BRET COLIN WINDOM

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EDUCATION

University of Florida, Gainesville, FL 32611
Ph.D., Mechanical Engineering, August 8, 2009
Dissertation title: Optical diagnostic techniques in tribological analysis: applications to wear film characterization, solid lubricant chemical transition, and electrical sliding contacts.

University of Florida, Gainesville, FL 32611
M.S., Mechanical Engineering, August 2006
Thesis title: Implementation of aerodynamic focusing and a dual-pulse configuration to improve laser-induced breakdown spectroscopy aerosol particle sampling rates and analyte response.

University of Florida, Gainesville, FL 32611
B.S., Mechanical Engineering, December 2004
Cum Laude

WORK EXPERIENCE

I. Associate Professor **(July 2021 - Present)**
Colorado State University, Fort Collins, Co

II. Visiting Combustion Engineer **(January 2025 – August 2025)**
Solar Turbines Inc.

III. Visiting Scholar **(September 2023 – December 2023)**
Trinity College, Dublin, Ireland

IV. Assistant Professor **(August 2016 – June 2021)**
Colorado State University, Fort Collins, Co

V. AFRL Summer Faculty Fellowship **(May 2019 – August 2019)**
US Air Force Academy (USAFA)

VI. Visiting Research Scientist – Vising Faculty Program **(May 2016 – August 2016)**
National Renewable Energy Laboratory (NREL)

VII. Assistant Professor **(August 2013 – August 2016)**
University of Colorado Colorado Springs, Colorado Springs, CO

VIII. Combustion Energy Frontier Research Center Postdoctoral Fellowship **(May 2011 – July 2013)**
University of Southern California, Los Angeles, CA
Princeton University, Princeton, NJ

IX. National Academy of Sciences Postdoctoral Associate **(July 2009 - May 2011)**
The National Institute of Standards and Technology (NIST), Boulder, CO

X. Graduate Research Assistant **(January 2005 – July 2009)**
Department of Mechanical and Aero. Engineering, University of Florida, Gainesville, FL

TEACHING EXPERIENCE

Classes taught:

- Thermodynamics
- Aerospace Propulsion
- Heat and Mass Transfer
- Combustion
- Building Energy Systems
- Senior Design

Students and Staff Supervised: (Institution, Expected Graduation)

- **Post-doctoral Students:** Toluwase Fosudo (CSU, 2024-current), Frank Chan (CSU, 2019-2021)
- **Research Associates:** Colin Sluneka (CSU, 2023-current), Andrew Zdanowicz (CSU, 2021 – current), Matt Kronwall (CSU, 2022-2023), Michael Sartini (CSU/NIST – 2020-2021)
- **PhD students:** Radi Alsulami (CSU, Graduated, Fall 2019, Assistant Professor - King Abdulaziz University), Diego Bestel (CSU, Graduated, Fall 2022, CAT R&D), Siddhesh Bhoite (CSU, Graduated, Fall 2022, CAT R&D), Stephen Lucas (Graduated, Summer 2023, AFRL - USAFA), Miguel Valles Castro (Summer 2025), Parneeth Lokini (Summer 2025), Reece Churchill (Fall 2025), Dan Cornett (Fall 2025), Kingsley Atomboh (Summer 2028)
- **Master's students:** Colin Curtis (UCCS, Graduated), Stephen Burke (CSU, Fall 2019), Mangesh Dake (CSU, Graduated), Bahar Abdollahipoor (CSU, Graduated), Anish Jadhav (CSU, Graduated), McKay Stoker (CSU, Graduated), Geet Padhi (CSU, Graduated), Miguel Castro (CSU, Graduated), Mars Rayno (CSU, Graduated), Elizabeth Browne (CSU, Graduated), Jesse Schulthess (CSU, Graduated), Michael Sartini (CSU, Graduated, 2021), Brye Windell (CSU, Graduated, 2022), Matthew Kronwall (CSU, Graduated, 2022), Manav Sharma (CSU, Graduate, 2023), Niko Landin (CSU, Graduated, 2023), Jadon Roberts (CSU, Graduated 2024), Kingsley Essuman Atomboh (CSU, Spring 2025), Bianca Jeremiah (CSU, Summer 2025), Andrew Harrod (CSU, Summer 2025), Alayna Gilbert (CSU, Fall 2025), Zachary Jones (CSU, Fall 2025), Evan Veatch (CSU, Fall 2025), Antoine Bertrand (CSU, Fall 2025), Seth Schripsema (Fall 2026)
- **Funded Undergraduate Students:** Brandon Patz (UCCS, Graduated), Rose Szczur (UCCS, Graduated), Jeffery Baston (UCCS, Graduated), Stephen Burke (UCCS, Graduated), Robert Rhoads (UCCS/NREL, Graduated), Irene Delgado (UCCS, Graduated), Diego Bestel (UCCS, Graduated), Carson Belknap (CSU, Graduated), Danielle Bartholet (UF/CSU, Graduated), Brye Windell (CSU, Senior), Miguel Valles (CSU, Graduated), Matthew Kronwall (CSU, Senior), Luca Maxeiner (Hochschule RheinMain, Graduated), Nick Scrivens (CSU, Junior), Carson Green (CSU, Freshman), Alayna Gilbert (CSU, Sophomore), Darwin Cortes (CSU, Freshman), Tom Muertterties (CSU, Senior), Manav Sharma (CSU, Senior), Will McBryde (CSU, Senior), Niko Landin (CSU, Senior), Bryson Arnott (CSU, Freshman), Wyatt Wolff (CSU, Freshman), Anas Tajouaout (Hochschule RheinMain), Iris Kessler (Senior), Emily Thomason (CSU, Freshman), Eli Bohlander (Purdue, Junior), Samantha Preuss (CSU, Senior), Dexter Shafer-White (CSU, Freshman), Landon Kohler (CSU, Freshman), Jadon Roberts (CSU, Senior), Reuben Holness (CSU, Junior), Ethan Smith (CSU, Sophomore), Jack Bicksler (CSU, Senior), Cara Guydish (CSU, Junior), Christian Lanni (CSU, Junior), Natalie Bradmon (CSU, Sophomore), Abby Rupeka (CSU, Senior), Ada Muzoglu (Moorpark College, Senior), Orion Kolkowski (USNA, Senior), Will Gaskins (USNA, Sneior), Parker Orth (CSU, Junior), Frankie Gaytan (CSU, Freshman), Jason Furman (CSU, Freshman)

SUCCESSFUL GRANTS AND FUNDING

Externally-Funded Projects as PI

1. (2024-2025) Methanol to DME Pilot Fuel Synthesis System and Modeling for Marine Engine Applications, Caterpillar, $126,000.
2. (2024-2025) Lubrication Oil Droplet Ignition Study in Rapid Compression Machine, Caterpillar Inc., $56,960.
3. (2024-2029) Connecting Colorado with Hydrogen Refueling Infrastructure on the I-25

Corridor (Hy-25), US Department of Transportation, $8,977,947

(2023-2026) Testing of Liquid-Fueled Gas Turbine with High EGR Fraction to Support Carbon Capture System Integration, Office of Naval Research (ONR), $6,000,000

