12th European Combustion Meeting

Poster programme

Numbers near the poster title correspond to poster number 1 to 120

Session 1: Tuesday, April 8th, 10:30–12:30

S1A1 – Gas-phase reaction kinetics / Laminar flames – Concourse of Appleton Tower

1. Analysis of entropy generation in acoustically perturbed hydrogen flames
Daniya Zhumabayeva, Frederick Young, Umair Ahmed, R. Stewart Cant

2. Effects of preferential diffusion on extinction of premixed ammonia/hydrogen/nitrogen/air counterflow flames under different cracking ratios
Boyan Xu, Rob Bastiaans, Jeroen Van Oijen

3. A consistency test for the estimation of the Zeldovich number
Omar Dounia, Nabiha Chaumeix

4. Numerical investigation of hot-spot surface ignition of hydrogen-air mixtures
Hongchao Chu, Tiankai Li, Haogeng Bai, Zezheng Li, Heinz Pitsch

5. Flame Propagation of Refrigerant R-1234yf (CF3CFCH2) in Humid Air: A DNS Study
Zezheng Li, Hongchao Chu, Gregory T. Linteris, Roman Glaznev, Joachim Beeckmann, Michael Gauding, Heinz Pitsch

6. Insights into the Nonlinear Dynamic Features of Meso-Scale Combustor Flames
Akhil Aravind, Balasundaram Mohan, Saptarshi Basu

7. Premixed flame quenching distance between cold walls: effects of flow and Lewis number
Joel Daou, Aiden Kelly, Remi Daou, Vadim Kurdyumov, Prabakaran Rajamanickam

8. Laminar and Turbulent Hydrogen-enriched Methane Flames: Interaction of Thermodiffusive Instabilities and Local Fuel Demixing
Hendrik Nicolai, Vinzenz Schuh, Antonia Bähr, Max Schneider, Felix Rong, Driss Kaddar, Mathis Bode, Christian Hasse

9. Investigating the role of diffusion modelling on hydrogen flame wall interaction
Mathieu Laignel, Kévin Bioche, Léa Voivenel, Ghislain Lartigue, Vincent Moureau

10. Laminar burning velocities of rich CH4+N2+O2 flames: a projection to make direct data comparison for highly dispersed experimental conditions
Xinlu Han, Fawei Lin, Alexander. A Konnov

10. An experimental tool to identify and understand the NO formation pathways in hydrogen-air flames
Cecilia Romero Gonzalez, Christopher Betrancourt, Clement Mirat, Laurent Zimmer

11. Modelling of Metastable Iron Oxide Nanoparticles Formation in Flame Synthesis
Piotr Cwiek, Matthieu Lalanne, Monika Nanjaiah, Sergey Cheskis, Irenaeus Wlokas, Igor Rahinov

13. Flame-Turbulence Interactions in thermo-diffusive unstable flames: Velocity Spectra and the Filtering Role of Flames
Hamid Kavari, Pasquale Eduardo Lapenna, Mathis Bode, Daniel Mira, Francesco Creta

14. Investigation of Biogas Production, Composition and Operating Conditions and the Effects in Premixed Laminar Flames
Nathalia Sampaio Sant'Anna Marques, Andreza Costa, Raquel Da Cunha Ribeiro Da Silva, Rogério Dos Santos

16. Assessment of Flamelet Generated Manifold for Predicting Quenching Distances in Laminar Hydrogen-Air Flames
Tahsin Berk Kiymaz, Nijso Beishuizen, Jeroen Van Oijen

18. Comparison of multiple McKenna burners using infrared thermometry
Nikolas Schmidt, Phillipp Bräuer, Mcweil Pereira, Anna Hasche, Sven Eckart, Florian Bauer, Hartmut Krause, Stefan Will

20. Mitigation of Thermo-acoustic Instabilities via Porous Plugs
Pedro Gatón Pérez, Matías Braun, Siba Prasad Choudhury, Victor Muntean, Daniel Martínez Ruiz

21. Dynamics of flame propagation in channels of varying cross section
Siba Prasad Choudhury, A Ananthakrishnan, Manas Jain, Digvijay Nath Tiwari, D Naveen, Ratan Joarder, Daniel Martínez Ruiz

22. Investigation of Laminar Burning Velocity of Sustainable Aviation Fuels Surrogates
Nadjet Hamamousse, Emilien Brodu, Camille Strozzi, Bastien Boust, Julien Sotton, Marc Bellenoue, Christophe Viguier

23. Impact of Lewis Number on Flame-Wall Interaction and Heat Transfer in Hydrogen, Methane, and Iso-Octane Combustion
Hugo Quintens, Clément Bramoullé, Emma Daudré, Vincent Giuffrida, Karine Truffin, Michele Bardi, Olivier Laget

24. Study of lean hydrogen flames with heat losses in composition space
Alba Domínguez-González, Daniel Martínez Ruiz, Luc Vervisch

25. Experimental study of the effect of droplets on partially prevapourised opposed stretched premixed flames
Maxim Kuvshinov, Bruno Renou, Simone Hochgreb

26. Impact of steam on the thermodiffusive instability in hydrogen premixed flames
Sofiane Al Kassar, Hunyan Zubair, Innes Cameron, Khushboo Pandey, Antonio Attili

27. Flame hydrodynamic instabilities under confinement, flow, and Darcy's law
Joel Daou, Prabakaran Rajamanickam

28. Response of Non-premixed Jet Flames to Blast Waves
Akhil Aravind, Gautham Vadlamudi, Saptarshi Basu

29. Experimental investigation of diffusive-thermal instabilities on a porous flat burner in a methane-air flame
Timo Jennerjahn, Philipp Golda, Robert Schießl, Viatcheslav Bykov, Ulrich Maas

30. The inhibitory effect of ammonia on sooting characteristics in laminar ethylene diffusion flames at different pressures
Faruk Y. Aydin, Felipe Campuzano, Raul Serrano-Bayona, William Roberts

31. Gasless deflagration with thermally sensitive intermediate ZLD branching kinetics
Mario Napieraski, Vadim Kurdyumov, Mario Sanchez-Sanz, César Huete, Forman Williams

32. Combined Stretch, Radiation, and Low-Temperature Chemistry Effects on Flame Propagation of Nitrogen-Diluted Mixtures
Roman Glaznev, Christian Schwenzer, Raik Hesse, Fabien Halter, Christian Chauveau, Chaimae Bariki, Heinz Pitsch, Joachim Beeckmann

33. Thermoacoustic frequencies of flames propagating in non-adiabatic slender channels
Carmen Jimenez, Daniel Martínez Ruiz, Vadim Kurdyumov

S1A2 – Gas-phase reaction kinetics – Mezzanine area of Appleton Tower

36. Primary Reactions of Oxygen with Phenanthryl C14H9•: Thermochemistry and Kinetics
Nadia Sebbar, Henning Bockhorn, Dimosthenis Trimis

37. Computational Study of the Dissociation Reactions of S8 and the Resulting Fragments S7, S6, S5, S4 and S3: Thermodynamic Data and Kinetics
Nadia Sebbar, Henning Bockhorn, Dimosthenis Trimis

38. Detailed Modeling of Flame-Wall-Interactions under the influence of phosphorous-containing Flame Retardants and development of a reduced kinetic model
Vanessa Lynn Stegmayer, Ulrich Maas, Christina Strassacker

39. Kinetic and Experimental Analysis of Ignition Delay Times and Speciation Profiles for CH2F2, CH4 and its Blends in High-Temperature Shock Tube
Nafi Farzana Nafi Farzana, Sumit Agarwal, Guanyu Wang, Ravi Fernandes, Bo Shu

40. Acetaldehyde reactivity at engine-relevant conditions: An experimental and kinetic modeling study
Jesús Caravaca-Vilchez, Malte Döntgen, Karl Alexander Heufer

41. Cool flame propagation velocities of DEE: determination in an ozone-seeded stagnation plate burner configuration
Perla Trad, Pierre Bragança, Guillaume Vanhove, Christophe Cuvier, Thomas Panaget, Bertrand Lecordier, Amaury Lahccen, Sébastien Batut, Valentine Bizet, Laure Pillier

42. Influence of Lubrication Oil Composition on Hydrogen Auto-Ignition: An Experimental and Kinetic Analysis
Hayat El Harrab, Tim Franken

43. Development of a fuel-flexible two-zone model for prediction of DI diesel engines emissions
Salih Baykal, Sascha Jacobs, Torsten Methling, Andreas Huber, Markus Köhler

44. Update and Uncertainty Analysis of an Acetylene Oxidation Model
Hongxin Wang, Gongrui Huang, Oskar Haidn, Nadja Slavinskaya

