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Expertise

Fluid mechanics and reacting flows, with a focus on the development and application of experimental methods and optical diagnostics. Experimental methods and modelling of phenomena relevant to engines and gas turbines, including sprays and turbulent combustion, emissions, high pressure combustion, autoignition and thermoacoustics. Current interests are in the application of optical diagnostics and spectroscopy to reacting flows for turbulence-flame interactions, nanoparticle formation and combustion instabilities.

Education

1986–1991 **PhD, Mechanical and Aerospace Engineering**, *Princeton University*, USA.

Title An Experimental and Numerical Study on the Oxidation of Formaldehyde

1990–1985 **B.Sc., Mechanical Engineering**, *University of São Paulo*, SP, Brazil.

Experience

2002–
Present **Professor of Engineering**, *University of Cambridge*, Cambridge, UK.

2000–2002 **Managing Engineer**, *Exponent, Inc.*, Natick, MA, USA.

2014–2016 **Visiting Professor**, *Instituto Tecnológico da Aeronáutica (ITA)*, São José dos Campos, SP, Brazil.

1999–2000 **Principal Investigator**, *Sandia National Laboratories*, Livermore, CA, USA.

1996–1999 **Principal Investigator**, *Massachusetts Institute of Technology*, Cambridge, MA, USA.

1991–1996 **Principal Investigator**, *Massachusetts Institute of Technology*, Cambridge, MA, USA.

Awards

2018 Fellow of the Combustion Institute

2018 Best Paper Award, Japanese Symposium on Combustion

2016 Best Poster Award, UK Aerosol Society

2013 IoP Best Combustion Dissertation Award (M. S. Sweeney)

2011 Fellow Royal Aeronautical Society

2003 Royal Society Wolfson Merit Award

1996 Society of Automotive Engineers Ralph R. Teetor Award

1993 General Electric Career Development Award

1991 Bradley Career Development Award

1989 Engineering Council Award for Excellence in Teaching, Princeton University

- 1989 Foundation for the Advancement of Scientific Research of the State of São Paulo Award
- 1986 Guggenheim Fellowship
- 1986 American Association for University Women Award
- 1986 Zonta International Award (declined)

Professional Activities

- 2017–present **Chair**, *The Combustion Institute*, British Section.
- 2016–2022 **Member**, *Board of Directors*, The Combustion Institute.
- 2016–2019 **Member**, *PRACE European Supercomputing Access Committee*.
- 2012–2017 **Member**, *Advisory Board*, Sandia National Laboratories Combustion Research Facility.
- 2012–2018 **Member**, *Tsuji Young Investigator Award Committee*, The Combustion Institute.
- 2015 **Member**, *Silver Medal Award Committee*, The Combustion Institute.
- 2014–2018 **Associated Editor**, *Proceedings of the IMechE Part G: Journal of Aerospace Engineering*.
- 2014–2017 **Member**, *Advisory Board*, CBC workshop on coal and biomass conversion.
- 2014 **Member**, *Gold Medal Award Committee*, The Combustion Institute.
- 2011–2013 **Session coordinator**, *Gordon Conference on Laser Diagnostics in Combustion*.
- 2012 **Chair**, *Gold Medal Nomination Committee*, The Combustion Institute.
- 2012 **Co-Chair**, *Gas Turbines and Internal Combustion Engines Colloquium*, 45th Symposium on Combustion, The Combustion Institute.
- 2013–2017 **Webmaster and Newsletter Editor**, *The Combustion Institute*, British Section.
- 2008–2013 **Hon. Secretary**, *The Combustion Institute*, British Section.
- 2008–2013 **Hon. Secretary**, *The Combustion Institute*, British Section.
- 2011–2012 **Chair**, *International Advisory Board*, Swedish Internal Combustion Engine Consortia.
- 2006–2012 **Chair**, *International Advisory Board*, Chalmers Engine Research Center, Chalmers University, Göteborg, Sweden
- 2008–2010 **Chair**, *International Advisory Board*, KTH Center for Engine and Turbomachinery Research, KTH, Sweden.
- 2010 **Organiser**, *Combustion in Gas Turbines: Present and Future Challenges*, Combustion Institute, British Section Meeting, Cambridge, UK.
- 2006 **Member**, *Royal Society Member of Parliament-Scientist Pairing Scheme*.
- 2001–2003 **Member**, *Committee on Carbon Monoxide Episodes in Meteorological and Topological Problem Areas*, National Research Council, USA.
- 1999–2002 **Member**, *Horning Award Committee*, Society of Automotive Engineers .
- 2001–2003 **Member**, *Panel on the Partnership for a New Generation of Vehicles*, National Research Council, USA.
- 1996 **Member**, *Review Panel: Toxicological and Performance Aspects of Oxygenated Motor Fuels*, National Research Council, USA.