4. (2023-2025) Enabling SmallSat Propulsion for Orbital Maneuverability, Pioneer Astronautics, Sponsor: Missile Defense Agency, $1,000,000 (CSU: $200,000)
5. (2023-2024) Impact of Contaminants on Water and NG VLE and Updated Mixture Models for Accurate Dew Point Calculations Using NIST-REFPROP, Gas Machinery Research Council (GMRC), $75,000
6. (2022-2025) NSF-BSF: Plasma Reformed Ammonia as a Carbon Free Fuel: Study of Nanosecond-Pulsed Discharge Kinetics and Combustion Enhancement, A. Yalin, J. Lefkowitz, National Science Foundation/Israel Binational Science Foundation, $671,433 (CSU Share: $433,612)
7. (2022-2023) Experimental Analysis of Lubricant Entrainment in Natural Gas, Gas Machinery Research Council (GMRC), $85,000.
8. (2021-2023) Effect of Lubrication Oil Droplet Ignition using a Rapid Compression Machine, Marchese, A., Caterpillar, Inc., $76,000
9. (2021-2022) High Pressure Vapor Liquid Equilibrium Measurements of Gas and Water Mixtures using Nuclear Magnetic Resonance Spectroscopy – Phase 2: C2-C4 + Water Mixtures, Widegren, J., Gas Machinery Research Council (GMRC), $70,000.
10. (2020-2021) High Pressure Vapor Liquid Equilibrium Measurements of Gas and Water Mixtures using Nuclear Magnetic Resonance Spectroscopy, Widegren, J., Gas Machinery Research Council (GMRC), $90,000.
11. (2020-2021) Analytical Lubrication Model Informed by Experimental Data, Gas Machinery Research Council (GMRC), $85,000.
12. (2019-2020) Computer Aided Design of a Spark Ignited Engine for Use in a High Efficiency SOFC-ICE Integrated Power Generation System, Bandhauer, T., Olsen, D., $10,000
13. (2019-2023) Poly(oxymethylene) Ethers as a High Cetane, Low Sooting Biofuel Blendstock for Use in Medium to Heavy Duty Mixing Controlled Compression Ignition Engines, Quinn, J., Labbe, N., McEnally, C., Foust, T., Reardon, K., Marchese, A., Department of Energy (DOE), $1,972,050.
14. (2019-2021) Poly(oxymethylene) Ethers as a High Cetane, Low Sooting Biofuel Blendstock for Use in Medium to Heavy Duty Mixing Controlled Compression Ignition Engines, Quinn, J., Labbe, N., McEnally, C., Foust, T., Reardon, K., Marchese, A., Colorado Energy Research Collaboratory, $85,000.
15. (2019) The Study of Two-phase Combustion of Jet Fuel Surrogates Using Advanced Diagnostics at the US Air Force Academy, AFRL-Summer Faculty Fellowship Program, $30,000
16. (2019-2020) Rod Packing Leakage Monitoring and Prevention Survey of Technologies and Recommended Practices, Zimmerle, D., Gas Machinery Research Council (GMRC), $75,000.
17. (2019-2020) Field-site High Pressure Oil Sampling and Gas Dilution Measurements, Olsen, D., Gas Machinery Research Council (GMRC), $75,000.
18. (2019-2020) Transient High-Pressure Oil-gas Dilution Study, Gas Machinery Research Council (GMRC), $95,000.
19. (2016-2018) Onboard Refueling Vapor Recovery System Testbed and Simulation, Marchese, A., Bradley, T., Honda R&D Americas, $309,985.
20. (2016-2017) High Power Optical Diagnostics for Large Hydrocarbon Fuel Combustion and Flame Research, U.S. Department of Defense, $362,384.
21. (2016) Optimized fuel composition and operating parameters for ethanol-gasoline direct injection spark ignition engines, DOE-Visiting Faculty Program, $25,000
22. (2015) Colorado Space Grant - COURSE Supplement, NASA – Colorado Space Grant Consortium, $5,250
23. (2013-2018) Professional Research Experience Program: Undergraduate/Graduate

Student and Post-doctoral Research Fellowships at the National Institute of Standards and Technology, Webb, R., Lilly, T., U.S. Department of Commerce – National Institute of Standards and Technology, $5,567,501

Total PI Funding: $

Externally-Funded Projects as CoPI

1. (2025-2028) Hydrogen Emissions Monitoring System Based on Trace Gas PARS Sensor, DOE ARPA-E, A. Yalin (PI), $1,429,931
2. (2025-2027) Laser Sensor for Trace Detection of Hydrogen in the Energy Transition, Colorado OEDIT, A. Yalin (PI), $180,000
3. (2025-2028) Inflation Reduction Act (IRA) – Full Scale Validation and Field Deployment of Comprehensive Methane Reduction Solution for NG Pipeline Engine Compressor Sets, DOE Fossil Energy and Carbon Management, D. Olsen (PI), $5,837,777.
4. (2024-2025) Rod-Packing Ventilation Gas Capture and Use, Gas Machinery Research Council, A. Zdanowicz (PI), $97,853.
5. (2024-2027) Development and Demonstration of a Medium-Duty Off-Road DME Engine with a Combustion Recipe for Ultra-Low NOx, US DOE, Ben Lawler (PI-Clemson), $2,500,000 (CSU $800,000)
6. (2024-2027) Flexible Hybrid SOFC CHP System using Low Carbon Fuels, US DOE, Rob Braun (PI-Colorado School of Mines), $4,500,000 (CSU: $2,100,000).
7. (2024-2025) Hydrogen Plasma-Assisted Radiant Tube Burner for Heat Furnaces, C. Dumitrache (PI), Colorado OEDIT, $120,000
8. (2024-2025) Evaluating Performance, Suitability of Grease Utilized for In-Situ Valve Repairs, Pipeline Research Council International (PRCI), Colin Slunecka (PI), $74,426
9. (2023-2024) Lubricant Performance and Optimization Software Toolbox, Gas Machinery Research Council (GMRC), A. Zdanowicz (PI), $10,000
10. (2022-2023) Sustainable Bioeconomy for Arid Regions – Sustainable Aviation Fuel Synthesis, Quinn, J., USDA, (CSU Share: $514,738)
11. (2022) Measurement of RON and MON for DME/Propane Blends, Olsen, D., Propane Education Research Council (PERC), $44,000 (CSU Share: $44,000)
12. (2022 – 2025) Lean-burn Natural Gas Engine System to Achieve Near-zero Methane Emissions from Existing and Future Engine Fleet, Olsen, D., DOE ARPA-E $1,500,000 (CSU Share: $900,000)
13. (2021 - 2022) Development of a Retrofittable Dry Low Emissions Gas Turbine Combustion System for 100% Hydrogen and Natural Gas Blends, Marchese, A., DOE Fossil Energy, $4,500,000 (CSU Share: $126,000)
14. (2021) Ultra-Low Sulfur Winterized Diesel: Analysis and Testing of Ethanol-to-Diesel Blendstock, Pacific Northwest National Lab, DOE, Marchese, A., $50,000 (CSU Share: $50,000)
15. (2020-2023) Development of Advanced Combustion Strategies for Direct Injection Heavy Duty LPG Engines to Achieve Near-Diesel Engine Efficiency, Olsen, D., Marchese, A., Xu, H., Som, S., $3,450,085 (CSU Share: $1,945,491)
16. (2020-2023) High Efficiency, Low Cost & Robust Hybrid SOFC/IC Engine Power Generator, Braun RJ, Sullivan NP, Danforth R, Bandhauer TM, Olsen D, Windom B, Schaffer B., Cale, J. $8,600,000 (CSU Share: $2,300,000)
17. (2019-2021) Lubrication Oil Droplet Ignition Study using a Rapid Compression Machine, Marchese, A., Caterpillar, Inc., $134,691 (CSU Share: $134,691)
18. (2019-2020) Storable Clean Ethane-ethylene Nitrous Engine (SCENE), Zubrin, R., Marchese, A., Department of Defense STTR Phase I, $100,000 (CSU Share: $30,000).
19. (2019-2020) Regionally Greenhouse Gas Analysis of Compressor Driver, Quinn, J., Zimmerle, D., Gas Machinery Research Council (GMRC), $75,000.

