA SciTech 2024, https://doi.org/10.2514/6.2024-0802
4. P. Lokini, C. Dumitrache, B. Windom, A.P. Yalin 2024 "Plasma Parameters of Laser Irradiated Hydrocarbon Droplets in Air" AIAA 2024-0401, AIAA SciTech 2024, https://doi.org/10.2514/6.2024-0401
5. S. Antozzi, J. Gottfried, J. Williams, A.P. Yalin "Cavity Ring-Down Spectroscopy (CRDS) Measurements of Barium Emitted from a Hollow Cathode" AIAA 2024-0922, AIAA SciTech 2024, https://doi.org/10.2514/6.2024-0922
6. S. Teeter, K. Please, R. Zulch, C. Haid, B. Windom, A.P. Yalin, C. Dumitrache 2024 "Development of a Supersonic Wind Tunnel Facility for Scramjet Testing at Colorado State University": AIAA 2024-2129, AIAA SciTech 2024, https://doi.org/10.2514/6.2024-2129
7. V.P. Blanchard, S. Wilson, C. Dumitrache, A.P. Yalin 2024 "Characterization of Femtosecond Laser Filaments in Air by Optical Emission Spectroscopy" AIAA 2024-3724, AIAA Aviation 2024, https://doi.org/10.2514/6.2024-3724
8. P. Lokini, C. Dumitrache, B. Windom, A.P. Yalin 2024 "Laser-Induced Fragmentation and Spectroscopy of Acoustically Levitated Hydrocarbon Droplets" AIAA 2024-3900, AIAA Aviation 2024, https://doi.org/10.2514/6.2024-3900

9. S. Antozzi, J. Gottfried, J. Williams, J. Polk, A. Yalin 2024 “Cavity Ring-Down Spectroscopy Measurements of Barium Density in a Hollow Cathode”, IEPC-2024-400, International Electric Propulsion Conference, Toulouse, France, 2024
10. J. Stienike, S. Antozzi, E. Ku, S. Thompson, J. Williams, A. Yalin 2024 “Spatially and Temporally Resolved Neutral Density Measurements in Plume of a Hollow Cathode by Two-Photon Absorption Laser Induced Fluorescence (TALIF)” IEPC-2024-401, International Electric Propulsion Conference, Toulouse, France, 2024
11. N. Yamamoto, Y. Ogata, A. Yalin 2024 “Temporally-Resolved Plasma Property Measurements in Hall Thrusters by Thomson Scattering Diagnostic System” IEPC-2024-362, International Electric Propulsion Conference, Toulouse, France, 2024
12. J.A. Gottfried, C.E. Rose, A.P. Yalin 2023 “Optical and Electrical Diagnostics of a High-Voltage Laser-Triggered Switch with Variable Impedance Load” AIAA-2023-2384, SciTech 2023 AIAA Forum, January 2023, https://doi.org/10.2514/6.2023-2384
13. P. Lokini, C. Dumitrache, B. Windom, A.P. Yalin 2023 “Laser Ignition and Laser-Induced Breakdown Spectroscopy of a Hydrocarbon Flame in an Annular Spray Burner” AIAA-2023-0750, SciTech 2023 AIAA Forum, January 2023, https://doi.org/10.2514/6.2023-0750
14. J.A. Gottfried, S. Antozzi, C. Dumitrache, A.P. Yalin 2023 “Preliminary Krypton Measurements by Two-Photon Absorption Laser Induced Fluorescence (TALIF) in Cold Flow and a Hollow Cathode Plasma” AIAA-2023-1863, SciTech 2023 AIAA Forum, January 2023, https://doi.org/10.2514/6.2023-1863
15. P. Lokini, C. Dumitrache, B. Windom, A.P. Yalin 2023 “Simultaneous Laser Ignition and Laser-Induced Breakdown Spectroscopy of a Hydrocarbon Spray Flame” AIAA-2023-3603, AIAA Aviation Forum, San Diego, CA, June 2023, https://doi.org/10.2514/6.2023-3603
16. S. Antozzi, J. Gottfried, J. Williams, A.P. Yalin 2023 “Spatially Resolved Measurements of Krypton by Two Photon Absorption Laser Induced Fluorescence (TALIF) in a Barium Oxide Hollow Cathode Plasma” AIAA-2023-4269, AIAA Aviation Forum, San Diego, CA, June 2023, https://doi.org/10.2514/6.2023-4269
17. Mitchell Walker, Dan Lev, Benjamin Jorns, John Foster, Alec Gallimore, Alex Gorodetsky, Joshua Rovey, Huck Beng Chew, Deborah Levin, John Williams, Azer Yalin, Richie Wirz, Jaime Marian, Iain Boyd, Kentaro Hara, Kristina Lemmer, "Overview of the Joint Advanced Propulsion Institute (JANUS)," IEPC-2022-156, 37th International Electric Propulsion Conference, Boston, Massachusetts, June 19-23, 2022.
18. *Tad Wegner, Ciprian Dumitrache, Azer P. Yalin “Rate-Equation Modeling of Xe and Kr TALIF for Electric Propulsion Applications” IEPC-2022-298 37th International Electric Propulsion Conference, Boston, Massachusetts, June 19-23, 2022.
19. Jacob Gottfried, Malcolm Roux and Azer P. Yalin “Electron Density and Temperature Measurements by Thomson Scattering in a High-Voltage Laser-Triggered Switch” AIAA Aviation 2022 Forum, Chicago IL. (AIAA 2022-3496) https://doi.org/10.2514/6.2022-3496
20. *Tad Wegner, Seth J. Thompson, John Williams and Azer P. Yalin “Two-Photon Absorption Laser Induced Fluorescence (TALIF) Of Neutral Xenon In A Hall Effect Thruster Plasma”, 2021 AIAA Propulsion and Energy Forum, Virtual Event, August, 2021 (AIAA 2021-3391)
21. *Carter Butte , Parneeth Lokini, Ciprian Dumitrache and Azer P. “Single and Dual-Pulse Laser Ignition of Methane-Air and Hydrogen-Air Mixtures”, 2020 AIAA Scitech, Orlando FA (AIAA 2020-1893)
22. *Carter Butte, Ciprian Dumitrache, Azer Yalin “Dual-Pulse Laser Ignition Using Oxygen REMPI Preionization”, 2019 AIAA Aviation, Dallas, TX (AIAA 2019-3117)
23. C. Rose, S. Simpson, S. Patel, A.P. Yalin “Preliminary Schlieren and Optical Emission Diagnostics of a High-Voltage Laser Triggered Switch” 2019 AIAA Aviation, Dallas, TX (AIAA 2019-3252)
24. Carter Butte, Ciprian Dumitrache, Azer Yalin “Properties of Dual-Pulse Laser Plasmas and Ignition Characteristics in Propane-Air and Methane-Air Mixtures”, 2019 AIAA SciTech Forum, San Diego, CA (AIAA 2019-0464)

25. A.J. Friss and A.P. Yalin “Electron Temperature and Density Measurements in a Low-Power Hollow Cathode Discharge by Cavity Enhanced Thomson Scattering” 2019 AIAA SciTech Forum, San Diego, CA (AIAA 2019-0192)
26. A.J. Friss, T. Wegner, *A.P. Yalin “Fiber Coupled Cavity Enhanced Thomson Scattering Diagnostic for Use in Electric Propulsion Facilities” IEPC-2019-689, 36th International Electric Propulsion Conference (IEPC), Vienna, Austria, September, 2019
27. T. Wegner, A.J. Friss, C. Dumitrache, A.P. Yalin “Two-Photon Absorption Laser Induced Fluorescence (TALIF) of Ground State Neutral Xenon” IEPC-2019-A-663, 36th International Electric Propulsion Conference (IEPC), Vienna, Austria, September, 2019
28. *Ciprian Dumitrache, Carter Butte, Andrew Eickelberg, and Azer P. Yalin. "On the Use of REMPI Pre-Ionization for Laser Plasma Formation", 2018 AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, (AIAA 2018-1431)
29. *Ciprian Dumitrache and Azer P. Yalin. "Numerical Modeling of the Hydrodynamics Induced by Dual-Pulse Plasma", 2018 AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, (AIAA 2018-0689)
30. Zdanowicz, A., Mohr, J., Bhoite, S., Baumgardner, M., Tryner, J., Dumitrache, C., Yalin, A. and Marchese, A. J. (2018). “Characterization of Knock Propensity via Observations of End-Gas Autoignition from Laser Ignited, Premixed Flames in a Rapid Compression Machine”, 2018 Spring Technical Meeting of the Western States Section of the Combustion Institute, Bend, OR, March 2018
31. William Lassman, J. Ham, A. Yalin, and J. R. Pierce “Estimating the Added Value of Different Measurement Platforms toward Determining Atmospheric Ammonia Concentrations and Deposition Rates Downwind of a Feedlot” American Meteorological Society, Austin, TX, January 2018
32. C. Dumitrache, R. VanOsdol, C. Limbach, and A. Yalin “Demonstration of a Dual-Pulse Laser Heating Technique for Ignition of Propane-Air Mixtures” 10th US National Combustion Meeting, CollegePark, MD, April 2017
33. S. Bhoite, C. Dumitrache, A. Yalin, and A. Marchese “Computational Study of Laser Ignition of Premixed Fuel Air mixtures in a Rapid Compression Machine” 10th US National Combustion Meeting, College Park, MD, April 2017
34. Adam Friss and Azer P. Yalin “Status Update: Cavity-Enhanced Thomson Scattering for Electron Measurements in Electric Propulsion Devices” 35th International Electric Propulsion Conference, Atlanta, GA, October 2017
35. Ciprian Dumitrache , Rachel VanOsdol , Christopher M. Limbach , Azer Yalin “Laser Ignition of Propane-Air Mixtures Using a Dual-Pulse Technique” AIAA SciTech Meeting, AIAA 2017-1976, Grapevine, TX, January 2017
36. *Adam Friss and Azer Yalin “Further Development of Cavity Enhanced Thomson Scattering for Plasma Thruster Diagnostics” 53rd AIAA/SAE/ASEE Joint Propulsion Conference, AIAA 2017-4972, Atlanta, GA, June 2017
37. C. Dumitrache, M. Baumgardner, A. Boissiere, A. Maria, J. Roucis, A. Marchese, A.P. Yalin “A Study of Laser Induced Ignition of Methane-Air Mixtures Inside a Rapid Compression Machine”, 36th International Symposium on Combustion, Seoul, Korea, August 2016.
38. C.M. Limbach, C. Dumitrache, A.P. Yalin “Laser Light Scattering from Equilibrium, High Temperature Gases: Limitations on Rayleigh Scattering Thermometry” AIAA 2016-3381, 47th AIAA Plasmadynamics and Lasers Conference, AIAA Aviation, Washington, DC June 2016.
39. C.M. Limbach, R. Robinson, D. Adams, M. Wilbanks, A.P. Yalin “Toward a Microscopic Study of Laser Interactions with Levitated Liquid Fuel Droplets” AIAA 2016-3382, 47th AIAA Plasmadynamics and Lasers Conference, AIAA Aviation, Washington, DC June 2016.
40. C. Dumitrache, C.M. Limbach, A.P. Yalin “Laser Thermal Ignition Using a Dual-Pulse Approach” AIAA 2016-0460, 54th AIAA Aerospace Sciences Meeting, AIAA SciTech, San Diego, CA, January 2016.
41. A. Friss, C.M. Limbach, A.P. Yalin “Development of a Cavity Enhanced Thomson and Raman Scattering Diagnostic” AIAA 2016-1698, 54th AIAA Aerospace Sciences Meeting, AIAA SciTech, San Diego, CA, January 2016.