Research Highlights

- Instabilities** First direct measurements of entropy and compositional spots. Interaction of self-excited and forced instabilities, how they can be suppressed or enhanced by forcing. Effect of fuel stratification on flame response.
- Turbulent flames** Structure and measurements in turbulent flames. Highly resolved scalar and velocity measurements for understanding the underlying microstructure structure of premixed and stratified flames, in collaboration with R. Barlow at Sandia National Laboratories and A. Dreizler at TU Darmstadt. Adopted as target flame at the TNF workshop. Dual camera thermographic PIV measurements of turbulent jets.
- Nanoparticles** Development of compact nanoparticle diagnostics. Development of compact nanoparticle measurement device based on photoionization. Numerical methods for aerosol ionization and transport. Cavity measurements of nanoparticles using extinction and laser induced incandescence.
- Relight** First measurements of measurements of flame development and spray distribution under conditions of altitude relight, at the Rolls-Royce cold relight facility. High-speed visualization of the flame kernel development and simultaneous measurements of the spray distribution revealed the role of ignition energy (minimal), fuel distribution and atomization (small) and the important role of the flow pattern and critical strain on flame survival and transport.
- High-pressure** Industrial scale experiments in a high pressure, high temperature (10 bar, 600 oC, 1 kg/s) combustion facility. Investigation of the dynamic behaviour and flame transfer function of aeroengine lean direct injector nozzles, and full quartz combustors with secondary air inlets for investigation of the imaging distribution of soot and particulate matter in very rich combustion nozzles.
- Biofuels** The laminar flame speeds of biofuels and the sensitivity to strain determined using the wall impingement technique, and compared to existing and new models. Measurements of the behaviour and soot production of biofuels in heated spray flames and liquid pools.
- Gasoline engines** Sprays and particulate matter. Produced the first LDA measurements in DISI measurements; demonstrated flash boiling. First measurements of nanoparticles and models for their formation in gasoline engines.
- Autoignition** Produced the first measurements and simulations demonstrating the effect of the roll-up vortex in rapid compression machines. Co-developed a practical model for suppression of corner vortex, and accounting for thermal boundary layer growth.

Conference Invited lectures

- 2018 *Mind the gap: turbulent combustion model validation and future needs*, Topical Review,, International Symposium on Combustion, 8 August 2018, Dublin, Ireland.
- 2016 *An overview of optical methods for non-intrusive soot and particle measurements*, Annual Aerosol Society Conference, 10 November, 2016 Birmingham, UK.
- 2016 *Understanding the structure and dynamics of turbulent reacting flows via selective experiments*, 11th International ERCOFTAC Symposium on Engineering Turbulence Modelling and Measurements, 21-23 September 2016, Palermo, Italy.
- 2016 *Probing the structure of turbulent pulverized coal flames: a review of non-intrusive methods*, Oxyflame First International Workshop, Montabaur, Germany, 10-11 Feb, 2016.
- 2015 *Still burning after all these years: better, cleaner, and less*, Combura Workshop, Soesterberg, Netherlands, 7-8 October 2015