20. (2019-2020) SBIR Phase I High Speed Positive Displacement Injector for Rate Shaping, Demons, N., Marchese, A., Air Force Research Lab Subcontract from Busek Inc., $60,000 (CSU Share: $15,000)
21. (2018-2023) Advanced Vehicle Technology Competitions – EcoCar, Bradley, T., Quinn, J., Pasricha, S., Department of Energy, $388,000 (CSU Share: $388,000)
22. (2018-2020) Cost Share: High Efficiency, Low Cost & Robust Hybrid SOFC/IC Engine Power Generator, Braun RJ, Sullivan NP, Danforth R, Bandhauer TM, Olsen D, Windom B, Schaffer B., Colorado Energy Research Collaboratory, $75,000 (CSU Share: $75,000)
23. (2018-2020) High Efficiency, Low Cost & Robust Hybrid SOFC/IC Engine Power Generator, Braun RJ, Sullivan NP, Danforth R, Bandhauer TM, Olsen D, Windom B, Schaffer B., DOE ARPA-E, $3,081,864 (CSU Share: $998,458)
24. (2018-2021) Expanding the Knock/Emissions/Misfire Limits for the Realization of Ultra- Efficiency Heavy Duty Natural Gas Engines, Olsen D., Marchese, A., Hampson, G., Bremmer, R., Department of Energy, $1,257,633 (CSU Share: $1,257,633)
25. (2018) Hydrothermal Processing of Biomass: Analysis and Testing of Upgraded HTL Product, Marchese, A., DOE Pacific Northwest National Laboratory, $60,000 (CSU Share: $60,000)
26. (2016-2017) Computational theoretical, multiscale, and phenomenological modeling of solid & fluid mechanics in extreme environments, Runnels, B., McCollum, J., National Science Foundation - XSEDE, $24,563 (CSU Share: $4,000)
27. (2015-2016) Methodology and Phenomenological Simulation Considerations for Multi-Application Gas Kinetic Modeling, Lily, T., Runnels, B., Webb, R., National Science Foundation – XSEDE, $14,000 (UCCS Share: $14,000)
28. (2014-2015) Methodology and Phenomenological Simulation Considerations for Multi-Application Gas Kinetic Modeling, Lily, T., Webb, R., National Science Foundation – XSEDE, $25,418 (UCCS Share: $25,418)

Total co-PI Funding: $, Institutional Share: $, My Share: $

Externally-Funded Projects as Investigator or role other than PI or CoPI

1. (2022-2023) Pilot Fuel Synthesis for Large Marine Methanol Engines, Caterpillar Inc., $40,00
2. (2021-2023) Modeling and Optimization of a Green Hydrogen Generation System, Caterpillar Inc., $80,000
3. (2020) Distillation Curve Measurements for Co-Optima Fuels, Lawrence Livermore National Laboratory, $1,651.
4. (2020) High Pressure/Temperature Lubricant Viscosity Measurements, Idemitsu Lubricant America, $18,000

Total Investigator Funding: $

Internally-Funded Awards

1. (2025) Enhanced Rocket Engine Testing Capabilities at Colorado State University, CSU Office of the Vice President of Research, $10,000.
2. (2023-2024) Hydrogen Production via Electrolysis Research (HyPER) Test Bed – Compression and Storage, WSCOE Scott High Impact Funding, $150,000, PI
3. (2022-2023) Hydrogen Production via Electrolysis Research (HyPER) Test Bed, WSCOE Scott High Impact Funding, $160,000, PI
4. (2018) A New Approach in Evaluating the Sooting Tendency of Liquid Fuels Using a Spray Flame Burner, Colorado State University Energy Institute, $4,500.
5. (2016) Development of a Spray Burner to Study the Impact of Preferential Evaporation on Turbulent Flame Dynamics, Colorado State University Energy Institute,

$3,650.

6. (2016) Optimized fuel composition and operating parameters for ethanol-gasoline direct injection spark ignition engines, UCCS Associate Vice Chancellor for Research and Faculty Development, $7,500
7. (2015) Flame Extinction Behavior of Alternative Fuels, UCCS Undergraduate Research Academy, $7,000
8. (2014) Derived Measurement of the Enthalpy of Vaporization for Complex Fuels Using a Reduced Pressure Distillation Curve Approach, UCCS Associate Vice Chancellor for Research and Faculty Development, $7,500
9. (2014) Volatility Characteristics of Alternative Fuels with Application to Novel Internal Combustion Engines, UCCS Undergraduate Research Academy, $7,000
10. (2014) Detailed characterization of turbulent flame planar laser induced fluorescence images, UCCS - EAS Undergraduate Research Scholars Program, $1,500

Total Internal Funding: $

PEER REVIEWED PUBLICATIONS

Refereed Journal Articles

1. Quintero, A., Zdanowicz, A., Windom, B. and Olsen, D.B., 2025. Characterization of Crankcase Ventilation Gas on Stationary Natural Gas Engines. Journal of Engineering for Gas Turbines and Power, pp.1-16.
2. Reyes-Flores, V.A., Swartwout, Z., Garland, S., Olsen, D.B., Windom, B., Braun, R. and Bandhauer, T., 2025. Operational Conditions for an Internal Combustion Engine in a SOFC-ICE Hybrid Power Generation System.
3. Lokini, P., Dumitrache, C., Windom, B.C. and Yalin, A.P., 2024, November. Laser-Induced Breakdown Spectroscopy and Shadowgraphy of Acoustically Levitated Heptane Droplets. In Photonics (Vol. 11, No. 11, p. 1044). MDPI.
4. Lucas, S.P., Zdanowicz, A.J., Wolff, W.W. and Windom, B.C., 2024. Combustion characteristics of diisopropoxymethane, a low-reactivity oxymethylene ether. Fuel, 362, p.130727.
5. Fosudo, T., Kar, T., Windom, B. and Olsen, D., 2024. Low-carbon fuels for spark-ignited engines: A comparative study of compressed natural gas and liquefied petroleum gas on a CFR engine with exhaust gas recirculation. Fuel, 360, p.130456.
6. Landin, N.K. and Windom, B.C., 2024. Evaluating the efficiency of a proton exchange membrane green hydrogen generation system using balance of plant modeling. International Journal of Hydrogen Energy, 57, pp.1273-1285.
7. Yepes, H.A., Slunecka, C., Salazar, A., Windom, B., Olsen, D.B., Marchese, A.J. and Amador, G., 2024. Laminar flame properties correlations for H2/C3H8 mixtures at high temperature and pressure conditions. Fuel, 357, p.129576.
8. Miller, S.L., Sartini, M., Windom, B.C., Suiter, C.L., McLinden, M.O., Levinger, N.E. and Widegren, J.A., 2023. High-pressure vapor-liquid equilibrium measurements of methane+ water mixtures by nuclear magnetic resonance spectroscopy. Gas Science and Engineering, 120, p.205165.
9. Alsulami, R.A., Sharma, M., Windell, B. and Windom, B., 2023. Experimental study on the effect of liquid loading on n-heptane spray jet flame stability. Experimental Thermal and Fluid Science, 147, p.110953.
10. Valles, M.A., Kessler, I. and Windom, B.C., 2023, June. Review and Development of Natural Gas/Hydrogen Fuel Flexible Reduced Chemical Mechanism for High-Order Modeling of Gas Turbines. In Turbo Expo: Power for Land, Sea, and Air (Vol. 86953, p. V03AT04A030). American Society of Mechanical Engineers.
11. Xu, H., Hampson, G., Bestel, D., Windom, B. and Olsen, D., 2023. Innovative Piston Design Performance for High Efficiency Stoichiometric Heavy Duty Natural Gas Engine (No. 2023-01-0288). SAE Technical Paper.