45. Recombination of NH2 with alkyl radicals: VRC-TST rate constants from neural network potentials.
Simone Vari, Carlo Cavallotti

46. A virtual chemistry framework compatible with thermodynamic and kinetic standards
Matthieu Preteseille, Tan-Phong Luu, Nasser Darabiha, Benoît Fiorina

48. Optimized workload distribution for GPU-accelerated combustion simulations in hybrid CPU-GPU architectures
Alvaro Moure, Anurag Surapaneni, Daniel Mira

49. Experimental investigation and optimization of ammonia chemical kinetics with ignition delay times from shock tubes
Torsten Methling, Michael Pierro, Nikolas Hulliger, Justin Urso, Jakob Krämer, Clemens Naumann, Markus Köhler, Subith Vasu

50. Low-Temperature Combustion of 3-Pentanol/Hydrogen Blends: An Experimental and Modeling Study
Marwa Saab, Rana Shebly, Yann Fenard, Guillaume Vanhove

51. The effect of methane kinetics on the dynamics of laminar slit flames
Cillian Thomas, Stephen Spence, Charles Stuart, Sandeep Jella, Marc Furi, Gilles Bourque

52. Modeling the Autoignition Kinetics of Standardized Liquefied Natural Gas (LNG) Mixtures
Mehdi Abbasi, Nadja Slavinskaya, Mohammad Mahdi Mahmoudirad

53. MTBE and ETBE oxidation at atmospheric and elevated pressure
Fabienne Werner, Trupti Kathrotia, Thomas Bierkandt, Joachim Schmid, Nina Gaiser, Jasmin Bachmann, Patrick Oßwald, Markus Köhler

54. Development of a kinetic mechanism for C10 –C11 iso-paraffins using Reaction Mechanism Generator
Pooja Nema, Nadja Slavinskaya, Pavan Prakash Duvvuri, Agnes Jocher

55. A principal component-based approach for kinetic model optimization
Sanket Girhe, Raymond Langer, Francesca Loffredo, Heinz Pitsch

56. Design and validation of a new shock-tube facility for chemical kinetics studies
Sulaiman Alturaifi, Belal Belal.Yehia@Bhit.Bu.Edu.Eg, Khair Ghunaim, Mohamed Amin Alya, Yasser Omer

57. A compact kinetic reaction mechanism for the oxidation of NH3/H2 mixtures
Ali Alnasif, Joanna Jójka, Máté Papp, András György Szanthoffer, Marina Kovaleva, Tamás Turányi, Syed Mashruk, Agustin Valera-Medina, Tibor Nagy

58. Benchmarking of NH3/CH4 combustion mechanisms against an extensive collection of experimental data
Chunping Chang, László Horváth, Binod Raj Giri, Tamás Turányi, Tibor Nagy

59. Optimized rate rules and kinetic models for large normal and neoalkenes
Pengzhi Wang, Tibor Nagy, Sirio Brunialti, Máté Papp, Hossein S. Saraee, Colin Banyon, S. Mani Sarathy, Tamás Turányi, Henry J. Curran

60. Highly branched alkane pyrolysis modeling: a study case for tabulated models of transition state estimation method
Fabiola Citrangolo Destro, René Fournet, Roméo Veillet, Pierre-Alexandre Glaude, Baptiste Sirjean

S1M1 – Low emission technologies – Basement corridor of McEwan Hall

61. Characterization of Carbon Products from Methane Pyrolysis
Emanuele Alberto Scelzo, Francesca Picca, Nunzia Molaro, Luca Basta, Mario Commodo, Patrizia Minutolo, Andrea D'Anna

62. Towards electric heating in Multiple Hearth Furnaces: a numerical analysis
Mehdi Riis, Alessandro Parente, Axel Coussement

63. Influence of plasma parameters on the lean blow-off limit of a model aeronautical combustor
Jean-Baptiste Perrin-Terrin, Hugo Veran, Philippe Scouflaire, Christophe Laux, Sebastien Ducruix

64. Experimental Investigation of Hydrogen and Ammonia Enriched Fuel Mixtures in Internal Combustion Engine for Power Generation Applications
Brad Gill, Christian Molla, Dipal Patel

65. Direct Numerical Simulation of a Stoichiometric Premixed NH3/H2/N2/Air Jet in Crossflow at Micro-Gas Turbine Relevant Conditions
Donato Cecere, Matteo Cimini, Eugenio Giacomazzi

66. Experimental Study and Challenges of Hydrogen-Natural Gas Mixture Combustion for Industrial Premixed Burners
Kiran Sreekumar, Sean Byrne, Dipal Patel

67. How can intrinsic flame instabilities influence the retrofitting of gas turbine brownfield units to burn hydrogen?
Francesco D'Alessio, Roberto Meloni, Francesco Creta

68. Direct Numerical Simulations of flame edge evolution in a forced-ignition hydrogen-air jet
Runze Mao, Jian Fang, Yifan Xu, James Massey, Zhi X. Chen

69. Investigation of instabilities during NH3 MILD combustion in a semi-industrial scale furnace
Marianna Cafiero, Natalia Cid, Ebrahim Rahmani, M. Mustafa Kamal, Joachim Beeckmann, Marco Lubrano Lavadera, Heinz Pitsch, Alessandro Parente

70. Ammonia-Hydrogen flame stabilization inside a radial porous media burner with a topology gradation
Guguloth Mahesh Nayak, Max Bernard, Vladimir Erenburg, Beni Cukurel, Joseph K. Lefkowitz

71. Sustainable liquid fuels studies on a Multi-swirler Model Combustor
Pranjal Gupta, David Sanned, Megha Prakash, Jan-Peter Hannappel, Arman Ahamed Subash, Mattias Richter

72. Numerical analysis of the MILD combustion definition using the homogeneous flow reactor model
Adam Klimanek, Sławomir Sładek, Katarzyna Bizon

73. Characterisation of thermoacoustic instabilities in ducted hydrogen-enriched methane inverse diffusion flames
Bruno Gouveia

74. Combustion of Methanol-O2-CO2 mixtures in Passive Pre-chamber Engine
Tim Franken, Rufat Asgarzade, Fabian Mauss

75. Tomographic imaging of reactive hydrogen and spatial resolution study
Cheau Tyan Foo, André Müller, Khadijeh Mohri

76. Soot measurement and reaction zone structure in a model Rich-Quench-Lean combustor
Kundan Kumar, Irfan Ahmed Mulla

S1M2 – Turbulent flames – Auditorium corridor of McEwan Hall

81. Large eddy simulation of transient leading edge propagation in a turbulent lifted hydrogen jet flame
Christoph Schumann, James Massey, Caleb Li, Nedunchezhian Swaminathan

82. Reducing Computational Costs in Turbulent Reacting Flow Simulations Using Cell Agglomeration
Yagiz Yalcinkaya, Ruggero Amaduzzi, Alberto Cuoci, Alessandro Parente

83. Experimental measurements of flame describing functions of a sustainable aviation fuel surrogate
Pierre-Alexandre Barré, Daniel Durox, Sébastien Candel, Antoine Renaud

84. Turbulence effect on thermodiffusively unstable lean hydrogen flames in a large domain
Cheng Chi, Dominique Thévenin

85. Assessment of Bray Moss Libby formulation for Reynolds Averaged Navier-Stokes simulations of premixed flame-wall interaction within turbulent boundary layers
Vipin Michael, Liyuan Liu, Umair Ahmed, Nilanjan Chakraborty

86. Flame characteristics and lift off dependencies of flames stabilized on a multi hydrogen jet in swirled crossflow burner
Lars Koch, Julian Bajrami, Friedrich Dinkelacker

87. Effects of fuel Lewis Number on Reynolds Stress distribution and its transport during oblique flame-wall interaction
Sanjeev Ghai, Umair Ahmed, Nilanjan Chakraborty

88. Exploring the local thermochemical states in turbulent H2-air multi-regime combustion using Raman/Rayleigh spectroscopy
Shuguo Shi, Tao Li, Justin Knubel, Robin Schultheis, Robert S. Barlow, Dirk Geyer, Andreas Dreizler

89. A Direct Numerical Simulation based investigation of the evolution of spatial correlations and spectra of velocity fluctuations during head-on interaction of premixed flames within turbulent boundary layers
Vishnu Mohan, Sophie Lindley, Umair Ahmed, Nilanjan Chakraborty

90. Characteristics of heat release rate spectra in turbulent flames with different fuels
Ankit Dilip Kumar, Preethi Rajendram Soundararajan, Caleb Li, James Massey, Nedunchezhian Swaminathan