- 2015 *Velocity and scalar database for coal and methane flames*, Coal and Biomass Combustion Workshop, Avignon, 19 April 2015.
- 2015 *Extracting data from turbulent flames and informing models*, Gordon Conference in Laser Diagnostics for Combustion, Waterville Valley, 9-13 August 2015.
- 2014 *Making Sense of Measurements in Instabilities and Turbulent Flames*, SPEIC2014, Lisbon, 19-21 November 2014.
- 2014 *Understanding real flames through high pressure experiments*, Clean Combustion Workshop, KAUST, Saudi Arabia, 17-19 February, 2014.
- 2014 *Measurements in thermoacoustic systems*, TANGO Network Lecture Series, IIT Bangalore, Chennai, India, 4-7 Feb 2014.
- 2013 *The structure and dynamics of stratified turbulent flames*, Keynote Talk, European Combustion Meeting, Lund, June 2013.
- 2012 *Rapid compression machine diagnostics – an overview*, 1st RCM Workshop, Argonne National Laboratories, August 2012.
- 2013 *Laser applications to oxycoal flames*, Combustion Institute (British Section) Autumn Meeting, Imperial College, London, June 2012.
- 2012 *Experiments on the structure of stratified Turbulent Flames*, TNF11 Workshop, Heidelberg, July 2012.
- 2013 *High Resolution measurements in premixed and stratified turbulent Flames*, ERCOFTAC Meeting, Rouen, Sep 2011.
- 2011 *Measurements in turbulent stratified flames with recirculation*, COMBINA Workshop, Ajaccio, June 2011.
- 2010 *Overview of Stratified Experiments*, TNF Workshop, Beijing, July 2010.
- 2009 *Measurements on the structure of premixed and stratified turbulent flames*, Invited Lecture, 6th Mediterranean Combustion Meeting, Ajaccio, Corsica, 10 June 2009.
- 2009 *High brow and low brow: from very applied to very fundamental approaches to gas turbine combustion*, BES Invited Speaker Series, Sandia National Laboratories, Livermore, California, 7 May 2009.
- 2009 *Measurements on the structure of premixed and stratified turbulent flames*, Combustion Institute (British Section) Autumn Meeting, Imperial College, London, 8 January 2009.
- 2005 *Burning cleaner, burning less: what combustion science can do*, Cambridge Philosophical Society, 2005.
- 1993 *Internal combustion engines: current and potential performance*, NSF/DOE Workshop on Fuel Cells, Washington, D.C., Dec. 14-16, 1993.

Languages

English	Native
Portuguese	Mothertongue
German	Advanced

Reading and comprehension

Patents

- Patent *Particle Measurement Apparatus*, GB 1609868.3, US 20170350862: Nishida, R. T. , Hochgreb, S., Boies, A. M., Saffell, J., Particle measurement apparatus and methods for determining concentration and size parameters of particles in a gas sample.

Publications

ORCID link <https://orcid.org/0000-0001-7192-4786>

Books

- 2004 Homsy, G A, H Aref, K S Breuer, S Hochgreb, J R Koseff, BR Munsen, K G Powell, C R Robertson, and S T Thoroddsen (2004). *Multimedia fluid mechanics*. Vol. CD ROM. Cambridge University Press. ISBN: 9780521604765. URL: <https://dx.doi.org/10.2277/0521604761>.

Book Chapters

- 2007 Hochgreb, S. and R. Balachandran (2007). "Combustion Instabilities in Basics of Aeroacoustics and Thermoacoustics", ed. by J. Anthoine. VKI. Chap. Measurement Techniques for Turbulent Combustion Instabilities. URL: <https://store.vki.ac.be/basics-of-aeroacoustics-and-thermoacoustics.html>.
- 1998 Hochgreb, S (1998). "Handbook of Air Pollution from Internal Combustion Engines: Pollutant Formation and Control", ed. by E. Sher. Academic Press. Chap. Combustion Related Emissions in Spark Ignition Engines.

