

Professor Ömer L. Gülder – Curriculum Vitae

J. Armand Bombardier Foundation Chair: University of Toronto -
Institute for Aerospace Studies

March 15, 2024

Contents

1. Appointment	3
2. Contact Information	3
3. Education	3
4. Current Research Interests	3
5. Professional Employment Record	4
6. Academic and Professional Honours and Distinctions	4
7. Professional Interests and Expertise	4
7.1 Teaching: 1977 – 1981; 1986 – 1989; 2001 – 2024	4
7.2 Research and Scholarship – Major forefront research accomplishments	5
7.3 Innovation and Technology Transfer	6
7.4 Patents	6
8. Supervision	6
8.1 Postdoctoral Fellows, Research Associates and Engineers (at the University of Toronto)	6
8.2 Postdoctoral Fellows (at the National Research Council Canada)	7
8.3 PhD Supervision (at the University of Toronto)	7
8.4 PhD Supervision (at the National Research Council Canada)	8
8.5 MAsc Supervision (at the University of Toronto)	9
8.6 MAsc Supervision (at the Middle East Technical University)	11
8.7 MEng Supervision (4 month term project in lieu of a course)	11
8.8 BAsc Undergraduate Thesis Supervision	12
9. Publications	12
9.1 Identifiers for Bibliometric Data	12
9.2 Journal manuscripts submitted / under review	12
9.3 Refereed Journal Publications	13
9.4 Refereed Conference Papers	26
9.5 Other Conference Papers	36
9.6 Keynote / Plenary / Invited Presentations	49
10. Research Grants / Equipment Grants / Contracts	51

11. Professional Service Activities	54
11.1 Journal Editorial Boards	54
11.2 Professional Societies	54
11.3 Professional Society Membership	55
11.4 Advisory Responsibilities	55
11.5 Scientific/Technical Meeting Organization	55
11.6 Reviewing Activities	56
12. University and Departmental Assignments/Committees	57
12.1 Faculty	57
12.2 UTIAS	57

1 Appointment

Rank: Professor
 Appointment date: November 2001
 Tenured; Full time

2 Contact Information

University of Toronto [↗](#)
 Institute for Aerospace Studies [↗](#)
 (UTIAS)
 4925 Dufferin Street
 Toronto, Ontario M3H 5T6 Canada

Work: +1-416-667-7721
 Fax: +1-416-667-7743
 E-mail: ogulder@utias.utoronto.ca
 Research Group Webpage [↗](#)
 (utias.utoronto.ca/~ogulder/Gulder.htm)

3 Education

B.Sc.	Mechanical Engineering	Middle East Technical University, Turkey	1971
M.Sc.	Mechanical Engineering	Middle East Technical University, Turkey	1974
Ph.D.	Mechanical Engineering	University of Manchester, England	1977

4 Current Research Interests

(Research Field: Combustion and Propulsion)

- **Turbulent Combustion** Spray combustion in aviation gas turbines;
Premixed turbulent flame propagation;
Soot formation in non-premixed flames
- **Sustainable Aviation Fuels** Fit-for-purpose drop in fuels;
Hydrogen and biofuels
- **Soot Aerosol Formation** Soot formation at high pressures;
Gas turbine spray combustion
- **Thermal Stability of Aviation Jet Fuels** Conventional and sustainable jet fuels
- **Optical Combustion Diagnostics** Laser-induced incandescence for soot;
Spectral soot emission;
Soot aggregate morphology
- **Aviation's Impact on Climate Change** Soot aerosol and contrail formation

5 Professional Employment Record

1971 – 1974	Power plant engineer	Turkish Electricity Authority
1974 – 1977	Graduate research assistant	University of Manchester, UK Simon Engineering Labs
1977 – 1981	Assistant professor	Mechanical Engineering Department Middle East Technical University, Turkey
1981 – 1989	Associate Research Officer	National Research Council Canada
1989 – 2001	Group Leader / Section Head	National Research Council Canada Combustion Research Labs
2001 – present	Professor	UTIAS – University of Toronto
(2007 – 2016)	(Associate Director)	UTIAS – University of Toronto

6 Academic and Professional Honours and Distinctions

- J. Armand Bombardier Foundation Chair Professor, 2022
- Fellow of the Combustion Institute, 2018
- Fellow Canadian Academy of Engineering, 2012
- Associate Fellow, American Institute of Aeronautics and Astronautics, 2011
- NRC Outstanding Achievement Award in support of NRC research objectives, 1996
- NRC Staff Performance Award, 1993
- NRC Research Associateship, 1981-1984
- Research Assistantship, Univ. of Manchester, 1976-1977
- Ph.D. Scholarship, British Council and Ministry of Education, 1974-1977
- Undergraduate Scholarship, Ministry of Education, 1967-1971

7 Professional Interests and Expertise

7.1 Teaching: 1977 – 1981; 1986 – 1989; 2001 – 2024

Taught a variety of courses in the thermal sciences area, both at the undergraduate and graduate levels including Combustion, Gas Turbines & Propulsion, Gas Dynamics, Combustion Engines, Thermodynamics, and Mechanical Engineering Laboratory. Developed three new courses on Combustion and Reactive Flows, one for 3rd year undergraduate Aerospace students, and the other two for graduate students at UTIAS.

AER 315 Combustion Processes (2004W; 2005W; 2006W; 2007W; 2007F; 2008F; 2009F; 2010F; 2011F; 2012F; 2013F; 2015F; 2016F; 2017F; 2018F; 2019F; 2021F)

AER 510 Aerospace Propulsion (2008W; 2009W)

AER 1304 Fundamentals of Combustion (2002F; 2003F; 2004F; 2005F; 2006F; 2007F; 2008F; 2009F; 2010F; 2011F; 2012F; 2013F; 2014F; 2015F; 2016F; 2017F; 2018F; 2019F; 2021F; 2022F)

AER 1306 Special Topics in Reactive Flows (2005W; 2006W; 2007W; 2008W; 2009W; 2010W; 2011W; 2012W; 2013W; 2014W; 2015W; 2016W; 2017W; 2018W; 2019W; 2020W; 2021W; 2022W; 2023W)

7.2 Research and Scholarship – Major forefront research accomplishments

Gas Turbine Combustion: Influence of fuel chemistry and flame temperature on soot formation in combustors; sooting propensities of aviation turbine fuels; turbulent combustion and radiation in gas turbine combustors; thermal oxidative stability of aviation fuels; coking avoidance.

Soot Formation: Influence of pressure, gravity, fuel chemistry, flame temperature, N_2 , SO_2 , CO_2 , O_2 , and H_2 dilution on soot formation in diffusion flames.

Turbulent Premixed Combustion: Flame propagation regimes, structure of turbulent premixed flame fronts, application of stochastic techniques to flame propagation, flame front interrogation by optical/spectroscopic techniques.

Laminar Premixed Combustion: Hydrogen enrichment; Lean-premixed combustion; NO_x formation in lean-premixed and hydrogen-enriched combustion; Burning velocities of methanol, ethanol, and gasoline at elevated pressures and temperatures; Burning velocities of gasoline - methanol, methanol-water, and ethanol-water blends.

Transient Dense Sprays: Structure and drop size distribution of diesel sprays; influence of injection pressure profile on temporal drop size; temporally and spatially resolved drop size distribution in intermittent sprays.

Laser-based Combustion Diagnostics: Development and application of laser induced incandescence (LII) as a diagnostic for soot particulate measurements; soot concentration and size measurements by multi-wavelength extinction; size measurement by diffraction in dense sprays; engineering approaches to correct bias due to multiple scattering in dense sprays; turbulent flame front imaging by laser induced OH fluorescence (OH LIF) and Mie scattering.

Sustainable Transportation Fuels: Performance and exhaust emission characteristics of biomass derived aviation and ground transportation fuels; hydrogen as a potential transportation fuel.

Fuel Technology: Influence of fuel chemical structure on aviation and diesel fuel ignition quality; development of fast and accurate non-engine ignition quality prediction techniques based on NMR spectroscopy; thermal stability and coking propensity of aviation fuels.

7.3 Innovation and Technology Transfer

My research work within the last 25 years on soot and particulate formation in combustion had led to creation of a team who have conceived and developed “Field LII”, an instrument for real-time optical measurement of nano-size carbon particles using laser-induced incandescence. The developed technology had led to three patents (one world-wide, second in US, Canada, and Japan, and third one in US and Canada), patents P.1 to P.3. We licensed the LII technology for commercialization and a commercial instrument is now available for monitoring particulate matter (PM) in various types of engine exhausts and in the atmosphere. Instrument is also used widely in soot research.

7.4 Patents

[P.1] Snelling, D. R., Smallwood, G. J., Liu, F., and Gülder, Ö. L., “Small Particle Analysis by Laser Induced Incandescence”, Patent No. US 6,809,820 B2, October 26, 2004; Canada CA2380735.

[P.2] Snelling, D. R., Smallwood, G. J., and Gülder, Ö. L., “Method and Apparatus for Applying Laser Induced Incandescence for the Determination of Particulate Measurements”, Patent No. US 6,181,419 B1, Jan. 30, 2001; Canada CA2,272,758; Japan JP200055800-A.

[P.3] Snelling, D. R., Smallwood, G. J., and Gülder, Ö. L., “Absolute Light Intensity Measurements in Laser Induced Incandescence”, Patent No. US 6,154,277, Nov. 28, 2000; Canada, 2,272,255; EPO and Japan, EP0959329 A3.

8 Supervision

8.1 Postdoctoral Fellows, Research Associates and Engineers (at the University of Toronto)

Start	Completion	Name	Research Area
2004	2006	Dr. David Pavé	Laser diagnostics of combustion; turbulent premixed flame structure
2005	2006	Dr. Guillaume Dayma	Chemical kinetic simulation of combustion
2007	2008	Dr. S. Tebajaamat	Combustion modelling
2008	2010	Dr. Mario Commodo	Thermal oxidative stability of aviation jet fuels
2011	2017	Dr. Frank Yuen	Altitude emissions control for aviation; aviation jet fuel thermal stability
2015	2017	Dr. Peter Joo	Soot formation at high pressures

2015	2017	Dr. Sina Kheirkhah	Turbulent premixed combustion
2017	2018	Dr. Moah Christensen	High pressure soot formation in biofuel flames
2017	2019	Dr. Emre Karatas	Soot morphology at high pressure combustion
2020	2021	Taylor Rault	Gas turbine spray combustion
2021	current	Leo Nataj	High pressure combustion facility operational and research engineer

8.2 Postdoctoral Fellows (at the National Research Council Canada)

Start	Completion	Name	Research Area
1987	1988	Dr. J. J. Liu	Spray diagnostics by laser diffraction
1990	1991	Dr. S. M. Aval	Structure of dense sprays
1991	1992	Dr. B. Deschamps	Turbulent premixed combustion
1992	1993	Dr. J.-C. Sautet	Turbulent premixed combustion
1994	1998	Dr. X. Li	Effect of fuel properties on engine emissions
1996	1997	Dr. A. Tanjo	Two-colour PIV image analysis

8.3 PhD Supervision (at the University of Toronto)

Start	Completion	Candidate's Name	Thesis Title
2000	2005	Kevin Thomson	Soot formation in annular non-premixed laminar flames of methane-air at pressures of 0.1 to 4.0 MPa (co-supervisor EJ Weckman, Waterloo)
2003	2009	Frank Yuen (MAsc and PhD)	Experimental investigation of the dynamics and structure of lean premixed turbulent combustion
2003	2011	F. Hernandez Perez (MAsc and PhD)	Subfilter scale modelling for large eddy simulation of lean hydrogen-enriched turbulent premixed combustion (co-supervisor CPT Groth)
2003	2010	Wen Lin (MAsc and PhD)	Large eddy simulation of premixed turbulent combustion using flame surface density approach. (co-supervisor CPT Groth)
2005	2010	Peter H. Joo	Soot formation in non-premixed laminar flames at subcritical and supercritical pressures.
2006	2010	March Charest	Numerical modelling of sooting laminar

2009	2015	Nasim Shahbazian	diffusion flames at elevated pressures and microgravity (co-supervisor CPT Groth) Subfilter scale combustion modelling for large eddy simulation of turbulent premixed flames (co-supervisor CPT Groth)
2010	2014	A. Emre Karataş	High-pressure soot formation and diffusion flame extinction characteristics of gaseous and liquid fuels
2011	2015	Sina Kheirkhah	Experimental study of turbulent premixed combustion in V-shaped flames
2011	2016	Parsa Tamadonfar	Experimental investigation of premixed turbulent hydrocarbon/air Bunsen flames
2012	2018	Sandipan Chatterjee	Turbulent non-premixed swirl-stabilized flames of gaseous and liquid fuels in a gas turbine model combustor
2014	2019	Yu-Lin Wang	Flow field and soot formation characteristics in swirl-stabilized non-premixed turbulent flames
2017	2023	Rahul Vishwanath	Investigations on soot and flow field characteristics of blended liquid and gaseous fuels in turbulent swirl-stabilized non-premixed flames
2018	in progress	Rayne Sung	Aviation jet fuel thermal stability
2018	in progress	Rajat Sawanni	Soot formation at elevated pressures
2019	in progress	Praful Kumar	Turbulent premixed combustion
2021	in progress	Yash Rajan	Soot aerosol morphology (co-supervisor A. E. Karataş, Toronto Metropolitan)
2021	in progress	Ritesh Maurya	Aviation gas turbine combustion
2021	in progress	Amirhossein Azimi	Gas turbine spray combustion
2022	in progress	Abdalrazik Ali	Premixed turbulent combustion (co-supervisor M. Talei, Melbourne)
2022	in progress	Daniel Cormier	Soot diagnostics (co-supervisor A. E. Karataş, Toronto Metropolitan)
2023	in progress	Mohammad Razavi	Pyrolysis and soot formation of aviation fuels at high-pressures

8.4 PhD Supervision (at the National Research Council Canada)

Start	Completion	Candidate's Name	Thesis Title
1988	1992	Asli Işığigür	Safflower Seed Oil as an Alternative Diesel Fuel (co-supervisor F. Hamdullahpur, TUNS / Dalhousie University)

8.5 MAsc Supervision (at the University of Toronto)

Start	Completion	Candidate's Name	Thesis Title
2002	2005	Décio Bento	Soot formation in propane-air laminar diffusion flames at elevated pressures
2003	2006	Paul Mandatori	Soot formation in ethane-air coflow laminar diffusion flames at elevated pressures
2003	2005	Esen Cintosun	Analysis of premixed turbulent flame front images obtained by Mie scattering and laser-induced fluorescence of OH
2003	2006	Frédéric Dandavino	Development of a two-line atomic fluorescence technique for temperature measurement in diffusion flames
2004	2006	Kathleen Bohan	Soot formation in laminar diffusion flames of gas mixtures
2004	2006	Natalie Galley	Investigation of thermal flame structure in lean turbulent premixed methane-air flames by Rayleigh scattering
2004	2006	Marie Vaillancourt	High pressure soot formation in non-smoking methane-air laminar diffusion flames from 1.5 to 6.0 MPa
2004	2006	Srivatsava Puranam	Flame surface density of turbulent premixed flames at medium to high turbulence intensities
2006	2010	Trevor Kempthorne	Laser-induced incandescence technique for soot diagnostics in combustion
2007	2009	Natalie Panek	An investigation of ethylene laminar diffusion flames at sub-atmospheric pressures to simulate microgravity
2007	2010	Owen Wong	Design and development of an apparatus to study aviation jet fuel thermal stability
2007	2009	Emre Karatas	Soot formation in coflow and counterflow laminar diffusion flames of fuel mixtures
2009	2011	Gorngrit Intasopa	Soot measurements in high-pressure diffusion flames of gaseous and liquid fuels
2009	2012	Arup Barua	Soot formation in diffusion flames of alternative turbine fuels at elevated pressures
2009	2011	Daniel Cormier	Laser-induced incandescence for high pressure combustion diagnostics
2009	Withdrawn	Ivo Fabris	Thermal oxidative stability of jet fuels
2009	2010	Sintia Bejatovic	Discrete Explicit Filtering Techniques for LES with AMR (co-supervisor CPT Groth)
2010	2013	Timothy Kwon	Extinction limits of laminar diffusion counterflow flames of various gaseous fuels including syngas and biogas

2010	2012	Sanaz Ghasemi	Laser-induced incandescence at high pressures
2010	2013	Ali Nasser	Development of surrogates for aviation jet fuels
2011	2013	Jason Liang	Design and development of an experimental apparatus to study jet fuel coking in small gas turbine fuel nozzles
2011	2014	Zhao Liu	Modelling of thermal oxidative stability of jet fuels
2012	2014	Christopher Halmo	Study of turbulent swirl-stabilized non-premixed ethylene flames in a model combustor
2012	2014	Weichao Wang	Experimental and numerical investigation of structure and extinction limits of biofuels in laminar counterflow diffusion flames (co-supervisor CPT Groth)
2012	2015	Adam O'Brien	Numerical simulation of thermoacoustic response of laboratory scale premixed multi-slit burner flames (co-supervisor CPT Groth)
2013	2015	Adriana Daca	Soot Formation at High Pressures in Laminar Liquid and Gaseous Fuel Flames
2013	2016	Alex Vargas	Design and development of a thermophoretic soot sampling system for high pressure laminar diffusion flames
2015	2017	Neell Young	An analysis of thermal stability of conventional and alternative aviation fuels
2016	2019	Cody Bauer	Spray characterization of an aircraft gas turbine engine hybrid fuel nozzle
2016	2018	Ben Gigone	Effect of pressure on soot morphology in laminar diffusion flames
2016	2018	Elizabeth Griffin	The sooting propensities of ethanol, ethylene, propylene, and butylene at elevated pressures
2017	2019	Sara Khan	A parametric study of jet fuel thermal stability
2017	In progress	Ral Bielawski	Premixed turbulent combustion simulation
2018	2020	Silin Wang	Effects of fuel doping and fuel chemistry on soot formation in co-flow laminar diffusion flames at elevated pressures
2018	2020	Taylor Rault	Soot, flow field, and spray structure in turbulent swirl-stabilized spray flames of Jet A-1/biofuel blends in a model gas turbine combustor
2019	2021	Peter Carniglia	Effects of flow field and spray characteristics on soot in a swirl-stabilized model combustor
2019	Withdrawn	Dominic Mortimer	Multi-angle scattering soot diagnostics
2020	2022	Jacob Weber	Soot and flow field in turbulent swirl-stabilized spray flames of Jet A-1 with downstream air

2021	2023	Mohammad Razavi	injection in a model gas turbine combustor A micro flow reactor for studying pollutant formation
------	------	-----------------	---

8.6 MAsc Supervision (at the Middle East Technical University)

Start	Completion	Candidate's Name	Thesis Title
1978	1980	Tuğrul Uşşaklı	Performance of a Multi-cylinder Passenger Car Engine Fuelled with Ethanol and Gasoline
1979	1981	Arif H. Tanribilir	Performance of a Spark Ignition Engine Fuelled with Ethanol-Water Blends at High Compression Ratios
1979	1981	M. Merih Özgen	Development of an Algorithm to Determine the Equilibrium Temperature and Composition of Constant Volume or Constant Pressure Combustion of a C-H-O-N-Ar System
1979	1981	Serdar Nişli	Development of a Digital Computer Program for the Simulation of the Power Cycle and Pollutant Formation in Spark Ignition Engines (co-supervisor A. D. Bayka)
1980	1983	M. Riza Arat	Mathematical Modelling of Rotary Dryers (co-supervisor B. Platin)

8.7 MEng Supervision (4 month term project in lieu of a course)

Start	Completion	Candidate's Name	Thesis Title
2013	2013	Pooja Sharma	JetA1 unstressed and stressed fuel analysis by NMR, IR and MS
2020	2020	Aysegul Arslan	Analysis of battery system for an all-electric aircraft
2020	2020	Zhe Li	Review of the state-of-the-art for micro-turbine
2021	2021	Nishant Thillai	In-depth analysis/comment on the paper "Experimental study of the combustion and emission characteristics of ethanol, diesel-gasoline, n-heptane-iso-octane, n-heptane-ethanol and decane-ethanol in a constant volume vessel"
2021	2021	Lakshmanan Velappan	Critical Assessment of an Experimental Study of Combustion and Emission Characteristics of Lower Alcohols in Constant Volume Vessel
2022	2022	Vanessa Lai	Hydrogen as an aviation fuel

8.8 BAsC Undergraduate Thesis Supervision

Start	Completion	Candidate's Name	Thesis Title
2005	2005	Eugene Zassoko	Design of a surrogate jet fuel
2006	2006	Owen Wong	Soot formation rates at high pressures
2008	2008	Alex Lin	High pressure soot formation
2009	2009	Quinn Jien	Effect of fuel structure on ignition quality and sooting tendency of jet fuels
2009	2009	Graham Feltham	Laminar burning velocities of transportation fuels
2010	2011	George Panagiotoglou	Structure of turbulent premixed flames
2010	2011	Kevin Pui	Ignition quality and sooting propensity of aviation fuels
2012	2012	Weiqing Fang	Properties of alternative aviation fuels
2012	2013	Navid Nourian	Extinction of diffusion flames of alcohols
2014	2015	Neell Young	Properties of aviation fuels
2017	2018	Zijun Xu	Sooting propensities of hydrocarbons
2018	2019	Mohamed Widaatalla	Sooting propensities of aviation fuels
2019	2020	Jacob Weber	Micro-channel combustion
2020	2021	Mohammad Razavi	Micro-channel reactor design
2023	in progress	Pauline Wang	Sustainable aviation fuels

9 Publications

9.1 Identifiers for Bibliometric Data

- Web of Science Researcher ID: E-3256-2013 [↗](#)
- Scopus ID: 7006436196 [↗](#)
- ORCID: 0000-0001-5342-9837 [↗](#)
- Google Scholar [↗](#)

9.2 Journal manuscripts submitted / under review

[S.1] R. Sawanni and Gülder, Ö. L. A tractable methodology for assessing the pressure scaling of sooting processes in a counterflow diffusion flame at 1 to 6 bar, *Under review*, submitted December 2023.