91. GPU Simulations of the PRECCINSTA Burner Using Chemistry Acceleration
Steven (Yu) Xia, Ashish Newale, Rakesh Yadav, Stefano Orsino

92. Large eddy simulation of multi-regime turbulent combustion with modal partially stirred reactor models
Arthur Péquin, Erica Quadarella, James Massey, Riccardo Malpica Galassi, Salvatore Iavarone, Hong G. Im, Alessandro Parente, Nedunchezhian Swaminathan

93. An LES study on the dynamics of a lifted flame base influenced by global instability
Agnieszka Wawrzak, Artur Tyliszczak

94. Experimental characterization of emissions and flame morphology of a partially-premixed dual-swirl 100% hydrogen burner
Francesca Iapaolo, Fabio Cozzi, Edoardo Ciuffoli, Pierfelice Rocco

95. Experimental study on the effects of Reynolds number ratio on flame stability, macrostructure, and emissions in dual annular burner for CH4 and CH4/H2 combustion
Md. Imteaz Ahmed, Qazi Talal, Ahmed Gaber H. Saif, Zubairu Abubakar, Esmail M. A. Mokheimer

96. Influence of soot oxidation reaction time scale on soot break-through
Gandolfo Scialabba, Antonio Attili, Heinz Pitsch

97. Using DNS to improve Estimates of Flame Surface Area from Experiments
Elias Öhman, Eirik Æsøy, Håkon Nygård, Andrea Gruber, Michael Gauding, Heinz Pitsch, James Dawson

98. Experimental investigation of turbulent premixed hydrogen flames under internal combustion engine-like conditions
Niklas Mirsch, Ntarinai Konosidou, Klara Frey, Daniel Zsoller, Shayan Asmari, Stefan Pischinger, Bastian Morcinkowski, Philipp Adomeit

99. Kinetic uncertainty quantification in turbulent flame simulations: A compact approach
Yunyun Wang, Diederik Coppitters, Alessandro Parente, Francesco Contino

100. Experimental characterization of premixed turbulent flame dynamics in lean and ultra-lean hydrogen mixtures
Nicolas Villenave, Seif Zitouni, Pierre Bréquigny, Fabrice Foucher

S1M3 – Low emission technologies – Deans Reception Room of McEwan Hall

101. New Pathway for Ultra-Lean Ammonia Combustion and NOx Reduction in a catalytic micro-combustor
Ahmed Radwan, Md Nur Alam Mondal, Manosh Paul

102. Ammonia/Biogas Plasma-Assisted Combustion Spectral and Gaseous emissions
Adolfas Jančauskas, Rolandas Paulauskas, Ernest Bykov, Kęstutis Zakarauskas

103. Oxidation of diethyl ether/ammonia mixtures in a flow reactor at different pressures
Pedro García-Ruiz, Marta García, María Abían, María Alzueta

104. Numerical simulation of a high-pressure hydrogen-air combustion system for aircraft propulsion; comparison to experimental results
Eleftherios Gorgoraptis, Sylvain Petit, Guillaume Pilla, Nicolas Bertier, Benjamin Blaisot, Cornelia Irimiea, Yannick Touzeau

105. Flame Dynamics and Anchoring in a Simplified Porous Material
Alessandro Russo, Aurelien Genot, Thorsten Zirwes, Oliver T. Stein, Dimosthenis Trimis, Rémi Roncen

106. Effects of Oxygen Enrichment on NH3/CH4 Turbulent Non-Premixed Flames in a Swirl Burner
Antoine Morel, Amani Harrek, Toufik Boushaki

107. Development and Validation of Predictive Simulation Models for Internal Combustion Engines
Arturas Gulevskis, Konstanin Volkov, Redha Benhadj-Djilali

108. CHARACTERISATION OF PILOTED SINGLE-NOZZLE LEAN DIRECT INJECTION BURNERS WITH ANGLED HYDROGEN JET INJECTION
Rojhat Dere, Yashvir Jugduth, Chinonso Ezenwajiaku, Nuno Rocha, Benjamin Cosway, Andrea Ducci, Ramanarayanan Balachandran, Midhat Talibi

109. Lift-off and blow-off of RQL-based hydrogen injection system for gas turbines at atmospheric and high-pressure
Marc Chen, Thierry Poinsot, Laurent Gicquel, Nicholas Treleaven

110. Structure and nitrogen oxide emissions of confined turbulent hydrogen jet flames
Thomas Howarth, Svenja Nerzak, Pascal Gruhlke, Jonathan Lipkowicz, Lukasz Panek, Sebastian Pfadler, Michael Gauding, Heinz Pitsch

111. Experimental Investigation of Hydrogen Admixture on NOx Emissions of Oxyfuel Combustion
Franziska Ott, Nico Schmitz, Christian Wuppermann

112. Effect of Fuel Outlet Velocity on NOx Emissions in a Fuel-Flexible Self-Recuperative Burner Operating with Natural Gas and Hydrogen
Elsa Busson, Benedikt Rumbach, Meinhard Mühlbach, Nico Schmitz, Christian Wuppermann, Joachim G. Wünning

113. Comparison between Nanosecond Repetitively Pulsed and surface Micro-Wave discharges for flame stabilization and ignition
Renaud Gablier, Joey Kim Soriano, Jean-Baptiste Perrin-Terrin, Yuji Ikeda, Christophe Laux

114. Experimental study on the structure of premixed and diffusion hydrogen flames in an Enclosed-Jet-in-Hot-Coflow combustor
Maria Teresa Cadete Gonçalves, Francesca De Domenico

115. Experimental and Numerical Insights from Swirl Number and Ambient Pressure Variations with a Hydrogen/Ammonia Swirl Stabilized Non-Premixed Flame
Robin Vivoli, Burak Goktepe, Daniel Pugh, Steven Morris, Philip Bowen, Agustin Valera-Medina

116. Influence of dispersion length for volume-averaged simulations of ammonia/air combustion in porous media burners
Rishabh Puri, Daniel Kretzler, Benjamin Bock-Seefeld, Björn Stelzner, Nora Brachhold, Jana Hubálková, Dimosthenis Trimis, Christos G. Aneziris, Oliver T. Stein, Thorsten Zirwes

117. The Role of Fuel-Air Mixedness in a High-Hydrogen Industrial Combustor - Insights from RANS, LES and Experiments
Teja Donepudi, Thijs Bouten, Rene Pecnik, Jurriaan Peeters, Lars-Uno Axelsson, Sikke Klein

118. Stabilised combustion of lean hydrogen-air mixtures in the presence of silica
Aki Fujinawa, Ewa J. Marek

119. Novel strategy for combustion enhancement of NH3-air mixture using gliding arc plasma
Aravind Balakrishnan, Ziyu Wang, Syed Mashruk, Deanna Lacoste, Agustin Valera-Medina

120. Nanosecond pulsed discharges for reliable ignition of ultra-lean hydrogen-air mixtures
Galia Faingold, Leander Krieg, Francis Pagaud, Quentin Malé, Nicolas Noiray

Session 2: Tuesday, April 8th, 15:30–17:30

S2A1 – Numerical Combustion – Concourse of Appleton Tower

1. The effect of artificial thickening on the premixed leading edge of triple flames
Nicola Scopolini, Simone Castellani, Antonio Andreini

2. In-situ characterization of biomass pyrolysis via Neural Network-assisted FTIR analysis
Juan Jesus Rico Fuentes, Ana Larranaga, Alba Dieguez-Alonso, Jacobo Porteiro

3. Insights from numerical simulators for compartment fire spread
Chang Liu, Xu Dai, Xiyue Ming Ming, Stephen Welch

4. Predicting Hydrogen Leak Characteristics and Hazardous Behaviour Through Computational Fluid Dynamics and Machine Learning
Giovanni Tretola, Konstantina Vogiatzaki

5. Preferential Diffusion Effects Port Fuel-Injection Hydrogen Engines
Luis Felipe Rico Cortes, Irenäus Wlokas, Andreas Kempf

6. Using tabulated flamelets to model flame propagation in a quasi-dimensional SI hydrogen engine model
Isabelle Jacobs, Bart Somers, Bendiks Jan Boersma, Frank Schenkel, Xander Seykens, Peter De Vos

7. Gaussian Process Regression with Deep Kernel Learning for the development of Reduced-Order Models of Dynamical Systems
Alberto Procacci, Salvatore Iavarone, Axel Coussement, Alessandro Parente

8. Experimental and modeling study of the combustion of ethyl methyl carbonate in shock tubes and rapid compression machine
Hwan Seong

9. Towards autoencoder-assisted deep neural networks for chemistry integration with detailed chemical mechanisms
Weitao Liu, Andreas Kronenburg, Thorsten Zirwes