42. C. Dumitrache, A. Yalin “Laser-Induced Heating Using a Non-Resonant Dual-Pulse Approach with Application to Laser Ignition” AIAA 2015-2658, 46th AIAA Plasmadynamics and Lasers Conference, Dallas, TX, June 2015
43. C. Dumitrache, C. Rose, A. Yalin “Towards Laser Ignition by Rapid Heating of Water Vapor” 46th AIAA Plasmadynamics and Lasers Conference, Dallas, TX, June 2015
44. Ciprian Dumitrache, Andrew J. Boissiere, Marc E. Baumgardner, Amir Maria, John Roucis, Anthony J. Marchese, Azer P. Yalin “Fundamental Studies of Laser Ignition of Natural Gas/Air Mixtures at Elevated Temperatures and Pressures” 9th U. S. National Combustion Meeting (Central States Section of the Combustion Institute), Cincinnati, Ohio, 2015
45. Ciprian Dumitrache, Andrew Boissiere, Marc E. Baumgardner, Anthony J. Marchese, Azer P. Yalin, Amir Maria, John Roucis “Laser Ignition of Methane-Air Mixtures: An investigation of the Lean Limit and Minimum Ignition Energy”, 3rd Laser Ignition Conference, Argonne, IL, April 2015
46. Ciprian Dumitrache, Marc Baumgardner, Andrew Boissiere, Anthony J. Marchese, Azer Yalin, Amir Maria, John Roucis “Laser Ignition of Methane-Air Mixtures with a Rapid Compression Machine” AIAA 2015-1831, 53rd AIAA Aerospace Sciences Meeting, Kissimmee, Florida, January 2015
47. Sean Walsh, John Williams, Azer Yalin “Laser Induced Fluorescence Measurements of Xenon Ion Velocity Distributions near Ceramic Surfaces” AIAA 2015-1828, 53rd AIAA Aerospace Sciences Meeting, Kissimmee, Florida, January 2015
48. C. Dumitrache, A.P. Yalin, M. Shneider “Laser Generated Plasma Using a Dual Pulse Approach with Application to Laser Ignition” AIAA-2014-2071,45th AIAA Plasmadynamics and Lasers Conference, Atlanta, GA, 2014
49. C. Dumitrache, J. Rath, S. Gupta, A.P. Yalin “Development of a Photonic Crystal Fiber Delivery System for Laser Ignition of Engines” AIAA-2014-2074,45th AIAA Plasmadynamics and Lasers Conference, Atlanta, GA, 2014
50. Adam Friss, Brian Lee, Isaiah Franka, and Azer Yalin “Towards a Cavity Enhanced Thomson Scattering Diagnostic for Electric Propulsion Research” IEPC-2013-351, 33rd International Electric Propulsion Conference, Washington, D.C., USA 2013
51. Brian C. Lee, Azer P. Yalin, Alec Gallimore, Wensheng Huang and Hani Kamhawi “Real-Time Boron Nitride Erosion Measurements of the HiVHAc Thruster via Cavity Ring-Down Spectroscopy” IEPC-2013-119, 33rd International Electric Propulsion Conference, Washington, D.C., USA 2013
52. Adam Friss, Isaiah Franka, Brian Lee, Azer Yalin, 2013, “Cavity Enhanced Thomson Scattering for Diagnostics of Weakly Ionized Discharges” AIAA-2013-2763 44th AIAA Plasmadynamics and Lasers Conference, San Diego, CA, July 2013
53. Ciprian Dumitrache, Mikhail Shneider, Azer Yalin, 2013, “Laser Plasma Formation in Air Using Dual Pulse Pre-Ionization” AIAA-2013-2632 44th AIAA Plasmadynamics and Lasers Conference, San Diego, CA, July 2013
54. *Azer P. Yalin, Sachin Joshi, Nick Wilvert, 2013, “Fiber Optic Delivered Laser Ignition Systems”, 1st Laser Ignition Conference, Pacifico Yokohama, Japan (Invited Talk)
55. *Azer P. Yalin, 2013, “Application of Laser Ignition to Aero-Turbines”, 1st Laser Ignition Conference, Pacifico Yokohama, Japan
56. Brian Lee, Josh Taylor, Randy Leach, Alec Gallimore, Azer Yalin, 2013, “Boron Nitride Erosion Measurements of an SPT-70 Hall Thruster via Cavity Ring-Down Spectroscopy”, JANNAF – 6th Space Propulsion Meeting, Colorado Springs, CO, April 2013
57. *Nick Wilvert, Sachin Joshi, Azer P. Yalin, 2013, “Ultraviolet Laser Plasma Preionization and Novel Thomson Scattering Method for Weakly Ionized Discharges”, 51st AIAA Aerospace Sciences Meeting, Grapevine, TX, AIAA-2013-0205, January 2013
58. *Sachin Joshi, Nick Wilvert, Azer P.Yalin, 2012, “On Comparative Performance Of Engine With Large Clad Silica Fiber Delivered Laser Ignition And Electrical Ignition” ASME Internal Combustion Engines Conference, ICEF-2012-92007, Vancouver, Canada
59. Y. Choi, S. Zhou, P. Stoltz, S. Joshi, A. Yalin, 2012, “Simulation And Measurement Of The Laser Induced Breakdown In Air And Argon For Nanosecond Order Pulses” ASME Internal Combustion Engines Conference, ICEF-2012-92087, Vancouver, Canada

60. *A.P. Yalin, 2012, “Laser Ignition: Aerospace Applications and Research Directions”, 43rd AIAA Plasmadynamics and Lasers Conference, New Orleans, LA, June 2012 (Invited Talk – No Written Paper)
61. N. Yamamoto, H. Nakashima, A.P. Yalin, 2012, “Dependence of lifetime on magnetic field configuration in a Hall thruster” AIAA-2012-3791 44th AIAA Joint Propulsion Conference, Atlanta, GA, July 2012
62. Brian Lee, Kevin Lehmann, Azer Yalin, 2012 “Ultraviolet Cavity Ring-Down Spectroscopy for Trace Species Detection”, 50th AIAA Aerospace Sciences Meeting, Nashville, TN, January 2012 (Invited Talk – No Written Paper)
63. *Frank Loccisano, Azer Yalin, Sachin Joshi, Isaiaha Franka, Zhiyao Zin, Walter Lempert, 2012 “Fiber Coupled Ultraviolet Planar Laser Induced Fluorescence of OH Radical” AIAA-2012-1059, 50th AIAA Aerospace Sciences Meeting, Nashville, TN, January 2012
64. *Jordan Rath, Isaiah Franka, Brian Lee, Chris Hagen, Mark Cappelli, Azer Yalin, 2012 “Electric Field Measurements in Gases Using Cavity Enhanced Polarimetry” AIAA-2012-0988, 50th AIAA Aerospace Sciences Meeting, Nashville, TN, January 2012
65. Brian C. Lee, Lei Tao, Josh Taylor, Azer P. Yalin, Alec Gallimore 2011 “Sensitivity Improvements to Laser Sensor for Boron Nitride Erosion in Hall Thrusters” 32nd International Electric Propulsion Conference, IEPC-2011-068, Wiesbaden, Germany
66. Lei Tao, Azer P. Yalin, 2011 “Velocity Profiles of Boron Atoms Sputtered from Boron Nitride by Low Energy Xenon Ions” 32nd International Electric Propulsion Conference, IEPC-2011-067 (Poster), Wiesbaden, Germany
67. Azer P. Yalin, et al. 2011 “Effect of Ion Sputtering on Transmission of Coverglass withMagnesium Fluoride Coating” 32nd International Electric Propulsion Conference, IEPC-2011-066, Wiesbaden, Germany
68. W. Huang, A.D. Gallimore, T.B. Smith, Azer P. Yalin, “The Technical Challenges of using Cavity Ring-Down Spectroscopy to Study Hall Thruster Channel Erosion” 32nd International Electric Propulsion Conference, IEPC-2011-030, Wiesbaden, Germany
69. Sachin Joshi, Azer P. Yalin, 2011 “Fiber Delivery Of High Power Nanosecond Pulses For Ignition In Aerospace Engines” IEEE - AVFOP 2011, Avionics, Fiber-Optics and Photonics Conference, San Diego, CA, October 2011
70. Wensheng Huang, Alec D. Gallimore, Timothy B. Smith, Lei Tao, and Azer P. Yalin 2011 “Initial Cavity Ring-Down Density Measurement on a 6-kW Hall Thruster”, AIAA 47th Joint Propulsion Conference, AIAA-2011-5994, San Diego, CA, July 2011
71. Giulia Damonte, Emanuele Ferrando, Angelo Cervone, Alessandro Vicini, Azer Yalin, Gianfelice D’Accolti, 2011, “Study Results on Ion Thruster Plume Effects on Solar Array Interfaces”, 9th European Space Power Conference (ESPC), June 2011, San-Raphael, France
72. L. Tao, A.P. Yalin, 2010, “LIF Velocity Measurement of Sputtered Boron Atoms from Boron Nitride Target”, AIAA 46th Joint Propulsion Conference, AIAA-2010-6526, Nashville, July 2010
73. R.M.Sullenberger, W. Munoz, M.P. Lyon, K. Vogel, A.P. Yalin, V. Korman, K.A. Polzin, 2010, “Optical Mass Gauging System for Measuring Liquid Levels in a Reduced Gravity Environment”, AIAA 46th Joint Propulsion Conference, AIAA-2010-7132, Nashville, July 2010
74. S.Joshi, F.Loccisano, A.P.Yalin, D.T. Montgomery, 2010 “On comparative performance testing of prechamber and open chamber laser ignition”, ASME Internal Combustion Engine Fall Technical Conference, ICEF 2010-35058
75. *A.P. Yalin, F. Loccisano, S. Joshi, Z. Zhang, M. Schneider, 2010 “Pre-Ionization Controlled Laser Plasma Formation for Ignition Applications”, AIAA 41st Plasmadynamics and Lasers Conference, AIAA-2010-4307, Chicago, June 2010
76. *S.Joshi, A.P.Yalin, A D’Angola, G.Colonna, C.Dumitrescu, P.V.Puzinauskas, H.El-Rabii, 2010 “A Time Resolved Spectroscopic Study of Laser Generated Plasmas in Air at High Pressures”, AIAA 41st Plasmadynamics and Lasers Conference, AIAA-2010-4309, Chicago, June 2010