[S.2] Sung, R., Young, N.G., Razavi, M.R., Canteenwalla, P., Chishty, W., and Gülder, Ö. L. Thermal stability and coking propensity assessment of alternative aviation turbine

fuels using a novel experimental methodology, *Under review*, submitted December 2023.

9.3 Refereed Journal Publications

- [J.1] R. B. Vishwanath, P. Carniglia, J. Weber, and Gülder, Ö. L. Effects of *n*-pentanol blending on soot formation in swirl-stabilized turbulent spray flames of Jet A-1 in a laboratory gas turbine combustor, *Fuel*, Vol.357, 129971, 2024.
doi:10.1016/j.fuel.2023.129971
- [J.2] Vishwanath, R.B. and Gülder, Ö. L. Hydrogen enrichment enhances soot formation in swirl-stabilized non-premixed turbulent combustion of ethylene in a model gas turbine combustor, *Proceedings of the Combustion Institute*, Vol.39, pp.889-898, 2023.
doi:10.1016/j.proci.2022.07.160
- [J.3] Yang, S.S. and Gülder, Ö. L. Impact of *n*-butanol substitution in ethylene on soot yields in laminar diffusion flames at pressures 3 to 10 bar, *Combustion and Flame*, Vol. 245. 112236, 2022.
doi:10.1016/j.combustflame.2022.112326
- [J.4] Kheirkhah, S. and Gülder, Ö. L. A revisit to the validity of flamelet assumptions in turbulent premixed combustion and implications for future research, *Combustion and Flame*, Vol. 239, 111635, 2022.
doi:10.1016/j.combustflame.2021.111635
- [J.5] Gülder, Ö. L. Does soot form in a spark-ignition engine fuelled with lean methanol and methanol-hydrogen mixtures?, *Fuel*, Vol. 306, 121728, 2021.
doi:10.1016/j.fuel.2021.121728
- [J.6] Thillai, N., Gülder, Ö. L. Critique of the experimental study of the combustion and emission characteristics of ethanol, diesel-gasoline, *n*-heptane-iso-octane, *n*-heptane-ethanol and decane-ethanol in a constant volume vessel, *Fuel*, Vol. 304, 121368, 2021.
doi:10.1016/j.fuel.2021.121368
- [J.7] Mortimer, D. and Gülder, Ö. L. Comments on effects of adding cyclohexane, *n*-hexane, ethanol, and 2,5-dimethylfuran to fuel on soot formation in laminar coflow *n*-heptane/iso-octane diffusion flame, *Combustion and Flame*, Vol. 232, 111555, 2021.
doi:10.1016/j.combustflame.2021.111555
- [J.8] Weber, J. K., Razavi, M. R., Carniglia, P., and Gülder, Ö. L. Comments on the Experimental Study of the Combustion and Emission Characteristics of Lower Alcohols in a Constant Volume Vessel, *Energy and Fuels*, Vol. 35(15), pp. 12753-12757, 2021.
doi:10.1021/acs.energyfuels.1c01233
- [J.9] Yang, S. S. and Gülder, Ö. L. Sooting propensity dependence on pressure of ethylbenzene, *p*-xylene, *o*-xylene and *n*-octane in laminar diffusion flames, *Combustion and*

- Flame*, Vol. 227, pp. 202-213, 2021.
doi:10.1016/j.combustflame.2021.01.008
- [J.10] Yang, S. S. and Gülder, Ö. L. Ethanol supplement increases soot yields in nitrogen-diluted laminar ethylene diffusion flames at pressures from 3 to 5 bar, *Combustion and Flame*, Vol. 227, pp. 1-10, 2021.
doi:10.1016/j.combustflame.2020.12.039
- [J.11] Yang, S. S. and Gülder, Ö. L. Sooting characteristics of ethanol-ethylene blends in laminar coflow diffusion flames up to 10 bar, *Combustion and Flame*, Vol. 225, pp. 39-47, 2021.
doi:10.1016/j.combustflame.2020.10.032
- [J.12] Rault M. T., Vishwanath, B. R., Gülder, Ö. L. Spray characteristics, velocity field, and soot formation in turbulent swirl-stabilized spray flames in a model combustor fueled with n-butanol/Jet A-1 blends, *Fuel*, Vol. 287, 119452, 2021.
doi:10.1016/j.fuel.2020.119452
- [J.13] Rault M. T., Vishwanath, B. R., Gülder, Ö. L. Impact of ethanol blending on soot in turbulent swirl-stabilized Jet A-1 spray flames in a model gas turbine combustor, *Proceedings of the Combustion Institute*, Vol.38, pp. 6431–6439, 2021.
doi:10.1016/j.proci.2020.05.021
- [J.14] Yang, S. S., Karataş, A. E., Gülder, Ö. L. Effect of hydrogen enrichment of laminar ethylene diffusion flames on thermal structure and soot yields at pressures up to 10 bar, *Proceedings of the Combustion Institute*, Vol.38, pp. 2507–2516, 2021.
doi:10.1016/j.proci.2020.06.157
- [J.15] Gu, M., Liu, F., Consalvi, J.-L. and Gülder, Ö. L. Effects of pressure on soot formation in laminar coflow methane/air diffusion flames doped with n-heptane and toluene between 2 and 8 atm, *Proceedings of the Combustion Institute*, Vol.38, pp. 1403–1412, 2021.
doi:10.1016/j.proci.2020.07.032
- [J.16] Yang, S. S. and Gülder, Ö. L. Effects of benzene, cyclo-hexane and n-hexane addition to methane on soot yields in high-pressure laminar diffusion flames, *Proceedings of the Combustion Institute*, Vol.38, pp. 1107–1114, 2021.
doi:10.1016/j.proci.2020.06.109
- [J.17] Karataş, A. E., Gigone, B., Gülder, Ö. L. Soot aggregate morphology deduced from thermophoretic sampling in coflow laminar methane diffusion flames at pressures up to 30 bar, *Combustion and Flame*, Vol. 220, pp. 411-422, 2020.
doi:10.1016/j.combustflame.2020.09.009
- [J.18] Yang, S. S., and Gülder, Ö. L. Pressure dependence of sooting characteristics of m-xylene and n-octane doped laminar methane diffusion flames from 2 to 10 bar, *Combustion and Flame*, Vol. 220, pp. 203-209, 2020.
doi:10.1016/j.combustflame.2020.06.043

- [J.19] Rault M. T., Vishwanath, B. R., Gülder, Ö. L. Influence of m-xylene addition to Jet A-1 on spray structure, flow field and soot production in turbulent swirl-stabilized spray flames in a model combustor, *Combustion and Flame*, Vol. 219, pp. 258-267, 2020. doi:10.1016/j.combustflame.2020.05.025
- [J.20] Commodo, M., Karataş, A. E., De Falco, G., Minutolo, P., D'Anna, A., Gülder, Ö. L. On the effect of pressure on soot nanostructure: A Raman spectroscopy investigation, *Combustion and Flame*, Vol. 219, pp. 13-19, 2020. doi:10.1016/j.combustflame.2020.04.008
- [J.21] Wang, L.-Y., Chatterjee, S., An, Q., Steinberg, A. M., Gülder, Ö. L. Soot formation and flame structure in swirl-stabilized turbulent non-premixed methane combustion, *Combustion and Flame*, Vol. 209, pp. 303-312, 2019. doi:10.1016/j.combustflame.2019.07.033
- [J.22] Khierkhah, S., Gülder, Ö. L. Comments on Tong et al.: "Experimental study on dynamics of confined low swirl partially premixed methane-hydrogen-air flame", *International Journal of Hydrogen Energy*, Vol. 44, pp. 17103-17104, 2019. doi:10.1016/j.ijhydene.2019.04.210
- [J.23] Khierkhah, S., Gülder, Ö. L. A comment on papers by Zhou et al. (CNF, 2018) and Zhou et al. (CST, 2019): Flame displacement speed, flame front velocity, and edge (reactants) velocity, *Combustion and Flame*, Vol. 205, pp. 133-134, 2019. doi:10.1016/j.combustflame.2019.04.002
- [J.24] Tamadonfar, P., Gülder, Ö. L. Comment on the paper "Experimental study of effect of hydrogen addition on combustion of low calorific value gas fuels", *International Journal of Hydrogen Energy*, Vol. 44, pp. 4006-4007, 2019. doi:10.1016/j.ijhydene.2018.12.006
- [J.25] Gigone, B., Karataş, A. E., Gülder, Ö. L. Soot aggregate morphology in coflow laminar ethylene diffusion flames at elevated pressures, *Proceedings of the Combustion Institute*, Vol. 37, pp. 841-848, 2019. doi:10.1016/j.proci.2018.06.103
- [J.26] Wang, L.-Y., Bauer, C. K., Gülder, Ö. L. Soot and flow field in turbulent swirl-stabilized spray flames of Jet A-1 in a model combustor, *Proceedings of the Combustion Institute*, Vol. 37, pp. 5437-5444, 2019. doi:10.1016/j.proci.2018.05.093
- [J.27] Wang, W., Karataş, A. E., Groth, C. P. T., Gülder, Ö. L. Combined Experimental and Numerical Study of Ethanol Laminar Flame Extinction, *Combustion Science and Technology*, Vol. 190, pp. 1472-1487, 2018. doi:10.1080/00102202.2018.1452130
- [J.28] Wang, W., Karataş, A. E., Groth, C. P. T., Gülder, Ö. L. Experimental and Numerical Study of Laminar Flame Extinction for Syngas and Syngas-Methane Blends, *Combustion Science and Technology*, Vol. 190, pp. 1455-1471, 2018. doi:10.1080/00102202.2018.1452128

- [J.29] Griffin, E. A., Gülder, Ö. L. Soot formation in diluted laminar ethene, propene and 1-butene diffusion flames at elevated pressures, *Combustion and Flame*, Vol. 197, pp. 378-388, 2018.
doi:10.1016/j.combustflame.2018.08.010
- [J.30] Griffin, E. A., Christensen, M., Gülder, Ö. L. Effect of ethanol addition on soot formation in laminar methane diffusion flames at pressures above atmospheric, *Combustion and Flame*, Vol. 193, pp. 306-312, 2018.
doi:10.1016/j.combustflame.2018.04.001
- [J.31] Chatterjee, S., Gülder, Ö. L. Soot concentration and primary particle size in swirl-stabilized non-premixed turbulent flames of ethylene and air, *Experimental Thermal and Fluid Science*, Vol. 95, pp. 73-80, 2018.
doi:10.1016/j.expthermflusci.2018.01.035
- [J.32] Joo, P. H., Gigone, B., Griffin, E. A., Christensen, M., Gülder, Ö. L. Soot primary particle size dependence on combustion pressure in laminar ethylene diffusion flames, *Fuel*, Vol. 220, pp. 464-470, 2018.
doi:10.1016/j.fuel.2018.02.025
- [J.33] Gülder, Ö. L. Comment on "Experimental Studies of Magnetic Effect on Methane Laminar Combustion Characteristics", *Combustion Science and Technology*, Vol. 190, pp. 186-188, 2018.
doi:10.1080/00102202.2017.1379513
- [J.34] Commodo, M., Joo, P. H., De Falco, G., Minutolo, P., D'Anna, A., Gülder, Ö. L. Raman spectroscopy of soot sampled in high-pressure diffusion flames, *Energy and Fuels*, Vol.31, pp. 10158-10164, 2017.
- [J.35] Karataş, A. E., and Gülder, Ö. L. Effects of carbon dioxide and nitrogen addition on soot processes in laminar diffusion flames of ethylene-air at high pressures, *Fuel*, Vol. 200, pp. 76-80, 2017.
- [J.36] Yuen, F. T. C., Liang, J. J., Young, N., Oskoei, S., Sreekanth, S., and Gülder, Ö. L. Novel experimental approach to studying the thermal stability and coking propensity of jet fuel, *Energy and Fuels*, Vol. 32, pp. 3581-3595, 2017.
- [J.37] Daca, A. E., Gülder, Ö. L. Soot formation characteristics of diffusion flames of methane doped with toluene and n-heptane at elevated pressures, *Proceedings of the Combustion Institute*, Vol. 36, pp. 737-744, 2017.
- [J.38] Vargas, A. M., Gülder, Ö. L. Pressure dependence of primary soot particle size determined using thermophoretic sampling in laminar methane-air diffusion flames, *Proceedings of the Combustion Institute*, Vol. 36, pp.975-984, 2017.
- [J.39] Gülder, Ö. L. Corrigendum to "Dependence of sooting characteristics and temperature field of co-flow laminar pure and nitrogen-diluted ethylene-air diffusion flames on pressure", *Combustion and Flame* Vol. 173, p.1, 2016.

- [J.40] Kheirkhah, S., Gülder, Ö. L., Maurice, G., Halter, F., and Gökalp, I., On periodic behaviour of weakly turbulent premixed flame corrugations, *Combustion and Flame*, Vol. 168, pp. 147-165, 2016.
- [J.41] Vargas, A. M., Gülder, Ö. L. A multi-probe thermophoretic soot sampling system for high-pressure diffusion flames, *Review of Scientific Instruments*, Vol. 87 (5), 055101, 2016.
- [J.42] Tamadonfar, P., and Gülder, Ö. L. Effect of burner diameter on the burning velocity of premixed turbulent flames stabilized on Bunsen-type burners, *Experimental Thermal Fluid Science*, Vol.73, pp. 42-48, 2016.
- [J.43] Tamadonfar, P., and Gülder, Ö. L. Effects of mixture composition and turbulence intensity on flame front structure and burning velocities of premixed turbulent hydrocarbon/air Bunsen flames, *Combustion and Flame*, Vol. 162, pp. 4417-4441, 2015.
- [J.44] Liu, F., Karataş, A. E., Gülder, Ö. L., and Gu, M., Numerical and experimental study of the influence of CO₂ and N₂ dilution on soot formation in laminar coflow C₂H₄/air diffusion flames at pressures between 5 and 20 atm, *Combustion and Flame*, Vol. 162, pp. 2231–2247, 2015.
- [J.45] Karataş, A. E., and Gülder, Ö. L. Dependence of sooting characteristics and temperature field of co-flow laminar pure and nitrogen-diluted ethylene–air diffusion flames on pressure, *Combustion and Flame*, Vol. 162, pp. 1566–1574, 2015.
- [J.46] Kheirkhah, S., and Gülder, Ö. L. Flame surface density and consumption speeds in counter-gradient and gradient diffusion regimes of turbulent premixed combustion, *Combustion and Flame*, Vol. 162, pp. 1422–1439, 2015.
- [J.47] Shahbazian, N., Salahi, M. M., Groth, C.P.T., Gülder, Ö. L., and Bushe, W. K., Performance of Conditional Source-Term Estimation Model for LES of turbulent premixed flames in thin reaction zones regime, *Proceedings of The Combustion Institute*, Vol.35, pp.1367–1375, 2015.
- [J.48] Tamadonfar, P., Gülder, Ö. L. Experimental investigation of the inner structure of premixed turbulent methane/air flames in the thin reaction zones regime, *Combustion and Flame*, Vol. 162, pp. 115–128, 2015.
- [J.49] Tamadonfar, P., Gülder, Ö. L. Flame brush characteristics and burning velocities of premixed turbulent methane/air Bunsen flames, *Combustion and Flame*, Vol. 161, pp. 3154–3165, 2014.
- [J.50] Kheirkhah, S., Gülder, Ö. L. Topology and brush thickness of turbulent premixed V-shaped flames, *Flow, Turbulence and Combustion*, Vol. 93, pp.439–459, 2014.
- [J.51] Charest, M.R.J., Gülder, Ö. L., and Groth, C.P.T., Numerical and experimental study of soot formation in laminar diffusion flames burning simulated biogas fuels at elevated pressures, *Combustion and Flame*, Vol.161, pp.2678-2691, 2014.