10. A combined local PCA and CSP solver framework for dimensionality and stiffness reduction in reacting flow simulations
Rafi Malik, Hong G. Im

11. Implementation of Soft Restrictions to Improve Neural Networks Robustness in Chemical Kinetics Time Integration
Luisa Castellanos, Rodolfo S. M. Freitas, Riccardo Malpica Galassi, Alessandro Parente

12. Real-time update of a digital twin of a Stagnation-Point Reverse-Flow Combustor using the Ensemble Kalman Filter
Laura Donato, Chiara Novelli, Alberto Procacci, Alessandro Piscopo, Chiara Galletti, Alessandro Parente

13. Dimensionality reduction and unsupervised clustering for the detection of flame shape transitions in a turbulent swirling flame
Emilio Mateo, Antoine Renaud, Salvatore Iavarone, Bérengère Podvin

14. Turbulent sooting flame simulations using the modal partially stirred reactor model
Erica Quadarella, Arthur Péquin, Alessandro Parente, Hong G. Im

15. Carrier-Phase DNS of Iron Particle Cloud Combustion in a Highly Turbulent Shear Layer
Mohammad Parsa Ghofrani Maab, Sheu Her Tey, Irenäus Wlokas, Andreas Kempf

16. Systematic assessment of presumed PDF approach for LES of lean premixed hydrogen combustion: an a priori and a posteriori study using cGAN
Ludovico Nista, Christoph David Karl Schumann, Marco Vivenzo, Temistocle Grenga, Jonathan F. Macart, Lukas Berger, Antonio Attili, Heinz Pitsch

17. Numerical investigation of the minimum ignition energy in ammonia/hydrogen/air mixtures considering radiative heat loss
Marcel Reinbold, Chunkan Yu, Ulrich Maas

18. Modelling nanoparticle formation and deposition in burning iron microparticle arrays
David Märker, Nils Hartmann, Tien Duc Luu, Bich-Diep Nguyen, Arne Scholtissek, Christian Hasse, Andreas Kronenburg, Oliver T. Stein

19. Large Eddy Simulation of Cetane Ignition Delay experiment to assess low temperature reactivity of n-heptane
Arthur Berthelot, Thomas Jaravel, Eleonore Riber, Dario Maestro, Stephane Pascaud

20. Data-driven model for reduced combustion chemistry via Bayesian Optimization
Hernando Maldonado Colman, Giuseppe D'Alessio, Michael Mueller

21. Analysis of lab-scale spray flame and soot production of synthetic and conventional aviation fuels
Giuseppe Indelicato, Leonardo Pachano, Anurag Surapaneni, Ferran Cuevas, Daniel Mira

22. LES of a semi-industrial burner using a Virtual Chemical scheme extended to CH4-H2 blends
Malo Hustache, Tan-Phong Luu, Nicolas Meynet, Nasser Darabiha, Benoît Fiorina

23. nekCRF: Towards Exascale Reactive Flow Simulations on European Supercomputers
Mathis Bode, Driss Kaddar, Bogdan A. Danciu, Vinzenz Schuh, Hendrik Nicolai, Christian Hasse, Christos E. Frouzakis

24. Pore resolved simulation of flow through a partially pyrolyzed beech wood particle with immersed boundary method
Andrea Dernbecher, Supriya Bhaskaran, Nicole Vorhauer-Huget, Alba Dieguez-Alonso

25. Hydrogen premixed flames using a tabulated flamelet model with mixture averaged transport
Emiliano Fortes, Eduardo Javier Pérez-Sánchez, Temistocle Grenga, Daniel Mira

26. Auto-ignition investigations of H2 in an optical RCM coupled with high-speed OH*-chemiluminescence
Leopold Seifert, Ajoy Ramalingam, Bo Shu, Ravi Fernandes

27. Calculation of radiation in turbulent oxygen-enriched ammonia combustion
Marina Kovaleva, Yu Xia, Akihiro Hayakawa, Hideaki Kobayashi

28. Comparison of full multicomponent transport and mixture-averaged approximation in axisymmetric laminar flames
Bertrand Naud, Manuel Arias-Zugasti, Alberto Cuoci

S2A2 – Fire Research / Detonation, explosion, and supersonic combustion – Mezzanine area of Appleton Tower

36. Numerical and experimental comparison of H2/air flame-shock interaction
Emilie Yhuel, Guillaume Ribert, Pascale Domingo, Anthony Roque-Ccacya, Nabiha Chaumeix

37. Hydraulic Diameter Effect on Detonation Wave Propagation in a Pre-Detonator
Yuchang Gil, Sungwoo Park

38. Role of reaction rate uncertainties on the dynamics of two-dimensional detonation
Vigneshwaran Sankar, Xiangrong Huang, Karl P. Chatelain, Rémy Mével, Deanna Lacoste

39. Effect of Water Vapor Addition on Explosion Parameters and Flammability Limits of Hydrogen-Air
Shamma Khair Allah, Wojciech Rudy, Andrzej Pekalski, Andrzej Teodorczyk

40. Design and Testing of a Low-Cost C2H2-O2 Combustion Driver for Shock Tubes
Micha Renè Noé, Josep Albert Gil, Karl Alexander Heufer

41. Three-dimensional rotating detonation structures and effects of thermal confinements
Zhaoxin Ren, Jac Clarke

42. Toward reduced order modelling of unstable one-dimensional detonation propagation in hydrogen-air mixtures
Francisco Sinjelo, Luis Fernando Figueira Da Silva, Valery Morgenthaler

45. A posteriori Evaluation of the Stretched-Thickened Flame Model for Accurate LES of Hydrogen Flames
Eric Matas Mur, Jean-Jacques Hok, Omar Dounia, Quentin Douasbin

46. Evolution of H2 Detonation Structure with Argon Dilution based on Planar Laser-Induced Fluorescence of Nitric Oxide and Rayleigh Scattering Visualizations
Andrés Z. Mendiburu, Karl P. Chatelain, Mhedine Alicherif, Deanna Lacoste

47. Numerical Simulation of Shock-Focusing and Ignition in a 3-wall 90-deg corner
Henrik Thomas, Wojciech Rudy, Andreas Kempf, Irenäus Wlokas

48. Effects of flame resolution and differential diffusion in the simulation of deflagration-to-detonation transition
Tom Alzer, Luis Felipe Rico Cortes, Josué Melguizo-Gavilanes, Irenaeus Wlokas, Andreas Kempf

49. Critical autoignition of supersonic mixing layers through oblique-shock impingement.
Nereida García De Codina, Pedro J. Martinez-Ferrer, Daniel Mira, César Huete, Daniel Martínez Ruiz

50. Effect of ventilation velocity on heat release rate and diffusion flame behavior in model tunnel fire
Jakub Bielawski, Dia Luan, Xinyan Huang, Wojciech Węgrzyński

51. Experimental investigation on the nonlinearity effect on large scale fires: Propagation characteristics and inheritant instability
Vinayak Malhotra, Thunaipragasam Selvakumaran

52. Experimental and Computational Investigation of a Single Pine Model-Tree Fire
Malte Döntgen, Leon Bernau, Fabian Brännström, Andreas Kempf, Karl Alexander Heufer

53. Experimental investigation of fire propagation along a vertical wall in a lab scale device
Florent Di Giorgio, Cédric Galizzi, Manuel Kühni

54. Gas-phase thermometry in downward opposed flow flame spread
Abhijit Padhiary, Anthony Ojo, David Morrisset, Rory Hadden, Brian Peterson

55. Ignition and combustion of wood stick under high-temperature and low-oxygen conditions
Can Ruan, Bohan Yu, Thomas Krenn, Johannes Sailer, Fabian Brännström, Leon Loni Berkel, Christian Hasse, Andreas Dreizler

56. Downward flame spread over PMMA Cones
David Morrisset, Hidayah Adnan, Rory Hadden

S2M1 – Diagnostics – Basement corridor of McEwan Hall

61. In-situ Detection of Phosphorus-Containing Gas Phase Species at Steady-State Pyrolysis of Flame Retardant Coated Cotton
Niklas Tomasik, Raphael Otto, Thomas Mayer-Gall, Burak Atakan

62. Systematic temperature error in RCARS diagnostics from improper Raman linewidths
Jonas Immanuel Hoelzer, Henry Misoi, Thomas Seeger

63. Presence probability map for a round turbulent gas jet
Sumit Joshi, Christopher Willman, Martin Davy, Richard Stone, Benjamin A O Williams