12. Fosudo T, Kar T, Windom B, Schlagel J, Olsen D. Performance, Combustion and Emissions Evaluation of Liquid Phase Port-Injected LPG on a Single Cylinder Spark Ignited Engine. SAE Technical Paper; 2023 Apr 11.
13. Robinson, A., Lim, S.J., Alwahaibi, A.K., Zdanowicz, A., Török, D., Windom, B., Dryer, F.L. and Won, S.H., 2023. Elucidating NO coupling effects on ignition of toluene reference fuels by chemical functional group analysis. Proceedings of the Combustion Institute, 39(4), pp.4919-4928.
14. Bhoite, S., Windom, B., Singh, J., Montgomery, D. and Marchese, A.J., 2023. A study of ignition and combustion of liquid hydrocarbon droplets in premixed fuel/air mixtures in a rapid compression machine. Proceedings of the Combustion Institute, 39(2), pp.2533-2542.
15. Lucas, S.P., Labbe, N.J., Marchese, A.J. and Windom, B., 2023. Pre-vaporized ignition behavior of ethyl-and propyl-terminated oxymethylene ethers. Proceedings of the Combustion Institute, 39(1), pp.765-774.
16. Bestel, D., Olsen, D., Marchese, A. and Windom, B., 2023. Influence of NOx chemistry on the prediction of natural gas end-gas autoignition in CFD engine simulations. Proceedings of the Combustion Institute, 39(4), pp.4861-4870.
17. Kar, T., Fosudo, T., Marchese, A., Windom, B. and Olsen, D., 2022. Effect of fuel composition and EGR on spark-ignited engine combustion with LPG fueling: Experimental and numerical investigation. Fuel, 327, p.125221.
18. Lucas, S.P., Chan, F.L., Fioroni, G.M., Foust, T.D., Gilbert, A., Luecke, J., McEnally, C.S., Serdoncillo, J.J.A., Zdanowicz, A.J., Zhu, J. and Windom, B., 2022. Fuel Properties of Oxymethylene Ethers with Terminating Groups from Methyl to Butyl. Energy & Fuels.
19. Rodriguez, J.F., Xu, H., Hampson, G., Windom, B., Marchese, A. and Olsen, D.B., 2022. Heavy Duty Natural Gas Single Cylinder Research Engine Installation, Commissioning, and Baseline Testing. Energy and Power Engineering, 14(06).
20. Kar, T., Fosudo, T., Slunecka, C., Marchese, A., Windom, B. and Olsen, D., 2022. A Study of Propane Combustion in a Spark-ignited Cooperative Fuel Research (CFR) Engine (No. 2022-01-0404). SAE Technical Paper.
21. Fosudo, T., Kar, T., Marchese, A., Windom, B. and Olsen, D., 2022. Impact of LPG Composition on Performance, Emissions and Combustion Characteristics of a Spark-ignited CFR Engine (No. 2022-01-0476). SAE Technical Paper.
22. Bestel, D.B., Rodriguez, J., Marchese, A., Olsen, D. and Windom, B., 2022. Detection and Onset Determination of End-Gas Autoignition on Spark-Ignited Natural Gas Engines Based on the Apparent Heat Release Rate (No. 2022-01-0474). SAE Technical Paper.
23. Windell, B., Sharma, M., Nocivelli, L., Asztalos, K., Zdanowicz, A., Kar, T., Olsen, D., Marchese, A. and Windom, B., 2022. Bulk Spray and Individual Plume Characterization of LPG and Iso-Octane Directly Injected at Engine-Like Conditions (No. 2022-01-0497). SAE Technical Paper.
24. Zdanowicz, A., Mohr, J., Tryner, J., Gustafson, K., Windom, B., Olsen, D.B., Hampson, G. and Marchese, A.J., End-gas autoignition fraction and flame propagation rate in laser-ignited primary reference fuel mixtures at elevated temperature and pressure. Combustion and Flame, 234, p.111661, 2021.
25. Bartholet DL, Arellano-Treviño MA, Chan FL, Lucas S, Zhu J, John PC, Alleman TL, McEnally CS, Pfefferle LD, Ruddy DA, Windom B, Foust TL, Reardon, KF. “Property predictions demonstrate that structural diversity can improve the performance of polyoxymethylene ethers as potential bio-based diesel fuels”, Fuel. 2021. (IF: 5.578)
26. Alsulami, R., Lucas, S., Windell, B., Hageman, M., & Windom, B., Experimental assessment of the impact of variation in jet fuel properties on spray flame liftoff height. Applications in Energy and Combustion Science, 100032, 2021.
27. Bestel D., Bayliff S., Marchese A., Olsen D., Xu, H. and Windom B., “Investigation of the End-Gas Autoignition Process in Natural Gas Engines and Evaluation of the Methane Number Index”, Proceedings of Combustion Institute, 38(4), 5839-5847, 2021. (IF: 5.627; C: 1)
28. Alsulami, R, Lucas, S., Hageman, M., Knadler, M., Quinlan, J.M., and Windom, B.C.. "Coupling

effects of physical and chemical properties on jet fuel spray flame blowout." Proceedings of the Combustion Institute, 38(2), 3333-3341, 2021. (IF:5.627; C: 3)
29. Alsulami, R., and Windom B.C., "Liquid Jet Fuel Property Impacts on Combustion Performance." Journal of Propulsion and Power, 37(2), 276-282, 2021. (IF: 1.94)
30. Alsulami R, Windell B, Nates S, Wang W, Won SH, Windom BC. “Investigating the role of atomization on flame stability of liquid fuels in an annular spray burner”, Fuel, 265:116945, 2020. (IF: 5.578; C: 7)
31. Shirazi SA, Abdollahipoor B, Windom B, Reardon KF, Foust TD. “Effects of blending C3-C4 alcohols on motor gasoline properties and performance of spark ignition engines: A review”. Fuel Processing Technology, 1;197:106194, 2020. (IF: 4.982; C: 5)
32. Braun RJ, Reznicek E, Cadigan C, Sullivan NP, Danforth R, Bandhauer TM, Garland S, Olsen D, Windom B, Schaffer B. Development of a Novel High Efficiency, Low Cost Hybrid SOFC/Internal Combustion Engine Power Generator. ECS Transactions. 2019 Jul 10;91(1):355-60. (IF: 0.47; C: 2)
33. Ratcliff MA, Windom B, Fioroni GM, John PS, Burke S, Burton J, Christensen ED, Sindler P, McCormick RL. “Impact of ethanol blending into gasoline on aromatic compound evaporation and particle emissions from a gasoline direct injection engine”. Applied Energy, 250:1618-31, 2019. (IF: 8.848; C: 7)
34. Shirazi SA, Abdollahipoor B, Martinson J, Windom B, Foust TD, Reardon KF. “Effects of dual-alcohol gasoline blends on physiochemical properties and volatility behavior”. Fuel, 15;252:542-52, 2019. (IF: 5.578; C: 6)
35. Tryner J, Quinn C, Windom BC, Volckens J. “Design and evaluation of a portable PM 2.5 monitor featuring a low-cost sensor in line with an active filter sampler”. Environmental Science: Processes & Impacts, 21(8):1403-15, 2019. (IF: 3.328; C: 3)
36. Stoker TM, Dake M, Nibbelink L, Henderson M, Shaw J, Windom B. “Development and Validation of a CFD Simulation to Model Transient Flow Behavior in Automotive Refueling Systems”. SAE Technical Paper; 2019. (IF: 0.51; C: 3)
37. Abdollahipoor, B., Shirazi, S. A., Reardon, K. F., & Windom, B. C. “Near-azeotropic volatility behavior of hydrous and anhydrous ethanol gasoline mixtures and impact on droplet evaporation dynamics”. Fuel Processing Technology, 181, 166-174, 2018. (IF: 4.982; C: 8)
38. Shirazi, S. A., Abdollahipoor, B., Martinson, J., Reardon, K. F., & Windom, B. C. “Physiochemical Property Characterization of Hydrous and Anhydrous Ethanol Blended Gasoline”. Industrial & Engineering Chemistry Research, 57(32), 11239-11245, 2018. (IF: 5.278; C: 4)
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96. Bruno, T.J. *, Lovestead, T., Windom, B.C., "Analysis of complex fluids with the advanced distillation curve method" 242nd ACS National Meeting, Denver, CO, August 28-September 1, 2011.
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NON-REFEREED PUBLICATIONS

Non-refereed Proceedings/Transactions:

1. R. Churchill, B. Windom, 2024. Numerical investigation of mixture formation at different start of injection timings for a direct injection LPG engine. 2024 Spring Technical Meeting Western States Section of The Combustion Institute, University of Utah – Salt Lake City, UT, March 4-6, 2024.
2. J. Roberts, D. Cornett, B. Windom, 2024, Heat transfer analysis of regeneratively cooled bi-propellant rocket engines and test stand development, 2024 Spring Technical Meeting Western States Section of The Combustion Institute, University of Utah – Salt Lake City, UT, March 4-6, 2024.
3. D. Cornett, A. Gilbert, B. A. Jean, T. Daugaard, R. Smith, B. Windom, Upgrading and analysis of red oak and guayule bagasse pyrolysis oils for use as sustainable aviation fuels. 2024 American Chemical Society Fall Meeting, Denver, CO, August 18-25.
4. Gilbert, A., Cornett, D. and Windom, B.C., 2023, November. Upgrading and Analysis of Red Oak Pyrolysis Oil to Develop Sustainable Aviation Fuels. In 2023 AIChE Annual Meeting. AIChE.
5. Kessler, I., Valles Castro, M., Windom, B., The characterization of hydrogen flames at high temperatures and pressures using a rapid compression machine, 13th US National Combustion Meeting, Texas A&M University, College Station, TX, March 20-22, 2023.
6. J. Rodriguez (P), D. Olsen, B. Windom, H. Xu, G. Hampson, Low cost in cylinder pressure sensors for high efficiency natural gas heavy-duty on-road engines, 13th US National Combustion Meeting, Texas A&M University, College Station, TX, March 20-22, 2023.
7. Kessler, I., Valles Castro, M., Windom, B. Development of Advanced Hydrogen Fueled Gas Turbine Combustion Systems, Rocky Mountain Fluid Mechanics Symposium, Boulder, CO, August 9, 2022.
8. Lokini, P., Yalin, A., Windom, B., Laser Ignition and Laser-Induced Breakdown Spectroscopy of a Hydrocarbon Flame in an Annular Spray Burner. Rocky Mountain Fluid Mechanics Symposium, Boulder, CO, August 9, 2022.
9. Churchill, R., Olsen, D., Windom, B., The Research and Motor Octane Numbers of Liquified Petroleum Gas (LPG) and Dimethyl Ether (rDME) blends. Rocky Mountain Fluid Mechanics Symposium, Boulder, CO, August 9, 2022.
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13. Schulthess, J., Windom, B.C., "Transient, High Pressure Oil-gas Dilution Study", Rocky Mountain Fluid Mechanics Symposium, Boulder, CO, July 16, 2019.
14. Lucas, S., Alsulami, R., Windom, B.C., "Combustion and Droplet Behavior of JP-8 Surrogates in a Two-Phase Reacting Flow", Rocky Mountain Fluid Mechanics Symposium, Boulder, CO, July 16, 2019.
15. Bestel, D., Windom, B., Bayliff, S., Balu, A., "Natural Gas and CFR Engine Modeling for Knock Prediction", Rocky Mountain Fluid Mechanics Research Symposium, August 13-14, 2018, Boulder, CO.
16. Stoker, M., Dake, M., Nibbelink, L., Henderson, M., Windom, B.*, "CFD Model for an Automobile Refueling System", Rocky Mountain Fluid Mechanics Research Symposium, August 13-14, 2018, Boulder, CO.
17. Alsulami, R., Jadhav, A., Windell, B., Windom, B., "Investigation on the Role of Fuel Droplet Vaporization and Atomization on Spray Flame Stability and Dynamics", Rocky Mountain Fluid Mechanics Research Symposium, August 13-14, 2018, Boulder, CO.
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21. Dake, M., Henderson, M., Windom, B.C., "Computer Aided Engineering of Refueling and Emissions", CSU Graduate Student Showcase, Fort Collins, CO, November 9, 2017.
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28. Curtis, C., Gowing, D., Windom, B. C., Owens, J., Lowe, L., Bruno, T., "Combustion of Endothermic Fuels", UCCS Mountain Lion Research Day, Colorado Springs, CO, April 8, 2016.
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30. Bruno, T.J., Windom, B.C.*, "Thermally Stressed Fuels: Relationship of Thermophyscial Properties to Combustion", Multi-Agency Coordinating Committee for Combustion Research (MACCCR) 7th Annual Fuel and Combustion Research Review, Boulder, CO, October 27-30, 2014.
31. Bruno, T.J.*, Fortin, T.J., Windom, B.C., Widegren, J.A., "Thermophysical Properties of Thermally Stressed RP-1 and RP-2", 3rd AIAA-Rocky Mountain Technical Symposium, October 24, 2014.
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34. Windom, B.C., Xiouris, C. *, Fincham, A.M., Egolfopoulos, F.N., "A Study of Spherically Expanding Flames Using Particle Image Velocimetry" 2012 Spring Technical Meeting of the Western States Sections of the Combustion Institute, Arizona State University, AZ, March 19-20, 2012.
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36. Windom, B.C.* and Bruno, T. J., "Advanced Distillation Curve Method: Reduced Pressure Volatility Measurements" Boulder Laboratories Poster Session, NIST, Boulder, Colorado, June 2010.
37. Hahn, D.W. *, Diwakar, P.K., Windom, B.C., Jackson, P.B., Asgill, M. and Dalyander, P. "LIBS: Role in Solving the Plasma-Analyte Interaction Puzzle" FACSS2009, Federation of Analytical Chemistry and Spectroscopy Societies Annual Conference, Louisville, KY, October 2009.
38. Windom, B.C.* and Hahn, D.W. "Laser ablation-laser induced breakdown spectroscopy (LA-LIBS): A means for overcoming matrix effects leading to improved analyte response" NASLIBS2009, North American Symposium on Laser Induced Breakdown Spectroscopy, New Orleans, LA, July 2009.
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40. Windom, B.C.* and Hahn, D.W. "Dual-Pulse LIBS for Analysis of Gaseous and Aerosol Systems: Plasma-Analyte Interactions" LIBS2006, International Conference on Laser Induced Breakdown Spectroscopy, Montreal, Canada, September 2006.

ADDITIONAL PUBLICATIONS

1. Impact of Contaminants on Water + Natural Gas VLE and Updated Mixture Models for Accurate Dew Point Calculations Using NIST-REFPROP, Bret Windom, Samantha L. Miller, Jadon Roberts, Jason Widegren, Christopher Suiter, Mark McLinden, Gas Machinery Research Council Published Research Report, 2024.
2. Lubricant Optimization Toolbox, Zdanowicz, A., Windom, B., Gas Machinery Research Council Published Research Report, 2024.
3. Windom, B.C., Labbe, N., McEnally, C., Reardon, K., Quinn, J., Foust, T. and Zdanowicz, A., 2023. Poly (oxymethylene) Ethers as a High Cetane, Low Sooting Biofuel Blendstock for Use in Medium to Heavy Duty Mixing Controlled Compression Ignition Engines (No. DE-EE0008726-Final Report). Colorado State Univ., Fort Collins, CO (United States).
4. Experimental Analysis of Lubricant Entrainment in Natural Gas, Zdanowicz, Windom, B., Gas Machinery Research Council Published Research Report, 2023.
5. High Pressure Vapor Liquid Equilibrium Measurements of Ethane and Propane Mixtures

with Water using Nuclear Magnetic Resonance (NMR) Spectroscopy, Miller, S., Widegren, J., Suiter, C., McLinden, M., Windom, B., Gas Machinery Research Council Published Research Report, 2022.