- [J.52] Kheirkhah, S., Gülder, Ö. L. Influence of edge velocity on flame front position and displacement speed in turbulent premixed combustion, *Combustion and Flame*, Vol.161, pp. 2614–2626, 2014.
- [J.53] Hernandez-Perez, F.E., Groth, C.P.T., Gülder, Ö. L. Large-eddy simulation of lean hydrogen-methane turbulent premixed flames in the methane-dominated regime, *International Journal of Hydrogen Energy*, Vol.39, pp.7147–7157, April 2014.
- [J.54] Joo, P. H., Charest, M.R.J., Groth, C.P.T., Gülder, Ö. L. Comparison of structures of laminar methane-oxygen and methane-air diffusion flames from atmospheric to 60 atm, *Combustion and Flame*, Vol.160, pp.1990–1998, 2013.
- [J.55] Karataş, A. E., Intasopa, G., and Gülder, Ö. L. Sooting behaviour of n-heptane laminar diffusion flames at high pressures, *Combustion and Flame* Vol.160, pp.1650–1656, 2013.
- [J.56] Kheirkhah, S., and Gülder, Ö. L. Turbulent premixed combustion in V-shaped flames: characteristics of flame front, *Physics of Fluids*, Vol. 25, 055107, 2013.
- [J.57] Yuen, F.T.C., and Gülder, Ö. L. Turbulent premixed flame front dynamics and implications for limits of flamelet hypothesis, *Proceedings of the Combustion Institute*, Vol.34, pp.1393–1400, 2013.
- [J.58] Karataş, A. E., and Gülder, Ö. L. Soot formation in high-pressure laminar diffusion flames, *Progress in Energy and Combustion Science*, Vol. 38, pp.818–845, 2012.
- [J.59] Joo, P. H., and Gülder, Ö. L. Formation of liquid methane water mixture during combustion of a laminar methane jet at supercritical pressures, *Energy and Fuels*, Vol. 26, pp.5462–5467, 2012.
- [J.60] Commodo, M., Fabris, I., Wong, O., Groth, C.P.T., and Gülder, Ö. L. Three-dimensional fluorescence spectra of thermally stressed commercial Jet A-1 aviation fuel in the autoxidative regime, *Energy and Fuels*, Vol. 26, pp.2191–2197, 2012.
- [J.61] Panek, N., Charest, M.R.J., and Gülder, Ö. L. Simulation of microgravity diffusion flames using sub-atmospheric pressures, *AIAA Journal*, Vol. 50(4), pp.976–980, 2012.
- [J.62] Charest, M.R.J., Groth, C.P.T., and Gülder, Ö. L. Solution of the equation of radiative transfer using a Newton–Krylov approach and adaptive mesh refinement, *Journal of Computational Physics*, Vol.231, pp.3023–3040, 2012.
- [J.63] Gülder, Ö. L., Intasopa, G., Joo, H. I., Mandatori, P. M., Bento, D. S., and Vaillancourt, M. E., Unified behaviour of maximum soot yields of methane, ethane and propane laminar diffusion flames at high pressures, *Combustion and Flame*, Vol.158, pp.2037–2044, 2011.
- [J.64] Charest, M.R.J., Groth, C.P.T., and Gülder, Ö. L. A numerical study on effects of pressure and gravity in laminar ethylene diffusion flames, *Combustion and Flame*, Vol.158, pp.1933–1945, 2011.

- [J.65] Commodo, M., Fabris, I., Groth, C.P.T., and Gülder, Ö. L. Analysis of aviation fuel thermal oxidative stability by Electrospray Ionization Mass Spectrometry (ESI-MS), *Energy and Fuels*, Vol. 25, pp.2142–2150, 2011.
- [J.66] Charest, M. R., Groth, C. P. T., and Gülder, Ö. L. Effects of gravity and pressure on laminar co-flow methane-air diffusion flames at pressures from 1 to 60 atmospheres, *Combustion and Flame*, Vol. 158, pp.860–875, 2011.
- [J.67] Joo, H. I., and Gülder, Ö. L. Experimental study of soot and temperature field structure of laminar co-flow ethylene–air diffusion flames with nitrogen dilution at elevated pressures, *Combustion and Flame*, Vol. 158, pp.416–422, 2011.
- [J.68] Charest, M.R.J., Joo, H. I., Gülder, Ö. L., and Groth, C.P.T., Experimental and numerical study of soot formation in laminar ethylene diffusion flames at elevated pressures from 10 to 35 atm, *Proceedings of The Combustion Institute*, Vol.33, pp. 549–557, 2011.
- [J.69] Hernandez-Perez, F.E., Yuen, F. T. C., Groth, C.P.T. and Gülder, Ö. L. LES of a laboratory-scale turbulent premixed Bunsen flame using FSD, PCM-FPI and thickened flame models”, *Proceedings of The Combustion Institute*, Vol.33, pp.1365–1371, 2011.
- [J.70] Mandatori, P. M., and Gülder, Ö. L. Soot formation in laminar ethane diffusion flames at pressures from 0.2 to 3.3 MPa, *Proceedings of the Combustion Institute*, Vol.33, pp. 577–584, 2011.
- [J.71] Commodo, M., Wong, O., Fabris, I., Groth, C.P.T., and Gülder, Ö. L. Spectroscopic study of aviation jet fuel thermal oxidative stability, *Energy and Fuels*, Vol. 24, pp.6437–6441, 2010.
- [J.72] Charest, M.R.J., Groth, C.P.T., and Gülder, Ö. L. A computational framework for predicting laminar reactive flows with soot formation, *Combustion Theory and Modelling*, Vol. 14, pp.793–825, 2010.
- [J.73] Karataş, A. E., Commodo, M., and Gülder, Ö. L. Soot formation in co-flow and counter-flow laminar diffusion flames of binary mixtures of ethylene and butane isomers and synergistic effects, *Energy and Fuels*, Vol. 24, pp.4912–4918, 2010.
- [J.74] Yuen, F. T. C., and Gülder, Ö. L. Investigation of Structure and Dynamics of Lean Turbulent Premixed Flames by Rayleigh Scattering, *Combustion Science and Technology* Vol. 182, pp. 544–558, 2010.
- [J.75] Joo, H. I., and Gülder, Ö. L. Soot Formation and Temperature Structure in Small Methane-Oxygen Diffusion Flames at Subcritical and Supercritical Pressures, *Combustion and Flame*, Vol. 157, pp.1194–1201, 2010.
- [J.76] Joo, H. I., and Gülder, Ö. L. Observation of Liquid Phase Material in Methane-Air Laminar Diffusion Flame Soot Experiments above 60 Atmospheres, *Combustion and Flame*, Vol. 157, pp. 408–409, 2010.

- [J.77] Yuen, F. T. C., and Gülder, Ö. L. Investigation of Dynamics of Lean Turbulent Premixed Flames by Rayleigh Imaging, *AIAA Journal* Vol.47(12), pp.2964–2973, 2009.
- [J.78] Gülder, Ö. L. Comments on ‘Electrorheology Leads to Efficient Combustion’ by Tao et al., *Energy and Fuels*, Vol. 23, pp.591–592, 2009.
- [J.79] Yuen, F. T. C., and Gülder, Ö. L. Premixed turbulent flame structure investigation by Rayleigh scattering in the thin reaction zone regime, *Proceedings of The Combustion Institute*, Vol.32, pp.177–1754, 2009.
- [J.80] Joo, H. I., and Gülder, Ö. L. Soot formation and temperature field structure in coflow laminar diffusion flames at pressures from 10 to 60 atmospheres, *Proceedings of The Combustion Institute*, Vol.32, pp.769–775, 2009.
- [J.81] Liu, F., and Gülder, Ö. L. Effects of pressure and preheat on super-adiabatic flame temperatures in rich premixed methane/air flames, *Combustion Science and Technology*, Vol.180, pp.437–452, 2008.
- [J.82] Cintosun, E., Smallwood, G. J., and Gülder, Ö. L. Flame Surface Fractal Characteristics in Premixed Turbulent Combustion at High Turbulence Intensities, *AIAA Journal*, Vol.45, n.11, pp.2785–2789, 2007.
- [J.83] Mandatori, P. M., and Gülder, Ö. L. Complete Conversion of Ethane to Soot in a Coflow Laminar Diffusion Flame at 3.65 MPa, *Combustion and Flame*, Vol. 150, pp.400–403, 2007.
- [J.84] Gülder, Ö. L. Contribution of Small Scale Turbulence to Burning Velocity of Flamelets in the Thin Reaction Zone Regime, *Proceedings of The Combustion Institute* Vol.31, pp. 1369–1375, 2007.
- [J.85] Guo, H., Smallwood, G. J., and Gülder, Ö. L. The Effect of Reformate Gas Enrichment on Extinction Limits and NOX Formation in Counterflow CH₄/Air Premixed Flames, *Proceedings of The Combustion Institute* Vol.31, pp. 1197–1204, 2007.
- [J.86] Cohé, C., Halter, F., Chauveau, C., Gökalp, I., and Gülder, Ö. L. Fractal Characterisation of High-Pressure and Hydrogen-Enriched CH₄-Air Turbulent Premixed Flames, *Proceedings of The Combustion Institute*, Vol.31, pp. 1345–1352, 2007.
- [J.87] Gülder, Ö. L., and Smallwood, G. J., Flame Surface Densities in Premixed Combustion at Medium to High Turbulence Intensities, *Combustion Science and Technology*, Vol. 179, pp. 191–206, 2007.
- [J.88] Bento, D. S, Thomson, K. A., and Gülder, Ö. L., Soot formation and temperature field structure in laminar propane-air diffusion flames at elevated pressures, *Combustion and Flame*, Vol. 145, pp. 765–778 (2006).
- [J.89] Guo, H., Liu, F., Smallwood, G. J., and Gülder, Ö. L., A Numerical Study on the Influence of Hydrogen Addition on Soot Formation in a Laminar Ethylene-Air Diffusion Flame, *Combustion and Flame*, Vol.145, pp.324–338 (2006).

- [J.90] Gülder, Ö. L., Thomson, K. A., and Snelling, D. R., Effect of fuel nozzle material properties on soot formation and temperature field in coflow laminar diffusion flames, *Combustion and Flame*, Vol.144, pp. 426–433 (2006).
- [J.91] Snelling, D. R., Smallwood, G. J., Liu, F., Gülder, Ö. L., and Bachalo, W. D., A Calibration-Independent LII Technique for Soot Measurement by Detecting Absolute Light Intensity, *Applied Optics*, Vol. 44(31), pp.6773–6785 (2005).
- [J.92] Liu, F., and Gülder, Ö. L., Effects of H₂ and H Preferential Diffusion and Unity Lewis Number Assumption on the Super-Adiabatic Flame Temperatures in Rich Premixed Methane Flames, *Combustion and Flame*, Vol.143, pp. 264–281 (2005).
- [J.93] Thomson, K. A., Gülder, Ö. L., Weckman, E. J., Fraser, R. A., Smallwood, G. J., and Snelling, D. R., Soot Concentration and Temperature Measurements in Co-annular Non-premixed CH₄/air Laminar Flames at Pressures Up to 4 MPa, *Combustion and Flame*, Vol.140, pp.222–232 (2005).
- [J.94] Guo, H., Smallwood, G. J., Liu, F., Ju, Y., and Gülder, Ö. L., The Effect of Hydrogen Addition on Flammability Limit and NO_x Emission in Lean Counterflow CH₄/Air Premixed Flames, *Proceedings of the Combustion Institute*, Vol. 30, pp.303–311 (2005).
- [J.95] Snelling, D. R., Liu, F., Smallwood, G. J., and Gülder, Ö. L. Determination of the Soot Absorption Function and Thermal Accommodation Coefficient Using Low-Fluence LII in a Laminar Co-Flow Diffusion Flame, *Combustion and Flame*, Vol.136, pp.180–190 (2004).
- [J.96] Guo, H., Liu, F., Smallwood, G. J., and Gülder, Ö. L., Numerical Investigation of the Thermal Diffusion Influence on Soot Formation in Ethylene/Air Diffusion Flames, *International Journal of Computational Fluid Dynamics*, Vol.18(2), pp.139–151 (2004).
- [J.97] Liu, F., Guo, H., Smallwood, G. J., and Gülder, Ö. L., Numerical Modelling of Soot Formation and Oxidation in Laminar Coflow Non-Smoking and Smoking Ethylene Diffusion Flames, *Combustion Theory and Modelling*, Vol. 7, pp. 301–315, 2003.
- [J.98] Liu, F., Guo, H., Smallwood, G. J., and Gülder, Ö. L., Numerical Study of the Super-Adiabatic Flame Temperature Phenomenon in Hydrocarbon Premixed Flames, *Proceedings of the Combustion Institute*, Vol.29, pp.1543–1550, 2003.
- [J.99] Guo, H., Liu, F., Smallwood, G. J., and Gülder, Ö. L., Influence of Transport Properties of Inert Diluents on Soot Formation in a Coflow Laminar Ethylene-Air Diffusion Flame, *Proceedings of the Combustion Institute*, Vol.29, pp.2359–2365, 2003.
- [J.100] Snelling, D. R., Thomson, K. A., Smallwood, G. J., Gülder, Ö. L., Weckman, E. J., and Fraser, R. A., Spectrally Resolved Measurement of Flame Radiation to Determine Soot Temperature and Concentration, *AIAA Journal*, Vol.40, pp.1789–1795, 2002.
- [J.101] Guo, H., Liu, F., Smallwood, G. J., and Gülder, Ö. L., The Flame Preheating Effect on Numerical Modeling of Soot Formation in a Two Dimensional Laminar Ethylene-Air Diffusion Flame, *Combustion Theory and Modelling*, Vol. 6, pp. 173–187, 2002.

- [J.102] Liu, F., Guo, H., Smallwood, G. J., and Gülder, Ö. L., Effects of Gas and Soot Radiation on Soot Formation in a Coflow Laminar Ethylene Diffusion Flame, *Journal of Quantitative Spectroscopy and Radiative Transfer*, Vol. 73, pp. 409–421, 2002.
- [J.103] Liu, F., Guo, H., Smallwood, G. J., Gülder, Ö. L., and Matovic, M. D., A Robust and Accurate Algorithm of the Beta-pdf Integration and Its Application to Turbulent Methane-Air Diffusion Combustion in a Gas Turbine Combustor Simulator, *International Journal of Thermal Sciences*, Vol. 41, pp. 763–772, 2002.
- [J.104] Snelling, D. R., Smallwood, G. J., Sawchuk, R., Neill, W. S., Gareau, D., Chippior, W., Liu, F., Bachalo, W., and Gülder, Ö. L., In-Situ Real-Time Characterization of Particulate Emissions from a Diesel Engine Exhaust by Laser-Induced Incandescence, *SAE Transactions - Journal of Fuels & Lubricants*, Vol. 109-4, pp.1914–1925, 2001.
- [J.105] Neill, W.S., Chippior, W. L., Gülder, Ö. L., Cooley, J., Richardson, E. K., and Mitchell, K., Influence of the Diesel Fuel Aromatic Types on the Exhaust Emissions of a Heavy Duty Diesel Engine, *SAE Transactions - Journal of Fuels & Lubricants*, Vol. 109-4, pp.1170–1181, 2001.
- [J.106] Gülder, Ö. L., and Smallwood, G. J., Do Turbulent Premixed Flame Fronts in SI Engines Behave Like Passive Surfaces?, *SAE Transactions - Journal of Engines*, Vol. 109-3, pp.1823–1832, 2001.
- [J.107] Smallwood, G. J., Snelling, D. R., Liu, F., and Gülder, Ö. L., Clouds over Soot Evaporation: Errors in Modelling Laser-Induced Incandescence of Soot, *Journal of Heat Transfer*, Vol.123, n.4, pp.814–818, 2001.
- [J.108] Liu, F., Guo, H., Smallwood, G. J., and Gülder, Ö. L., The Chemical Effect of Carbon Dioxide as an Additive in Ethylene Diffusion Flames: Implications for Soot and NOx Formation, *Combustion and Flame*, Vol.125, pp.778–787, 2001.
- [J.109] Liu, F., Smallwood, G. J., and Gülder, Ö. L., Application of the Statistical Narrow-Band Correlated-k Method to Non-Grey Gas Radiation in CO₂-H₂O Mixtures: Approximate Treatments of Overlapping Bands, *Journal of Quantitative Spectroscopy and Radiative Transfer*, Vol.68, pp.401–417, 2001.
- [J.110] Gülder, Ö. L., Transport of Water Vapor from Combustion gases into Liquid Phase in Unsteady Methanol Pool Flames, *Experimental Thermal and Fluid Science*, Vol.23, n1/2, pp.51–57, 2000.
- [J.111] Smallwood, G. J., and Gülder, Ö. L., Views on the Structure of Transient Diesel Sprays, *Atomization and Sprays*, Vol.10, pp.355–386, 2000.
- [J.112] Liu, F., Smallwood, G. J., and Gülder, Ö. L., Application of the Statistical Narrow-Band Correlated-k Method to Low Resolution Spectral Intensity and Radiative Heat Transfer Calculations - Effects of the Quadrature Scheme, *International Journal of Heat and Mass Transfer*, Vol.43, n.17, pp.3119–3135, 2000.

- [J.113] Liu, F., Smallwood, G. J., and Gülder, Ö. L., Radiation Heat Transfer Calculations Using the SNBCK Method, *Journal of Thermophysics and Heat Transfer*, Vol.14, n.2, pp.278–280, 2000.
- [J.114] Kayakol, N., Selcuk, N., Campbell, I, and Gülder, Ö. L., Performance of Discrete Ordinates Method in a Gas Turbine Combustor Simulator, *Experimental Thermal and Fluid Science*, Vol.21, pp.134–141, 2000.
- [J.115] Liu, F., Smallwood, G. J., Gülder, Ö. L., and Ju, Y., Asymptotic Analysis of Radiative Extinction in Counter-flow Diffusion Flames of Non-unity Lewis Numbers, *Combustion and Flame*, Vol.121, pp.275–287, 2000.
- [J.116] Gülder, Ö. L., and Smallwood, G. J., Wong, R., Snelling, D. R., Smith, R., Deschamps, B. M., and Sautet, J.-C., Flame Front Surface Characteristics in Turbulent Premixed Propane/Air Combustion, *Combustion and Flame*, Vol.120, pp.407–416, 2000.
- [J.117] Gülder, Ö. L., Soot Particulate Formation and Characterization in Combustion, *Transactions of the Canadian Society for Mechanical Engineering*, vol. 23, n.1B, pp. 225–240, 1999.
- [J.118] Liu, F., Smallwood, G. J., and Gülder, Ö. L., Application of the Statistical Narrow-Band Model to Three-Dimensional Absorbing-Emitting-Scattering Media, *Journal of Thermophysics and Heat Transfer*, vol. 13, n.3, pp.285–291, 1999.
- [J.119] Snelling, D. R., Thomson, K. A., Smallwood, G. J., and Gülder, Ö. L., Two-Dimensional Imaging of Soot Volume Fraction in Laminar Diffusion Flames, *Applied Optics*, vol.38, n.12, pp.2478–2485, 1999.
- [J.120] Li, X., and Gülder, Ö. L., Influence of Diesel Fuel Cetane Number and Aromatic Content on Engine Exhaust Emissions, *Journal of Canadian Petroleum Technology*, vol.37, n.11, pp.56–60, 1998.
- [J.121] Liu, F., Gülder, Ö. L., and Smallwood, G. J., Three-Dimensional Non-Grey Gas Radiative Transfer Analyses Using the Statistical Narrow-Band Model, *International Journal of Thermal Sciences (Revue Générale de Thermique)*, vol.37, pp.759–768, 1998.
- [J.122] Liu, F., Gülder, Ö. L., Smallwood, G. J., and Ju, Y., Non-Grey Gas Radiative Transfer Analyses Using the Statistical Narrow-Band Model, *International Journal of Heat Mass Transfer*, vol.41, n.14, pp.2227–2236, 1998.
- [J.123] Deschamps, B. M., Smallwood, G. J., Prieur, J., Snelling, D. R., and Gülder, Ö. L., Surface Density Measurements of Turbulent Premixed Flames in a Spark-Ignition Engine and a Bunsen-type Burner, *Proceedings of The Combustion Institute*, Vol.26, pp.427–435, 1996.
- [J.124] Gülder, Ö. L., Snelling, D. R., and Sawchuk, R. A., Influence of Hydrogen Addition to Fuel on Temperature Field and Soot Formation in Diffusion Flames, *Proceedings of The Combustion Institute*, Vol. 26, pp.2351–2357, 1996.