64. Multi-angle multi-wavelength elastic light scattering for particle sizing
Phillipp Bräuer, Peter Lang, Sarah Bittl, Aman Kumar, Stefan Will, Florian Bauer

65. Soot primary particle radial profiles in laminar diffusion flames for Jet A-1/SAF fuels: a SAXS study
Mijail Littin, Marek Mazur, Guillaume Lefevre, Michael Sztucki, Andrés Fuentes, Jérôme Yon

66. Application of Machine Learning Classification Models in the Prediction of Lean Flame Blowout for Premixed Methane Combustion
Adib Adnan, Abdulsalam Hasan, Mohammad Raghib Shakeel, Esmail M. A. Mokheimer

67. Spatially Resolved Flame Front Measurements Using the Temperature Dependence of OH PLIF Excitation Lines
André Silva Correia, Francesco Mazza, Leonardo Castellanos, Arvind Gangoli Rao, Francesca De Domenico

68. Impact of Oxygen Content on Wall-Temperature Phosphor Thermometry for Combustion
Tobias Guivarch, Hugo Samson, Jerome Bonnety, Jessy Elias, Sébastien Ducruix, Clement Mirat, Christopher Betrancourt, Guilhem Dezanneau, Ronan Vicquelin

69. Determining the reaction enthalpy in pyrolysis and combustion at realistic process conditions
Raymond Chen, Ewa J. Marek

70. Self-Excited Dynamics Modelling of a Technically Premixed Burner Operating with Pure Hydrogen
Roberto Meloni, Simone Castellani, Antonio Andreini, Giulia Babazzi

71. Effects of flame macrostructures on the combustion dynamics of novel counter-rotating radial swirl injector in a model can combustor
Sk Thirumalaikumaran, Balasundaram Mohan, Saptarshi Basu

72. HT-SIMNet: A Novel Approach for Species Quantification in High-Temperature Combustion via Unsupervised Spectral Decomposition
Mohamed Sy, Mohammed Almomtan, Aamir Farooq

73. Understanding the chemical pathways of NO formation in low-pressure burner stabilized premixed lean-to-rich hydrogen flames
Pascale Desgroux, Tirthankar Mitra, Nathalie Lamoureux

74. Time-resolved temperature profiling of burning aluminum droplets in hot H2O/N2 flow
Zhiyong Wu, Can Ruan, Marcus Aldén, Zhongshan Li

75. Determination of soot particle size distribution from Time-resolved Laser Induced Incandescence using Gaussian Process Regression on Mckenna burner
Poorva Shrivastava, Vikram Ramanan, T M Muruganandam

77. Two-Line Atomic Fluorescence of Indium for Thermometry in Near-Wall Reactive Flows
Artémis Blondel, Alexis Vandel, Saïd Idlahcen, Gilles Godard, Frédéric Grisch, Pradip Xavier

78. Investigations of ammonia injection with Laser-Induced Grating spectroscopy
Fabian Roesner, Jonas Immanuel Hoelzer, Ingo Schmitz, Thomas Seeger

79. Assessment of Wavelet-Based Optical Flow Velocimetry at Liquid-Gas Interfaces in Atomizing Sprays
Adam Wilson, Elliott Lewis, Farid A. Hammad, Theodore Huckstep, Fabian Fröde, Heinz Pitsch, Brian Peterson

80. Feature learning from laser-induced grating spectroscopy of turbulent reacting flows
Oussama Chaib, Lee Weller, Simone Hochgreb

S2M2 – Turbulent flames – Auditorium corridor of McEwan Hall

81. Analysis of an LES combustion model for lean premixed turbulent hydrogen/air flames at different Reynolds number
Marco Vivenzo, Francesca Loffredo, Ludovico Nista, Lukas Berger, Temistocle Grenga, Michael Gauding, Heinz Pitsch

82. Modeling Carbon Monoxide in Premixed Turbulent Jet Flames with Flame-Wall Interaction
Kai Niemietz, Michael Gauding, Heinz Pitsch

83. Numerical characterization of a H2-air planar jet flame under velocity conditions representative of aeronautic combustion chambers
Mathieu Orlowski, Marc Bellenoue, Camille Strozzi

84. Impact of the Equivalent Ratio and the Turbulence/Heterogeneity Induced by H2 Direct Injection on the Heat Flux during the Flame-Wall Interaction
Emma Daudré, Hugo Quintens, Karine Truffin, Marc Bellenoue

85. On the role of mixing during flame-cooling air interaction
Antoine Blaise, Ethan Fosse, Frédéric Grisch, Pradip Xavier

86. A priori DNS subgrid PDF analysis of turbulent partially premixed ammonia-hydrogen flames
Suliman Abdelwahid, Junjun Guo, Rafi Malik, Francisco Hernandez Perez, Hong G. Im

87. Multiple Mapping Conditioning for the Modelling of Differential Diffusion of NH3/H2 Blends in a Reacting Turbulent Shear Layer
Sergio Gutiérrez Sánchez, Jan Wilhelm Gärtner, Andreas Kronenburg, Thorsten Zirwes

88. Numerical simulation of the HYLON Burner with a Lattice-Boltzmann Method
Ilyasse Mir, Song Zhao, Said Taileb, Pierre Boivin

89. Modal partially stirred reactor model with automated adaptive chemistry for large eddy simulations of turbulent reacting flows
Ruggero Amaduzzi, Arthur Péquin, Axel Coussement, Alessandro Parente

90. Large-Eddy Simulations of Methane Oxy-Flames Stabilized on a Swirled Co-Axial Injector.
Paolo Illuminati, Ronan Vicquelin

91. On-the-fly detection of flame front and flame scales for thickened flame model based on particle tracking
Mickaël Theot, Eleonore Riber, Thomas Jaravel

92. Progress variable source term closure with a partially stirred approach for multi-regime combustion
Arthur Péquin, Salvatore Iavarone, James Massey, Hanying Yang, Alessandro Parente, Nedunchezhian Swaminathan

93. Numerical simulation of combustion noise in a turbulent H2/air swirled flame
Théo Riou, Hervé Magnes, Martin Vilespy, Thierry Schuller, Thierry Poinsot, Guillaume Daviller, Laurent Selle

94. FGM Modeling of Hydrogen Boundary Layer Flashback in a Turbulent Channel
Stijn Schepers, Jeroen Van Oijen

95. Windward front lift-off of a methane jet flames in crossflows
Mathieu Lenninger

96. Characterization of H2, N2 and O2 profiles in the cold flow produced by HYLON burner
Dilay Güleryüz, Sylvain Marragou, Hervé Magnes, Laurent Selle, Clément Brunet, Thierry Schuller

97. LES of Partially Lean Premixed Hydrogen Flame with Swirling and Axial Air Injection
Weiyue Liu, William Jones, Aimee Morgans

98. Experimental study of local turbulent consumption speed in thermodiffusively unstable Bunsen flames
Guido Troiani, Pasquale Eduardo Lapenna, Francesco Creta

99. Bayesian neural networks for Arrhenius-based turbulent combustion closures in large eddy simulations
Lorenzo Piu, Arthur Péquin, Rodolfo Da Silva Machado De Freitas, Salvatore Iavarone, Hongchao Chu, Alessandro Parente, Heinz Pitsch

S2M3 – Low emission technologies – Deans Reception Room of McEwan Hall

101. Experimental and numerical investigation of non-premixed ammonia flames stabilized on a heated slot burner
Daniel Kretzler, Rishabh Puri, Björn Stelzner, Thorsten Zirwes, Fabian Hagen, Oliver T. Stein, Dimosthenis Trimis

102. Hydrogen flame blow-off in a lean direct injection burner
Caleb Li, Rojhat Dere, James Massey, Chinonso Ezenwajiaku, Christoph Schumann, Midhat Talibi, Ramanarayanan Balachandran, Yusuke Tanaka, Nedunchezhian Swaminathan

103. Physics-based Analytical Correlation for NOx formation in Partially Premixed Swirl-Stabilized Lean H2 Combustors
Alam Uziel Garcidueñas-Correa, Francesca De Domenico, Arvind Gangoli Rao

104. Heat Release Analysis of Dual-Fuel Direct Injected Ammonia and HTL Fuels
David Zilles, David Emberson, Daniele Castello, Abdenour Achour

105. Detailed analysis of the Gas turbine power plant cycle operated with Hydrogen from onsite cracked Ammonia
Mahendra Reddy Vanteru, Gangadhar Pavan Kumar Maganti, Giancarlo Sorrentino, Mara De Joannon, Chetankumar Sureshbhai Mistry

106. OH* chemiluminescence under MILD conditions in a cyclonic unit with a methane/air mixture
Vicente Castro, Giovanni Battista Ariemma, Pino Sabia, Giancarlo Sorrentino, Raffaele Ragucci, Mara De Joannon