77. *A.P. Yalin, J. Topper, B. Rubin, 2010 “Quartz Crystal Microbalance Based System for Angularly Resolved Sputter Yield Measurements” Invited talk for 2010 Society of Vacuum Coaters TechCon, Orlando, FL
78. W. Huang, T. B. Smith, C. J. Durot, A. D. Gallimore, A.P. Yalin, 2010 “Development of a Cavity Ring-Down Diagnostic for Studying Hall Thruster Channel Erosion” Joint Army Navy NASA Air Force (JANNAF) Propulsion Meeting, Colorado Springs, CO
79. B. Lee, K. Lehmann, A.P. Yalin, 2010 “Optical Loss Characterization of CaF2 in the Ultraviolet Region for Prism Retroreflectors” Conference on Lasers and Electro Optics, CMT3, San Jose, CA
80. L. Tao, B. Lee, A.P. Yalin, N. Yamamoto, A. Gallimore, 2009 “Development of a Cavity Ring-Down Spectroscopy Sensor for Boron Nitride Erosion in Hall Thrusters ” 31st International Electric Propulsion Conference, IEPC-2009-146, Ann Arbor, MI
81. B. Rubin, J. Topper, and A.P. Yalin, 2009 “Total and Differential Sputter Yields of Boron Nitride Measured by Quartz Crystal Microbalance” 31st International Electric Propulsion Conference, IEPC-2009-042, Ann Arbor, MI
82. J. Topper B. Rubin, C.C. Farnell, and A.P. Yalin, 2009 “Quartz Crystal Microbalance-Based System for High-Sensitivity Differential Sputter Yield Measurement” 31st International Electric Propulsion Conference, IEPC-2009-045, Ann Arbor, MI
83. N. Yamamoto, L. Tao, Y. Arakawa, M. Oya, H. Nakashima, A.P. Yalin 2009 “Lifetime estimation in a Hall thruster using continuous-wave cavity ring-down spectroscopy” 49th Propulsion Conference, The Japanese society for aeronautical and space science (Japanese Proceedings)
84. N. Yamamoto, L. Tao, A. P.Yalin, 2009 “Development of Real-time Erosion Monitoring System for Hall Thrusters by Cavity Ring-Down Spectroscopy” 27th Int. Symposium on Space Technology and Science, ISTS 2008-b-11, Japan
85. *A.P. Yalin, B. Rubin, J. Topper, C. Farnell, 2009 “Differential Sputter Yield Measurements of Single- and Multi-Element Targets due to Ion Beam Bombardment”, 2009 Society of Vacuum Coaters TechCon, Santa Clara, CA, USA
86. A.P. Yalin, L. Tao, N. Yamamoto, 2009 “Laser-Based Sensor for Real Time Sputter Monitoring and End Point Detection in Ion Beam Etch Systems”, 2009 Society of Vacuum Coaters TechCon, Santa Clara, CA, USA
87. * A.P. Yalin, L. Tao, R. Sullenberger, M. Oya, N. Yamamoto, T.B. Smith, A.D. Gallimore 2008, “High-Sensitivity Boron Nitride Sputter Erosion Measurements by Continuous-Wave Cavity Ring-Down Spectroscopy”, 44th AIAA Joint Propulsion Conference, AIAA-2008-5091, Hartford, CT, USA
88. *J. Topper, B. Rubin, A.P. Yalin, 2008, “Low Energy Sputter Yields Of Boron Nitride due to Xenon Ion Bombardment”, 44th AIAA Joint Propulsion Conference, AIAA-2008-5092, Hartford, CT, USA
89. N. Yamamoto, A.P. Yalin, L. Tao, T.B. Smith, A.D. Gallimore, Y. Arakawa, 2008, “Development of Real-time Boron Nitride Erosion Monitoring System for Hall Thrusters by Cavity Ring-Down Spectroscopy” 26th Int. Symposium on Space Technology and Science, ISTS 2008-b-21, pp. 254-259 Japan
90. *S. Joshi, A. Reynolds, B. Willson, A.P. Yalin, 2007, “Design and Bench-Top Testing of Multiplexed Fiber Delivered Laser Ignition System for Natural Gas Engines” ICE Division – ASME Fall Technical Conference, ICEF 2007-1617, Charleston, SC
91. B. Rubin, A.P. Yalin, 2007, “Total and Differential Sputter Yields Of Boron Nitride measured by Quartz Crystal Microbalance and Weight Loss”, 30th International Electric Propulsion Conference, IEPC-2007-074, Florence, Italy
92. A.P. Yalin, L. Tao, N. Yamamoto, T. Smith, A. Gallimore, 2007, “Boron Nitride Sputter Erosion Measurements by Cavity Ring-Down Spectroscopy”, 30th International Electric Propulsion Conference, IEPC-2007-075, Florence, Italy
93. *V. Surla, L. Tao, A.P. Yalin, 2007, “Species-Specific Sputtering Measurements with Cavity Ring-Down Spectroscopy”, 43rd AIAA Joint Propulsion Conference, AIAA-2007-5315, Cincinnati, OH, CA

94. *A.P. Yalin, B. Rubin, S. Domingue, Z. Glueckert, J.D. Williams, 2007, "Differential Sputter Yields Of Boron Nitride, Quartz, and Kapton Due to Low Energy Xe+ Bombardment", 43rd AIAA Joint Propulsion Conference, AIAA-2007-5314, Cincinnati, OH, CA
95. *A.P. Yalin, S. Joshi, A. Reynolds, M. Defoort, B. Willson, A. Galvanauskas, Y. Matsuura, M. Miyagi, 2006, "Fiber Delivered Systems for Laser Ignition of Natural Gas Engines" ICE Division – ASME 2006 Fall Technical Conference, ICEF 2006-1574, Sacramento, CA
96. A.P. Yalin, V. Surla, C. Farnell, M. Butweiller, and J.D. Williams, 2006, "Sputtering Studies of Multi-Component Materials by Weight Loss and Cavity Ring-Down Spectroscopy", 42nd AIAA Joint Propulsion Conference, AIAA-2006-4338, Sacramento, CA, July
97. A.P. Yalin, K. Zoerb, J.D. Williams, 2006, "Azimuthal Differential Sputter Yields of Molybdenum by Low Energy Xe+ Bombardment," 42nd AIAA Joint Propulsion Conference, AIAA-2006-4336, Sacramento, CA
98. *A.P. Yalin, S. Joshi, M. DeFoort, B. Willson, A. Reynolds, Y. Matsuura, M. Miyagi, 2006, "Development of a Fiber Delivered Laser Ignition System for Natural Gas Engines", ICE Division – ASME Spring Technical Conference, ICEF 2006-1370, Aachen, Germany
99. K.A. Zoerb, J.D. Williams, D. Williams, A.P. Yalin, 2005, "Differential Sputtering Yields of Refractory Metals by Xenon, Krypton, and Argon Ion Bombardment at Normal and Oblique Incidences", IEPC-2005-293, 29th International Electric Propulsion Conference, Princeton, NJ
100. A. Sengupta et al, 2005, "An Overview of the VHITAL Program: A Two-Stage Bismuth Fed Very High Specific Impulse Thruster With Anode Layer", IEPC-2005-238, 29th International Electric Propulsion Conference, Princeton, NJ
101. *A.P. Yalin, V.Surla, 2005, "Determination of Number Density and Velocity of Sputtered Particles by Cavity Ring-Down Spectroscopy", IEPC-2005-300, 29th International Electric Propulsion Conference, Princeton, NJ
102. A.P. Yalin, V.Surla, J.D. Williams, 2005, "Erosion Measurements by Cavity Ring-Down Spectroscopy for the VHITAL Program", IEPC-2005-299, 29th International Electric Propulsion Conference, Princeton, NJ
103. C. Marrese-Reading et al, 2005, "The VHITAL Program to Demonstrate the Performance and Lifetime of a Bismuth-Fueled Very High Isp Hall Thruster", AIAA Joint Propulsion Conference, AIAA-2005-4564, Tuscon, AZ
104. *A.P. Yalin, M.W. Defoort, S. Joshi, B. Willson, Y. Matsuura, M. Miyagi, 2005, "Laser Ignition of Natural Gas Engines using Fiber Delivery", ICE Division – ASME Fall Technical Conference, ICEF- 2005-2336, Ottawa, Canada
105. *D. Ahrens, D. Olsen, A.P. Yalin, 2005, "Development of an Open Path Laser Ignition System for a Large Bore Natural Gas Engine: Part 2 On-Engine Test Results", ICE Division – ASME Fall Technical Conference, ICEF-2005–1317, Ottawa, Canada
106. D.L. Ahrens, A.P. Yalin, D.B. Olsen, G.-H. Kim, 2005, "Development of an Open Path Laser Ignition System for a Large Bore Natural Gas Engine: Part 1 System Design", ICE Division – ASME Spring Technical Conference, ICES-2005–1060, Chicago, USA
107. *A.P. Yalin, V. Surla, J.D. Williams, P.J. Wilbur, 2004, "Application of Cavity Ring-Down Spectroscopy to Sputter Erosion Measurements", Laser Applications to Chemical and Environmental Analysis (LACEA), Optical Society of America, Annapolis, MD
108. J. Blandino, N. Gatsonis, M. Cappelli, A. Gallimore et al., 2003, "Overview of Electric Propulsion Research in U.S. Academia", Joint Propulsion Conference, AIAA-2003-4442, Huntsville, AL
109. Y.Z. Ionikh, N.V. Chernysheva, A.P. Yalin, S. O. Macheret, L. Martinelli, R.B. Miles, 2000, "Shock Wave Propagation Through Glow Discharge Plasmas: Evidence of Thermal Mechanism of Shock Dispersion", 38th Aerospace Sciences Meeting and Exhibition, AIAA-2000-0714, Reno, NV
110. *A.P. Yalin, Y.Z. lonikh, A. Meshchanov, R.B. Miles, 2000, "2-D Temperature fields in glow discharges measured with ultraviolet filtered Rayleigh scattering", 38th AIAA Aerospace Sciences Meeting and Exhibit, AIAA-2000-0375, Reno, NV