- [J.125] Gülder, Ö. L., and Smallwood, G. J., Inner Cutoff Scale of Flame Surface Wrinkling in Turbulent Premixed Flames, *Combustion and Flame*, Vol. 103, pp. 107–114, 1995.
- [J.126] Gülder, Ö. L., Effects of Oxygen on Soot Formation in Methane, Propane, and n-Butane Diffusion Flames, *Combustion and Flame*, Vol. 101, pp. 302–310, 1995.
- [J.127] Smallwood, G. J., Gülder, Ö. L., Snelling, D. R., Deschamps, B. M., and Gökalp, I. Characterization of Flame Front Surfaces in Turbulent Premixed Methane / Air Combustion, *Combustion and Flame*, Vol. 101, pp. 461–470, 1995.
- [J.128] Smallwood, G. J., Gülder, Ö. L., and Snelling, D. R., The Structure of the Dense Core Region in Transient Diesel Sprays, *Proceedings of The Combustion Institute*, Vol. 25, pp.371–379, 1994.
- [J.129] Isigigur, A., Karaosmanoglu, F., Aksoy, H. A., Hamdullahpur, F., and Gülder, Ö. L., Performance and Emission Characteristics of a Diesel Engine Operating on Safflower Oil Methyl-Ester, *Applied Biochemistry and Biotechnology*, Vol.45/6, pp. 93–102, 1994.
- [J.130] Gülder, Ö. L., Smallwood, G. J., and Snelling, D. R., Diesel Spray Structure Investigation by Laser Diffraction and Sheet Illumination, *Journal of Engines, Trans. SAE*, Vol. 101, 1993.
- [J.131] Gülder, Ö. L., Influence of Sulphur Dioxide on Soot Formation in Diffusion Flames, *Combustion and Flame*, Vol. 92, pp.410–418, 1993.
- [J.132] Gülder, Ö. L., and Snelling, D. R., Flame Temperature and Dilution Effects on Soot Formation in Diffusion Flames, *Combustion and Flame*, Vol. 92, pp.115–124, 1993.
- [J.133] Isigigur, A., Karaosmanoglu, F., Aksoy, H. A., Hamdullahpur, F., and Gülder, Ö. L., Safflower Seed Oil of Turkish Origin as a Diesel Fuel Alternative, *Applied Biochemistry and Biotechnology*, Vol.39, pp. 89–105, 1993.
- [J.134] Gülder, Ö. L., Soot Formation in Laminar Diffusion Flames at Elevated Temperatures, *Combustion and Flame*, Vol. 88, pp.74–82, 1992.
- [J.135] Gülder, Ö. L., and Glavincevski, B., Influence of Fuel-Bound Sulfur on Soot Formation in Laminar Diffusion Flames of Liquid Hydrocarbons, *Combustion Science and Technology*, Vol. 77, pp. 337–343, 1991.
- [J.136] Gülder, Ö. L., Turbulent Premixed Flame Propagation Models For Different Combustion Regimes, *Proceedings of The Combustion Institute*, Vol.23, pp.743–750, 1991.
- [J.137] Gülder, Ö. L., Turbulent Premixed Combustion Modelling Using Fractal Geometry, *Proceedings of The Combustion Institute*, Vol.23, pp.835–842, 1991.
- [J.138] Gülder, Ö. L., and Snelling, D. R., Formation and Temperature of Soot Particles in Laminar Diffusion Flames with Elevated Temperatures, *Proceedings of The Combustion Institute*, Vol.23, pp.1509–1516, 1991.
- [J.139] Glavincevski, B., and Gülder, Ö. L., Comments on Estimation of Hydrocracking of C-C Bonds During Hydroprocessing of Oils, *Fuel*, vol.69, p. 1333, 1990.

- [J.140] Gülder, Ö. L., Glavincevski, B., and Baksh, M.F., Fuel Molecular Structure and Flame Temperature Effects on Soot Formation in Gas Turbine Combustors, *Journal of Gas Turbines & Power*, Vol.112, pp.52–59, 1990.
- [J.141] Gülder, Ö. L., Multiple Scattering Effects in Dense Spray Sizing by Laser Diffraction, *Aerosol Science and Technology*, Vol. 12, n.3, pp.570–577, 1990.
- [J.142] Gülder, Ö. L., Influence of Hydrocarbon Fuel Structural Constitution and Flame Temperature on Soot Formation in Laminar Diffusion Flames, *Combustion and Flame*, Vol.78, pp. 179–194, 1989.
- [J.143] Gülder, Ö. L., Glavincevski, B., and Das, S., Effect of Molecular Structure on Soot Formation Characteristics of Aviation Turbine Fuels, *Journal of Gas Turbines & Power*, Vol.111, pp.77–83, 1989.
- [J.144] Gülder, Ö. L., Glavincevski, B., and Kallio, N. N., A Rapid Cetane Number Prediction Method for Petroleum Liquids and Pure Hydrocarbons Using Proton Nuclear Magnetic Resonance, *Journal of Fuels & Lubricants, SAE Transactions*, Vol.98, 1989.
- [J.145] Gülder, Ö. L., and Glavincevski, B., “Comments on Prediction of Cetane Number by Group Additivity and Carbon-13 Nuclear Magnetic Resonance”, *Industrial and Engineering Chemistry Research*, Vol.27, pp.2192–2194, 1988.
- [J.146] Gülder, Ö. L., Combustion Gas Properties: Part III - Prediction of the Thermodynamic Properties of Combustion Gases of Aviation and Diesel Fuels, *Journal of Gas Turbines & Power*, Vol.110, pp.94–99, 1988.
- [J.147] Gülder, Ö. L., and Glavincevski, B., Prediction of Cetane Number of Diesel Fuels from Carbon Type Structural Composition Determined by Proton NMR Spectroscopy, *I&EC Product Research & Development*, Vol.25, pp.153–156, June 1986.
- [J.148] Gülder, Ö. L., and Glavincevski, B., Ignition Quality Determination of Diesel Fuels from Hydrogen Type Distribution of Hydrocarbons, *Combustion and Flame*, Vol.63, pp.231–238, 1986.
- [J.149] Gülder, Ö. L., Flame Temperature Estimation of Conventional and Future Jet Fuels, *Journal of Gas Turbines & Power*, Vol.108, pp.376–380, 1986.
- [J.150] Gülder, Ö. L., Combustion Gas Properties: Part II - Prediction of Partial Pressures of CO₂ and H₂O in the Combustion Gases of Aviation and Diesel Fuels, *Journal of Gas Turbines & Power*, Vol.108, pp.455–459, 1986.
- [J.151] Gülder, Ö. L., and Moroz, G., Surface Tension as an Indicator of Cetane Number of Diesel Fuels, *SAE Transactions, Fuels & Lubricants*, Vol.95, pp.447–454, 1986.
- [J.152] Gülder, Ö. L., Burton, G. F., and Whyte, R. B., NRCC Cetane Index-1: An Improved Cetane Number Predictor, *SAE Transactions, Fuels & Lubricants*, Vol.95, pp.437–446, 1986.

- [J.153] Gülder, Ö. L., Glavincevski, B., and Burton, G. F., Ignition Quality Rating Methods for Diesel Fuels - A Critical Appraisal, *SAE Transactions, Fuels & Lubricants*, Vol.94, pp.526–536, 1985.
- [J.154] Gülder, Ö. L., and Wong, J. K. S., Spheroidal Evaporation and Ignition of Fuel Droplets on a Hot Surface, *Proceedings of The Combustion Institute*, Vol.20, pp.1751–1760, 1985.
- [J.155] Gülder, Ö. L., Burning Velocities of Ethanol-Air and Ethanol-Water-Air Mixtures, *AIAA Progress in Astronautics and Aeronautics*, Vol.95, pp.181–197, 1984.
- [J.156] Gülder, Ö. L., Burning Velocities of Ethanol/Isooctane Blends, *Combustion and Flame*, Vol.56, pp.261–268, 1984.
- [J.157] Gülder, Ö. L., On the Empiric Equation for the Extrapolation of Heat Capacities at High Temperatures, *Zeitschrift für Physikalische Chemie*, Vol.265, pp.575-576, 1984.
- [J.158] Gülder, Ö. L., Laminar Burning Velocities of Methanol, Isooctane and Isooctane / Methanol Blends, *Combustion Science and Technology*, Vol.33, pp.169–182, 1983.
- [J.159] Gülder, Ö. L., On Water-Ethanol-Gasoline Blends as Spark Ignition Engine Fuels, *Fuel*, Vol.62, pp.1381–1382, 1983.
- [J.160] Gülder, Ö. L., Laminar Burning Velocities of Methanol, Ethanol, and Isooctane-Air Mixtures, *Proceedings of The Combustion Institute*, Vol.19, pp.275–281, 1983.
- [J.161] Annand, W. J. D., and Gülder, Ö. L., Exhaust Emissions and Cold Starting of a Four-Cylinder Engine Using Methanol as Fuel, *Proc. Institution of Mechanical Engineers*, Vol.194, pp.139-144, 1980.
- [J.162] Gülder, Ö. L., Design of a Cold-Start Carburetor for Methanol Fuel, *Journal of Pure and Applied Sciences*, Vol. 12, pp.127–148, 1979.

9.4 Refereed Conference Papers

- [C.1] Razavi, M. R. and Gülder, Ö. L. Pyrolysis and soot formation of liquid fuels in a micro flow reactor, 18th International Conference on Flow Dynamics, Sendai, Japan, November 6 - 8, 2023.
- [C.2] Vishwanath, R. B., Carniglia, P. A., Weber, J. K., Gülder, Ö. L. "Soot formation in swirl-stabilized spray combustion of Jet A-1 doped with n-pentanol in a laboratory gas turbine combustor", 12th Mediterranean Combustion Symposium, Luxor, Egypt, January 23 – 26, 2023.
- [C.3] Vishwanath, R. B., Carniglia, P. A., Weber, J. K., Gülder, Ö. L. "Influence of n-pentanol blending on soot in spray combustion of kerosene", 17th International Conference on Flow Dynamics, Sendai, Japan, November 9 - 11, 2022.

- [C.4] Rault, M. T., Gülder, Ö. L. "Influence of ethanol blending on soot in spray combustion of kerosene", 16th International Conference on Flow Dynamics, Sendai, Japan, November 6 - 8, 2019.
- [C.5] Karataş, A. E., Gigone, B., Gülder, Ö. L. "Soot aggregate morphology in laminar methane diffusion flames at elevated pressures up to 30 bar", 11th Mediterranean Combustion Symposium, Tenerife, Spain, June 16 - 20, 2019.
- [C.6] Karatas, A. E., Gigone, B., Gülder, Ö. L. "Pressure Effects on Soot Morphology in Laminar Methane Diffusion Flames", 12th Asia-Pacific Conference on Combustion, Fukuoka, Japan, July 1 - 5, 2019.
- [C.7] Commodo, M., Karataş, A. E., De Falco, G., Minutolo, P., D'Anna, A., Gülder, Ö.L., "Raman spectroscopy of soot sampled from high-pressure diffusion flames", Proceedings of the European Combustion Meeting, Lisbon, 2019.
- [C.8] Griffin, E. A., Gülder, Ö. L., "High Pressure Soot Formation in Laminar Diffusion Flames of C2-C4 Olefins", 15th International Conference on Flow Dynamics, Sendai, Japan, November 7 - 9, 2018.
- [C.9] Wang, Y.-L., Gülder, Ö. L., "Soot Formation in Swirl-Stabilized Spray Combustion of Jet A-1 in a Model Gas Turbine Combustor", Asian Congress on Gas Turbines, Marioka, Japan, August 22-24, 2018.
- [C.10] Wang, W., Karataş, A. E., Groth, C. P. T., and Gülder, Ö. L., "Experimental and numerical study of laminar flame extinction for syngas and syngas-methane blends", 10th Mediterranean Combustion Symposium, Naples, Italy, September 17-21, 2017.
- [C.11] Wang, W., Karataş, A. E., Groth, C. P. T., and Gülder, Ö. L., "Combined experimental and numerical study of ethanol laminar flame extinction", 10th Mediterranean Combustion Symposium, Naples, Italy, September 17-21, 2017.
- [C.12] Joo, P. H., Christensen, M., Griffin, E., Gigone, B., Gülder, Ö. L., "Soot primary particle size dependence on combustion pressure in laminar ethylene diffusion flames", 10th Mediterranean Combustion Symposium, Naples, Italy, September 17-21, 2017.
- [C.13] Chatterjee, S., and Gülder, Ö. L., "Soot concentration and primary particle size in swirl-stabilized non-premixed turbulent flames of ethylene and air", 10th Mediterranean Combustion Symposium, Naples, Italy, September 17-21, 2017.
- [C.14] Tamadonfar, P., and Gülder, Ö. L., "On the validity of the Damköhler's hypothesis in premixed turbulent combustion", 13th International Conference on Flow Dynamics, Sendai, Japan, October 10 - 12, 2016.
- [C.15] Chatterjee, S., and Gülder, Ö. L., "Soot concentration distribution of swirl-stabilized non-premixed propane/air flames in a gas turbine model combustor", XXIV ICTAM, 21-26 August 2016, Montreal, Canada.

- [C.16] Karatas, A. E., Gülder, Ö. L., "Pressure dependence of sooting propensity in laminar diffusion flames of ethylene-air diluted with carbon dioxide and nitrogen", presented at the 36th Combustion Symposium (International), August 2016, Seoul, Korea.
- [C.17] Chatterjee, S., and Gülder, Ö. L., "Soot concentration distributions of swirl-stabilized non-premixed flames in a model gas turbine combustor", 11th International Gas Turbine Congress, November 15 – 20, 2015, Tokyo, Japan.
- [C.18] Tamadonfar, P., and Gülder, Ö. L., "Effects of mixture composition and turbulence intensity on flame front structure and burning velocities of premixed turbulent hydrocarbon-air Bunsen flames", 12th International Conference on Flow Dynamics, Sendai, Japan, October 27 – 29, 2015.
- [C.19] Tamadonfar, P., and Gülder, Ö. L., "Effect of burner diameter on the burning velocity of premixed turbulent flames stabilized on Bunsen-type burners", 9th Mediterranean Combustion Symposium, Rhodes, Greece, June 7-11, 2015.
- [C.20] Chatterjee, S., Halmo, C., and Gülder, Ö. L., "Structure of the velocity and soot concentrations fields of a swirl-stabilized turbulent non-premixed flame in a gas turbine model combustor", ASME Gas Turbine India Conference, Paper GTINDIA2014-8114, New Delhi, India, December 2014.
- [C.21] Kheirkhah, S., and Gülder, Ö. L., "Local Consumption Speed of Turbulent Premixed V-shaped Flames of Methane-Air", 11th International Conference on Flow Dynamics, Sendai, Japan, October 8-10, 2014.
- [C.22] Karataş, A. E., and Gülder, Ö. L., "Soot Formation in Laminar Diffusion flames of diluted ethylene in air at pressures up to 20 atm", AIAA Paper: AIAA- 2014-0652, January 2014.
- [C.23] Karataş, A. E., and Gülder, Ö. L., "Influence of pressure on soot formation in laminar diffusion flames of ethylene diluted with carbon dioxide or nitrogen at pressures up to 20 atm", ISTP 24 - 24rd International Symposium on Transport Phenomena (on CD), Yamaguchi, Japan, November 2013.
- [C.24] Kheirkhah, S., and Gülder, Ö. L., "Topology of turbulent premixed V-shaped flames", 8th Mediterranean Combustion Symposium (on CD), September 2013, Cesme, Izmir.
- [C.25] Tamadonfar, P., and Gülder, Ö. L., "Experimental investigation of the internal structure of premixed turbulent methane/air flame fronts", 8th Mediterranean Combustion Symposium (on CD), September 2013, Cesme, Izmir.
- [C.26] Kheirkhah, S., and Gülder, Ö. L., "Turbulent premixed combustion in V-shaped flames: front position and brush thickness", 8th Mediterranean Combustion Symposium (on CD), September 2013, Cesme, Izmir.
- [C.27] Karataş, A. E., and Gülder, Ö. L., "Influence of carbon dioxide and nitrogen dilution on soot formation in laminar diffusion flames of ethylene/air at pressures up to 20 atm", 8th Mediterranean Combustion Symposium (on CD), September 2013, Cesme, Izmir.

- [C.28] Kheirkhah, S., and Gülder, Ö. L., "Edge velocity and dynamics of turbulent premixed V-shaped flames", 8th Mediterranean Combustion Symposium (on CD), September 2013, Cesme, Izmir.
- [C.29] Karatas, A. E., Intasopa, G., and Gülder, Ö. L., "Soot measurements in laminar diffusion flames of n-heptane diluted with nitrogen or helium at pressures from 2 to 7 atmospheres", Proceedings of 9th Asia-Pacific Conference on Combustion, May 19-22, 2013, Gyeongju, Korea.
- [C.30] Shahbazian, N., Groth, C.P.T., and Gülder, Ö.L., "Comparative study of algebraic and transported FSD models for LES of premixed flames in flamelet and thin reaction zone regimes", AIAA Aerospace Sciences Meeting, AIAA Paper No. 2013-1138, 2013.
- [C.31] Hernández-Pérez, F.E., Groth, C.P.T., and Gülder, Ö.L., "LES of a hydrogen-enriched lean turbulent premixed flame", AIAA Aerospace Sciences Meeting, AIAA Paper No. 2013-1139, 2013.
- [C.32] Joo, P. H., Charest, M. R. J., Groth, C.P.T., and Gülder, Ö. L., "Two zone structure of laminar methane-oxygen diffusion flames at atmospheric and elevated pressures", ISTP 23 23rd International Symposium on Transport Phenomena, Auckland, New Zealand, 19-22 November 2012.
- [C.33] Gülder, Ö.L., and Yuen, F.C.T., "Turbulent premixed flame front dynamics and implications for limits of flamelet hypothesis" 7th Mediterranean Combustion Symposium (on CD), September 2011, Sardinia.
- [C.34] Shahbazian, N., Groth, C. P. T., and Gülder, Ö. L., "Assessment of presumed pdf models for large eddy simulation of turbulent premixed flames", AIAA Aerospace Sciences Meeting, Paper No: AIAA-2011-0781, 2011.
- [C.35] Charest, M. R. J., Groth, C. P. T., and Gülder, Ö. L. "Effects of pressure and gravity in laminar coflow ethylene diffusion flames", AIAA Aerospace Sciences Meeting, Paper No: AIAA-2011-0412, 2011.
- [C.36] Hernandez-Peréz, F.E., Groth, C.P.T.G., and Gülder, Ö.L., "LES of a turbulent premixed Bunsen flame: comparison of the FSD, PCM-FPI and thickened flame models", Proc.of the 18th Annual Conference of the CFD Society of Canada, London, Ontario, Canada, May 18-19, 2010.
- [C.37] Charest, M. R. J., Groth, C. P. T., and Gülder, Ö. L. "A parallel solution adaptive method for radiative heat transfer using a Newton-Krylov approach", Proceedings of the 18th Annual Conference of the CFD Society of Canada, London, Ontario, Canada, May 18-19, 2010.
- [C.38] Charest, M. R. J., Groth, C. P. T., and Gülder, Ö. L. "Soot formation in high-pressure laminar methane diffusion flames", Proceedings of the 18th Annual Conference of the CFD Society of Canada, London, Ontario, Canada, May 18-19, 2010.