Journal Publications

- 2020 Nishida, Robert, Tyler Johnson, Joshua S Hassim, Brian Graves, Adam M. Boies, and Simone Hochgreb (Jan. 2020). "A simple method for measuring fine-to-ultrafine aerosols using bipolar charge equilibrium", *ACS Sensors*. URL: <https://doi.org/10.1021/acssensors.9b02143>.
- 2019 Breitegger, Philipp, Mario A. Schriefl, Robert T. Nishida, Simone Hochgreb, and Alexander Bergmann (2019). "Soot mass concentration sensor using quartz-enhanced photoacoustic spectroscopy", *Aerosol Science and Technology* 0.0, pp. 1–5. eprint: <https://doi.org/10.1080/02786826.2019.1635677>. URL: <https://doi.org/10.1080/02786826.2019.1635677>.
- De Domenico, F, E O Rolland, and S Hochgreb (2019). "A generalised model for acoustic and entropic transfer function of nozzles with losses", *Journal of Sound and Vibration* 440, pp. 212–230. URL: <https://doi.org/10.1016/j.jsv.2018.09.011>.
- Domenico, Francesca De, Thibault F. Guiberti, Simone Hochgreb, William L. Roberts, and Gaetano Magnotti (2019a). "Temperature and water measurements in flames using 1064 nm Laser-Induced Grating Spectroscopy (LIGS)", *Combustion and Flame* 205, pp. 336–344. eprint: <https://doi.org/10.1016/j.combustflame.2019.04.0167>. URL: <https://doi.org/10.1016/j.combustflame.2019.04.016>.
- Domenico, Francesca De, Thibault F. Guiberti, Simone Hochgreb, William L. Roberts, and Gaetano Magnotti (Oct. 2019b). "Tracer-free laser-induced grating spectroscopy using a pulse burst laser at 100 kHz", *Opt. Express* 27.22, pp. 31217–31224. URL: <http://www.opticsexpress.org/abstract.cfm?URI=oe-27-22-31217>.
- Fan, Luming and Simone Hochgreb (2019). "Uncertainty analysis in Structured Laser Illumination Planar Imaging (SLIPI) applied to non-linear signals: gas-phase phosphor thermometry", *Measurement Science and Technology*. URL: <http://iopscience.iop.org/10.1088/1361-6501/ab19ff>.
- Nishida, R.T., N.M. Yamasaki, M.A. Schriefl, A.M. Boies, and S. Hochgreb (2019). "Modelling the effect of aerosol polydispersity on unipolar charging and measurement in low-cost sensors", *Journal of Aerosol Science* 130, pp. 10–21. URL: <http://www.sciencedirect.com/science/article/pii/S0021850218303136>.

- Nivarti, G. V., R. S. Cant, and S. Hochgreb (2019). "Reconciling turbulent burning velocity with flame surface area in small-scale turbulence", *Journal of Fluid Mechanics* 858, R1.
- Weller, L., F. R. Smail, J. A. Elliott, A. H. Windle, A. M. Boies, and S. Hochgreb (2019). "Mapping the parameter space for direct-spun carbon nanotube aerogels", *Carbon*. URL: <http://www.sciencedirect.com/science/article/pii/S0008622319300946>.
- Weller, Lee, Maxim Kuvshinov, and Simone Hochgreb (Apr. 2019). "Gas-phase Raman spectroscopy of non-reacting flows: comparison between free-space and cavity-based spontaneous Raman emission", *Appl. Opt.* 58.10, pp. C92–C103. URL: <http://ao.osa.org/abstract.cfm?URI=ao-58-10-C92>.
- 2018 De Domenico, Francesca, P Shah, B. A. O. Williams, P. Ewart, Steven M Lowe, L. Fan, and S. Hochgreb (2018a). "High Frequency Measurement of Temperature and Composition with LITGS", *Journal of Engineering for Gas Turbines and Power* 141.3, p. 031003. URL: <http://doi.org/10.1115/1.4041275>.
- Fan, L, D McGrath, C T Chong, M N Mohd Jaafar, H Zhong, and S Hochgreb (2018). "Laser-induced incandescence particle image velocimetry (LII-PIV) for two-phase flow velocity measurement", *Experiments in Fluids* 59.10, p. 156. URL: <https://doi.org/10.1007/s00348-018-2610-4>.
- Hayakawa, Akihiro, Tomohisa Yamagami, Kiyonori Takeuchi, Yasuhiro Higuchi, Taku Kudo, Steven Lowe, Yi Gao, Simone Hochgreb, and Hideaki Kobayashi (2018). "Quantitative measurement of temperature in oxygen enriched CH₄/O₂/N₂ premixed flames using Laser Induced Thermal Grating Spectroscopy (LITGS) up to 1.0 MPa", *Proceedings of the Combustion Institute*. URL: <http://www.sciencedirect.com/science/article/pii/S1540748918305510>.
- Hochgreb, S (2018). "Mind the gap: Turbulent combustion model validation and future needs", *Proceedings of the Combustion Institute*.
- Luers, A., A-L. Sahlberg, S. Hochgreb, and P. Ewart (2018). "Flame thermometry using laser induced grating spectroscopy of nitric oxide", *Applied Physics B* 143.0, p. 124. URL: <http://dx.doi.org/10.1007/s00340-018-6912-2>.
- Nishida, R T, A M Boies, and S Hochgreb (2018). "Measuring ultrafine aerosols by direct photoionization and charge capture in continuous flow", *Aerosol Science and Technology* 52.5, pp. 546–556. URL: <https://doi.org/10.1080/02786826.2018.1430350>.
- Taveau, J, S Hochgreb, S Lemkowitz, and D Roekaerts (Jan. 2018). "Explosion hazards of aluminum finishing operations", *Journal of Loss Prevention in the Process Industries* 51, pp. 84–93. URL: <https://dx.doi.org/10.1016/j.jlp.2017.11.011>.
- Taveau, Jérôme, Saul Lemkowitz, Simone Hochgreb, and Dirk Roekaerts (2018). "Dust Explosion Propagation in Small Diameter Pipes", *Process Safety Progress*. eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/prs.12033>. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1002/prs.12033>.
- Tian, B., C.T. Chong, L. Fan, J.-H. Ng, C. Zhang, and S. Hochgreb (2018). "Soot volume fraction measurements over laminar pool flames of biofuels, diesel and blends", *Proceedings of the Combustion Institute*. URL: <http://www.sciencedirect.com/science/article/pii/S1540748918300956>.
- Tian, B., Y. Gao, C. Zhang, and S. Hochgreb (2018). "Soot measurement in diluted methane diffusion flames by multi-pass extinction and laser-induced incandescence", *Combustion and Flame* 192, pp. 224–237. URL: <https://doi.org/10.1016/j.combustflame.2018.01.037>.