107. Fuel-rich ammonia catalytic combustion on gadolinium-doped ceria (GDC) supported copper oxides catalyst
Siqi Wang, Haliru Muhammad, Mingming Zhu

108. Flame Control by Low-Temperature Hydrogen Injection in a Trapped Vortex Combustor
Vittorio De Lauso, Lorenzo Mazzei, Ivan Langella

109. Flame propagation dynamics in an ammonia/hydrogen combustor with a passive prechamber
Marwin Schüpfer, Thomas Howarth, Michael Gauding, Heinz Pitsch

110. Sectional modelling of TiO2 particle size distribution and crystallinity in burner-stabilised stagnation flames
Jiajun Qiu, Lu Tian, Adrian Spencer, Peter Lindstedt

111. The influence of side dilution jets on the flame stabilisation mechanism and NOx emissions in a hydrogen-fuelled model gas turbine combustor
Hazem Awad, Savvas Gkantonas, Jinhoon Choe, Epaminondas Mastorakos

112. Comprehensive energy balance and techno-economic assessment of low-emission natural gas–hydrogen dual-fuel combustors in food manufacturing
Edgar Segovia, Michael Short, Dipal Patel, Faik Hamad, Paul Russell, Huda Dawood, Craig Tether

113. Transported PDF and MMC modelling of local extinction in turbulent piloted NH3/H2/N2-air jet flames
Lu Tian, Andrew Wandel, Peter Lindstedt

114. Measurements of Hydrogen-Air Flame Quenching Diameters in a Novel Quartz Tube
Dongliang Liu, Yuriy Shoshin, Nijso Beishuizen, Jeroen Van Oijen

115. Heat transfer characteristics of carbon-free fuels for decarbonization of hard-to-abate industries
Giovanni Battista Ariemma, Tommaso Esposito, Giancarlo Sorrentino, Pino Sabia, Giuseppe Langella, Raffaele Ragucci, Mara De Joannon

116. Constrained reduced-order modelling of reacting flows with transformed Gaussian process likelihood: application to a furnace operating in MILD conditions
Muhammad Azam Hafeez, Alberto Procacci, Axel Coussement, Alessandro Parente

117. Effect of H2 and Jet-A1 fuel split on flame stability and pollutant emissions from low-swirl burner
Samarjeet Singh, Matteo Amerighi, Nicola Scopolini, Antonio Andreini, Stefan Harth, Dimosthenis Trimis

118. Study on Influence of Noise in Internal Mixing Arrayed Micro-Tubes Burners for Hydrogen Combustion
嘉怡 李, Yuzhen Lin, Xiaoye Li, Xiao Han, Yunxin Chang

119. Numerical Characterization of Stratified Weakly Turbulent Hydrogen Flames
Raphael Strickling, Faizan Habib Vance, T. Jeremy P. Karpowski, Christian Hasse, Arne Scholtissek

120. Experimental and numerical investigation of turbulent premixed H2-jet flame at high exhaust gas recirculation
Maurus Bauer, Björn Stelzner, Peter Habisreuther, Michael Schneider, Christof Weis, Dimosthenis Trimis

Session 3: Wednesday, April 9th, 10:30–12:30

S3A1 – Propulsion / Soot, nanomaterials, and large molecules – Concourse of Appleton Tower

1. Numerical investigation of marine dual-fuel engine operating with 60% premixed hydrogen fuel using LES
Panagiotis Karvounis, Gerasimos Theotokatos, Binteng Gu, Peilin Zhou

2. Analysis of Thermodiffusive Instabilities and Flame Front Wrinkling in a Hydrogen-Fueled Engine
Pedro Ye, Jannick Erhard, Cooper Welch, Hao Shi, Andreas Dreizler, Benjamin Böhm

3. Large Eddy Simulations of multi-component swirling spray flames' dynamics under acoustic oscillations
Nikola Sekularac, Anthony Dupuy, Laurent Gicquel

4. Role of hydrodynamic instabilities in high-frequency transverse thermoacoustic instabilities in a dual swirl H2 burner
Hyebin Kang, Hugo Paniez, Thierry Schuller

5. Numerical study of successful and failed droplet cloud forced ignition events using Cluster-Based Balance Analysis
Thomas Lesaffre, Antoine Pestre, Quentin Douasbin, Eleonore Riber

6. Investigation by LES and Optical Diagnostics of a Rich burn – Quick mix – Lean burn Lab-Scale Combustion Chamber operating in High-Pressure Conditions
Afaf Karrouk, Rafael Jucá Pinheiro, Benjamin Quevreux, Alexis Vandel, Maxim Kuvshinov, Clément Brunet, Stéphane Richard, Gilles Cabot, Frédéric Grisch

7. Ignition dynamics of a hydrogen-fueled annular combustor
Nicolas Vaysse, Daniel Durox, Ronan Vicquelin, Sébastien Candel, Antoine Renaud

8. Numerical Modeling of Lean Hydrogen Spark-Ignition Engines: On the Role of Intrinsic Instabilities
Benjamin Traut, Vinzenz Schuh, Max Hasenzahl, Magnus Kircher, Hendrik Nicolai, Christian Hasse

9. Local Rayleigh index reconstruction: Application to plasma-assisted sequential combustion under varying pulse repetition frequency
Matteo Impagnatiello, Nicolas Noiray

10. Offline Reinforcement Learning for Mitigating Thermoacoustic Instabilities in a Laminar Premixed Flame
Juan Camilo Giraldo Delgado, Qi Wang, S. Mani Sarathy

11. Flamelet Generated Manifolds for Multi-Regime H2-Air Combustion: A-Priori Analysis with a Partially-Premixed Lifted Flame
Sandra Recio Balmaseda, T. Jeremy P. Karpowski, Christian Hasse

12. Alternative methods to measuring flame describing functions
Preethi Rajendram Soundararajan, Daniel Durox, Antoine Renaud, Sébastien Candel

13. Development of a mesoscale non premixed vortex combustor
Jai Vardhan, Satender Singh, Gyan Deep, Pravendra Kumar

14. RF-PINNs: Reactive Flow Physics-Informed Neural Networks for Mean Field Reconstruction of Turbulent Jet Flames
Vikas Yadav, Abdulla Ghani

15. Internal ballistics combustion study and thermal analysis of Ti/KDN pyrotechnic composition
Jayashri Sehajpal

16. Ionic liquid versus solvent-and-reactive agent liquid mixture for hypergolic fuel ignition with HTP
Caroline Chabaud, Celia Soudarin, Bastien Boust, Marc Bellenoue

17. Characterization and pollutant emissions of H2/air non-premixed flames stabilized by a strut injector
Vincent Gope, Alexis Vandel, Maxim Kuvshinov, Gilles Godard, Benjamin Quevreux, Pradip Xavier, Gilles Cabot, Frédéric Grisch

18. Experimental Investigation of the influence of injection equivalence ratio and air flow velocity on a non-premixed Hydrogen/Air swirled flame at elevated pressure using optical diagnostics
Yannick Touzeau, Sylvain Petit, Cornelia Irimiea, Benjamin Blaisot, Guillaume Pilla, Ajmal Khan Mohamed

19. High-fidelity simulations using dual-time stepping preconditiong method
Louis Duhem Duvilla, Guillaume Ribert

20. Influence of swirl number on combustion instabilities through potential modification in spray characteristics
Abdallah Alhaffar, Mohammed Asad Khan, Jean-Bernard Blaisot, Éric Domingues, Françoise Baillot

21. Comprehensive Plasma-Assisted Ignition Characterization of Ethylene Under Scramjet-Relevant Velocity and Temperature
Weronika Senior-Tybora, Si Shen, Joseph K. Lefkowitz

22. Impact of Oxygen Enrichment on Ammonia Combustion in Spark-Ignition Engines Under Partial Load Conditions
Fabio Anaclerio, Francesco Fornarelli, Jean-Baptiste Masurier, Christine Mounaïm-Rousselle

23. Validation and implementation of a tabulated chemistry model in a bluff-body stabilized flame configuration with Sustainable Aviation Fuels (SAFs)
Biagio Cassese, Giancarlo Sorrentino, Giovanni Battista Ariemma, Mara De Joannon, Raffaele Ragucci

24. Ex situ characterization of the precursors of incipient nanoparticles in an ethylene laminar diffusion flame
Harsh Chaliyawala, Erin Mccaughey, Xavier Mercier, J. Houston Miller, Myriam Moreau, Nicolas Nuns, Alessandro Faccinetto