- [C.39] Yuen, F. T. C., and Gülder, Ö. L., "Lean premixed turbulent flame front structure and implications for modeling", ASME Paper No: GT2010-23214; Proceedings of ASME Turbo Expo 2010: Power for Land, Sea and Air GT2010, June 14-18, 2010, Glasgow, UK.
- [C.40] Joo, H. I., and Gülder, Ö. L., "Structure of Laminar Methane-Oxygen Diffusion Flames at High Pressures", AIAA Aerospace Sciences Meeting, Paper No: AIAA-2010-0775, 2010.
- [C.41] Panek, N., and Gülder, Ö. L., "Simulation of Microgravity Diffusion Flames Using Sub-Atmospheric Pressures", AIAA Aerospace Sciences Meeting, Paper No: AIAA-2010-1477, 2010.
- [C.42] Yuen, F. T. C., and Gülder, Ö. L., "Structure and Dynamics of Lean Premixed Turbulent Flames and Implications for Modeling", Proceedings 6th U.S. National Combustion Meeting, May 18-20, 2009, Ann Arbor, Michigan (on CD).
- [C.43] Joo, H. I. and Gülder, Ö. L., "Observation of Liquid Phase Material in Methane-Air Laminar Diffusion Flame Soot Experiments above 60 Atmospheres", Proceedings 6th U.S. National Combustion Meeting, May 18-20, 2009, Ann Arbor, Michigan (on CD).
- [C.44] Charest, M. R. J., Groth, C. P. T., and Gülder, Ö. L. "Numerical Prediction of Sooting Laminar Diffusion Flames Using Adaptive Mesh Refinement", Proceedings 6th U.S. National Combustion Meeting, May 18-20, 2009, Ann Arbor, Michigan (on CD).
- [C.45] Yuen, F. T. C., and Gülder, Ö. L., "Dynamics of Lean-Premixed Turbulent Combustion at High Turbulence Intensities", the Sixth Mediterranean Combustion Symposium, June 7-11, 2009, Ajaccio, France (on CD).
- [C.46] Yuen, F. T. C., and Gülder, Ö. L., "Investigation of Structure and Dynamics of Lean Turbulent Premixed Flames by Rayleigh Scattering", Paper No: AIAA-2009-243, AIAA Aerospace Sciences Meeting, Orlando, FL, January 2009.
- [C.47] Joo, H. I. and Gülder, Ö. L., "Pressure dependence of soot formation in diffusion flames" ASME Paper GT2008-50437, Proceedings of ASME Turbo 2008, 2008 (on CD).
- [C.48] Groth, C. P. T., Lin, W., Hernandez-Perez, F. E.S., Northrup, A., and Gülder, Ö. L., "Parallel Adaptive Mesh Refinement Scheme for LES of Turbulent Premixed Flames", Proceedings of the Fifth International Conference on Computational Fluid Dynamics, ICCFD5, Seoul, Korea, July 7-11, 2008.
- [C.49] Groth, C. P. T., Lin, W., Hernandez-Perez, F. E.S., Northrup, A., and Gülder, Ö. L., "Parallel Adaptive Mesh Refinement Finite-Volume Scheme for LES of Turbulent Premixed Combusting Flows", Proceedings of the 16th Annual Conference of the CFD Society of Canada, Saskatoon, Saskatchewan, Canada, June 9-11, 2008.
- [C.50] Hernández-Pérez, F. E., Lin, W, Groth, C. P. T. and Gülder, Ö. L., "Comparison of Subfilter Scale Models for LES of Turbulent Premixed Flames", Paper No: AIAA-2008-1048, AIAA Aerospace Sciences Meeting, Reno, NV, January 2008.

- [C.51] Gülder, Ö. L., Cintosun, E., and Smallwood, G. J., "Flame Surface Fractal Characteristics in Premixed Turbulent Combustion at Medium to High Turbulence Intensities" Paper No: AIAA-2007-1349, AIAA Aerospace Sciences Meeting, Reno, NV, January 8-11, 2007.
- [C.52] Puranam, S. V., Pavé, D., and Gülder, Ö. L. "Flame Surface Density of Turbulent Premixed Flames at Medium to High Turbulence Intensities", Paper No: AIAA-2007-1350, AIAA Aerospace Sciences Meeting, Reno, NV, January 8-11, 2007.
- [C.53] Gülder, Ö. L., and Smallwood, G. J., "Flame Surface Densities in Premixed Combustion at Medium to High Turbulence Intensities", Proceedings of the Fourth Mediterranean Combustion Symposium (on CD) (11 pages), October 6-10, 2005, Lisbon, Portugal.
- [C.54] Bento, D. S., and Gülder, Ö. L., "Soot and Temperature Field Structure of Laminar Diffusion Flames at Elevated Pressures", Proceedings of 5th Asia-Pacific Conference on Combustion, pp.341-345, July 17-20, 2005, Adelaide, Australia.
- [C.55] Bento, D. S., and Gülder, Ö. L., "Effects of Pressure on Soot Formation in Laminar Non-Premixed Propane-Air Flames", Proceedings of 2nd European Combustion Conference (on CD), paper 172 (6 pages), April 3-6, 2005.
- [C.56] Gülder, Ö. L., Thomson, K., Weckman, E. J., Fraser, R. A., Smallwood, G. J., and Snelling, D. R., "Influence of Pressure on Soot Formation in Laminar Diffusion Flames of Methane", AIAA Paper No: AIAA-2005-1315, Aerospace Sciences Meeting, Reno, NV, January 10-13, 2005.
- [C.57] Gülder, Ö. L., Thomson, K., and Snelling D. R., "Influence of the Fuel Nozzle Material on Soot Formation and Temperature Field in Coflow Laminar Diffusion Flames", AIAA Paper No: AIAA-2004-0644, 2004.
- [C.58] Smallwood, G. J., Clavel, D., Gareau, D., Sawchuk, R. A., Snelling, D. R., Witze, P. O., Axelsson, B., Bachalo, W. D., and Gülder, Ö. L., "Concurrent Quantitative Laser-Induced Incandescence and SMPS Measurements of EGR Effects on Particulate Emissions from a TDI Diesel Engine", SAE Paper No: 2002-01-2715, 2002.
- [C.59] Liu, F., Smallwood, G. J., and Gülder, Ö. L., "An Accurate Efficient and Flexible SNBCK-based Band Model for Calculations of Spectrally Resolved and Integrated Quantities in Participating Media Containing Mixtures of Real-Gases and Particulates", Proc. 12th International Heat Transfer Conference, Vol.4, p. 663, August 2002.
- [C.60] Smallwood, G. J., Snelling, D. R., Gülder, Ö. L., Clavel, D., Gareau, D., Sawchuk, R. A., and Graham, L., "Transient Particulate Matter Measurements from the Exhaust of a Direct Injection Spark Ignition Automobile", SAE Paper No: 2001-01-3581, 2001.
- [C.61] Liu, F., Guo, H., Smallwood, G. J., and Gülder, Ö. L., "Effects of Gas and Soot Radiation on Soot Formation in a Coflow Laminar Ethylene Diffusion Flame", Proceedings of the 3rd International Symposium on Radiative Transfer, June 17-22, 2001.

- [C.62] Guo, H., Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Numerical Modelling of a Two-Dimensional Axisymmetric Laminar Ethylene-Air Diffusion Flame", NHTC01-11419, 35th National Heat Transfer Conference, June 10-12, 2001, Anaheim, CA.
- [C.63] Liu, F., Guo, H., Smallwood, G. J., and Gülder, Ö. L., "Numerical Modelling of Soot Formation in Laminar Coflow Smoking and Non-Smoking Ethylene Diffusion Flames", 3rd Asia-Pacific Conference on Combustion, June 24-27, 2001, Seoul, Korea.
- [C.64] Smallwood, G. J., Snelling, D. R., Neill, W. S., Liu, F., Bachalo, W. D., and Gülder, Ö. L., "Laser-Induced Incandescence Measurements of Particulate Matter Emissions in the Exhaust of a Diesel Engine", 5th International Symposium COMODIA-01, July 1-5, 2001, Nagoya, Japan.
- [C.65] Neill, W. S., Chippior, W. L., and Gülder, Ö. L., "Influence of Aromatic Type on Diesel Emissions Investigated by Blending Narrow-Cut Components and Pure Hydrocarbons into a Base Fuel", Paper No. 2001-ICE-420, Proceedings of the 2001 Fall Technical Conference ASME Internal Combustion Engine Division, ICE-Vol.37.1, pp. 127-135, 2001.
- [C.66] Snelling, D. R., Smallwood, G. J., Gülder, Ö. L., Liu, F., and Bachalo, W. D., "A Calibration-Independent Technique of Measuring Soot by Laser-Induced Incandescence Using Absolute Light Intensity", Proceedings of The Second Joint Meeting of the US Sections of the Combustion Institute, Oakland, California, March 25-28, 2001.
- [C.67] Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Numerical Investigation of the Effects of a Skimmer on the Structure of Dense Sprays", Proc. 8th International Conference on Liquid Atomization and Spray Systems ICLAS 2000, pp. 676-679, July 2000, Pasadena, CA.
- [C.68] Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Numerical Study of Breakup Processes of Water Jet Injected into a Cross Air Flow", Proc. 8th International Conference on Liquid Atomization and Spray Systems ICLAS 2000, July 2000, pp. 67-74, Pasadena, CA.
- [C.69] Snelling, D. R., Smallwood, G. J., Gülder, Ö. L., Bachalo, W. D., and Sankar, S., "Soot Volume Fraction Characterizations Using the Laser-Induced Incandescence Detection Method", Proc. of the 10th International Symposium on Applications of Laser Techniques to Fluid Mechanics, July 10-13, 2000, Lisbon.
- [C.70] Neill, W.S., Chippior, W. L., Gülder, Ö. L., Cooley, J., Richardson, E. K., and Mitchell, K., "Influence of the Diesel Fuel Aromatic Types on the Exhaust Emissions of a Heavy Duty Diesel Engine", SAE Paper No. 2000-01-1856, 2000.
- [C.71] Snelling, D. R., Smallwood, G. J., Sawchuk, R., Neill, W. S., Gareau, D., Chippior, W., Liu, F., Bachalo, W., and Gülder, Ö. L., "In-Situ Real-Time Characterization of Particulate Emissions from a Diesel Engine Exhaust by Laser-Induced Incandescence", SAE Paper No. 2000-01-1994, 2000.

- [C.72] Snelling, D. R., Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Evaluation of the Heat and Mass Transfer Model of the Laser-Induced Incandescence Process for Excitation Intensity Prediction", Proceedings of NHTC'00, Paper No. NHTC2000-12132, 34th National Heat Transfer Conference, Pittsburgh, PA, August 20-22, 2000.
- [C.73] Gülder, Ö. L., and Smallwood, G. J., "Do Turbulent Premixed Flame Fronts in SI Engines Behave Like Passive Surfaces?" SAE Paper No. 2000-01-1942, 2000.
- [C.74] Gülder, Ö. L., and Smallwood, G. J., "Temporal Structure of Dense Diesel Sprays", Proceedings of the 4th International Conference on Internal Combustion Engines, ICE-99, pp. 497-504, 1999.
- [C.75] Li, X., Neill, W. S., Chippior, W. L., and Gülder, Ö. L., "Exhaust Emissions of Diesel Fuels Derived from Oil Sands and Conventional Crude Oil", Proc. Combustion Canada'99, on CD, 1999.
- [C.76] Snelling, D. R., Smallwood, G. J., Sawchuk, R., Neill, W. S., Gareau, D., Chippior, W., Liu, F., Bachalo, W., and Gülder, Ö. L., "Particulate Matter Measurements in a Diesel Engine Exhaust by Laser-Induced Incandescence and the Standard Gravimetric Procedure", SAE Paper No. 1999-01-3653, 1999.
- [C.77] Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Radiation Heat Transfer Calculations Using the SNBCK Method", AIAA Paper No. 99-3679, AIAA 33rd Thermophysics Conference, June 28-30, Norfolk, VA, 1999.
- [C.78] Gülder, Ö. L., "Fractal Characteristics and Surface Density of Flame Fronts in Turbulent Premixed Combustion", Plenary Lecture, Proceedings of the Mediterranean Combustion Symposium (International), pp.130-154, June 20-25, 1999, Antalya, Turkey.
- [C.79] Gülder, Ö. L. and Smallwood, G. J., "Time-Resolved Structure of Full Cone Diesel Sprays", Proc. Second International Workshop on Advanced Spray Combustion, pp. 29 - 38, 1998, Hiroshima, Japan.
- [C.80] Li, X., Chippior, W. L., Gülder, Ö. L., Cooley, J., Richardson, E. K., and Mitchell, K., "Comparison of the Exhaust Emissions of Diesel Fuels Derived from Oil Sands and Conventional Crude Oil", SAE Paper No. 982487, 1998.
- [C.81] Li, X, and Gülder, Ö. L., "Comparison of Oil-Sands-Derived and Conventional-Crude-Oil-Derived Diesel Fuels at Different Engine Operating Conditions", ACS Division Of Fuel Chemistry Preprints, Vol. 43, N0.3, pp. 435-440, 1998.
- [C.82] Li, X., and Gülder, Ö. L., "Effects of Fuel Cetane Number, Density and Aromatic Content on Diesel Engine NOx Emissions at Different Operating Conditions", Proceedings of the 4th International Symposium COMODIA-98, pp.111-116, Kyoto, Japan, July 20-23, 1998.
- [C.83] Liu, F, Gülder, Ö. L., and Smallwood, G. J., "Evaluation of an Approximate Narrow-Band Formulation for Non-Grey Radiative Transfer Calculation in Three-Dimensional Absorbing-Emitting-Scattering Media", HTD-Vol.357-1, pp.33-39, Proceedings AIAA/ASME Joint Thermophysics and Heat Transfer Conference, June 15-18, 1998.

- [C.84] Gülder, Ö. L., "Soot Particulate Formation and Characterization in Combustion", Invited Paper, Proceedings Canadian Society for Mechanical Engineering Forum 1998, Volume 1: Thermal and Fluids Engineering, pp.1-10, May 19-22, 1998, Toronto, Ontario.
- [C.85] Snelling, D. R., Smallwood, G. J., Campbell, I. G., Medlock, J. E., and Gülder, Ö. L., "Development and Application of Laser Induced Incandescence (LII) as a Diagnostic for Soot Particulate Measurements", AGARD Conference Proceedings; AGARD-CP-598, Advanced Non-Intrusive Instrumentation for Propulsion Engines, Paper No: 23, pp. 23.1-23.9, 20-24 October, 1997, Brussels, Belgium.
- [C.86] Li, X., Chippior, W. L., and Gülder, Ö. L., "Effects of Cetane Enhancing Additives and Ignition Quality on Diesel Engine Emissions", SAE Paper No. 972968, 1997.
- [C.87] Li, X., Chippior, W. L., and Gülder, Ö. L., "Effects of Fuel Properties on Exhaust Emissions of a Single Cylinder DI Diesel Engine", SAE Paper No. 962116, 1996.
- [C.88] Li, X., and Gülder, Ö. L., "Influence of Oil Sands Derived Diesel Fuels on Engine Exhaust Emissions", Proc. of the 47th Annual Technical Meeting, The Petroleum Society of CIM, Paper No:96-114, Vol.2, 1996.
- [C.89] Gülder, Ö. L., Glavincevski, B., Snelling, D. R., Baksh, M. F., and Battista, V., "Flame Luminosity Enhancement of Neat Methanol Fuel by Non-Aromatic Hydrocarbon Additives", SAE Paper No. 950402, 1995.
- [C.90] Gülder, Ö. L., "Transmission and Tomographic Analysis of Dense Diesel Sprays", Proc. International Symposium on Advanced Spray Combustion, pp. 35 - 44, 1994, Hiroshima, Japan.
- [C.91] Gülder, Ö. L., Smallwood, G. J., and Snelling, D. R., "Internal Structure of the Transient Full Cone Dense Diesel Sprays", Proceedings of the 3rd International Symposium COMODIA-94, pp. 355-360, 1994.
- [C.92] Smallwood, G. J., Gülder, Ö. L., and Snelling, D. R., "Tomographic Visualization of the Dense Core Region in Transient Diesel Sprays", Proc. International Symposium ICLASS-94, pp. 270-277, 1994.
- [C.93] Gülder, Ö. L., Glavincevski, B., and Battista, V., "Visibility of Methanol Pool Flames", Proceedings of the 1993 Windsor Workshop on Alternative Transportation Fuels, pp.559-576, June 14 - 17, 1993, Toronto, Ont.
- [C.94] Deschamps, B., Gülder, Ö. L., Chauveau, C., and Gökalp, I., "Comportement Fractal d'une Flamme Conique Turbulente de Methane/Air", Cinquieme Colloque National de Visualisation et de Traitement d'images en Mecanique des Fluides, du 2 au 5 juin 1992, Université de Poitiers, France
- [C.95] Isigigur, A., Karaosmanoglu, F., Hamdullahpur, F., Gülder, Ö. L., and Aksoy, H. A., "Safflower Seed Oil Transesterification Product as a Fuel Alternative for Diesel Engines", Renewable Energy Technology and The Environment - Proceedings of the 2nd World Renewable Energy Congress, Reading, U.K., 13-18 September, 1992, Vol. 3, pp. 1352- 1356, Pergamon Press, Oxford, 1992.

- [C.96] Karaosmanoglu, F., Isigigur, A., Hamdullahpur, F., Gülder, Ö. L., and Aksoy, H. A., "Used Canola Oil as a Diesel Fuel Alternative ", Renewable Energy Technology and The Environment - Proceedings of the 2nd World Renewable Energy Congress , Reading, U.K., 13-18 September, 1992, Vol. 3, pp. 1455-1459, Pergamon Press, Oxford, 1992.
- [C.97] Gülder, Ö. L., "Structure of Dense Diesel Sprays", in Atomization and Sprays 2000, pp.103-110, (N. Chigier, Ed.), Workshop Sponsored by the National Science Foundation, July 19, 1991, Gaithersburg, MD.
- [C.98] Gülder, Ö. L., Glavincevski, B., "Soot Formation in Laminar Diffusion Flames - Effects of Flame Temperature and Fuel Molecular Structure", AIAA Paper No. 89-0491, 1989.
- [C.99] Glavincevski, B., Gülder, Ö. L., and Gardner, L., "An Original Method for Determination of Aromatics in Transportation Fuels," ACS Division of Petroleum Chemistry Preprints, Vol.34, n.4, pp. 897-899, 1989.
- [C.100] Glavincevski, B., Gülder, Ö.L., and Gardner, L., "Structure of Middle Distillate Fuels : On the Atomic Carbon and Hydrogen to Carbon Ratio at Alpha Position to Aromatic Rings", SAE Paper No. 881 654, 1988.
- [C.101] Gülder, Ö. L., Glavincevski, B., and Kassinger, R., "Ignition Quality Determination of Marine Diesel Fuels," Society of Automotive Engineers, SAE Paper No. 872 144, 1987.
- [C.102] Gülder, Ö. L., "Temporally and Spatially Resolved Drop Sizing of Dense Diesel Sprays", ASME Paper No. 87-FE-5, 1987.
- [C.103] Gülder, Ö. L., and Glavincevski, B., "Effect of Carbon Type Structure on Cetane Number of Diesel Fuels", American Chemical Society Division of Petroleum Chemistry Preprints, Vol.30, n.2, pp.287-293, 1985.
- [C.104] Gülder, Ö. L., "Correlations of Laminar Combustion Data for Alternative S.I. Engine Fuels", Society of Automotive Engineers, SAE Paper No. 841 000, 1984.
- [C.105] Gülder, Ö. L., "Film Boiling of Fuel Droplets Impinging on a Hot Surface", American Society of Mechanical Engineers, ASME Paper No. 84-WA/HT-23, 1984.
- [C.106] Glavincevski, B., Gülder, Ö. L., and Gardner, L., "Cetane Number Estimation of Diesel Fuels from Carbon Type Structural Composition", Society of Automotive Engineers, SAE Paper No. 841 341, 1984.
- [C.107] Gülder, Ö. L., Wong, J. K. S., and Billingham, R., "Cold Starting Characteristics of Tar Sands Fuels in a Swirl Chamber Automotive Diesel Engine", Society of Automotive Engineers, SAE Paper No. 831752, 1983.
- [C.108] Platin, B., Erden, A., and Gülder, Ö. L., "Modelling and Design of Rotary Dryers", Proceedings 3rd International Drying Symposium, Vol.2, Drying Research Ltd., Wolverhampton,UK, pp.466-477, 1982.