111. *A.P. Yalin, Y.Z. lonikh, R.B. Miles, 1999, "Temperature measurements in glow discharges with ultraviolet filtered Rayleigh scattering", 30th AIAA Plasmadynamics and Lasers Conference, AIAA-99-3431, Norfolk, VA
112. *A.P. Yalin, R.B. Miles, 1999, "Ultraviolet filtered Rayleigh scattering temperature measurements using a mercury filter", 37th AIAA Aerospace Sciences Meeting and Exhibit, AIAA-99-0642, Reno, NV
113. *A.P. Yalin, N.D. Finkelstein, W.R. Lempert, R.B. Miles, 1998, "Ultraviolet rotational Raman spectroscopy with an atomic resonance filter", 36th AIAA Aerospace Sciences Meeting & Exhibit, AIAA-98-0311, Reno, NV
114. *M.L Baumgartner, P.J. Erbland, M.R. Etz, A.P. Yalin, B.K. Muzas, A.J. Smits, W.R. Lempert, R.B. Miles, 1997, "Structure of a Mach 8 turbulent boundary layer", 35th AIAA Aerospace Sciences Meeting, AIAA-97-0765, Reno, NV
115. *P.J. Erbland, M.L Baumgartner, A.P. Yalin, M.R. Etz, B.K. Muzas, W.R. Lempert, A.J. Smits, R.B. Miles, 1997, "Development of planar diagnostics for imaging Mach 8 flowfields using carbon dioxide and sodium seeding", AIAA 35th Aerospace Sciences Meeting, AIAA Paper 97-0154, Reno, NV
116. *A.P. Yalin, W.R. Lempert, M.R. Etz, P.J. Erbland, A.J. Smits, R.B. Miles, 1996, "Planar imaging in a Mach 8 flow using sodium laser-induced fluorescence", 19th AIAA Advanced Measurement and Ground Testing Technology Conference, AIAA-96-2270, New Orleans, LA

Refereed Conference Talks, Posters, and Abstracts – See also Invited Talks Section below:
(* indicates I presented paper at Conference)

1. W. Chen, G. Wang, R. Cui, A. Yalin, H. Yi, C. Coeur, L. Dong 2023 "Chemical sensing of trace gases and particulate matter with optical cavities" CLEO/Europe-EQEC 2023, June 26 – 30, Munich, Germany
2. R. Cui, G. Wang, A. Yalin, L. Meng, C. Coeuer, L. Dong, W. Chen 2023 "Development of a high-finesse broadband optical cavity using prism based on total internal reflection for applied spectroscopy" EGU23-5828, European Geophysical Union General Assembly, Vienna, Austria, https://doi.org/10.5194/egusphere-egu23-5828
3. G. Wang et al., "Prism-based Cavity Enhanced Absorption Spectroscopy for Broadband Trace Gas Sensing" Laser Applications to Chemical, Security and Environmental Analysis 2022 Vancouver, British Columbia Canada 11–15 July 2022, https://doi.org/10.1364/LACSEA.2022.LTh5E.4
4. Ciprian Dumitrache and Azer Yalin "Vorticity Dynamics in Laser-induced Plasma" 19th International Conference On Plasma Physics And Applications - CPPA 2021, Magurele-Bucharest, Romania, 2021
5. *Ciprian Dumitrache, Carter Butte, and Azer Yalin "Comparison of Non-Resonant and Resonant Preionization for Dual-Pulse Laser Plasma Ignition in Air" Gaseous Electronics Conference (Online), 2020
6. Weidong Chen, Gaoxuan Wang, Lingshuo Meng, Qian Gou, Azer Yalin, Tong Nguyen, Cécile Coeur, and Alexandre Tomas "Prism-based Broadband Optical Cavity (400 – 1600 nm) for High-Sensitivity Trace Gas Sensing by Cavity Enhanced Absorption Spectroscopy" EGU General Assembly 2020 (EGU 2020-4213)
7. B. Jorns and A. Yalin et al "Electric Propulsion Research in Academia - A White Paper submitted for the 2020 Decadal Assessment of Plasma Science" 2019
8. W. Lassman, A. Yalin, J. M. Ham, J. L. Collett Jr., and J. R. Pierce "Methods of Estimating Deposition Using Atmospheric Concentration Measurements: Using Synthetic Observations Downwind of a CAFO to Quantify Ammonia Deposition" 99th Annual Meeting of the American Meteorological Society (AMS), Phoenix, AZ, January 2019.
9. S.C. Simpson, A. Yalin, R.S. Goeke, J. Matthew Lane, K. Dezetter "Developing Automated Algorithms for Determining Desorption Energy, Kinetic Order of Desorption, and the Pre-Exponential Factor for Neutral Gas Desorption: Initial Results for 304L, Fe2O3, and Ni" GC LDRD Poster Session, Sandia National Laboratories, Albuquerque, NM, 2019.

10. Invited: L. McHale, B. Martinez, T. Miller, A.P. Yalin "Open-Path Cavity Ring-Down Sensor for Mobile Detection of Methane Emissions", PIERS 2019, Rome, Italy, June, 2019
11. J. Sipich, J. Volckens, C. L'Orange, A.P. Yalin, K. Anderson, C. Limbach "Development of a Direct-Reading Inhalable Particle Sizer with Elemental Composition Analysis" American Association for Aerosol Research (AAAR) Conference, Portland, OR, October 2019
12. S. Simpson, O. Johns, D. Nielsen, J. Leckbee, M.L. Kiefer, C. Rose, C. Dumitrache, A. Yalin "Triggering of a High Pressure Air-filled High Voltage Spark Gap Switch Using Laser Induced Plasmas Resulting in Sub-nanosecond Jitter at Low Percentages of Self-Break" 2017 IEEE Pulsed Power Conference, Brighton, England, June 2017
13. *A.P. Yalin, L.E. McHale, S. Shadman "Measurement Of Agricultural Emissions Using Laser Sensors On Unmanned Aerial Systems" OSA – Optics and Photonics for Energy and the Environment, NCAR, Boulder, CO, November 2017
14. C. Dumitrache, C. Limbach, A. Yalin "A Study of Flame Dynamics Induced by a Dual-Pulse Laser Ignition Technique" International Conference on Plasma Science, Atlantic City, NJ, May 2017
15. A. DeMario, E. Plewka, P. Lopez, R. Wix, H. Xia, E. Zamora, D. Gessler, A.P. Yalin "Water Temperature Measurements by an Unmanned Aerial System (UAS) of Powerplant Hot Water Discharges" The Geological Society of America - Cordilleran Section - 113th Annual Meeting, Hawaii, May 2017
16. Betsy M. Farris, Eben Thoma, Parikshit J. Deshmukh, Azer P. Yalin "Open-Path Hydrocarbon Laser Sensor for Oil and Gas Facility Monitoring", AWMA - Air Quality Measurement Methods And Technology, Long Beach, CA November 2017
17. Azer P. Yalin "Cavity Ring-Down Spectroscopy Plasma Diagnostics" AIAA SciTech Meeting, Grapevine, TX, January 2017
18. X. Zhou, A. Montazeri, L. McHale, S. Gassner, D. Lyon, B. Trask, J. Gu, A.P. Yalin, J.D. Albertson "Characterization of methane and volatile organic compounds (VOCs) emissions from natural gas production sites: a mobile sensing approach", American Geophysical Union, New Orleans, LA, December 2017
19. L.E. McHale, C. P. Rose, T. W. Miller, A. P. Yalin "Mobile Field Measurements of Methane Gas Using Open-Path Cavity-Ring-Down Spectroscopy", International Global Chemistry (IGAC), Breckenridge CO, September 2016
20. B. Farris, E. Thoma, P.J. Deshmukh, A.P. Yalin "Open-Path Hydrocarbon Laser Sensor for Oil and Gas Facility Monitoring", International Global Chemistry (IGAC), Breckenridge CO, September 2016
21. S. Shadman A.P. Yalin "Open-path laser based sensors for measurements of ammonia in the atmosphere", International Global Chemistry (IGAC), Breckenridge CO, September 2016
22. C. Dumitrache, C. M. Limbach, A. P. Yalin "Properties Of Ultraviolet And Near-Infrared Laser Induced Air Plasmas And Their Application For Spark Ignition" Paper 7C-6, International Conference on Plasma Science (ICOPS), Banff, AB, Canada, June 2016
23. A.J. Friss, C. M. Limbach, A. P. Yalin " Development Of Cavity Enhanced Raman And Thomson Scattering Diagnostics" Paper 5F-2, International Conference on Plasma Science (ICOPS), Banff, AB, Canada, June 2016
24. Azer P. Yalin, Laura E. McHale, Soran Shadman, Charles Rose "Open-Path Cavity Ring-Down Spectroscopy Sensors for Atmospheric Measurements" Invited Talk, Paper ATh3J.1, Conference on Lasers and Electro-Optics (CLEO), Optical Society of America, San Jose, CA, 2016
25. Ciprian Dumitrache , Christopher M. Limbach, Azer P. Yalin "Novel Approach to Laser Ignition Using a Gas Pre-ionization Technique" Western States Section Combustion Institute 2016 Spring Meeting, Seattle, WA 2016 (Talk)
26. Jessica Tryner, Qiang An, Jeffrey Mohr, Adam Steinberg, Azer P. Yalin, Anthony J. Marchese "High-Speed OH and Acetone PLIF Imaging of an Inverse Non-Premixed Cross-Flow Flame" Western States Section Combustion Institute 2016 Spring Meeting, Seattle, WA 2016 (Talk)