6. Andrew Zdanowicz, Jeff Mohr, Diego Bernardi Bestel, Juan Felipe Rodriguez Rueda, Anthony Marchese, Bret Windom, and Daniel B. Olsen, Expanding The Knock/Emissions/Misfire Limits For The Realization Of Ultra-Low Emissions, High Efficiency Heavy Duty Natural Gas Engines, Published Final Scientific/Technical Report, DOE – EERE for DE-EE0008331, 2021.
7. Schulthess, J., Lingel, C., Delmotte, S., Windom, B., Reciprocating Natural Gas Compressor Analytical Lubrication Model Informed by Experimental Lubricant Dilution Data, Gas Machinery Research Council Published Research Report, 2021.
8. Sartini, S., Widegren, J., Suiter, C., McLinden, M., Windom, B., High Pressure Vapor Liquid Equilibrium Measurements of Methane and Water using Nuclear Magnetic Resonance Spectroscopy, Gas Machinery Research Council Published Research Report, 2021.
9. Stuart N. Riddick, Mars Rayno, Jesse Schulthess, Dan Zimmerle and Bret Windom, The maintenance and monitoring of rod packing in reciprocating compressors, Gas Machinery Research Council Published Research Report, 2020.
10. Jesse Schulthess, Bret Windom and Clint Lingel, Oil Dilution with Natural Gas and the Impact on Lubrication Rates for Reciprocating Compressors at Various Operating Conditions, Gas Machinery Research Council Published Research Report, 2020.
11. Bruno, T.J., Fortin, T.J., Windom, B.C., Widegren, J.A., "Thermophysical properties of thermally stressed RP-1 and RP-2 for application to fuel regenerative cooling: a comprehensive report" NIST Journal of Research, 2012.

RECENT PRESENTATIONS (* indicates invited presentation)

1. *B. Windom, CSU Powerhouse Past, Present, Future: Centaur 40 Gas turbine Test Facility. Technical Presentation Series, Solar Turbines, June 13, 2024.
2. *B. Windom, 2024. The Combustion Science and Engineering of Next Generation Decarbonized Power Systems (Science to Solution to Scale), Presentation at Universidad Técnica Federico Santa María, Valparaíso, Chile, November 5, 2024
3. *B. Windom, 2024. The combustion science and engineering of next generation large engines. Plenary Lecture at The 2024 Spring Technical Meeting Western States Section of The Combustion Institute, University of Utah – Salt Lake City, UT, March 4-6, 2024.
4. R. Churchill, B. Windom, 2024. Numerical investigation of mixture formation at different start of injection timings for a direct injection LPG engine. 2024 Spring Technical Meeting Western States Section of The Combustion Institute, University of Utah – Salt Lake City, UT, March 4-6, 2024.
5. J. Roberts, D. Cornett, B. Windom, 2024, Heat transfer analysis of regeneratively cooled bi-propellant rocket engines and test stand development, 2024 Spring Technical Meeting Western States Section of The Combustion Institute, University of Utah – Salt Lake City, UT, March 4-6, 2024.
6. D. Cornett, A. Gilbert, B. A. Jean, T. Daugaard, R. Smith, B. Windom, Upgrading and analysis of red oak and guayule bagasse pyrolysis oils for use as sustainable aviation fuels. 2024 American Chemical Society Fall Meeting, Denver, CO, August 18-25.
7. Lokini, P., Dumitrache, C., Windom, B. and Yalin, A.P., 2024. Laser-Induced Fragmentation and Spectroscopy of Acoustically Levitated Hydrocarbon Droplets. In AIAA AVIATION FORUM AND ASCEND 2024 (p. 3900).
8. Lokini, P., Dumitrache, C., Windom, B. and Yalin, A.P., 2024. Plasma Parameters of Laser Irradiated Hydrocarbon Droplets in Air. In AIAA SCITECH 2024 Forum (p. 0401).
9. Teeter, S., Plese, K., Zulch, R., Haid, C., Windom, B., Yalin, A.P. and Dumitrache, C., 2024. Development of a Supersonic Wind Tunnel Facility for Scramjet Testing at Colorado State University. In AIAA SCITECH 2024 Forum (p. 2129).
10. Windom, B., Olsen, D., Nocivelli, N., Sharma, M., Slunecka, C., Fosudo, t., Kar, T., Churchill, R.,

Vishwanathan, G., Development of Advanced Combustion Strategies for Direct Injection Heavy Duty LPG Engines to Achieve Near-Diesel Engine Efficiency and Prospects of DME/LPG Blends to Reduce Carbon Intensity., 35th World LPG Forum, Rome Italy, November 14th, 2023.

11. Gilbert, A., Cornett, D. and Windom, B.C., 2023, November. Upgrading and Analysis of Red Oak Pyrolysis Oil to Develop Sustainable Aviation Fuels. In 2023 AIChE Annual Meeting. AIChE.
12. Kessler, I., Valles Castro, M., Windom, B., The characterization of hydrogen flames at high temperatures and pressures using a rapid compression machine, 13th US National Combustion Meeting, Texas A&M University, College Station, TX, March 20-22, 2023.
13. J. Rodriguez (P), D. Olsen, B. Windom, H. Xu, G. Hampson, Low cost in cylinder pressure sensors for high efficiency natural gas heavy-duty on-road engines, 13th US National Combustion Meeting, Texas A&M University, College Station, TX, March 20-22, 2023.
14. Lokini, P., Dumitrache, C., Windom, B. and Yalin, A.P., 2024. Plasma Parameters of Laser Irradiated Hydrocarbon Droplets in Air. In AIAA SCITECH 2024 Forum (p. 0401).
15. Teeter, S., Plese, K., Zulch, R., Haid, C., Windom, B., Yalin, A.P. and Dumitrache, C., 2024. Development of a Supersonic Wind Tunnel Facility for Scramjet Testing at Colorado State University. In AIAA SCITECH 2024 Forum (p. 2129).
16. Windom, B., Olsen, D., Nocivelli, N., Sharma, M., Slunecka, C., Fosudo, t., Kar, T., Chruchill, R., Vishwanathan, G., Development of Advanced Combustion Strategies for Direct Injection Heavy Duty LPG Engines to Achieve Near-Diesel Engine Efficiency and Prospects of DME/LPG Blends to Reduce Carbon Intensity., 35th World LPG Forum, Rome Italy, November 14th, 2023.
17. Lokini, P., Dumitrache, C., Windom, B.C. and Yalin, A.P., 2023. Simultaneous Laser Ignition and Laser-Induced Breakdown Spectroscopy of a Hydrocarbon Spray Flame. In *AIAA AVIATION 2023 Forum* (p. 3603).
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19. Yepes, H., Slunecka, C., Windom, B., Olsen, D. and Amador, G., 2022. Non-homogeneous autoignition experimental study for a C3H8/H2 equimolar mixture. Bulletin of the American Physical Society.
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21. A.E. Quintero Castillo, A. Zdanowicz, B. Windom, D.B. Olsen, Characterization of crankcase ventilation gas on stationary natural gas engines, 2023 Fall Meeting of the Western States Section of the Combustion Institute, October 16-17, 2023, Cal State University Northridge, CA.
22. T. Fosudo, B. Windom, D. Olsen, Improvements in performance, emissions, and combustion characteristics of a heavy-duty LPG engine using direct liquid injection, 2023 Fall Meeting of the Western States Section of the Combustion Institute, October 16-17, 2023, Cal State University Northridge, CA.
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24. S. Lucas, B. Windom., Rapid compression machine autoignition of diisopropoxymethane for gasoline additive use, Proceedings to 13th US National Combustion Meeting, Texas A&M University, College Station, TX, March 20-22, 2023.
25. R. Churchill, G. Vishwanathan, D. Olsen, B. Windom, The research and motor octane numbers of

Liquified Petroleum Gas (LPG) and Dimethyl Ether (rDME) blends, Proceedings to 13th US National Combustion Meeting, Texas A&M University, College Station, TX, March 20-22, 2023.