- 2017 Afzalabadi, A, A K Poorfar, M Bidabadi, H Moghadasi, S Hochgreb, A Rahbari, and C Dubois (Sept. 2017). "Study on hybrid combustion of aero-suspensions of boron-aluminum powders in a quiescent reaction medium", *Journal of Loss Prevention in the Process Industries* 49, pp. 645–651. URL: <https://dx.doi.org/10.1016/j.jlp.2017.08.012>.
- Balusamy, S, L K B Li, Z Han, and S Hochgreb (Jan. 2017). "Extracting flame describing functions in the presence of self-excited thermoacoustic oscillations", *Proceedings of the Combustion Institute* 36, pp. 3851–3861. URL: <https://dx.doi.org/10.1016/j.proci.2016.06.050>.
- Chong, C T and S Hochgreb (Jan. 2017). "Flame structure, spectroscopy and emissions quantification of rapeseed biodiesel under model gas turbine conditions", *Applied Energy* 185, pp. 1383–1392. URL: <https://dx.doi.org/10.1016/j.apenergy.2016.01.003>.
- De Domenico, F, E O Rolland, and S Hochgreb (Apr. 2017a). "Detection of direct and indirect noise generated by synthetic hot spots in a duct", *Journal of Sound and Vibration* 394, pp. 220–236. URL: <https://doi.org/10.1016/j.jsv.2017.01.004>.
- Fan, L, Y Gao, A Hayakawa, and S Hochgreb (Apr. 2017). "Simultaneous, two-camera, 2D gas-phase temperature and velocity measurements by thermographic particle image velocimetry with ZnO tracers", *Experiments in Fluids* 58. URL: <https://doi.org/10.1007/s00348-017-2313-2>.
- Goldsborough, S S, S Hochgreb, G Vanhove, M S Wooldridge, H J Curran, and C J Sung (Jan. 2017). "Advances in rapid compression machine studies of low- and intermediate-temperature autoignition phenomena", *Progress in Energy and Combustion Science* 63, pp. 1–78. URL: <https://dx.doi.org/10.1016/j.pecs.2017.05.002>.
- Kamal, M M, B Coriton, R Zhou, J H Frank, and S Hochgreb (Jan. 2017). "Scalar dissipation rate and scales in swirling turbulent premixed flames", *Proceedings of the Combustion Institute* 36, pp. 1957–1965. URL: <https://dx.doi.org/10.1016/j.proci.2016.08.067>.
- Nishida, R T, A M Boies, and S Hochgreb (Jan. 2017). "Modelling of direct ultraviolet photoionization and charge recombination of aerosol nanoparticles in continuous flow", *Journal of Applied Physics* 121. URL: <https://dx.doi.org/10.1063/1.4972335>.
- Rolland, E O, F De Domenico, and S Hochgreb (2017a). "Direct and indirect noise generated by entropic and compositional inhomogeneities", *Journal of Engineering for Gas Turbines and Power* 17, p. 1458. URL: <https://dx.doi.org/10.1115/1.4039050>.
- Rolland, E O, F De Domenico, and S Hochgreb (May 2017c). "Theory and application of reverberated direct and indirect noise", *Journal of Fluid Mechanics* 819, pp. 435–464. URL: <https://doi.org/10.1017/jfm.2017.183>.
- Taveau, J R, J E Going, S Hochgreb, S M Lemkowitz, and D J E M Roekaerts (Jan. 2017). "Igniter-induced hybrids in the 20-l sphere", *Journal of Loss Prevention in the Process Industries* 49, pp. 348–356. URL: <https://dx.doi.org/10.1016/j.jlp.2017.07.014>.
- Tian, B, C Zhang, Y Gao, and S Hochgreb (2017). "Planar 2-color time-resolved laser-induced incandescence measurements of soot in a diffusion flame", *Aerosol Science and Technology* 51.12, pp. 1345–1353. URL: <https://doi.org/10.1080/02786826.2017.1366644>.
- 2016 Bidabadi, M, M Mohebbi, AK Poorfar, S Hochgreb, CX Lin, SA Biouki, and M Hajilou (Sept. 2016). "Modeling quenching distance and flame propagation speed through an iron dust cloud with spatially random distribution of particles", *Journal of Loss Prevention in the Process Industries* 43, pp. 138–146. URL: <https://dx.doi.org/10.1016/j.jlp.2016.05.018>.