- [C.109] Gülder, Ö. L., "Effect of Compression Ratio on the Performance of a Spark Ignition Engine Fueled with Methanol and Ethanol," Proceedings 16th Intersociety Energy Conversion Engineering Conference, ASME, Vol.2, pp.1160-1165, 1981.
- [C.110] Gülder, Ö. L., "Performance and Exhaust Emissions of a Multi-Cylinder Engine Fueled with Methanol and Gasoline", Proceedings 15th Intersociety Energy Conversion Engineering Conference, AIAA, Vol.1, 1980.
- [C.111] Gülder, Ö. L., "Technical and Economical Aspects of Ethanol as an Automotive Fuel", Proceedings 4th International Symposium on Alcohol Fuels Technology, San Paulo, Vol.1, pp.347-352, 1980.

9.5 Other Conference Papers

- [O.1] Razavi, M. R. and Gülder, Ö. L. A Micro Flow Reactor for Studying PAH and Soot Formation Through Pyrolysis, Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of Alberta, Edmonton, May 15-18, 2023.
- [O.2] Kumar, P. and Gülder, Ö. L. Piloted Bunsen burner design for high Karlovitz number premixed turbulent flame studies, Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of Alberta, Edmonton, May 15-18, 2023.
- [O.3] Sawanni, R. and Gülder, Ö. L. Assessment of tractability of laminar opposed-flow diffusion flames for studying pressure dependence of sooting processes, Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of Alberta, Edmonton, May 15-18, 2023.
- [O.4] Maurya, R. K. and Gülder, Ö. L. Mapping of 3D flow characteristics and qualitative soot fields in a swirl-stabilized model gas turbine combustor, Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of Alberta, Edmonton, May 15-18, 2023.
- [O.5] Rajan, Y.T., Karatas, A. E. and Gülder, Ö. L. Soot Temperature and Concentration Measurements in Laminar Diffusion Flames with Reactant Preheating, Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of Alberta, Edmonton, May 15-18, 2023.
- [O.6] Weber, J. K., Vishwanath, R. B. and Gülder, Ö. L. Soot and flow field in turbulent swirl-stabilized spray flames of Jet A-1 with downstream air injection in a model gas turbine combustor, Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of Ottawa, Ottawa, May 16-19, 2022.
- [O.7] Vishwanath, R. B. and Gülder, Ö. L. Hydrogen addition enhances soot formation in swirl-stabilized non-premixed turbulent ethylene flames, Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of Ottawa, Ottawa, May 16-19, 2022.

- [O.8] Sawanni, R. and Gülder, Ö. L. Tractability of laminar counterflow diffusion flames to assess the pressure dependence of sooting processes, Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of Ottawa, Ottawa, May 16-19, 2022.
- [O.9] Sawanni, R. and Gülder, Ö. L. Optical considerations for low soot measurements in steady state counterflow diffusion flames using Diffuse Back Illuminated Extinction Imaging- Temperature Imaging at high pressures, Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of Ottawa, Ottawa, May 16-19, 2022.
- [O.10] Vishwanath, R.B., Carniglia, P., Weber, J. and Gülder, Ö. L. Effects of *n*-pentanol blending on soot formation in swirl-stabilized turbulent spray flames of Jet A-1 in a laboratory gas turbine combustor, Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of Ottawa, Ottawa, May 16-19, 2022.
- [O.11] Rault, T. M., Gülder, Ö. L., "Soot Formation in Turbulent Swirl-Stabilized Spray Flames of Jet A-1 Blended with 10% Ethanol", Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of British Columbia, Kelowna, May 13-16, 2019.
- [O.12] Yang, S., Gülder, Ö. L., "Sooting propensity changes by addition of ethanol to ethylene diffusion flames at elevated pressures", Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of British Columbia, Kelowna, May 13-16, 2019.
- [O.13] Gülder, Ö. L., "What have we learned from high pressure soot studies – on track to finding a soothing solution or falling into a black hole?", Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, The University of British Columbia, Kelowna, May 13-16, 2019.
- [O.14] Griffin, E. A., Christensen, M., Gülder, Ö. L., "Pressure influence on soot formation in ethanol-doped diffusion flames of methane", Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, Ryerson University, Toronto, May 14-17, 2018.
- [O.15] Wang, L.-Y., Bauer, C. K., Gülder, Ö. L., "Soot formation in turbulent swirl-stabilized spray combustion in a model combustor fuelled by Jet A-1", Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, Ryerson University, Toronto, May 14-17, 2018.
- [O.16] Griffin, E. A., and Gülder, Ö. L., "Soot formation in laminar diffusion flames of C2-C4 olefins at elevated pressures", Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, Ryerson University, Toronto, May 14-17, 2018.
- [O.17] Chatterjee, S., An, Q., Steinberg, A. M., Gülder, Ö. L., "Velocity and soot concentration fields of turbulent non-premixed swirl-stabilized propane/air flames in a gas turbine model combustor", Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, Ryerson University, Toronto, May 14-17, 2018.

- [O.18] Gigone, B., Karatas, A. E., Gülder, Ö. L., "Soot aggregate morphology in coflow laminar ethylene diffusion flames at elevated pressures", Proceedings of Combustion Institute - Canadian Section Spring Technical Meeting, Ryerson University, Toronto, May 14-17, 2018.
- [O.19] De Falco, G., Commodo, M., Joo, P. H., Minutolo, P., D'Anna, A., Gülder, Ö. L., "Raman spectroscopy and atomic force microscopy of soot sampled in high-pressure diffusion flames", 40th Meeting of the Italian Section of the Combustion Institute, June 7-9, 2017, Rome, Italy.
- [O.20] Joo, P. H., Christensen, Griffin, E., Gigone, B., Gülder, Ö. L., "The effect of pressure on the primary soot particle size in nitrogen diluted ethylene diffusion flames determined by thermophoretic sampling at pressures up to 20 bar", Combustion Institute Canadian Section Proceedings, McGill University, May 15-18, 2017.
- [O.21] Young, N. G., Yuen, F. T. C., Gülder, Ö. L. "Assessment of thermal oxidation stability characteristics of biojet fuels using a new technique", Combustion Institute Canadian Section Proceedings, McGill University, May 15-18, 2017.
- [O.22] Syed, W., Joo, P. H., Gülder, Ö. L., Groth, C. P. T., "Numerical and experimental study of sooting propensity of ethanol in laminar diffusion flames at elevated pressures", Combustion Institute Canadian Section Proceedings, McGill University, May 15-18, 2017.
- [O.23] Joo, P. H., Christensen, Griffin, E., Gigone, B., Gülder, Ö. L., "Dependence of soot particle size on pressure in methane-air diffusion flames determined by thermophoretic sampling at pressures up to 20 bar", Combustion Institute Canadian Section Proceedings, McGill University, May 15-18, 2017.
- [O.24] Vargas, A. M., and Gülder, Ö. L., "The effects of combustion pressure on primary soot particle size in methane-air diffusion flames", Poster presentation, 20. ETH Conference on Combustion Generated Nanoparticles, June 13-16, 2016, Zurich, Switzerland.
- [O.25] Wang, L.-Y., and Gülder, Ö. L., "Stereoscopic-PIV and two-color LII measurements in swirl-stabilized non-premixed turbulent flames", Combustion Institute Canadian Section Proceedings, University of Waterloo, May 09-12, 2016.
- [O.26] Young, N. G., Yuen, F. T. C., Liang, J. J., and Gülder, Ö. L., "Thermal Stability Assessment of Conventional and Alternative Aviation Jet Fuels", Combustion Institute Canadian Section Proceedings, University of Waterloo, May 09-12, 2016.
- [O.27] Chatterjee, S., and Gülder, Ö. L., "Velocity and soot concentration fields of swirl-stabilized turbulent non-premixed propane/air flames", Combustion Institute Canadian Section Proceedings, University of Waterloo, May 09-12, 2016.
- [O.28] Tamadonfar, P., and Gülder, Ö. L., "Measurements of flame surface area ratio in premixed turbulent methane/air Bunsen flames", Combustion Institute Canadian Section Proceedings, University of Waterloo, May 09-12, 2016.

- [O.29] Vargas, A. M., and Gülder, Ö. L., "Sensitivity of primary soot particle size to combustion pressure in laminar methane-air diffusion flames", Combustion Institute Canadian Section Proceedings, University of Waterloo, May 09-12, 2016.
- [O.30] Tamadonfar, P., and Gülder, Ö. L., "Influence of turbulent Markstein number on flame front structure and turbulent burning rate in premixed turbulent flames", poster presentation, 25th International Colloquium on Dynamics of Explosions and Reactive Systems, August 3 – 7, 2015, Leeds UK,
- [O.31] Kheirkhah, S., Tamadonfar, P., and Gülder, Ö. L., "Influence of flame configuration on turbulent premixed flames characteristics", Combustion Institute Canadian Section Proceedings, University of Saskatchewan, May 11-14, 2015.
- [O.32] Kheirkhah, S., and Gülder, Ö. L., "On quasi-periodic corrugations of weakly turbulent premixed V-shaped flames", Combustion Institute Canadian Section Proceedings, University of Saskatchewan, May 11-14, 2015.
- [O.33] Daca, A., Karatas, A. E., and Gülder, Ö. L., "Influence of nitrogen dilution on soot yield and temperature field of a laminar ethylene-air diffusion flame at 10 atm", Combustion Institute Canadian Section Proceedings, Windsor, May 2014.
- [O.34] Liu, F., Karatas, A. E., and Gülder, Ö. L., "Numerical and experimental study of the influence of CO₂ and N₂ dilution on soot formation in laminar coflow C₂H₄/air diffusion flames between 5 and 20 atm", Combustion Institute Canadian Section Proceedings, Windsor, May 2014.
- [O.35] Tamadonfar, P., and Gülder, Ö. L., "Experimental investigation of burning velocity and flame stretch factor of premixed turbulent Bunsen flames", Combustion Institute Canadian Section Proceedings, Windsor, May 2014.
- [O.36] Chatterjee, S., Halmó, C., and Gülder, Ö. L., "Soot formation and velocity field of a turbulent non-premixed flame in a swirl-stabilized model combustor", Combustion Institute Canadian Section Proceedings, Windsor, May 2014.
- [O.37] Kheirkhah, S., and Gülder, Ö. L., "Flame surface density in counter-gradient and gradient diffusion regimes of turbulent premixed combustion", Combustion Institute Canadian Section Proceedings, Windsor, May 2014.
- [O.38] Wang, W., Groth, C. P. T., and Gülder, Ö. L., "A two-dimensional numerical investigation of laminar diffusion flame sheet position and its interaction with the flow field in counterflow geometry", Combustion Institute Canadian Section Proceedings, Windsor, May 2014.
- [O.39] Kheirkhah, S., and Gülder, Ö. L., "Statistics of flame front curvature in turbulent premixed V-shaped flames", Combustion Institute Canadian Section Proceedings, Windsor, May 2014.
- [O.40] Wang, W., Karatas, A. E., Groth, C. P. T., and Gülder, Ö. L., "An experimental and numerical study of the effect of nozzle separation distance on the extinction strain

- rate in counterflow laminar diffusion flame burners”, Combustion Institute Canadian Section Proceedings, Windsor, May 2014.
- [O.41] Ghasemi, S., Cormier, D. D. Karatas, A. E., and Gülder, Ö. L., “Effect of combustion pressure on soot aerosol formation and characteristics”, DUST 2014: HE18 - Multi-component Aerosol of Fossil Fuel and Biomass Burning, Castellaneta Marina, Italy June 2014.
- [O.42] Tamadonfar, P., and Gülder, Ö. L., “Flame front thickness of ultra-lean premixed turbulent methane/air flames in the thin reaction zones regime”, Combustion Institute Canadian Section Proceedings, Quebec City, May 2013.
- [O.43] Karatas, A. E., and Gülder, Ö. L., “Extinction Characteristics of Liquid Hydrocarbon Diffusion Flames and Multiple Solutions to Flame Stability”, Combustion Institute Canadian Section Proceedings, Quebec City, May 2013.
- [O.44] Kheirkhah, S., and Gülder, Ö. L., “Turbulent Premixed Combustion in V-shaped Flames: Flame Front Position and Flame Brush Thickness”, Combustion Institute Canadian Section Proceedings, Quebec City, May 2013.
- [O.45] Kheirkhah, S., and Gülder, Ö. L., “Topology of Turbulent Premixed V-shaped Flames”, Combustion Institute Canadian Section Proceedings, Quebec City, May 2013.
- [O.46] Shahbazian, N., Groth, C.P.T., and Gülder, Ö.L., “Comparative study of algebraic and transported FSD models for LES of premixed flames in flamelet and thin reaction zone regimes”, Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Toronto, Ontario, May 13-16, 2012, paper 08-009, pp.326-331.
- [O.47] Lapalme, D., Seers, P., Johnson, M., Groth, C.P.T., and Gülder, Ö.L., “Numerical and Experimental Determination of Laminar Flame Speed of H₂/CO/CO₂/CH₄ Mixtures”, Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Toronto, Ontario, May 13-16, 2012, paper 06-002, pp.237-240.
- [O.48] Charest M.R.J., Barnwal, A., Barua, A., Gülder, Ö.L., and Groth, C.P.T., “Effects of pressure and composition on soot formation in laminar biogas diffusion flames”, Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Toronto, Ontario, May 13-16, 2012, paper 10-009, pp.404-409.
- [O.49] Karataş, A. E., Intasopa, G., and Gülder, Ö.L., “Sooting behaviour of laminar diffusion flames of n-heptane at super atmospheric pressures”, Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Toronto, Ontario, May 13-16, 2012, paper 10-010, pp.410-415.
- [O.50] Joo, P.H., Charest, M.R.J., Groth, C.P.T., and Gülder, Ö.L., “Two zone structure of laminar methane-oxygen diffusion flames in comparison to methane-air flames”, Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Toronto, Ontario, May 13-16, 2012, paper 10-011, pp.416-421.

- [O.51] Hernández-Pérez, F.E., Groth, C.P.T., and Gülder, Ö.L., "LES of a hydrogen-enriched lean turbulent premixed flame", Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Toronto, Ontario, May 13-16, 2012, paper 08-011, pp. 338-343.
- [O.52] M. Van Hove, F. E. Hernandez-Perez, C. P. T. Groth, and Ö. L. Gülder, "A comparative study of subfilter-scale models for large-eddy simulation of turbulent premixed flames", Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Winnipeg, Manitoba, Canada, May 8-11, 2011, paper A3-4, pp. 41-46, 2011.
- [O.53] Gülder, Ö.L., Intasopa, G., Joo, H.I., Mandatori, P.M., Bento, D.S., and Vaillancourt, M.E., "Similarity of pressure dependence of maximum soot yields of alkane gaseous hydrocarbon laminar diffusion flames at high pressures", Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Winnipeg, Manitoba, Canada, May 8-11, 2011, paper A6-3, pp. 122-127, 2011.
- [O.54] A. Barnwal, A. Barua, M. R. J. Charest, Ö. L. Gülder, and C. P. T. Groth, "Structure and sooting propensity of biogas and syngas fuel co-flow laminar diffusion flames at elevated pressures", Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Winnipeg, Manitoba, Canada, May 8-11, 2011, paper A8-4, pp. 152-156, 2011.
- [O.55] Ö. L. Gülder, and F. T. C. Yuen, "Validity range of flamelet concepts in premixed turbulent combustion", Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Winnipeg, Manitoba, Canada, May 8-11, 2011, paper B2-1, pp. 193-196, 2011.
- [O.56] A. Barnwal, M. R. J. Charest, C. P. T. Groth, Ö. L. Gülder, B. Rehel, and P. Seers, "Premixed laminar flame properties of biogas and syngas alternative fuels as a function of composition and pressure", Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Winnipeg, Manitoba, Canada, May 8-11, 2011, paper B4-4, pp. 247-254, 2011.
- [O.57] M. Commodo, O. Wong, I. Fabris, C. P. T. Groth, and Ö. L. Gülder, "Aromatic content variations in thermally stressed aviation fuel: a spectroscopic analysis", Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Ottawa, Ontario, Canada, May 9-12, 2010.
- [O.58] C. P. T. Groth, W. Lin, F. E. Hernández-Pérez, and Ö. L. Gülder, "Assessment of Subfilter-Scale Models for LES of Turbulent Premixed Flames", Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Ottawa, Ontario, Canada, May 9-12, 2010, paper A3-3, pp. 34-39, 2010.
- [O.59] M. R. J. Charest, H. I. Joo, Ö. L. Gülder, and C. P. T. Groth, "Predictions and Measurements of Soot Formation in High-Pressure Laminar Ethylene Diffusion Flames", Proceedings of the Combustion Institute/Canadian Section Spring Technical Meeting, Ottawa, Ontario, Canada, May 9-12, 2010, paper B5-4, pp. 279-284, 2010.

- [O.60] Ö. L. Gülder, and N. Panek, "Ethylene Laminar Diffusion Flames at Sub-atmospheric Pressures to Simulate Microgravity", Paper ID: 4871, 60th International Astronautical Congress, October 12-16, 2009, Daejeon, Republic of Korea.
- [O.61] M. R. J. Charest, C. P. T. Groth, and Ö. L. Gülder, "Parallel solution adaptive method for prediction of sooting laminar diffusion flames", Proceedings Combustion Institute / Canadian Section, Spring Technical Meeting, May 2009, Montreal, PQ.
- [O.62] A. E. Karatas, and Ö. L. Gülder, "Soot formation in co-flow and counterflow laminar diffusion flames of fuel mixtures", Proceedings Combustion Institute / Canadian Section, Spring Technical Meeting, May 2009, Montreal, PQ.
- [O.63] M. R. J. Charest, C. P. T. Groth, and Ö. L. Gülder, "Numerical study on the effects of gravity on flame shape and radiation in laminar diffusion flames", Proceedings Combustion Institute / Canadian Section, Spring Technical Meeting, May 2008, Toronto, ON, pp.84-89.
- [O.64] F. E. Hernández-Pérez, C. P. T. Groth, and Ö. L. Gülder, "LES of a Bunsen flame using the thickened flame model", Proceedings Combustion Institute / Canadian Section, Spring Technical Meeting, May 2008, Toronto, ON, pp.120-125.
- [O.65] W. Lin, C. P. T. Groth, and Ö. L. Gülder, "Large eddy simulation of a premixed turbulent Bunsen flame using flame surface density model", Proceedings Combustion Institute / Canadian Section, Spring Technical Meeting, May 2008, Toronto, ON, pp.126-131.
- [O.66] F. T. C. Yuen, and Ö. L. Gülder, "Flame surface density and curvature statistics in turbulent premixed combustion", Proceedings Combustion Institute / Canadian Section, Spring Technical Meeting, May 2008, Toronto, ON, pp.137-141.
- [O.67] F. E. Hernández-Pérez, W. Lin, C. P. T. Groth, and Ö. L. Gülder, "Comparison of Sub-filter Scale Models for Large-Eddy Simulation of Turbulent Premixed Flames", Proceedings Combustion Institute / Canadian Section, Spring Technical Meeting, May 2007, Banff, AL.
- [O.68] W. Lin, C. P. T. Groth, and Ö. L. Gülder, "Large Eddy Simulation of Premixed Turbulent Combustion Using a Flame Surface Density Approach", Proceedings Combustion Institute / Canadian Section, Spring Technical Meeting, May 2007, Banff, AL.
- [O.69] M. E. Vaillancourt, P. M. Mandatori, H. I. Joo, and Ö. L. Gülder, "Laminar Diffusion Flames of Methane, Ethane and Propane at Elevated Pressures", Proceedings Combustion Institute / Canadian Section, Spring Technical Meeting, May 2007, Banff, AL.
- [O.70] S. V. Puranam, D. Pavé, and Ö. L. Gülder, "Flame Surface Density Evaluations for Lean Premixed Turbulent Flames", Proceedings Combustion Institute / Canadian Section, 2006 Spring Technical Meeting, pp. G1.1-G1.6.