27. L. McHale, S. Shadman, A.P. Yalin "Effects of Particles on Trace-Gas Measurement Using Open-Path Cavity Ring-Down Spectroscopy" American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, December 2015 (Talk)
28. S. Shadman, L. McHale, A.P. Yalin "Open Path Trace Gas Laser Sensors for UAV Deployment" American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, December 2015 (Poster)
29. K. Anderson, S. Walsh, A. Yalin, J. Volckens "Design and Optimization of an Optical Detector for the Portable Inhalable Particle Sizer" American Association for Aerosol Research (AAAR), Minneapolis, MN, October 2015 (Talk)
30. L. McHale, S. Shadman, A.P. Yalin "Development of Open-Path Cavity Ring-Down Spectroscopy Sensors for Methane and Ammonia" 11th International User Meeting and Summer School on Cavity Enhanced Spectroscopy, Boulder, CO, June 2015 (Talk)
31. Ciprian Dumitrache, Charles Rose, Azer P. Yalin "Towards Laser Ignition by Rapid Heating of Water Vapor in Air", 3rd Laser Ignition Conference, Argonne, IL, April 2015 (Talk)
32. Ciprian Dumitrache, Charles Rose, Azer P. Yalin "Towards Laser Ignition by Rapid Heating of Water Vapor in Air", 5th EUCASS Aerospace Thematic Workshop: Fundamentals of Aerodynamic Flow and Combustion Control by Plasmas, Les Houches, France, April 2015 (Poster)
33. Ciprian Dumitrache, Marc Baumgardner, Andrew Boissiere, Anthony J. Marchese, Azer Yalin, Amir Maria, John Roucis "Laser Ignition Studies of Methane/Air Mixtures in a Rapid Compression Machine" 5th EUCASS Aerospace Thematic Workshop: Fundamentals of Aerodynamic Flow and Combustion Control by Plasmas, Les Houches, France, April 2015 (Poster)
34. T. Grumstrup, A.J. Marchese, A.P. Yalin, F.L. Dryer, T. Farouk "Planar laser-induced fluorescence spectroscopy and simulations of ignition and combustion of freely falling alkane, alcohol, and methyl ester droplets" 35th Combustion Institute Symposium, San Francisco, CA August, 2014 (Poster)
35. *Brian C. Lee and Azer P. Yalin "Atomic Boron Speed Distribution Measurements in the Plume of a Hall Thruster Using Laser-Induced Fluorescence" International Conference on Plasma Science, Washington, DC, 2014 (Talk)
36. Sean P. Walsh, Jordan L. Rath, Azer P. Yalin "Laser-Induced Fluorescence Measurements Of Xenon Ion Velocity Distributions Near Ceramic Surfaces" International Conference on Plasma Science, Washington, DC, 2014 (Poster)
37. *A. Yalin, A. Friss, B. Lee, I. Franka, 2013, "Cavity Enhanced Thomson Scattering for Low Temperature Plasmas" 66th Annual Gaseous Electronics Conference, American Physical Society, Princeton, NJ
38. *A.P. Yalin, L. Tao, N. Yamamoto, 2008, "Sputtering Measurements by Cavity Ring-Down Spectroscopy and Application to Electric Propulsion and Plasma Engineering", Laser Applications to Chemical Security and Environmental Analysis (LACSEA 2008), Optical Society of America, St. Petersburg, FL
39. S. Joshi, A.P. Yalin, C. Dumitrescu, S. Olcmen, P. Puzinauskas, 2008, "Laser Ignition and Laser Induced Breakdown Spectroscopy In Engines Using Hollow Core Fiber Delivery", Laser Applications to Chemical Security and Environmental Analysis (LACSEA 2008), Optical Society of America, St. Petersburg, FL
40. A.P. Yalin, M. Defoort, B. Willson, Y. Matsuura, M. Miyagi, M.-Y. Cheng, K.-C. Hou, A. Galvanauskas, 2006, "Fiber Optic Delivery of Nanosecond Laser Pulses for Spark Formation in Gases", Post Deadline Poster - Laser Applications to Chemical Security and Environmental Analysis (LACSEA), Optical Society of America, Tahoe, CA
41. A.P. Yalin, V. Surla, 2006, "High Sensitivity Sputtering Diagnostics by Cavity Ring-Down Spectroscopy", Post Deadline Poster - Laser Applications to Chemical, Security and Environmental Analysis (LACSEA), Optical Society of America, Tahoe, CA, February
42. *A.P. Yalin, S. Joshi, A. Reynolds, B. Willson, A. Galvanauskas, 2006, "Fiber Delivered Systems for Laser Ignition of Nature Gas Engines", 3rd Annual Advanced Stationary Reciprocating Engines Conference, Argonne National Laboratory

43. A.P. Yalin, V. Surla, J.D. Williams, P.J. Wilbur, 2004, "Cavity Ring-Down Spectroscopy Measurements of Electric Propulsion Device Life Time", American Physical Society Mini-Conference on Plasma Propulsion, Savannah, GA, November (2004)
44. R. Rahul et al, 2004, "Radio Frequency Excited Open Air Wedge-Slot Plasmas: Electrical and Optical Characteristics", Second International Workshop on Microplasmas, Hoboken, NJ
45. K. Hoshmiya et al, 2004, "Open Air Operating Characteristics and Applications of RF Driven Slot Plasmas", Second International Workshop on Microplasmas, Hoboken, NJ
46. Z. Machala, A.P. Yalin, C.O. Laux, C.H. Kruger, 2004, "Determinations of the diameter of an atmospheric pressure nitrogen glow discharge by emission and cavity ring-down spectroscopy", 21st Symposium on Plasma Physics and Technology, Prague, Checkoslovakia
47. A. Rahman, A.P. Yalin, V.Surla, K. Hoshmiya, O. Stan, Z. Yu , G.J. Collins, 2004, "Absolute UV and VUV Emission in the 100-400 nm Region from 13.56 MHz Driven Hollow Slot Microplasmas Operating in Open Air", International Conference on Plasma Sciences, Baltimore, MD (1P18)
48. Z.Q. Yu, A. P. Yalin, Z.Q. Yu, O. Stan, K. Hoshimiya, R. Abdur, V. Surla and G.J. Collins, 2003, "Electrical and Optical Emission Characteristics of RF Driven Hollow Slot Microplasmas in Open Air at Atmospheric Pressure", Gaseous Electronics Conference, American Physical Society, San Francisco, CA
49. A. Yalin, Z. Yu, A. Rahman, V. Surla, K. Hoshimiya, S. Ovidu, G. Collins, 2003, "Studies of Optical Emission and Radical Generation from Atmospheric Pressure Plasma Source Powered by RF in a Hollow Slot Electrode Configuration", American Physical Society Meeting, Denver, CO
50. *A. Yalin, J. Williams, P. Wilbur, 2003, "Sputter Yield and Erosion Measurements For Ion Thruster Materials", Advanced Space Propulsion Workshop, Huntsville, Alabama
51. A.P. Yalin, Z. Machala, C.O. Laux, C.H. Kruger, R.N. Zare, 2002, "Optical Emission and Cavity Ring-down Spectroscopy Measurements in an Atmospheric Nitrogen Glow Discharge", Gordon Conference on Plasma Processing Sciences, Tilton School, NH
52. *A.P. Yalin, U. Lommatzsch, R.N. Zare, C.O. Laux, C.H. Kruger, 2001, "Cavity ring-down spectroscopy of N2+ in a Pulsed and DC atmospheric pressure discharge", International Conference on Plasma Sciences, Las Vegas, NV (O3F3)
53. C.H. Kruger, C.O. Laux, D. Packan, L. Yu, A.P. Yalin, R.N. Zare, M. Nagulapally, G. Candler, J.D. Kelley, 2001, "Non-equilibrium discharges in atmospheric pressure air", International Conference on Plasma Sciences, Las Vegas, NV (O2G2)
54. A.P. Yalin, U. Lommatzsch, C.H. Kruger, R.N. Zare, 2001, "Cavity ring-down Spectroscopy in atmospheric pressure plasmas", Western Spectroscopy Conference
55. *A.P. Yalin, Y.Z. lonikh, R.B. Miles, 2000, "Temperature Fields in Glow Discharges Measured with UltraViolet Filtered Rayleigh Scattering", International Conference on Plasma Sciences, IEEE, New Orleans, LA
56. *A.P. Yalin, Y.Z. lonikh, R.B. Miles, 1999, "Temperature measurements in glow discharges using ultraviolet filtered Rayleigh scattering", Gaseous Electronics Conference, American Physical Society, Norfolk, VA
57. *A.P. Yalin, N.D. Finkelstein, R.B. Miles, 1998, "Ultraviolet rotational Raman spectroscopy with a dispersive atomic resonance filter", Conference on Lasers and Electro-Optics, Optical Society of America, San Francisco, CA
58. R.B. Miles, S.O. Macheret, Y.Z. Ionikh, N.D. Finkelstein, A.P. Yalin, 1998, "Measurement of the temperature profile of a weakly ionized plasma by Rayleigh scattering imaged through an atomic filter", International Conference on Plasma Sciences - IEEE, Raleigh, NC

NON-REFEREED PAPERS AND INVITED TAKS AND LECTURES

Conference Papers, Presentations, Posters (Non-Refereed):

1. A. Yalin and V. Blanchard 2024 "Spontaneous Raman Scattering and Optical Emission Spectroscopy Study of Dual-Pulse Laser Induced Plasma with Pre-Ionization", The 4th Annual PCRF User Meeting, September 23-24, 2024