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28. J. Bayer, B. Windom, D. Montgomery, D. Olsen, A. Zdanowicz, Reduction of methane emissions with hydrogen substitution on a lean burn four stroke natural gas engine., Proceedings to 13th US National Combustion Meeting, Texas A&M University, College Station, TX, March 20-22, 2023.
29. T. Fosudo, T. Kar, R. Duffens, B. Windom, D. Olsen, Combustion, performance, and emissions comparison of a liquefied petroleum gas heavy-duty engine with direct and port-fuel injection., Proceedings to 13th US National Combustion Meeting, Texas A&M University, College Station, TX, March 20-22, 2023.
30. Valles, M.A., Kessler, I. and Windom, B.C., 2023, June. Review and Development of Natural Gas/Hydrogen Fuel Flexible Reduced Chemical Mechanism for High-Order Modeling of Gas Turbines. Proceedings to 13th US National Combustion Meeting, Texas A&M University, College Station, TX, March 20-22, 2023.
31. Lokini, P., Dumitrache, C., Windom, B.C. and Yalin, A.P., 2023. Laser Ignition and Laser-Induced Breakdown Spectroscopy of a Hydrocarbon Flame in an Annular Spray Burner. In AIAA SCITECH 2023 Forum (p. 0750).
32. Yepes, H., Slunecka, C., Windom, B., Olsen, D. and Amador, G., 2022. Non-homogeneous autoignition experimental study for a C3H8/H2 equimolar mixture. Bulletin of the American Physical Society.
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139. *Windom, B.C., "The Role of Low Temperature Fuel Ignition Chemistry on Premixed Turbulent Flame Structures, Propagation, and Stability", Mechanical Engineering Department Seminar – Colorado State University, Fort Collins, CO, February 11, 2016.

140. Won, S. H., Reuter, C., Windom, B., & Ju, Y. Study on Turbulent Premixed Flame Regimes with Ignition Using a Reactor Assisted Turbulent Slot Burner. APS, H39-007, November, 2015.
141. Burke, S., Windom, B.C., "Derived Measurement of the Enthalpy of Vaporization of Complex Fuels Using a Variable Pressure Distillation Curve Approach", 19th Symposium of Thermophysical Properties, Boulder, CO, June 22-26, 2015.
142. Patz, B., Windom, B.C., "Azeotropic Volatility Behavior of Hydrous Ethanol Gasoline Mixtures", 19th Symposium of Thermophysical Properties, Boulder, CO, June 22-26, 2015.
143. Burke, S., Windom, B.C., "Derived Measurement of the Enthalpy of Vaporization of Complex Fuels Using a Variable Pressure Distillation Curve Approach", 249th ACS National Meeting, Denver, CO, March 22-26, 2015.
144. Patz, B., Windom, B.C., "Azeotropic Volatility Behavior of Hydrous Ethanol Gasoline Mixtures", 249th ACS National Meeting, Denver, CO, March 22-26, 2015.
145. Won, S.H., Reuter, C.B., Nakane, S., Windom, B.C., Ju, Y., "Effect of Ignition on Turbulent Premixed Flames of n-Heptane and Toluene", 53st AIAA Aerospace Sciences Meeting, Orlando, FL, January 5-9, 2015.
146. *Bruno, T.J., Windom, B.C., "Thermally Stressed Fuels: Relationship of Thermophyscial Properties to Combustion", Multi-Agency Coordinating Committee for Combustion Research (MACCCR) 7th Annual Fuel and Combustion Research Review, Boulder, CO, October 27-30, 2014.
147. *Windom, B.C., "The Role of Low Temperature Fuel Chemistry on Premixed Turbulent Flame Structures, Propagation, and Stability", Invited Presentation at Colorado State University, Fort Collins, CO, October 28, 2014.
148. Bruno, T.J., Fortin, T.J., Windom, B.C., Widegren, J.A., "Thermophysical Properties of Thermally Stressed RP-1 and RP-2", 3rd AIAA-Rocky Mountain Technical Symposium, October 24, 2014.
149. Curtis, C., Windom, B.C., "The Effect of Thermal Stress on the Combustion of Endothermic Fuels", 3rd AIAA-Rocky Mountain Technical Symposium, October 24, 2014.
150. Lefkovitz, J., Uddi, M., Windom, B.C., Lou, G., Ju, Y., "In situ species diagnostics and kinetic study of plasma activated ethylene pyrolysis and oxidation in a low temperature flow reactor", Proceedings of Combustion Institute, August 3-8, 2014.
151. Windom, B.C., Won, S.H., Jiang, B., Ju, Y., Hammack, S., Ombrello, T., Carter, C., "Impacts of turbulence-Chemistry Interaction and Low Temperature Ignition on Premixed n-Heptane/Air Flames", Proceedings of Combustion Institute, August 3-8, 2014.
152. Lefkovitz, J., Windom, B.C., Uddi, M., MacDonald, W., Adams, S., Ju, Y., "Time Dependent Measurements of Species Formation in Nanosecond-Pulsed Plasma Discharges in C2H4/O2/Ar Mixtures", 52st AIAA Aerospace Sciences Meeting, National Harbor, MD, January 13-10, 2014.
153. Windom, B.C., Won, S.H., Jiang, B., Ju, Y., Hammack, S., Ombrello, T., Carter, C., "Detailed Characterization of Low Temperature Chemistry and Turbulence Interaction in Reactor-Assisted Turbulent Premixed Flames", 52st AIAA Aerospace Sciences Meeting, National Harbor, MD, January 13-10, 2014.
154. *Windom, B.C., Won, S.H., Jiang, B., Ju, Y., "The Role of Low Temperature Fuel Chemistry on Turbulent Flame Propagation", Invited Presentation at the National Renewable Energy Laboratory, Golden, CO, December 6, 2013.
155. Windom, B.C., Won, S.H., Jiang, B., Ju, Y., "The Role of Low Temperature Fuel Chemistry on Turbulent Flame Propagation", AIAA Rocky Mountain Section Annual Technical Symposium, Colorado Springs, CO, October 25, 2013.
156. Windom, B.C., Won, S.H., Jiang, B., Ju, Y., "Detailed Characterization of Low Temperature Chemistry and the Influence on Turbulent Burning velocities for n-Heptane and Iso-Octane Reactor-Assisted Turbulent Flames", Western States Section of the Combustion Institute Technical Meeting, Fort Collins, CO, October 7-8, 2013.
157. Windom, B.C., Won, S.H., Jiang, B., Ju, Y., "Studies of Turbulent Flame Propagation and

Chemistry Interaction at Elevated Temperatures and High Reynolds Numbers", 8th U.S. National Combustion Meeting, Park City, UT, May 19-22, 2013.