- [O.71] D. Pavé, C. Chauveau, D. Davidenko, I. Gökalp, I. G. Shepherd, and Ö. L. Gülder, "Experimental Characterization on Structure of Lean Premixed Turbulent Methane-Air Flames: Strain, Curvature and Thickness", Proceedings Combustion Institute / Canadian Section, 2005 Spring Technical Meeting, pp.196-201.
- [O.72] Ö. L. Gülder, "Burning Velocity Enhancement of Turbulent Flamelets in the Thin Reaction Zone Regime by Small Scale Turbulence", Proceedings Combustion Institute / Canadian Section, 2005 Spring Technical Meeting, pp.136-141.
- [O.73] D. S. Bento, K. A. Thomson, Ö. L. Gülder, "Temperature and Soot Field in Laminar Diffusion Flames at Super-Atmospheric Pressures", Proceedings Combustion Institute / Canadian Section, 2005 Spring Technical Meeting, pp.4-9.
- [O.74] Gülder, Ö. L., Guo, H., Liu, and F., Smallwood, G. J., "Hydrogen-Enriched Lean-Premixed Combustion" [Invited Lecture] Chemical Kinetics and Diffusion Processes in Reacting Flows, CDRF04 Abstract Book, pp. 22-24, June 7-9, 2004, Istanbul, Turkey.
- [O.75] Thomson, K. A., Gülder, Ö. L., Weckman, E. J., Fraser, R. A., Smallwood, G. J., and Snelling, D. R., "Soot Concentration Profiles in a Non-premixed Methane Laminar Diffusion Flame at High Pressures", Proceedings Combustion Institute / Canadian Section, 2004 Spring Technical Meeting, pp. Q2.1-Q2.6, May 10-12, Kingston, ON, 2004.
- [O.76] Gülder, Ö. L., "Characteristics of Flame Front Surfaces in Turbulent Premixed Combustion", [Invited Keynote Presentation] Combustion Institute / Canadian Section, 2003 Spring Technical Meeting, May 11-14, Vancouver, BC, 2003.
- [O.77] Thomson, K. A., Gülder, Ö. L., Weckman, E. J., Fraser, R. A., and Smallwood, G. J., "Preliminary Characterization of a High-Pressure Laminar Diffusion Flame Combustion Facility", Combustion Institute / Canadian Section, 2003 Spring Technical Meeting, May 11-14, Vancouver, BC, 2003.
- [O.78] Smallwood, G. J., Snelling, D. R., Witze, P.O., Axelsson, B., Bachalo, W. D., and Gülder, Ö. L., "Comparison of Quantitative LII and SMPS Measurements of Particulate Emissions from a TDI Diesel Engine", Proceedings Twenty-Fourth Task Leaders Meeting (IEA), pp.239-253, June 2002, Trondheim, Norway.
- [O.79] Guo, H., Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Numerical Investigation of the Thermal Diffusion Influence on Soot Formation in Ethylene/Air Diffusion Flames", Proceedings of the 10th Annual Conference of the CFD Society of Canada, Windsor, Ontario, June 2002.
- [O.80] Thomson, K. A., Gülder, Ö. L., Weckman, E. J., Fraser, R. A., and Snelling, D. R., "A New Diffusion Flame Burner and Pressure Vessel for High Pressure Soot Formation Study", Combustion Institute / Canadian Section, 2002 Spring Technical Meeting, pp.2.1-2.7, May 13-15, Windsor, Ontario, 2002.
- [O.81] Guo, H., Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Influence of Transport Properties of Inert Diluents on Soot Formation in a Coflow Laminar Ethylene-Air Diffusion

- Flame", Combustion Institute / Canadian Section, 2002 Spring Technical Meeting, pp.4.1-4.6, May 13-15, Windsor, Ontario, 2002.
- [O.82] Smallwood, G. J., Snelling, D. R., Gülder, Ö. L., Clavel, D., Gareau, D., Sawchuk, R. A., and Bachalo, W. D., "Quantitative Laser-Induced Incandescence Measurements of Particulate Matter from the Exhaust of a Direct Injection Spark Ignition Automobile", Proceedings of the IEA XXIII Task Leaders Meeting, Energy Conservation and Emissions Reduction in Combustion, September 9-12, 2001.
- [O.83] Guo, H., Liu, F., Smallwood, G. J., and Gülder, Ö. L., "The Inlet Boundary Condition Effect on the Numerical Modeling of a Two Dimensional Laminar Ethylene-Air Diffusion Flame", Proceedings of the 9th Annual Conference of the CFD Society of Canada, pp.418-423, June 2001.
- [O.84] Liu, F., Guo, H., Smallwood, G. J., and Gülder, Ö. L., "Numerical Investigation of the Effect of O₂ Addition to Fuel on Soot Formation in Coflow Laminar C₂H₄/Air Diffusion Flames", Combustion Institute / Canadian Section, 2001 Spring Technical Meeting, pp. 5.1-5.5, May 13-16, 2001, Montreal, PQ.
- [O.85] Guo, H., Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Numerical Investigation of the Influence of Hydrogen and Helium Addition on Soot Formation in Laminar Ethylene-Air Diffusion Flames", Combustion Institute / Canadian Section, 2001 Spring Technical Meeting, pp. 6.1-6.6, May 13-16, 2001, Montreal, PQ.
- [O.86] Liu, F., and Gülder, Ö. L., "Calculations of the 2D Cavity Flow Using A Finite-Difference Based Lattice Boltzmann Method", Proceedings of the 8th Annual Conference of the CFD Society of Canada, Vol.2, pp.575-580, 2000.
- [O.87] Guo, H., Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Numerical Simulation of a Coflow Laminar Diffusion C₂H₄/Air Flame", Combustion Institute / Canadian Section, 2000 Spring Technical Meeting, pp.2.1-2.5, 2000.
- [O.88] Liu, F., Guo, H., Smallwood, G. J., and Gülder, Ö. L., "Numerical Study of the Chemical Effects of CO₂ Dilution on Counterflow Laminar C₂H₄/Air Diffusion Flame", Combustion Institute / Canadian Section, 2000 Spring Technical Meeting, pp.6.1-6.5, 2000.
- [O.89] Gülder, Ö. L., Thomson, K. A., and Snelling, D. R., "Influence of the Fuel Nozzle Material on Soot Formation and Temperature Field in Coflow Laminar Diffusion Flames", Combustion Institute / Canadian Section, 2000 Spring Technical Meeting, pp.20.1-20.6, 2000.
- [O.90] Campbell, I. G., Smallwood, G. J., Gülder, Ö. L., Snelling, D. R., "Pressure Atomizer Spray Field Velocity Analysis using Two-Color PIV", ILASS-Americas'99, 12th Annual Conference on Liquid Atomization and Spray Systems, poster, May 17-19, Indianapolis, IN, 1999.
- [O.91] Snelling, D. R., Thomson, K. A., Smallwood, G. J., Weckman, E., Fraser, R., and Gülder, Ö. L., "Soot Surface Temperature Measurements in a Laminar Diffusion

- Flame", Combustion Institute / Canadian Section, 1999 Spring Technical Meeting, pp. 29.1-29.5, 1999.
- [O.92] Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Asymptotic Analysis of Radiative Extinction in Counter-Flow Diffusion Flames of Non-Unity Lewis Numbers", Combustion Institute / Canadian Section, 1999 Spring Technical Meeting, pp.5.1-5.6, 1999.
- [O.93] Snelling, D. R., Thomson, K. A., Smallwood, G. J., and Gülder, Ö. L., "Two-Dimensional Imaging of Soot Volume Fraction in Laminar Diffusion Flames", Combustion Institute / Canadian Section, 1998 Spring Technical Meeting, pp. 4.1-4.6, 1998.
- [O.94] Smallwood, G. J., Gülder, Ö. L., and Snelling, D. R., "Extension of Surface Density Measurements to High Turbulence Premixed Flames", Combustion Institute / Canadian Section, 1998 Spring Technical Meeting, pp. 1.7-1.11, 1998.
- [O.95] Liu, F., Smallwood, G. J., and Gülder, Ö. L., "Numerical Modelling of a Transient Axisymmetric Turbulent Pyrophoric Jet Diffusion Flame", Combustion Institute / Canadian Section, 1998 Spring Technical Meeting, pp. 9.6-9.10, 1998.
- [O.96] Liu, F., Smallwood, G. J., Snelling, D. R., and Gülder, Ö. L., "A Ray-Tracing Method for Solving the Radiative Transfer Equations in Three-Dimensional Participating Media", Combustion Institute / Canadian Section, 1997 Spring Technical Meeting, pp. 1.17-1.20, 1997.
- [O.97] Li, X., Chippior, W. L., and Gülder, Ö. L., "Effects of Cetane Number on Diesel Emissions", Combustion Institute / Canadian Section, 1997 Spring Technical Meeting, pp. 7.1-7.5, 1997.
- [O.98] Tanjo, A., Smallwood, G. J., Snelling, D. R., and Gülder, Ö. L., "Analysis of Two-Color PIV Images of Isothermal Heptane Sprays: A Comparison Between Particle Tracking and Cross-Correlation Techniques", ILASS-Americas 97, 10th Annual Conference on Liquid Atomization and Spray Systems, pp.352-356, May 18-21, 1997, Ottawa, Ontario.
- [O.99] Li, X., Chippior, W. L., and Gülder, Ö. L., "Effects of Cetane Number and Cetane Improver on Exhaust Emissions of a Single Cylinder DI Diesel Engine", Combustion Institute / Canadian Section, 1996 Spring Technical Meeting, pp. 14.1-14.4, 1996.
- [O.100] Gülder, Ö. L., Smallwood, G. J., Wong, R., Snelling, D. R., Smith, R., Deschamps, B. M., and Sautet, J.-C., "Flame Front Surface Characteristics in Turbulent Premixed Propane/Air Combustion" Combustion Institute / Canadian Section, 1996 Spring Technical Meeting, pp. 50.1-50.6, 1996.
- [O.101] Gülder, Ö. L., "Canadian Diesel Fuel Composition and Exhaust Emissions: Critical Issues and Research Needs" Invited Paper, Combustion Institute / Canadian Section, 1995 Spring Technical Meeting, University of Victoria, B.C., May 23-26, 1995.

- [O.102] Deschamps, B. M., Smallwood, G. J., Snelling, D. R., Gökalp, I., and Gülder, Ö. L., "Axial Evolution of Flame Front Surface Characteristics in Conical Turbulent Premixed Methane / Air Flames", 25th International Combustion Symposium, Poster No. 2/32, 1994.
- [O.103] Gülder, Ö. L., and Baksh, M. F., "Influence of Hydrogen Addition to Fuel on Soot Formation in Diffusion Flames", Combustion Institute / Canadian Section, 1994 Spring Technical Meeting, Paper No.41, pp.41.1-41.5, May 11-13, 1994, Kingston, On.
- [O.104] Baksh, M. F., and Gülder, Ö. L., "Effects of Oxygen on Soot Formation in Methane, Propane, and n-Butane Diffusion Flames", Combustion Institute / Canadian Section, 1994 Spring Technical Meeting, Paper No.44, pp.44.1-44.5, May 11-13, 1994, Kingston, On.
- [O.105] Wong, R., Snelling, D. R., Smallwood, G. J., Smith, R., and Gülder, Ö. L., "Fractal Characteristics of Turbulent Premixed Propane / Air Flames Measured by OH PLIF and LMS", Combustion Institute / Canadian Section, 1994 Spring Technical Meeting, Paper No.58, pp.58.1-58.4, May 11-13, 1994, Kingston, On.
- [O.106] Smallwood, G. J., Gülder, Ö. L., Snelling, D. R., "Transmission and Scattering Characteristics of the Dense Core Region in Transient Diesel Sprays", Combustion Institute / Canadian Section, 1994 Spring Technical Meeting, Paper No.78, pp.78.1-78.5, May 11-13, 1994, Kingston, On.
- [O.107] Smallwood, G. J., Deschamps, B. M., Gülder, Ö. L., and Snelling, D. R., "Variation of Flame Front Geometry in Conical Turbulent Premixed Methane / Air Flames", Combustion Institute / Canadian Section, 1994 Spring Technical Meeting, Paper No.61, p.61.1-61.5, May 11-13, 1994, Kingston, On.
- [O.108] Gülder, Ö. L., Glavincevski, B., and Battista, V., "Visibility of Methanol Pool Flames", 1993 Windsor Workshop on Alternative Transportation Fuels, June 14 - 17, 1993, Toronto, On.
- [O.109] Wong, R., Sautet, J. -C., Snelling, D. R., Smallwood, G. J., and Gülder, Ö. L., "2-D Profiles of the Flame Front in Turbulent Premixed Flames Using Laser Induced Fluorescence and Laser Mie Scattering", Combustion Institute / Canadian Section, 1993 Spring Technical Meeting, Paper No. 8, pp. 8.1 - 8.5, May 9-11, 1993, Québec QC.
- [O.110] Snelling, D. R., Gülder, Ö. L., Sawchuk, R. A., and Parameswaran, T., "CARS Temperature Measurements in a Sooting Laminar Diffusion Flame", Combustion Institute / Canadian Section, 1993 Spring Technical Meeting, Paper No. 9, pp. 9.1 - 9.5, May 9-11, 1993, Québec QC.
- [O.111] Deschamps, B. M., Gülder, Ö. L., Smallwood, G. J., Snelling, D. R., Bjorn, P. V., and Gökalp, I., "Characteristics of the Turbulent Premixed Methane / Air Flame Front Surfaces", Combustion Institute / Canadian Section, 1993 Spring Technical Meeting, Paper No.28, pp.28.1 -28.5, May 9-11, 1993, Québec QC.

- [O.112] Gülder, Ö. L., and Baksh, M. F., "Influence of Carbon Dioxide Dilution on Soot Formation in Diffusive Combustion", Combustion Institute / Canadian Section, 1993 Spring Technical Meeting, Paper No.40, pp.40.1 -40.5, May 9-11, 1993, Québec QC.
- [O.113] Smallwood, G. J., Gülder, Ö. L., and Snelling, D. R., "Dense Core Region Structure of Transient Diesel Sprays", ILASS-Americas 92, 5th Annual Conference on Liquid Atomization and Spray Systems, pp.43-47, May 18-20, 1992, San Ramon, CA.
- [O.114] Gülder, Ö. L., and Snelling, D. R., "Flame Temperature and Dilution Effects on Soot Formation in Diffusion Flames", Combustion Institute / Canadian Section, 1992 Spring Technical Meeting, Paper No.92-28, pp.88-91, May 11-13, 1992, Edmonton, Alberta.
- [O.115] Gülder, Ö. L., and Baksh, M. F., "Influence of Sulphur Dioxide on Soot Formation in Diffusion Flames", Combustion Institute / Canadian Section, 1992 Spring Technical Meeting, Paper No.92-29, pp.92-95, May 11-13, 1992, Edmonton, Alberta.
- [O.116] Aval, S. M., Gülder, Ö. L., Smallwood, G. J., and Snelling, D. R., "Interrogation of the Diesel Spray Structure by Laser Tomography and Diffraction", Combustion Institute / Canadian Section, 1991 Spring Technical Meeting, Paper No. 38, p.136, May 29-31, 1991, Ottawa, Ontario.
- [O.117] Gülder, Ö. L., "A Turbulent Premixed Flame Propagation Model for the Wrinkled Flame Regime", Combustion Institute/Canadian Section, 1991 Spring Technical Meeting, Paper No. 18, pp.65-68, May 29 -31, 1991, Ottawa, Ontario.
- [O.118] Gülder, Ö. L., and Baksh, M. F., "Soot Formation in Laminar Diffusion Flames at Elevated Temperatures", Combustion Institute / Canadian Section, 1991 Spring Technical Meeting, Paper No. 7, pp.26-29, May 29 -31, 1991, Ottawa, Ontario.
- [O.119] Gülder, Ö. L., Glavincevski, B., Baksh, M. F., and Burton, G. F., "Influence of Fuel-Bound Sulfur on Soot Formation in Laminar Diffusion Flames of Liquid Hydrocarbons", Combustion Institute/Eastern Section, 1990 Fall Technical Meeting, Paper No.127, December 3-5, 1990, Orlando, FL.
- [O.120] Gülder, Ö. L., and Snelling, D. R., "Formation and Temperature of Soot Particles in Laminar Diffusion Flames with Elevated Temperatures", Combustion Institute/Canadian Section, 1990 Spring Technical Meeting, pp.192-197, April 28-May 2, 1990, Banff, Alberta.
- [O.121] Gülder, Ö. L., "Turbulent Premixed Combustion Modelling Using Fractal Geometry", Combustion Institute/Canadian Section, 1990 Spring Technical Meeting, pp. 42-47, April 28-May 2, 1990, Banff, Alberta.
- [O.122] Gülder, Ö. L., "Soot Radiation in Laminar Diffusion Flames", Combustion Institute/Canadian Section, 1989 Spring Technical Meeting Proc. pp.45-48, May 31-June 2, 1989, Toronto.

- [O.123] Gülder, Ö. L., and Glavincevski, B., "Influence of Hydrocarbon Fuel Structural Constitution on Soot Formation in Laminar Diffusion Flames", 22nd International Symposium on Combustion, Poster No. 25, August 14-18, 1988.
- [O.124] Gülder, Ö. L., "Temporally and Spatially Resolved Drop Sizing of Dense Sprays", Proc. of 2nd ILASS Conference, pp.78-81, May 18-20, 1988, Pittsburgh, PA.
- [O.125] Gülder, Ö.L., and Glavincevski, B., "Effects of Flame Temperature and Fuel Structural Features on Soot Formation in Laminar Diffusion Flames", Combustion Institute/Canadian Section, 1988 Spring Technical Meeting, June 1-3, 1988, Halifax,N.S.
- [O.126] Gülder, Ö. L., and Glavincevski, B., "Soot Formation Characteristics of Gas Turbine Fuels - Effects of Hydrocarbon Structural Composition", Workshop on Alternative Fuels for Transportation: Canadian Research Needs, May 9,10, 1988, NRC, Ottawa, Ontario.
- [O.127] Gülder, Ö.L., "Multiple Scattering Effects in Drop Sizing of Dense Fuel Sprays by Laser Diffraction", AGARD / NATO PEP 70th Symp. on Combustion and Fuels in Gas Turbine Engines, AGARD CP-422, pp.7.1-7.15, 1988.
- [O.128] Gülder, Ö. L., and Baksh, M. F., "Drop Size Distribution in Dense Diesel Sprays", Combustion Institute/Canadian Section, 1987 Spring Technical Meeting, May 28-29, 1987, Vancouver, B.C.
- [O.129] Gülder, Ö. L., "Multiple Scattering Effects in Laser Diffraction Measurements of Dense Sprays with Bi-modal Size Distributions", 1st Annual Conference of ILASS-Americas, June 9-11, Madison, WI, 1987.
- [O.130] Gülder, Ö. L., Billingham, R., and Chellingworth, F. W., "Intermittent Spray Characterization and Spray Ignition at High Pressure and Temperature: Description of an Experimental Set-Up", Joint Technical Meeting of the Canadian and Western States Sections/The Combustion Institute, Paper no. 91, April 1986, Banff, Alberta.
- [O.131] Gülder, Ö. L., "Transient Heating and Evaporation of a Fuel Droplet with Non-Uniform Surface Temperature on a Hot Horizontal Plate", 21st International Symposium on Combustion, Poster No.74, Munich, Germany, August 1986.
- [O.132] Gülder, Ö. L., "An Expression for the Enthalpy of Vaporization of Hydrocarbons between their Triple Points and Critical Points", Combustion Institute / Canadian Section 1985 Spring Technical Meeting Paper no.13, May 1985, Waterloo, Ontario.
- [O.133] Glavincevski, B., and Gülder, Ö. L., "Cetane Number Prediction of Diesel Fuels from Hydrogen Type Structural Composition," Combustion Institute / Canadian Section 1985 Spring Technical Meeting, Paper no.4, May 1985, Waterloo, Ontario.
- [O.134] Gülder, Ö. L., and Wong, J. K. S., "Evaporation of Fuel Droplets on a Heated Surface", Combustion Institute / Canadian Section, 1984 Spring Technical Meeting, Paper no. 23, May 1984, Fredericton, New Brunswick.