2. A. Yalin, J. Willams 2023 “Electrostatic, Magnetostatic, and Laser Diagnostics of ExB Plasmas” poster for Colorado Plasma Retreat, October 7, Boulder, CO.
3. S. Antozzi, J. Gottfried, J. Williams, S. Thompson, A.P. Yalin “Two-Photon Absorption Laser Induced Fluorescence (TALIF) in a Barium Oxide Hollow Cathode Plasma and a Hall Thruster Plasma” Poster at AIAA Rocky Mountain Section Annual Technical Symposium, September 22, 2023, Colorado State University (Fort Collins, CO)
4. P. Lokini, C. Dumitrache, B. Windon, A.P. Yalin “Laser Ignition of Multi-Phase Flows for Combustion Applications” Poster at AIAA Rocky Mountain Section Annual Technical Symposium, September 22, 2023, Colorado State University (Fort Collins, CO)
5. Parneeth Lokini, Bret Windom, Azer Yalin “Laser Ignition and Laser Induced Breakdown Spectroscopy of a Hydrocarbon Flame in an Annular Spray Burner” Rocky Mountain Fluid Mechanics Research Symposium, University of Colorado, Boulder, August 9th, 2022
6. Azer Yalin “Pre-Ionization Controlled Laser Induced Plasmas for Combustion Applications” National Science Foundation ECLIPSE Meeting 2022, Old Town Alexandria, VA
7. Gaoxuan Wang, Azer Yalin et al. “Development of a Prism-based Broadband Optical Cavity (400 – 1600 nm) for High-Sensitivity Cavity Enhanced Absorption Spectroscopy”, 6th International WORKshop on Infrared Technologies October 29-30, 2019 Princeton University
8. E. Wendt et al. “A low-cost monitor for simultaneous measurement of PM2.5 and aerosol optical depth”, American Association for Aerosol Research, Raleigh, NC, October 2017
9. Azer Yalin “Laser Ignition: From Laboratory Investigation to Real World Application”, Aerospace Thematic Workshop - Fundamentals of Aerodynamic Flow and Combustion Control by Plasmas, Saint Petersburg, Russia April 2017
10. Adam J. Friss and Azer P. Yalin, "Laser Thomson Scattering for Diagnostics of Electric Propulsion Devices," NASA's Science Technology Research Grants Tech Day on the Hill, Washington, D.C., November 2017
11. C. Dumitrache, C. Rose, A.P. Yalin, 2015 “Towards Laser Ignition by Rapid Heating of Water Vapor in Air” CSU Graduate Student Showcase, October 11, Fort Collins, CO (CSU Ventures Drivers of Innovation – Silver Award)
12. A.P. Yalin, 2013, “Versatile and Sensitive Laser Sensors for Trace Gases”, Air Quality and Oil & Gas Development in the Rocky Mountain Region Workshop, October 21-22, Boulder, CO
13. M.Oya, N. Yamamoto, H. Nakashima, L. Tao, R. Sullenberger, A.P. Yalin, 2008, “Sputter erosion measurements of boron nitride by cavity ring-down spectroscopy, The 10th Cross Straits Symposium, Fukuoka.
14. Defoort, A.P. Yalin, B. Willson, Y. Matsuura, M. Miyagi, 2005, “Hollow Core Fibers for Laser Spark Ignition in Natural Gas Engines”, 2nd Annual Advanced Stationary Reciprocating Engines Conference, SCAQMD Headquarters, Diamond Bar, CA
15. Justin Lisowski, Daniel Olsen, Azer Yalin, Sachin Joshi, “Visible Flame Imaging of Prechamber Combustion in a Large Bore Natural Gas Engine” Gas Machinery Research Council, Gas Machinery Conference, Oklahoma City, OK, October (2006)
16. B. Lee, A.P. Yalin "Cavity ring-down spectroscopy in the ultraviolet region using calcium fluoride prism retroreflectors", Four Corners APS Annual Meeting, Colorado School of Mines, October 23-24 (2009)

Invited Talks and Lectures (Some of these are double-listed under Conference Proceedings):

1. A.P. Yain 2025 “EP Research Overview: Optical Diagnostics Collaborative Opportunities with Aerospace Corporation”, Aerospace Corporation, El Segundo, CA, August 21, 2025
2. A. Yalin 2024 “Laser Diagnostics Advances for the Study of Electric Propulsion” Invited Speaker, Online Low Temperature Plasma (OLTP) seminar, April 16, 2024
3. A.P. Yalin – Panelist on Propulsion & Responsive Launch Panel, AIAA Rocky Mountain Section Annual Technical Symposium, September 22, 2023, Colorado State University (Fort Collins, CO)
4. A.P. Yalin “Laser Diagnostics for Electric Propulsion at Colorado State University: CRDS and TALIF” Seminar for Electric Propulsion Group, NASA Jet Propulsion Laboratory, July 11, 2023

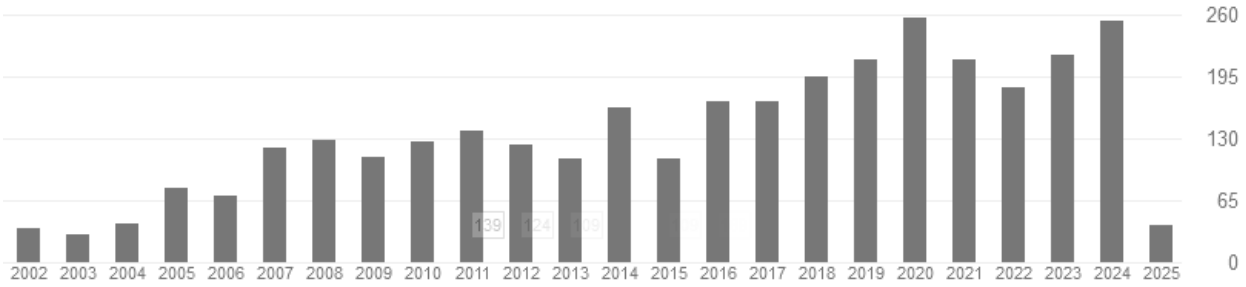
5. A.P. Yalin “Laser Thomson Scattering Diagnostics for Electric Propulsion Studies” Seminar for Electric Propulsion Group, NASA Jet Propulsion Laboratory, July 11, 2023
6. A.P. Yalin, Detection and Quantification of Methane Emissions from the Oil-and-Gas Industry, Brownbag Lunch Talk (Virtual), Counter WMD Systems Group, MIT Lincoln Laboratory, 12/1/2021
7. L. McHale, B. Martinez, T. Miller, A.P. Yalin “Open-Path Cavity Ring-Down Sensor for Mobile Detection of Methane Emissions”, PIERS 2019, Rome, Italy, June, 2019
8. A.P. Yalin “Cavity Enhanced and Laser Absorption Spectroscopy for Atmospheric Measurements” P Université du Littoral Côte d’Opale, Dunkerque, France, June 27, 2019
9. A.P. Yalin, Invited Lecture: “Cavity Ring-Down Spectroscopy Plasma Diagnostics”, Part of Short Course on Plasma Diagnostics, 2019 AIAA SciTech Forum, San Diego, CA
10. A.P. Yalin, B. Martinez, J. Ham, C. VanTilburg, F.W. Smith “A Radio-Controlled Vehicle for Airborne Atmospheric Methane and Ammonia Measurements” Presentation to University Science Club, Colorado State University, May 1, 2019
11. Ciprian Dumitrache and Azer Yalin “Recent findings on laser plasma formation and combustion ignition” Research Seminar - Department of Physics, CSU, Fort Collins, CO, January 2017
12. A.P. Yalin, L.E. McHale, S. Shadman “Measurement Of Agricultural Emissions Using Laser Sensors On Unmanned Aerial Systems” OSA – Optics and Photonics for Energy and the Environment, NCAR, Boulder, CO, November 2017
13. Azer Yalin “Laser Ignition: From Laboratory Investigation to Real World Application”, Aerospace Thematic Workshop - Fundamentals of Aerodynamic Flow and Combustion Control by Plasmas, Saint Petersburg, Russia April 2017
14. Azer P. Yalin “Cavity Ring-Down Spectroscopy Plasma Diagnostics” AIAA SciTech Meeting, Grapevine, TX, January 2017
15. A.P. Yalin “Laser ring-down sensors for atmospheric trace gas detection using mobile platforms”, Environmental Sensing Technical Group Special Talk, Frontiers in Optics – OSA Annual Meeting, Rochester, NY, October 19, 2016
16. A.P. Yalin “Recent findings on laser plasma formation and combustion ignition” Research Seminar, Department of Mechanical Engineering, Univ. of Colorado, Boulder, Co June 14, 2016.
17. Azer P. Yalin, Laura E. McHale, Soran Shadman, Charles Rose “Open-Path Cavity Ring-Down Spectroscopy Sensors for Atmospheric Measurements” Invited Talk, Paper ATh3J.1, Conference on Lasers and Electro-Optics (CLEO), Optical Society of America, San Jose, CA, 2016
18. A.P. Yalin, Panel Member and Invited Talk “Sensitive and Compact Laser Sensors to Measure Methane Emissions” Natural Gas Symposium, Fort Collins, CO, October 28, 2015.
19. A.P. Yalin, “Laser Ignition: Combustion Applications and Research Directions” Departmental Seminar, Aerospace & Mechanical Engineering, University of Arizona, October 8, 2015
20. A.P. Yalin, “Laser Diagnostics with Atomic Vapor Filters” (In Honor of Dick Miles’s (semi-) Retirement Session) 45th AIAA Plasmadynamics and Lasers Conference, Atlanta, GA, 2014
21. A.P. Yalin, “Application of Cavity Ring-Down Spectroscopy to Plasma and Combustion.” Frontiers in Spectroscopy, Chemical Physics graduate program, Ohio State University, Columbus, OH., multi-day lectures and honorarium, Jan. 29-31 2014
22. A.P. Yalin “Cavity Ring-Down Spectroscopy: Application to Electric Propulsion, Atmospheric Science, and Future Directions” Kyushu University, April 26, 2013
23. A.P. Yalin, S. Joshi, N. Wilvert “Fiber Optic Delivered Laser Ignition Systems” 1st Laser Ignition Conference, Yokohma, Japan, April 24, 2013
24. A.P. Yalin, 2012, “Laser Ignition: Aerospace Applications and Research Directions”, 43rd AIAA Plasmadynamics and Lasers Conference, New Orleans, LA, June 2012
25. A.P. Yalin, 2012, “Cavity Enhanced Laser Diagnostics for Electric Propulsion and Plasma Engineering”, NASA Glenn Research Center, OH, May 2012
26. Brian Lee, Kevin Lehmann, Azer Yalin, 2012 “Ultraviolet Cavity Ring-Down Spectroscopy for Trace Species Detection”, 50th AIAA Aerospace Sciences Meeting, Nashville, TN, January 2012

27. A.P. Yalin, 2011, "Laser Ignition: Application to Internal Combustion Engines and Research Directions", Aerospace Thematic Workshop: Fundamentals of Aerodynamic Flow and Combustion Control by Plasmas, Les Houches – Mont Blanc, France, March 28, 2011
28. A.P. Yalin, J. Topper, B. Rubin, 2010 "Quartz Crystal Microbalance Based System for Angularly Resolved Sputter Yield Measurements" Invited talk for 2010 Society of Vacuum Coaters TechCon, Orlando, FL
29. A.P. Yalin, 2009, "Cavity Enhanced Spectroscopy: Application to Plasma Engineering and New Directions" Rocky Mountain Chapter - Optical Society of America, Boulder, CO
30. A.P. Yalin, 2008, "Cavity Ring-Down Spectroscopy: Trends and Application to Plasma Engineering" Physical Seminar, Department of Chemistry, Colorado State University, Fort Collins, CO
31. A.P. Yalin, 2008, "Cavity Ring-Down Spectroscopy: A Tool for High-Sensitivity Concentration Measurements" Presentation - Chemical Sciences Division NOAA Earth System Research Laboratory, Boulder, CO
32. A.P. Yalin, 2007, "Cavity Ring-Down Spectroscopy: Trends and Application to Electric Propulsion", Mechanical Engineering - Engineering Mechanics, Department Seminar, Michigan Technological University, Houghton, MI
33. A.P. Yalin, 2006, "Development of a Fiber Delivered Laser Ignition System for Natural Gas Engines", Ecole-Centrale, Paris, France
34. A.P. Yalin, 2005, "Cavity Ring-Down Spectroscopy and Application to Sputter Measurements", Mechanical Engineering, Department Seminar, Colorado State University, Fort Collins, CO, May 6, (2005)
35. A.P. Yalin and J.D. Williams, 2004, "Ion Optics Modeling and Laser-based Sputtering Characterization Research Activities at Colorado State University", Veeco Instruments Inc., Fort Collins, CO, January 20, (2004)
36. A.P. Yalin, 2002, "Cavity Ring-Down Spectroscopy in Atmospheric Pressure Plasmas", Department of Engineering Physics, McMaster University, Hamilton, Canada
37. A.P. Yalin, C.O. Laux, C.H. Kruger, R.N. Zare, 2002, "Temporally and Spatially Resolved Cavity Ring-Down Spectroscopy Measurements in Atmospheric Pressure Plasmas", Optical Society of America Annual Meeting and Exhibit 2002, Orlando, FL
38. A.P. Yalin, 2002, "Cavity Ring-Down Spectroscopy in Atmospheric Pressure Plasmas", Department of Mechanical Engineering, UCLA
39. A.P. Yalin, 2002, "Cavity Ring-Down Spectroscopy in Atmospheric Pressure Plasmas", Department of Mechanical Engineering, Colorado State University
40. A.P. Yalin, 2001, "Spatially and Temporally Resolved Cavity Ring-Down Spectroscopy in Atmospheric Pressure Plasmas", Thermosciences Division Seminar, Department of Mechanical Engineering Department, Stanford University