25. Optical properties of carbonaceous species in the transition from molecules to particles in shock-tube pyrolysis of toluene
Can Shao, Meysam Khademorezaeian, Jürgen Herzler, Greg Smallwood, Thomas Dreier, Torsten Endres, Mustapha Fikri, Christof Schulz

26. Response of soot formation to fuel inlet perturbation in an aero-engine model combustor
Jinbo Cheng, Yihao Tang, Wang Han, Lijun Yang

27. An insight on soot production processes using LII measurements and high-fidelity CFD simulation: a focus on hydrocarbon/H2 blends
Benedetta Franzelli, Andrea Nobili, Geoffrey Guy, Christopher Betrancourt, Jerome Bonnety, Tiziano Faravelli, Alessio Frassoldati, Alberto Cuoci

28. Analysis and modelling of PAHs in turbulent non-premixed jet flames
Geveen Arumapperuma, Antonio Attili

29. Investigation of ethanol blending on soot particle evolution in counterflow diffusion flames of a gasoline surrogate
Fenja Ahrendt, Fabian Hagen, Robert Martin Schmitz, Dimosthenis Trimis, Federica Ferraro

30. Towards reduced-order modeling of iron oxide nanoparticle formation using reactor networks
Sören Dübal, Leon Loni Berkel, Christian Hasse, Hendrik Nicolai, Sandra Hartl

31. Estimation of soot absorption function and relative PAH concentration in a laminar premixed ethylene/air flame
Aditya Choudhari, Irfan Ahmed Mulla

S3A2 – Gas-phase reaction kinetics – Mezzanine area of Appleton Tower

36. A semi-detailed pyrolytic gas-phase kinetic model for the volatiles of polyethylene thermal degradation
Andrea Locaspi, Alessandro Pegurri, Marco Mehl, Matteo Pelucchi, Sittichai Natesakhawat, Hang Zhou, Yupeng Xu, Ping Wang, Mehrdad Shahnam, Tiziano Faravelli

37. Experimental and numerical analysis of knock phenomena inside ammonia internal combustion engine
Florian Hurault, Pierre Bréquigny, Fabrice Foucher, Christine Mounaïm-Rousselle

38. Reconciling theory, experiments and gas-phase kinetic models. A case study on rigorous implementation of pressure dependent reactions in hydrogen combustion.
Timoteo Dinelli, Matteo Primi, Matteo Lea Casagrande, Luna Pratali Maffei, Alberto Cuoci, Carlo Cavallotti, Matteo Pelucchi

39. A theoretical study of 1-propanol H-abstractions and successive reactivity
Sarah Elliott, Maristella Di Teodoro, Simone Vari, Luna Pratali Maffei, Zeynep Serinyel, Océane Clément, Claire Gregoire, Eric L. Petersen, Olivier Mathieu, Guillaume Dayma, Carlo Cavallotti

40. A Comprehensive Analysis of NO_2 Formation and Kinetics in 70/30 vol% NH_3/H_2 Flames
Ali Alnasif, Joanna Jójka, Tibor Nagy, Mohammed H. Abdulsada, Syed Mashruk, Agustin Valera-Medina

41. A Systematic Analysis of Thermal Dry Reforming of Different Hydrocarbons and Oxygenated Compounds
Maria Virginia Manna, Giovanni Battista Ariemma, Davide Amato, Pino Sabia, Raffaele Ragucci, Mara De Joannon

42. Ozone-Initiated Oxidation of 1,3-Dioxane Bio-Hybrid Fuel Analyzed by SVUV-PEPICO Spectroscopy
Jiabiao Zou, Alvina Mendy, Caroline Smith Lewin, Olivier Herbinet, Philippe Arnoux, Gustavo Garcia, Laurent Nahon, Luc-Sy Tran, Guillaume Vanhove, Frédérique Battin-Leclerc, Jeremy Bourgalais

43. Study of the oxycombustion chemistry of toluene and its mixture with guaiacol in flames
Mohammad Issa, Sylvie Gosselin, Pascale Desgroux, Luc-Sy Tran

44. Shock-Tube Spectroscopic H35Cl Measurements and Modeling of Chlorinated Hydrocarbons
Claire Gregoire, Eric L. Petersen

45. First application of virtual chemistry methodology for fuels mixture - ispropanol, butanol and ethanol
Henrique Mantovani, Rogério Dos Santos

46. Reduced and Semi-global Chemical Kinetics Mechanisms for Ammonia, Hydrogen, and their Mixtures
Andreza Costa, Arthur França Martins, Paulo Vitor Ribeiro Plácido, Rogério Dos Santos

47. Reduced reaction model of a kerosene surrogate for adequate PAHs prediction targeting soot modeling in aero engines
Astrid Ramirez, Torsten Methling, Marina Braun-Unkhoff, Uwe Riedel

48. Enhanced Multi-Stage Reaction Rate Optimization Framework for Combustion Kinetic Mechanisms
Krunal Panchal, Krithika Narayanaswamy

49. A Novel Temperature-Dependent Optimization Framework for Thermodynamic Parameters in Fuel Kinetic Mechanisms
Bishwajeet Singh, Krunal Panchal, Krithika Narayanaswamy

51. A Novel Deterministic Chemical Kinetic Mechanism Optimisation Technique: A Case Study
Aleksandar Ribnishki, Stefania Esposito, Sam Akehurst, Hao Yuan

52. A Novel Adaptive Curve Prediction Technique for Shock Tube Species Concentration Profiles to Optimize Fuel Reaction Kinetic Mechanisms Using Polynomial Response Surfaces
Gautam Srikanth, Krunal Panchal, Krithika Narayanaswamy

53. The effect of ammonia on high-pressure cool and warm flames
Andy Thawko, Wenbin Xu, Bowen Mei, Ziyu Wang, Kaii Ri, Yiguang Ju

54. Highly time-resolved infrared spectroscopic investigation of the combustion of formic acid
Alina Wildenberg, Malte Döntgen, Karl Alexander Heufer

55. Case Study on the Performance of Two DFT Approaches for the Determination of Thermodynamic Properties
Manuel Breuer, Karl Alexander Heufer, Malte Döntgen

56. An experimental and modeling study of the pyrolysis and oxidation of propan-1-ol using CO time history measurements behind reflected shock waves
Claire Gregoire, Océane Clément, Olivier Mathieu, Eric L. Petersen, Maristella Di Teodoro, Sarah Elliott, Carlo Cavallotti, Zeynep Serinyel, Guillaume Dayma

57. Are gaseous canonical cases enough to reduce a mechanism for spray flames?
Quentin Cazères

58. Shock tube TOF-MS study of the decomposition of hexamethyldisiloxane and trimethylsilanol
Rachel Schwind, Robert Tranter

59. Fast optimization of combustion mechanisms through model and experimental data reduction
László Horváth, Tamás Turányi, Máté Papp, Tibor Nagy

60. Antagonistic impact of iron doping on the temperature and hydroxyl radical concentration in iron-oxide nanoparticle synthesis flames
Matthieu Lalanne, Piotr Cwiek, Monika Nanjaiah, Christof Schulz, Thomas Dreier, Sergey Cheskis, Irenaeus Wlokas, Igor Rahinov

S3M1 – Diagnostics – Basement corridor of McEwan Hall

61. Quantitative NH Measurements in Laminar Premixed Low-Pressure NH3/O2/N2 Flames using Calibrated LIF
Nour El Baba, Pascale Desgroux, Nathalie Lamoureux

62. Determination of flame temperatures using thermocouples in transient measurements
Andreas Wortmeier, Munko Gonchikzhapov, Tina Kasper

63. Simultaneous high-speed planar laser-induced fluorescence imaging of OH and NO in an H2/air jet diffusion flame
Christian Schweizer, Gilles Godard, Benoît Barviau, Frédéric Grisch

64. H_2 Thermometry by CPP fs-CARS spectroscopy
Célia Bonnefoy, Benoît Barviau, Frédéric Grisch

65. Laser-based visualization of soot precursors and oxidation in an optical spark-ignition engine
Esra Bauer, Sebastian A. Kaiser

66. Effects of hydrogen addition on soot formation in ethylene-air premixed flat flames including under nucleation conditions
Anshul Seecharam, Iain Burns

67. Analysis of the Ablation Behavior of a Laser Spectroscopic Measuring Technique Used to Investigate Iron Particles as a Renewable Energy Storage
Maximilian Dorscht, Joshua Röblitz, Benjamin Böhm, John Linkhorst, Andreas Dreizler, Dirk Geyer

68. Influence of soot self-absorption on simultaneous 3D temperature and soot volume fraction measurements in turbulent flames
Marcel Nico Müller, Mikhail Vassilyev, Franz J.T. Huber, Stefan Will