- [O.135] Gülder, Ö. L., "Flame Temperature Estimation Of Diesel and Gas Turbine Fuels," Combustion Institute/Eastern States Section, 1984 Fall Meeting, Paper no.38, December 1984, Clearwater , FL.
- [O.136] Gülder, Ö. L., "Laminar Burning Velocities of Ethanol, Isooctane, and Isooctane / Ethanol Blends in Air", Combustion Institute / Canadian Section, 1983 Spring Technical Meeting, Paper no.14 ,May 1983, Kingston, Ontario.
- [O.137] Gülder, Ö. L., "Alternative I.C. Engine Fuels and Air Pollution", in Proceedings of Seminar on Alternative Energy Sources and Environmental Pollution, (Edited by Y. Yener, and B. Kilkis), pp.1-15, Ankara, 1980.

9.6 Keynote / Plenary / Invited Presentations

- [KPI.1] Rault, M. T., Gülder, Ö. L. "Influence of ethanol blending on soot in spray combustion of kerosene", 16th International Conference on Flow Dynamics, Sendai, Japan, November 6 - 8, 2019 (Invited)
- [KPI.2] Gülder, Ö. L., "What have we learned from high pressure soot studies – on track to finding a soothing solution or falling into a black hole?", Combustion Institute - Canadian Section Spring Technical Meeting, The University of British Columbia, Kelowna, May 13-16, 2019 (Plenary)
- [KPI.3] Griffin E. A. and Gülder, Ö. L., "High Pressure Soot Formation in Laminar Diffusion Flames of C2-C4 Olefins", 15th International Conference on Flow Dynamics, Sendai, Japan, November 7 - 9, 2018 (Invited)
- [KPI.4] Gülder, Ö. L., "Soot aerosol formation and morphology in high pressure combustion", KAUST Research Conference: Combustion in Extreme Conditions, KAUST Saudi Arabia, March 5-8, 2018 (Invited)
- [KPI.5] Gülder, Ö. L., "Uncertainty analysis in soot measurements at high pressures", Invited reflections. 3rd International Sooting Flame Workshop, Seoul, Korea, August 2016.
- [KPI.6] Gülder, Ö. L., "Soot aerosol formation in high pressure combustion", Princeton University, October 16, 2015, Princeton, N.J. (Invited)
- [KPI.7] Gülder, Ö. L., "Soot aerosol formation at high pressures in laminar diffusion flames", XXXVIII Meeting of the Italian Section of the Combustion Institute, Lecce – September 20-23, 2015. (Plenary)
- [KPI.8] Gülder, Ö. L., "Prospects of biofuels in aviation", The National Colloquium on Sustainable Aviation, May 27-28, 2015, Toronto, ON. (Invited)
- [KPI.9] Gülder, Ö. L., "What are the criteria for the validity of flamelet assumption?" 14th International Workshop on Premixed Turbulent Flames, August 1-2, 2014, San Francisco, CA. (Invited)

- [KPI.10] Gülder, Ö. L., "Premixed turbulent flame front structure and the limits of flamelet assumption", University of Orléans and CNRS, December 05, 2012, Orléans, France. (Invited)
- [KPI.11] Gülder, Ö. L., "Biofuels for aviation: challenges and sustainability", Canada in Aviation and Space: Past, Present and Future, CAE Symposium, June 22, 2012, Ottawa, ON.(Invited)
- [KPI.12] Gülder, Ö. L., "Structure of premixed turbulent flames and validity range of flamelet hypothesis", 7th Int'l Seminar on Flame Structure, July 2011, Novosibirsk, Russia. (Plenary)
- [KPI.13] Gülder, Ö. L., "Dynamics and structure of premixed turbulent flames", International Workshop on Turbulent Ignition and Flame Propagation, July 2010, Taipei, Taiwan. (Invited)
- [KPI.14] Gülder, Ö. L., "Combustion research for alternative fuels, energy efficiency and emissions reduction", University of Orléans, June 25, 2009, Orléans, France. (Invited)
- [KPI.15] Gülder, Ö. L., "A critical assessment of bio-fuels for aviation", The UTIAS-MITACS International Workshop on Aviation and Climate Change, May 29-30, 2008, Toronto, ON. (Invited)
- [KPI.16] Gülder, Ö. L., "Combustion of alternative fuels in engines", European Union Marie-Curie Conference on Fuels and Combustion in Engines, March 31-April 1, 2008, Istanbul, Turkey. (Invited)
- [KPI.17] Gülder, Ö. L., "Temperature and Soot Field Measurements in Atmospheric and High-Pressure Laminar Diffusion Flames", Sandia National Laboratories - Utah Workshop on Heat Transfer in Pool Fires, April 12-13, 2005, Livermore, CA. (Invited)
- [KPI.18] Gülder, Ö. L., "Recent Developments in Lean Premixed Flame Studies", Workshop on Combustion Science & Technology for Advanced Gas Turbines, March 28-30, 2005, Istanbul, Turkey. (Invited)
- [KPI.19] Gülder, Ö. L., "Characteristics of Flame Front Surfaces in Premixed Combustion", Front Propagation and Nonlinear Stochastic PDEs for Combustion and other Applications, CRM Université de Montréal, January 26-29, 2005, Montréal, QC. (Invited)
- [KPI.20] Gülder, Ö. L., "Properties of Turbulent Premixed Flame Surfaces", Zeldovich Memorial II – International Conference on Combustion and Detonation, August 30-September 3, 2004, Moscow, Russia. (Plenary)
- [KPI.21] Gülder, Ö. L., "Hydrogen-Enriched Lean-Premixed Flames", Workshop on Chemical Kinetics & Diffusion Processes in Reacting Flows, 7-9 June 2004, Istanbul, Turkey. (Invited)
- [KPI.22] Gülder, Ö. L., "Characteristics of Flame Front Surfaces in Turbulent Premixed Combustion", Combustion Institute / Canadian Section, 2003 Spring Technical Meeting, May 11-14, Vancouver, BC, 2003. (Plenary)

- [KPI.23] Gülder, Ö. L., "Soot Particulate Formation and Characterization in Combustion", Tsinghua University, Beijing, China, March 21, 2001 (on the occasion of the 90th Anniversary of the University). (Invited)
- [KPI.24] Gülder, Ö. L. and Smallwood, G. J., "Views on the Structure of Transient Diesel Sprays" ICLASS 2000: 8th International Conference on Liquid Atomization and Spray Systems, July 2000, Pasadena, CA. (Plenary)
- [KPI.25] Gülder, Ö. L., "The Breakup and Structure of Diesel Sprays" 3rd Symposium, Towards Clean Diesel Engines, 15-16 June 2000, IFP, Rueil-Malmaison, France. (Invited)
- [KPI.26] Gülder, Ö. L., "Fractal Characteristics and Surface Density of Flame Fronts in Turbulent Premixed Combustion" 1st Mediterranean Combustion Symposium (International), June 20-25, 1999, Antalya, Turkey. (Plenary)
- [KPI.27] Gülder, Ö. L., "Time-Resolved Structure of Full Cone Diesel Sprays", Second International Workshop on Advanced Spray Combustion, (Proc. Second International Workshop on Advanced Spray Combustion, pp. 29 – 38), November 1998, Hiroshima, Japan. (Invited)
- [KPI.28] Gülder, Ö. L., "Soot Particulate Formation and Characterization in Combustion", Canadian Society for Mechanical Engineering Forum 1998, (Transactions of the Canadian Society for Mechanical Engineering, vol. 23, n.1B, pp. 225-240, 1999), May 1998, Toronto, Ontario. (Invited)
- [KPI.29] Gülder, Ö. L., "Surface Density Measurements of Turbulent Premixed Flames in a Spark-Ignition Engine and a Bunsen-Type Burner Using Planar Laser-Induced Fluorescence", ERCOFTAC (European Research Centers on Flow, Turbulence and Combustion) 1996 Conference, June 1996, Paul Scherrer Institut (PSI), Würenlingen, Switzerland. (Plenary)

10 Research Grants / Equipment Grants / Contracts

Dates	Grantor	Grant type (PI or co-PI)	Topic	Amount \$CAD
2024-2028 (pending)	ORF, Pratt and Whitney Canada	Research Excellence (co-PI)	Hydrogen as a sustainable aviation fuel - Combustion research to remove impediments to adoption in gas turbine engines (Groth, PI; Devaud & Chaudhuri, Co-PIs)	1,980,000 (over 4 yrs)
2023-2026	NSERC, Pratt and Whitney Canada	Alliance (PI)	Near-future aviation fuels: Synthesis, testing, and GHG emissions (Devaud, Bushe, Kheirkhah and Upham, Co-PIs)	1,500,000 (over 3 yrs)

2022-2024	NSERC, Pratt and Whitney Canada	Alliance (PI)	Reducing Aviation's Impact on Climate Change - Understanding Effects of Fuel and Engine Characteristics on Formation of Contrails (Groth and Chaudhuri, Co-PIs)	951,000 (over 2 yrs)
2021-2023	CFI – JELF	Infrastructure (Co-PI)	Kinetics-transport interaction towards deposition of carbon particulates in meso-channel supercritical fuel flows (S. Chaudhuri, PI)	248,343
2021-2029	CFI	CFI NI Operational (PI)	High-pressure blow-down facility for gas turbine combustion research	615,000
2020-2022	NSERC	Equipment (PI)	A comprehensive research platform for measuring combustion generated soot nanoparticle morphology and pressure sensitivity at elevated pressures	69,250
2017-2023	NSERC	Discovery Grant (PI)	Fundamental flame studies of soot formation and morphology at elevated pressures	456,000 (over 6 yrs)
2016-2024	ORF	Research Excellence (PI)	Next Generation Low Emission Combustor Technologies for High-Efficiency Compact Aviation Gas Turbine Engines (Groth, Chaudhuri, Devaud, Co-PIs)	3,104,249
2015-2017	BIOFUEL NET	NCE	Particulate matter/soot aerosol formation propensities and thermal oxidative stability of biojet fuels at elevated pressures	110,00 (over 2 yrs)
2015-2017	NSERC	Equipment (PI)	Filtered Rayleigh scattering instrumentation for diagnostics of high-pressure combustion systems emitting nano soot aerosols	148,500
2014-2016	NSERC	Equipment (PI)	An experimental platform for nano-soot particle diagnostics and characterization for high	147,000

			pressure combustion	
2013-2024	CFI, OIT, Pratt and Whitney	CFI NI Infrastructure (PI)	High-pressure blow-down facility for gas turbine combustion research	5,100,000
2012-2015	NSERC, Rolls Royce, Pratt and Whitney	Strategic Project Grant (PI)	Environmental performance, sustainability and durability improvements in fuel-flexible combustors for stationary and motive engines (three other Co-PIs)	746,000 (over 3yrs)
2012-2017	NSERC	CREATE (Co-PI)	Industrial Stream NSERC CREATE Research and Training Program in Environmentally Sustainable Aviation (11 other Co-PIs)	1,650,00 (over 5 yrs)
2012-2013	NSERC RTI	Equipment (PI)	Swirl-stabilized burner for premixed and spray combustion	81,177
2012-2016	NSERC	Discovery (PI)	Fundamental flame studies of soot formation at high pressures and at low gravity	280,000 (over 5 yrs)
2011-2015	Pratt and Whitney, NSERC	Industrial Executive Research Chair (Co-PI)	Combustion and emissions (Sampath, PI) (2 other Co-PIs)	1,000,000 (over 5 yrs)
2011-2013	GARDN, Pratt and Whitney	Contract (PI)	Altitude emission control for aviation	252,000
2008-2009	NSERC RTI	Equipment (PI)	Stereo Particle Image Velocimetry System for Combustion and Turbulence Studies	145,034
2007-2010	Canadian Space Agency	Research Grant (PI)	Effects of gravity, buoyancy and differential diffusion on the structure of non-premixed flames	201,000
2007-2010	Pratt and Whitney	Contract (Co-PI)	Thermal Stability of Aviation Turbine Fuels (Groth, PI)	555,200
2007-2012	NSERC	Discovery (PI)	Fundamental Flame Studies of Turbulent Premixed	215,000

Combustion				
2006-2007	NSERC RTI	Equipment (PI)	A liquid fuel laminar diffusion flame burner for soot studies at high pressures	46,808
2005-2009	AUTO21	Research Grant (Co-PI)	Combustion of low-emission automotive tailored natural gas	76,875
2005-2006	NSERC RTI	Equipment (PI)	Components to build a laser-induced incandescence (LII) instrument for soot diagnostics	95,000
2004-2005	NSERC RTI	Equipment (PI)	A counter-flow flame burner system to study synergistic effects of gas mixtures on soot formation	23,020
2003-2004	NSERC RTI	Equipment (PI)	Planar Rayleigh scattering for temperature imaging	134,700
2003-2004	CFI, OIT New Opps	Infrastructure (PI)	High-Pressure Combustion Facility for Soot Research	500,000
2002-2005	NSERC	CRO (PI)	Dynamics and Structure of Lean Premixed Flames (Groth, Co-PI)	660,000
2002-2003	UTIAS	Startup (PI)	Fundamental flame studies	40,000
2002-2007	NSERC	Discovery (PI)	Turbulent premixed and partially premixed combustion	190,000

11 Professional Service Activities

11.1 Journal Editorial Boards

- Associate Editor: Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering, 2019-2022
- Editorial Board, Combustion and Flame, 2001-2009
- Editorial Board, International Journal of Engine Research, 2000-2004
- Editorial Board, International Journal of Thermal Sciences, 1996-2007
- Editorial Board, Journal of Atomization and Sprays, 1990-1996

11.2 Professional Societies

- Board of Directors, The Combustion Institute, 2000-2012

- Chair, Canadian Section, The Combustion Institute, 1991- 2001
- Board of Directors, The Combustion Institute, Canadian Section, 1989-2006
- Board of Directors, Institute for Liquid Atomization and Spray Systems, 1987-1994

11.3 Professional Society Membership

- Combustion Institute – Fellow
- Canadian Academy of Engineering – Fellow
- American Society of Mechanical Engineers
- American Institute of Aeronautics and Astronautics – Associate Fellow
- Institute for Liquid Atomization and Spray Systems

11.4 Advisory Responsibilities

- Member, NSERC Mechanical Engineering Grant Selection Committee, 1992-1995.
- Scientific Adviser, Canadian Space Agency (Microgravity Combustion), 1989-1994.
- Canadian Delegate, International Energy Agency – Working Group on Energy Conservation and Emissions Reduction in Combustion, 1988-2001.
- Canadian Member, Executive Committee, International Energy Agency - Working Group on Energy Conservation and Emissions Reduction in Combustion, 1991-2009 (Chair 2004-2005).
- PERD Advanced Fuels & Transportation Emissions Reduction POL leader, 1999-2001.
- Canadian Space Agency, Physical Sciences Advisory Committee, 2007-2010.

11.5 Scientific/Technical Meeting Organization

- Scientific Advisory Board Member, Mediterranean Combustion Symposium (biennial) since 2015.
- Co-organizer of 15th International Workshop on Premixed Turbulent Combustion, July 27-28, 2018, Dublin, Ireland.
- Scientific Advisory Committee Member, International Sooting Flame Workshop, July 27-28, 2018, Dublin, Ireland.
- Co-organizer of 15th International Workshop on Premixed Turbulent Combustion, July 29, 2016, Seoul, Korea.
- Scientific Advisory Committee Member, International Sooting Flame Workshop, July 30-31, 2016, Seoul, Korea.
- Co-organizer of 14th International Workshop on Premixed Turbulent Combustion, August 2014, San Francisco, USA.

- Colloquium Chair (Turbulent Combustion), 35th Int'l Symposium on Combustion, August 2014, San Francisco, USA.
- Co-organizer of 13th International Workshop on Premixed Turbulent Combustion, July 28-29, 2012, Warsaw, Poland.
- Scientific Advisory Committee Member, International Sooting Flame Workshop, July 28-29, 2012, Warsaw, Poland.
- Colloquium co-chair (Turbulent Combustion), 34th Int'l Symposium on Combustion, August 2012, Warsaw, Poland.
- Co-chair of Combustion Institute Canadian Section Spring Technical Meeting, May 2012, University of Toronto, Toronto.
- Co-organizer of 12th International Workshop on Premixed Turbulent Combustion, August 2010, Beijing, China.
- Co-organizer of 11th International Workshop on Premixed Turbulent Combustion, August 2008, McGill University, Montreal.
- Co-chair of Combustion Institute Canadian Section Spring Technical Meeting, May 2008, University of Toronto, Toronto.
- Colloquium co-chair (Pollutants formation and control) of biennial Mediterranean Combustion Symposia, 1999-present.
- Scientific Committee member, 6th International Seminar on Flame Structure, September 14-17, 2008, Brussels, Belgium.
- Scientific Committee member, Zeldovich Memorial II – International Conference on Combustion and Detonation, August 30-September 3, 2004, Moscow, Russia.

11.6 Reviewing Activities

- Member, Papers Subcommittee, The Combustion Institute, 1990- present.
- Reviewer for the following journals: Combustion and Flame, Journal of Fluid Mechanics, AIAA Journal, Physics of Fluids, Optic Letters, Combustion Theory and Modelling, Combustion Science and Technology, Progress in Energy and Combustion Science, Experimental Thermal and Fluid Science, International Journal of Thermal Sciences, Journal of Gas Turbines and Power (ASME), Atomization and Sprays, Applied Optics, Energy and Fuels (ACS), Industrial and Engineering Chemistry (ACS), Fuel, International Journal of Engine Research, Proceedings of the Combustion Institute, Energy Conversion and Management.
- Reviewer for following granting agencies: NSERC, Canadian Space Agency, PERD, US Army Office of Basic Research, NSF, DoE, Australian Research Council, Swiss National Science Foundation.
- Bernard Lewis Fellowship Committee of the Combustion Institute, 2000-2004
- Nominations Committee of The Combustion Institute, 2003-2008
- Site Selection Committee of The Combustion Institute, 2007-2010

- Ontario Graduate Scholarship Panel (Aerospace), 2005-2010 (Chair 2006-2008)
- Combustion Institute Gold Medal Nomination Committee Chair (2019-2020)

12 University and Departmental Assignments/Committees

12.1 Faculty

- Senior Promotions Committee (2008-present)
- Vice-Dean Search Committee (2006)

12.2 UTIAS

- Associate Director (2007-2016)
- CPPF (2001-present)
- Curriculum Committee (2002-2006)
- Tenure Committees (2005, 2008, 2022)
- Strategic Planning Committee (2007)
- Promotions Committee (2007-present)
- Honours Committee (2007-present)
- Alumni Committee (2007-2013)
- New Faculty Search Committees (2007, 2008, 2010, 2011, 2017/2018)