Citation Summary

From Google Scholar (accessed 1/25/2025):

	All	Since 2020
Citations	3372	1170
h-index	35	18
i10-index	87	40



(Trend line added manually.)

CONTRACTS & GRANTS

Data accessed on 1-25-25 from: https://vprweb.research.colostate.edu/Proposal-Award-History-Search/Award.aspx
Funding total as PI of extramural grants: $10.3M
Funding total as PI or co-PI of extramural grants: $15.2M

RELATED RESEARCH ACTIVITIES

Disclosures and Patents:

- Filed US Patent: Optical Measurement Apparatus And Optical Measurement Method; Filing Number: 18/947,891, Filing Date: 2024.11.14
- Invention disclosure to CSU: Sensor for Trace H2 Detection, Submitted: 10-5-2022
- US Provisional Patent, Direct Identification Of A Target Molecule With Photoacoustic Stimulated Raman Spectroscopy, 63/492,352, Receipt Date: 03-27-2023
- US Provisional Patent, Optical Method For Measuring Gases And Particles For Cleanroom Applications, 63/548,462, Receipt Date: 11-14-2023
- US Patent 10,687,412 B1, Photonic-Crystal-Fiber-Delivered Laser-Triggered High-Voltage Gas Switch, Issued: June 16, 2020 (co-invented with Sandia National Laboratory)
- US Patent 10,241,037 B2, Laser sensor for trace gas detection, Issued: 03-26-2019
- Provisional Patent (filed 11/2017): Laser-Lamp Pumped Cavity-Enhanced Absorption Spectroscopy Sensor
- US Patent 9,482,620, Portable Particle Spectrometer, Issued: 11/1/2016
- US Patent 8,740,432, Transmission of Laser Pulses with High Output Beam Quality Using Step-Index Fibers Having Large Cladding Fiber Coupled Optical Spark Delivery System, Issued: 06-03-2014
- US Patent 7,420,662, Fiber Coupled Optical Spark Delivery System, Issued: 09-02-2008
- US Patent 7,412,129, Optical Diagnostics Integrated With Laser Spark Delivery System, Issued: 09-02-2008
- US Patent 7,340,129, Fiber Laser Coupled Optical Spark Delivery System, Issued: 03-04-2008
- US Provisional Patent 61/055,402 Advanced Single-mode Fibers, Receipt Date: 05-22-2008
- One European patent filed in 2007 relating to laser ignition research.
- One US provisional patent filed in 2006 for CRDS applied to Etch Monitoring.
- One US provisional patent filed in 2014 for Open Path Methane Detection
- One US provisional patent filed in 2014 for Laser Ignition by Heating of Water Vapor

Articles Describing Yalin's Research:

1. "Pulse Delivered by Hollow Optical Fiber Creates Spark", Photonics Spectra, B. Hitz, Laurin Publishing, p.35-, September 2005
2. "Fiber Optics: Laser spark plug heads to patent office", Laser Focus World, Hassaun A. Jones-Bey, Volume: 42 Issue: 6 June 2006
3. "Frickin' laser spark plugs!", www.autoblog.com, Stuart Waterman, April 2006
4. "Invention: Laser spark plugs", www.NewScientist.com, Barry Fox, March 2006
5. "Lasers spark end for plugs", www.autoexpress.co.uk, April 2006
6. "Fiber laser provides the spark for engines", www.optics.org, Tim Hayes, June 27, 2007
7. "Cooperation sparks inventions. Partnerships heighten chance for solutions", Fort Collins Coloradoan (Front Page), December 29, 2008
8. "Laser ignition may replace spark plugs", USA Today, Science Fair, Dan Vergano, April 27, 2011
9. "The Emerging Epicenters of High Tech Industry", Wired Magazine, Adam Davidson, June, 2011
10. "Energy Institute researchers funded by ARPA-E to advance hydrogen sensing technologies", https://engr.source.colostate.edu/energy-institute-researchers-funded-by-arpa-e-to-advance-hydrogen-sensing-technologies/, CSU Source Magazine (Josh Rhoten), 9-23-2024

NEW COURSE DEVELOPMENT

MECH 407 – Laser Applications

Since Spring 2008, I have offered a senior technical elective course entitled "Applied Optics for Mechanical Engineers". Optical systems (and opto-electronic devices including lasers) are finding increased use in a range of application areas within mechanical engineering. These areas include sensing, imaging, diagnostics, communication, etc. This course provides background in the fundamentals of optics and opto-electronics and will examine their use within mechanical engineering systems and applications. (The course was originally an experimental course with code MECH 480 but now has a permanent code as MECH 407.)

ME 507 - Laser Diagnostics for Engineers

Since Spring 2005, I have offered a new graduate level course entitled "Laser Diagnostics for Engineers". In summary, the course introduces relevant background material (electromagnetism and optics, laser physics, and spectroscopy) before presenting a survey of laser diagnostic techniques. The first and second offerings had 8 and 12 graduate students respectively (including audits) and were considered a success based on evaluations (see above). The course is now on the books to be taught in alternate years. The multidisciplinary nature of the course makes it of interest to graduate students in Mechanical Engineering, as well as students from Electrical Engineering, Chemistry, Physics and other departments. (The course was originally an experimental course with code MECH 580 but now has a permanent code as MECH 507.)

STUDENT ADVISING/GRADUATE SUPERVISION

GRADUATE STUDENTS:

Current Graduate Advisees

PhD:

- Parneeth Lokini, Mechanical Engineering (co-advised with Windom)
- Junaid Qureshi, Mechanical Engineering

MSc:

- Brian Harrod, Mechanical Engineering
- Seth Wilson, Mechanical Engineering (co-advised with Dumitrache)
- Jon Stienike, Mechanical Engineering (*now PhD)

- Evan Ronzone, Mechanical Engineering
- Mitchell Morasco, MECH 498 Accelerated Masters, Mechanical Engineering

Graduate Degrees Completed Under My Supervision (Total: 8 PhD, 14 MSc)

PhD:

- Adam Friss, Mechanical Engineering, completed: 2019 (now at quantum startup)
- Laurie McHale, Mechanical Engineering, completed: 2018 (now at Picarro, CA)
- Soran Shadman, Mechanical Engineering, completed: 2018 (now at Opus)
- Ciprian Dumitrache, Mechanical Engineering, completed: 2016 (now at Ecole Centrale, France)
- Tim Vaughn, Mechanical Engineering (Co-Major Advisor), completed: 2016 (now at CSU as post-doc)
- Torben Grumstrup, Mechanical Engineering (Co-Major Advisor, completed: 2014)
- Brian Lee, Physics (Co-Major Advisor), Physics, completed: 2014 (now at Lincoln Labs, MIT)
- Morgan Defoort, completed: 2008 (now Factor[e] Ventures)
- Sachin Joshi, completed: 2008 (now at Cummins)
- Arlen Ward, completed: 2010 (now at Covidien)
- Lei Tao, completed: 2011 (now at Princeton University)
- Vijay Surla, completed: 2007 (now at Lam)
- Abdur Rahman, completed: 2005 (now at Osram Sylvania Research Lab)

MSc:

- Seth Antozzi, completed summer 2024
- Bilal Khan, completed summer 2024
- Jacob Gottfried, completed summer 2023 (now in PhD program at U Wisconsin)
- James Sipich, completed spring 2023 (now at ?)
- Tad Wegner, completed 2020 (now at Boeing)
- Benjamin Martinez, completed 2019 (now at Particle Measuring Systems)
- Carter Butte, completed 2019
- Charles Rose, completed 2019 (now at Sandia National Laboratory)
- Betsy Farris, completed 2019 (now at Ball Aerospace)
- Sean Walsh, completed 2016 (now at LANL)
- Frank Locciano: completed 2011 (now with contractor to Sandia Labs, NM)
- Adam Reynolds: completed 2011
- James Topper: completed 2011 (now at Plasma Processing Group)
- Herman Bravo: completed 2013 (now a Research Associate at Colorado State)
- Randy Leach: completed 2012 (now at Sierra Nevada)
- Isiah Franka: completed 2013 (now at Raytheon)
- Nick Wilvert: completed 2013 (now at Sandia Labs, NM)
- Jake Doyle: completed 2013 (now at wind-energy company in Nebraska)
- Jordan Rath: completed 2013 (now at Raytheon)
- Vijay Surla, completed: 2004 (moved to Ph.D. program)
- Scott Eakle, completed: 2005 (now at South West Research Institute)
- David Ahrens: completed 2005 (now at Caterpillar)

Undergraduate Senior Practicum (MECH 498 / IDP+):

- Mitchell Morasco
- Neylson Rodrigues

- Brian Harrod
- Jon Stienike
- Evan Ronzone (Hispanic)
- Jack Brennan
- Bilal Khan (Intl. 1st Gen.)
- Anthony Puga (Hispanic)
- Carter Butte
- Andrew Eickelberg

POSTDOCTORAL RESEARCHERS AND RESEARCH SCIENTTISTS:

Research Scientists

- Chris Limbach (Research Scientist II). 2015 – 2017
- Chris Hagen (Research Scientist II). 2010 – 2011
- Sachin Joshi (Research Scientist I). 2010 - 2012

Postdoctoral Researchers

- Ryan Werner. 2/2025- (full salary support)
- Matteo DaValle. 3/2025- (full salary support)
- Victorien Blanchard (Post-doc). 12/2023- (full salary support)
- Guoxun Tian (Post-doc). 2013-(50% salary support)
- Binyamin Rubin (Post-doc). 2006 – 2009 (50% salary support)
- Naoji Yamamoto (Post-doc). 2007 – 2008 (salary support from Japan)

OTHER ACTIVITIES/ACCOMPLISHMENTS – TEACHING/ADVISING

CSU NASA Space Grant Program

- **Director CSU NASA Space Grant Program (2007-Present).**
  - Program management and coordination between CSU and NASA Space Grant officials
  - Oversee Seed Grant Program for junior faculty at CSU (2007-2011)
  - Oversee Student Intern space hardware teams including DemoSat-B, RockOn, RocketSat, Robot Challenge and independent projects (most projects are done each year).
  - Grew CSU budget from $60k per year in 2007 to $80k+ per year in 2009, as well as $25,000 internal CSU cost share.