- Chong, C T, S S Lam, and S Hochgreb (2016). "Effect of mixture flow stratification on premixed flame structure and emissions under counter-rotating swirl burner configuration", *Applied Thermal Engineering* 105, pp. 905–912. URL: <https://dx.doi.org/10.1016/j.applthermaleng.2016.03.164>.
- Tsui, HP, MM Kamal, S Hochgreb, and WK Bushe (Mar. 2016). "Direct comparison of PDF and scalar dissipation rates between LEM simulations and experiments for turbulent, premixed methane air flames", *Combustion and Flame* 165, pp. 208–222. URL: <https://dx.doi.org/10.1016/j.combustflame.2015.12.006>.
- 2015 Balusamy, S, M M Kamal, S M Lowe, B Tian, Y Gao, and S Hochgreb (May 2015). "Laser diagnostics of pulverized coal combustion in O₂/N₂ and O₂/CO₂ conditions: velocity and scalar field measurements", *Experiments in Fluids* 56. URL: <https://dx.doi.org/10.1007/s00348-015-1965-z>.
- Balusamy, S, L K B Li, Z Han, M P Juniper, and S Hochgreb (Jan. 2015). "Nonlinear dynamics of a self-excited thermoacoustic system subjected to acoustic forcing", *Proceedings of the Combustion Institute* 35, pp. 3229–3236. URL: <https://dx.doi.org/10.1016/j.proci.2014.05.029>.
- Chong, C T and S Hochgreb (Jan. 2015a). "Effect of atomizing air flow on spray atomization of an internal-mix twin-fluid atomizer", *Atomization and Sprays* 25, pp. 657–673. URL: <https://dx.doi.org/10.1615/AtomizSpr.2015011361>.
- Chong, C T and S Hochgreb (Jan. 2015b). "Fundamental Spray Combustion Characteristics of Rapeseed Biodiesel, Diesel and Blend", *Energy Procedia* 75, pp. 2394–2399. URL: <https://dx.doi.org/10.1016/j.egypro.2015.07.186>.
- Chong, C T and S Hochgreb (Jan. 2015c). "Measurements of non-reacting and reacting flow fields of a liquid swirl flame burner", *Chinese Journal of Mechanical Engineering (English Edition)* 28, pp. 394–401. URL: <https://dx.doi.org/10.3901/CJME.2015.0109.011>.
- Chong, C T and S Hochgreb (Jan. 2015d). "Spray and combustion characteristics of biodiesel: Non-reacting and reacting", *International Biodeterioration and Biodegradation* 102, pp. 353–360. URL: <https://dx.doi.org/10.1016/j.ibiod.2015.01.012>.
- Chong, C T, S S Lam, and S Hochgreb (Oct. 2015). "Combustion performance of a counter-rotating double swirl flame burner under stratified burning condition", *Chemical Engineering Transactions* 45, pp. 193–198. URL: <https://dx.doi.org/10.3303/CET1545033>.
- Han, Z, S Balusamy, and S Hochgreb (June 2015). "Spatial Analysis on Forced Heat Release Response of Turbulent Stratified Flames", *Journal of Engineering for Gas Turbines and Power* 137. URL: <https://dx.doi.org/10.1115/1.4029056>.
- Han, Z and S Hochgreb (Jan. 2015). "The response of stratified swirling flames to acoustic forcing: Experiments and comparison to model", *Proceedings of the Combustion Institute* 35, pp. 3309–3315. URL: <https://dx.doi.org/10.1016/j.proci.2014.05.047>.
- Kamal, M M, R S Barlow, and S Hochgreb (Feb. 2015a). "Conditional analysis of turbulent premixed and stratified flames on local equivalence ratio and progress of reaction", *Combustion and Flame* 162, pp. 3896–3913. URL: <https://dx.doi.org/10.1016/j.combustflame.2015.07.026>.
- Kamal, M M, R S Barlow, and S Hochgreb (Nov. 2015b). "Scalar structure of turbulent stratified swirl flames conditioned on local equivalence ratio", *Combustion and Flame* 166, pp. 76–79. URL: <https://dx.doi.org/10.1016/j.combustflame.2016.01.001>.