158. Windom, B.C., Won, S.H., Wada, T., Jiang, B., Ju, Y., "Study of Turbulent Flame Propagation and Surface Characteristics at Large Reynolds Numbers", 51st AIAA Aerospace Sciences Meeting, Grapevine, TX, January 7-10, 2013.
159. Uddi, M., Leftkovitz, J., Windom, B.C., Ju, Y., "Species Measurements of Ethylene Oxidation in a Nanosecond-Pulsed Plasma Discharge Using QCL Absorption Spectroscopy Near 7.6μm", 51st AIAA Aerospace Sciences Meeting, Grapevine, TX, January 7-10, 2013.
160. *Lovestead, T., Windom, B.C., Riggs, J., Nickell, C., Bruno, T.J. "Assessment of the Compositional Variability of RP-1 and RP-2 with the Advanced Distillation Curve Approach" 18th Symposium on Thermophysical Properties, Boulder, CO, June 24-29, 2012.
161. Lovestead, T., Windom, B.C., Mascal, M., Nitkin, E., Bruno, T.J., "Advanced distillation curve analysis on ethyl levulinate as a diesel fuel oxygenate and a hybrid biodiesel fuel" 18th Symposium on Thermophysical Properties, Boulder, CO, June 24-29, 2012.
162. Windom, B.C., Xiouris, C., Fincham, A.M., Egolfopoulos, F.N., "A Study of Spherically Expanding Flames Using Particle Image Velocimetry" 2012 Spring Technical Meeting of the Western States Sections of the Combustion Institute, Arizona State University, AZ, March 19-20, 2012.
163. Eisazadeh-Far, K., Windom, B.C., Jayachandran, J., Fincham, A.M., Egolfopoulos, F.N., "An Experimental Study of Spherically Expanding Flames and the Determination of Laminar Flame Speeds" 2011 Fall Technical Meeting of the Western States Sections of the Combustion Institute, University of California at Riverside, CA, October 16-18, 2011.
164. Burger, J, Lovestead, T., Windom, B.C., Bruno, T.J., "Characterization of renewable fuels and additives with the advanced distillation curve method" 242nd ACS National Meeting, Denver, CO, August 28-September 1, 2011.
165. Bruno, T.J., Lovestead, T., Windom, B.C., "Analysis of complex fluids with the advanced distillation curve method" 242nd ACS National Meeting, Denver, CO, August 28-September 1, 2011.
166. Windom, B.C., Lovestead, T.M., Bruno, T.J.: "Pressure controlled advanced distillation curve analysis of biodiesel fuels" The 241 ACS Meeting, Anaheim, CA, March 30, 2011.
167. Windom, B.C. and Bruno, T. J., "Advanced Distillation Curve Method: Reduced Pressure Volatility Measurements" Boulder Laboratories Poster Session, NIST, Boulder, Colorado, June 2010.
168. Bruno, T.J., Windom, B.C., and Lovestead, T.M.: "Assessment of the Compositional Variability of RP-1 and RP-2 with the Advanced Distillation Curve Approach" Proceedings of the 57th JANNAF Propulsion Meeting, Colorado Springs, CO, US, May 3-7, 2010.
169. Windom, B.C., "Research at the University of Florida: Laser-Based Diagnostics Laboratory" Thermophysical Properties Division Seminar, NIST, Boulder, Colorado, November 2009.
170. *Hahn, D.W., Diwakar, P.K., Windom, B.C., Jackson, P.B., Asgill, M. and Dalyander, P. "LIBS: Role in Solving the Plasma-Analyte Interaction Puzzle" FACSS2009, Federation of Analytical Chemistry and Spectroscopy Societies Annual Conference, Louisville, KY, October 2009.
171. Windom, B.C. and Hahn, D.W. "Laser ablation-laser induced breakdown spectroscopy (LA-LIBS): A means for overcoming matrix effects leading to improved analyte response" NASLIBS2009, North American Symposium on Laser Induced Breakdown Spectroscopy, New Orleans, LA, July 2009.
172. *Hahn, D.W., Diwakar, P.K., Windom, B.C., Jackson, P.B., Asgill, M. and Dalyander, P. "Plasma-analyte Interactions for LIBS-based Analysis: Plasma-Particle Considerations" NASLIBS2009, North American Symposium on Laser Induced Breakdown Spectroscopy, New Orleans, LA, July 2009.
173. Windom, B.C. and Hahn, D.W. "Dual-Pulse LIBS for Analysis of Gaseous and Aerosol Systems: Plasma-Analyte Interactions" LIBS2006, International Conference on Laser Induced Breakdown Spectroscopy, Montreal, Canada, September 2006.

AWARDS

- 2023, Best Presentation: Engines, LPG Week: Global Technology Conference Rome, Italy November 14, 2023.
- 2021, Abell Outstanding Early Career Faculty Award, Walter Scott College of Engineering, Colorado State University, Fort Collins, CO.
- 2019, Summer Faculty Fellowship, Air Force Research Lab (AFRL), US Air Force Academy, Colorado Springs CO.
- 2018, Ralph R. Teetor Award, Society of Automotive Engineers (SAE), Detroit MI
- 2016, Summer Faculty Fellowship, Department of Energy, National Renewable Energy Laboratory, Golden CO.
- 2013, Campus Award for Mentoring, National Residence Hall Honorary, Colorado Springs CO
- 2011, Combustion Energy Frontier Research Center Postdoctoral Fellowship, Department of Energy, Princeton NJ
- 2009, National Academy of Science/National Research Council Postdoctoral Fellowship, NIST, Boulder CO
- 2006, Elsevier Science Prize for Best Student Presentation, Laser Induced Breakdown Spectroscopy Conference, Montreal Canada
- 2013, 2017, 2019, Combustion Art Merit Prize, US National Combustion Meeting, Park City UT, College Park MD, & Pasadena CA.

PROFESSIONAL AFFILIATIONS AND SERVICE ACTIVITIES

- Meeting Host
  - GMRC Engine Analyzer and Reliability Conference – July 2023
  - ONR Decarbonization Program Review – February 2024
- AIChE Hydrogen Safety Working Group Member
- Navy Decarbonization Consortium
- Member of Pi Tau Sigma engineering honor society
- Member of The Combustion Institute
  - Chair of the WSSCI Board Member
  - USSCI Board Member
  - Conference Organizer and Sessions Chair
- Member of the Society of Automotive Engineering
  - CSU SAE Chapter Faculty Advisor
  - Rocky Mountain Region Board Member
- Member of the American Society of Engineering Education
- Member of the American Institute of Aeronautics and Astronautics
  - Session chair at annual SCITECH meetings and Rocky Mountain Technical Symposium
- Conference Organizing Committee Rocky Mountain Fluid Mechanics Research Symposium
- Reviewed articles for: AIAA Journal for Propulsion and Power, Fuel, Energy and Fuels, Fuel Processing Technology, Combustion and Flame, Proceedings of the Combustion Institute, Energies, Applied Energy, Tribology Letters, Environmental Science and Technology, ASME Journal of Gas Turbines and Power, Heliyon, International Journal of Hydrogen Energy, Nanoscale, Nanotechnology, Wear, Journal of Combustion

MEDIA EXPOSURE

1. 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/
2. CSU, New Day Hydrogen awarded nearly $9M to build and operate hydrogen fueling stations https://www.coloradoan.com/story/news/education/2024/02/07/colorado-state-university-

new-day-hydrogen-awarded-nearly-9m-to-build-hydrogen-fueling-stations/72487244007/
3. Transportation Department awards CSU $8.9M for public hydrogen fueling stations project https://engr.source.colostate.edu/transportation-department-awards-csu-8-9m-for-public-hydrogen-fueling-stations-project/
4. ARPA-E awards CSU $1.5 million to curb methane emissions in natural gas infrastructure https://engr.source.colostate.edu/arpa-e-awards-csu-1-5-million-to-curb-methane-emissions-in-natural-gas-infrastructure/
5. New turbine donation allows Colorado State University to 'make our world a little more sustainable' https://www.cbsnews.com/colorado/news/csu-turbine-donation-energy/
6. Propane could be the new diesel with $3.5 million U.S. Department of Energy grant https://engr.source.colostate.edu/propane-could-be-the-new-diesel-with-3-5-million-u-s-department-of-energy-grant/
7. ASEE Highlight - DOE GRANT FUNDS BIOFUEL RESEARCH ACROSS DISCIPLINES https://engr.source.colostate.edu/doe-grant-funds-biofuel-research-across-disciplines/
8. Bret Windom honored with Ralph R. Teetor Education Award https://engr.source.colostate.edu/bret-windom-honored-with-ralph-r-teetor-education-award/
9. Energy Institute team awarded $1.2M to study natural gas engine efficiency https://source.colostate.edu/energy-institute-team-awarded-1-2m-to-study-natural-gas-engine-efficiency/
10. And they’re off again: CSU chosen for EcoCAR Mobility Challenge https://engr.source.colostate.edu/and-were-off-again-csu-chosen-for-ecocar-mobility-challenge/
11. CSU Researchers Want To Build A Better Big Truck Engine https://www.kunc.org/post/csu-researchers-want-build-better-big-truck-engine#stream/0
12. CEFRC news: FROM FUNDAMENTALS TO MULTI-SCALE PREDICTIVE MODELS FOR 21ST CENTURY TRANSPORTATION FUELS. Volume 3 Issue 1.