SERVICE AND COMMITTEES (within CSU)

- Chair, Department Tenure and Promotion Committee, Fall 2024 -
- Chair, Departmental Hiring Committee for new CFD Faculty, Fall 2023 – Spring 2024
- Member, Aerospace Working Group, Department of Mechanical Engineering, Fall 2022-
- Member, Curriculum Committee, Department of Mechanical Engineering, Spring 2020 –
- Member, Departmental Hiring Committee for new Aerospace Propulsion Faculty, Spring 2020 – 2021
- Member, Conflict of Interest/Commitment Committee (COICC), CSU, March 2021 – July 2025
- Member, Faculty Council Standing Committee on Intercollegiate Athletics (FCCIA), May 2020 - June 2023, reappointed for July 2023-summer 2026 TBD
- Chair, Thermal Sciences Work Group, Department Mechanical Engineering, Spring 2020 - ?
- Member, Departmental Hiring Committee for new Energy Faculty, Fall 2019 – Spring 2020
- Member, Departmental Hiring Committee for Department Head of Mechanical Engineering, Fall 2018 – Spring 2019
- Member, Hiring Committee for Professor of Practice, Department of Mechanical Engineering,

CSU, Spring 2018

- Member, Ad Hoc College of Engineering Committee, Strategic Plan Implementation Team #3 – External Research, 2016-
- Chair, Tenure and Promotion Committee, Dept. Mechanical Engineering, Fall 2014- Spring 2017
- Executive Committee of Faculty Council, Member, 2013-2014
- Mechanical Engineering representative to Faculty Council. 2003-2007, 2013-2016
- Ad-Hoc Departmental Hiring Committee, Chair, 2013-2014
- Departmental Awards Committee, Member, 2011-2013
- Member of Hiring Committee for Manager of Operations for Department of Mechanical Engineering, 2011-2012
- Member of Mechanical Engineering Code Committee, Ad hoc committee, 2010-2011
- **Associate Department Head for Graduate Studies, Chair of Mechanical Engineering Department Graduate Committee 2008-2011.** Coordinate overall departmental graduate activity including recruiting, promotion of research, admissions, oversee Graduate Coordinator (Karen Mueller), handle problems and appeals etc. Summary of achievements: Introduced core courses, quantified TA selection process, conducted self-study, introduced publication requirements, increased PhD graduation rate per faculty (per year) by >100%.
    - 2010-2011 – Vision and Self-Assessment of Graduate Program, Discussion of Course Sequences, Publication Requirements for Graduate Students
    - 2009-2010 – Implemented Core Courses.
    - 2008-2009 - Revised: Diagnostic Exam Guidelines, TA Selection/Application Procedure, Research Area Groupings.
- Member of Departmental Graduate Committee. 2006-2008
- Coordinator of Mathematics portion of Diagnostic Exam (Prepared and graded Mathematics portion of exam). 2006-2010
- Chair of Department's ad hoc "Graduate Exam Committee". The role of this committee was described above in the Education section. 2004
- Member of Faculty Hiring Committee for new positions in Energy Conversion and Plasma/Advanced Materials area. 2005-2006.
- Technical Advisor for 5 students for Senior Practicum (ME 486) in Thermo-fluids area. 2005
- Member of COE Physics Committee. 2004, 2005
- Member of Departmental Grade Appeal Committee. 2005
- OE (Order of Engineer) Management Team member and participant in Order of the Engineer (Iron Ring) Ceremony. 2003-2007
- Served as judge in Undergraduate Research Symposium. 2003, 2004, 2005
- Participant in College of Engineering Focus Group "Engineer of 2020" Discussion. 2005

PROFESSIONAL SERVICE AND AFFILIATIONS

Professional Society Officer Positions and Memberships:

- Member, Colorado Space Grant Consortium, Advisory Board, January 2025 -
- Associate Fellow of American Institute of Aeronautics and Astronautics (AIAA) 2014- Present; Senior Member – 2006-; Member # 150130
- Member of Plasma Dynamics and Lasers Technical Committee of American Institute of Aeronautics and Astronautics (AIAA), 2013-Present
- Member of American Physical Society 2012-2013
- Senior Member of Optical Society of America (OSA) 2015-Present; Member 2006 -2015

  - Vice-Chair of Applied Spectroscopy and Environmental Sensing Technical Group of the Optical Society of America, Optical Society of America (OSA), 2002-2006
  - Chair of Applied Spectroscopy and Environmental Sensing Technical Group of the Optical Society of America, Optical Society of America (OSA), 2006-2008
  - Member CLEO) subcommittee 13 on Active Optical Sensing (Conference on Laser and Electro-Optics), 2007-2010
- Past Member American Society of Mechanical Engineers (ASME)

Journal Editing:

- Applied Optics Special Issue - Laser Applications to Chemical and Environmental Analysis, June 2005. Editors: Azer Yalin, Clemens Kaminski, and Kevin McNesby

Journal (Manuscript) Reviewing:

- Reviewer for: Optics Letters, Optics Express, Applied Optics, Plasma Sources Science Technology, Review of Scientific Instruments, IEEE Transactions on Plasma Science, Journal of the Optical Society Of America A, Applied Physics B - Lasers and Optics, Optics and Laser Technology, IEEE Sensors, Journal of Applied Physics, AIAA Journal of Propulsion and Power, IEEE Transactions on Plasma Science, Applied and Environmental Microbiology, Chinese Optics Letters, Colorado State Journal of Undergraduate Research and Scholarly Excellence, Applied Physics Letters, Journal of Mechanical Engineering Research, IEEE Transactions on Semiconductor Manufacturing, Applied Spectroscopy, Journal of Molecular Spectroscopy, Sensors and Actuators A, European Physics Journal, Optics Letters, Optics Express

Conference Reviewing & Organization:

- Organizing Committee for Optical Society of America (OSA) LACEA (Laser Applications to Chemical and Environmental Analysis) 2004 Conference (Arlington, VA)
- Organizing Committee for Optical Society of America (OSA) LACSEA (Laser Applications to Chemical, Security and Environmental Analysis) 2006 (Incline Village, NV)
- Session Chair, ASME ICE Fall 2007 Conference (Charleston, SC)
- Session Chair, 30th International Electric Propulsion Conference. Florence, Italy, September 2007
- Session Chair, AIAA JPC 2007 Conference (Cincinnati, OH LACSEA 2006 Conference, ASME ICE Fall 2006 Conference, ASME ICE Fall 2007)
- Session Chair, Electric Propulsion track, AIAA 46th Joint Propulsion Conference, Nashville, July 2010
- Session Chair, Aerospace Thematic Workshop: Fundamentals of Aerodynamic Flow and Combustion Control by Plasmas, Les Houches – Mont Blanc, France, March 28, 2011
- Session Chair, 32nd International Electric Propulsion Conference, Wiesbaden, Germany, September 2011
- Reviewer for: Optical Society of America – LACEA 2004 Conference, ASME ICE Fall 2005 Conference, Optical Society of America –
- Reviewer for Best Paper: Electric Propulsion area, Joint Propulsion Conference 2011, San Diego, CA
- Session Chair, 44th AIAA Plasmadynamics and Lasers Conference, San Diego, CA, July 2013
- Session Chair, 33rd International Electric Propulsion Conference, Washington, DC, October 2013
- Member, Program Committee, The 2nd Laser Ignition Conference 2014, Yokohama, Japan (April 2014)
- Session Chair, 45th AIAA Plasmadynamics and Lasers Conference, Atlanta, GA, June 2014

- Session Chair, AIAA Sci-Tech 2015, Kissimmee, FL, January 2015
- **Technical Chair, 46th AIAA Plasmadynamics and Lasers Conference** (part of Aviation 2015), Dallas, TX, June 2015
- Member, Technical Program Committee, 4th International Workshop on Specialty Optical Fibers (WSOF 2015), Hong Kong, November 2015
- Member, Program Committee, The 4th Laser Ignition Conference 2016 (LIC'16), Yokohama, Japan (May 2016)
- Reviewer and Member of Organizing Committee, Laser Applications to Chemical, Security and Environmental Analysis (LACSEA), Heidelberg, Germany (July 2016)
- **Member, Local Organizing Committee, OSA Light, Energy, and the Environment Congress, Boulder (November 2017)**
- Member of CLEO A&T 3: Laser-Based Instrumentation for Measurements and Monitoring Subcommittee for the CLEO 2019 (OSA conference – Jan Jose, CA, May 2019)
- Session Chair, AIAA SciTech 2020, Orlando, FL, January 2020
- Session Chair, AIAA SciTech 2020, Orlando, FL, January 2024
- Session Chair, AIAA SciTech 2020, Orlando, FL, January 2025

Proposal Reviewing:

- Ad Hoc Proposal Reviewer for: National Science Foundation, US Dept. of Energy, US Dept. of Energy SBIR/STTR Program, NOAA SBIR/STTR Program, ARPA-E, Romanian - U.S. Fulbright Commission
- Panel reviewer for Physics Division of National Science Foundation 2015, 2019
- Proposal reviewer Princeton Collaborative Low Temperature Plasma Research Facility (PCRF), 2020

Related Service:

- Participant and Mini-Presentation speaker at NSF Low Temperature Plasma Workshop, Washington, DC, August 22-23 2016 (organized by Professor Mark Kushner)
- Instructor for short course in Plasma Diagnostics (topic: Cavity Ring-Down Spectroscopy Plasma Diagnostics), AIAA SciTech Meeting, San Diego, CA, January 2019