- Kamal, M M, R Zhou, S Balusamy, and S Hochgreb (Jan. 2015). "Favre- and Reynolds-averaged velocity measurements: Interpreting PIV and LDA measurements in combustion", *Proceedings of the Combustion Institute* 35, pp. 3803–3811. URL: <https://dx.doi.org/10.1016/j.proci.2014.06.061>.
- Muto, M, H Watanabe, R Kurose, S Komori, S Balusamy, and S Hochgreb (Feb. 2015). "Large-eddy simulation of pulverized coal jet flame - Effect of oxygen concentration on NO_x formation", *Fuel* 142, pp. 152–163. URL: <https://dx.doi.org/10.1016/j.fuel.2014.10.069>.
- Tian, B, Y Gao, S Balusamy, and S Hochgreb (Sept. 2015). "High spatial resolution laser cavity extinction and laser-induced incandescence in low-soot-producing flames", *Applied Physics B: Lasers and Optics* 120, pp. 469–487. URL: <https://dx.doi.org/10.1007/s00340-015-6156-3>.
- 2014 Chalmers, H et al. (Jan. 2014). "OxyCAP UK: Oxyfuel combustion - Academic programme for the UK", *Energy Procedia* 63, pp. 504–510. URL: <https://dx.doi.org/10.1016/j.egypro.2014.11.055>.
- Chong, C T and S Hochgreb (Dec. 2014a). "Spray and combustion characteristics of biodiesel: Non-reacting and reacting", *International Biodeterioration and Biodegradation* 102, pp. 353–360. URL: <https://dx.doi.org/10.1016/j.ibiod.2015.01.012>.
- Chong, C T and S Hochgreb (Jan. 2014c). "Spray flame structure of rapeseed biodiesel and Jet-A1 fuel", *Fuel* 115, pp. 551–558. URL: <https://dx.doi.org/10.1016/j.fuel.2013.07.059>.
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- Mohd Yasin, MF, RS Cant, CT Chong, and S Hochgreb (June 2014). "Discrete multi-component model for biodiesel spray combustion simulation", *Fuel* 126, pp. 44–54. URL: <https://dx.doi.org/10.1016/j.fuel.2014.02.020>.
- 2013 Balusamy, S, A Schmidt, and S Hochgreb (May 2013). "Flow field measurements of pulverized coal combustion using optical diagnostic techniques", *Experiments in Fluids* 54. URL: <https://dx.doi.org/10.1007/s00348-013-1534-2>.
- Chong, C T and S Hochgreb (Jan. 2013a). "Flow field of a model gas turbine swirl burner", *Advanced Materials Research* 622, pp. 1119–1124. URL: <https://dx.doi.org/10.4028/www.scientific.net/AMR.622-623.1119>.
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