69. Determining the derived sooting index (DSI) via pyrolysis for sooting tendency evaluation of fuels
Jasmin Bachmann, Nina Gaiser, Thomas Bierkandt, Tobias Grein, Melena Groß, Joachim Schmid, Fabienne Werner, Markus Köhler, Andreas Huber, Patrick Oßwald

70. Investigation of the combustion characteristics of SAF surrogate and Jet A-1 under aeronautical conditions with a focus on sooting tendency
Brendan Gachot, Cornelia Irimiea, Renaud Jalain, Nicolas Fdida, Guillaume Pilla, Xavier Mercier

71. Self-calibrated in situ laser-induced incandescence imaging of soot volume fraction in the exhaust of a gas turbine with conventional and alternative fuels
Joshua Collins, Aniket Kulkarni, Anupam Ghosh, Ihab Ahmed, Mohamed Pourkashanian, Krikor Ozanyan, Paul Wright, Iain Burns

72. Laser-induced breakdown spectroscopy for quantification of total elemental potassium with relevance to biomass thermal processing
Nikhil Gaur, Iain Burns

73. Imaging of nitric oxide concentration in a swirling hydrogen/air flame
Victor Coquin, Alexis Vandel, Gilles Godard, Lucio Taddeo, Hicham Ossman, Karine Truffin, Gilles Cabot, Bruno Renou

74. Instantaneous two-line OH-LIF temperature imaging in spray-flame synthesis of nanoparticles
Sadrollah Karaminejad, Thomas Dreier, Torsten Endres, Christof Schulz

75. Statistical analysis of iron particle combustion dynamics using multi-band pyrometry and high-speed imaging
Sayedmehrdad Bathaei, Veysel Ersoy, Niklas Jüngst, Torsten Endres, Christof Schulz

76. Toward Self-Optimizing Spray-Flame Nanoparticle Synthesis: An Integrated Diagnostics Approach
Veysel Ersoy, André Müller, Benjamin Suedholt, Torsten Endres, Christof Schulz

77. Experimental Study of NO Production in Swirled Hydrogen Flames using Raman and LIF Spectroscopy
Zeinab Al Hadi, Suman Basnet, Priybrat Sharma, Sylvain Marragou, Thibault Guiberti, Gaetano Magnotti

78. Flame Rectification Study for Natural Gas-Hydrogen-Air Mixtures in Industrial Premixed Burners
Job Thomas, Shine Stephen, Sean Byrne, Dipal Patel

79. Experimental Study of Premixed Hydrogen-Enriched Flame Quenching and Emission Characteristics for Industrial Burner Applications
Gabriel Ayanbiola, Joshua Okafor, Sean Byrne, Dipal Patel

S3M2 – Turbulent flames – Auditorium corridor of McEwan Hall

81. Kerosene-H2 blending effects in a multifuel combustor
Kaushal Dave, Sarah Link, Francesca De Domenico, Ferdinand Schrijer, Fulvio Scarano, Arvind Gangoli Rao

82. Study of an ultra-lean Hydrogen Spark-Ignition Engine combining Large-Eddy Simulation, Experiments and Statistical Analysis
Julien Steib, Karine Truffin, Delphine Sinoquet, Kumar Rajesh, Vincent Giuffrida, Caio Ramalho Leite, Stéphane Jay

83. Kinetic uncertainty quantification in turbulent flame simulations: A compact approach
Yunyun Wang, Diederik Coppitters, Alessandro Parente, Francesco Contino

84. A DNS/LES approach based on deconvolution to validate subgrid scale models for passive scalars in turbulence : Application to agglomerating nanoparticles in a turbulent flow
Muhammad Harchaoui, Aymeric Vié, Denis Veynante, Benedetta Franzelli

85. Influence of Air Distribution and Hydrogen Injection on Stability and Emissions in a Swirl-Stabilized Methane Burner
Raul Payri, Jose M Garcia-Oliver, Pedro Martí Gómez-Aldaraví, Elkin Ramírez-Correa

86. Analysis of flame front velocities in planar iron particle cloud flames
Gabriel Thäter, Maurizio Carbone, Oliver T. Stein, Bettina Frohnapfel

87. Formation of dual heat release zones in ammonia oxygen-enriched turbulent jet diffusion flames
Marina Kovaleva, Yu Xia, Daichi Matsumoto, Kai Tanji, K.D. Kunkuma A. Somarathne, Taku Kudo, Akihiro Hayakawa, Hideaki Kobayashi

88. Flame-Wall Interaction of Turbulent Premixed Flames Under Isochoric Conditions
Felix Rong, Max Schneider, Matthias Steinhausen, Hendrik Nicolai, Christian Hasse, Andrea Gruber

89. Analysis of turbulent flame evolution of NH3 and CH4 permixed air flames
Noé Monnier, Seif Zitouni, Yutao Zheng, Pierre Brequigny, Simone Hochgreb, Christine Mounaïm-Rousselle

90. Turbulent lean premixed hydrogen flames at high pressure and high temperature
Sofiane Al Kassar, Sara Cantagalli, William Lauder, Geveen Arumapperuma, Antonio Attili

91. Computational and Experimental Study of Effective Chemical Time-Scale for Flame Wrinkling in Hydrogen Engines
Shibam Bose, Pedro Ye, Hongchao Chu, Benjamin Böhm, Heinz Pitsch

92. Impact of spark channel-turbulence interactions on the early flame kernel development under engine conditions
Hongchao Chu, Haogeng Bai, Federico Ramognino, Lorenzo Sforza, Heinz Pitsch

93. Displacement speed and curvature correlations for turbulent premixed flame topology
Hassan F. Ahmed, R. Stewart Cant

94. Modelling multi-regime combustion in LES with filtered tabulated chemistry
Samuel Dillon, Renaud Mercier, Benoît Fiorina

95. DNS of a thermodiffusively unstable turbulent H2/air premixed flame: propagation and modeling aspects
Donato Cecere, Guido Troiani, Davide Cavalieri, Pasquale Eduardo Lapenna, Francesco Creta

96. A DNS comparison of thermodiffusively-unstable lean premixed hydrogen-methane blends in a lab-scale combustor and canonical flames-in-a-box
Edward Hunt, Arnab Moitro, Thomas Howarth, Andy Aspden

97. Direct numerical simulations of laboratory-scale thermodiffusively-unstable piloted Bunsen flames: flame surface area and turbulent flame speed
Arnab Moitro, Edward Hunt, Thomas Howarth, Oussama Chaib, Jinhyun Bae, Lee Weller, Simone Hochgreb, Andy Aspden

98. Reactive AI Super-resolution: From DNS data to LES for Green Fuels on GPU Supercomputers
Mathis Bode

99. CFD and CRN Evaluation of Emission Profiles in Premixed NH_3/H_2 Swirl Combustion Flames
Joanna Jójka, Ali Alnasif, Paweł Czyżewski, Syed Mashruk, Agustin Valera-Medina

S3M3 – Low emission technologies – Deans Reception Room of McEwan Hall

101. Performance of Ceramic Foam Glass Sintered from Hazardous Waste Incinerator Slags
Ayodeji Akerele, Csaba Póliska

102. Investigation on the effects of CH3 substituent on the PAH chemistry in the pyrolysis of cyclopentane and methyl-cyclopentane
Qian-Peng Wang, Qing-Bo Zhu, Shu-Yao Chen, Xiang Gao, Cheng-Yin Ye, Jiu-Jie Kuang, Du Wang, Ling-Nan Wu, Zhan-Dong Wang, Marina Braun-Unkhoff, Zhen-Yu Tian

104. Impact of elevated Paraffinic and Olefinic content on Combustion and Emissions in a GDI Engine under Ultra-Lean Conditions Using Euro-6 Gasoline Surrogates
Mebin Panithasan, Tawfik Badawy, Jaeheun Kim, Donghee Han, Jonghyeok Lee, Abdullah Alramadan, Junseok Chang, James Turner

105. Combustion of CH4 blended with high H2 concentrations on a divergent porous media reactor
Claudio Munoz, Leonardo Jeldres, Guillaume Vignat, Petr Nikrityuk, Matthias Ihme, Mario Toledo

106. Chemiluminescence of OH*, NH*, NH2* radicals in a porous media burner fueled with NH3-CH4 blends
Claudio Munoz, Aravind Balakrishnan, Paula Rojas, Christian Hernandez, Petr Nikrityuk, Syed Mashruk, Agustin Valera-Medina, Mario Toledo

107. Investigation of Two-Stage Methane Consumption and Model Evaluation Under High-Pressure Conditions
Xupeng Yu, Jinhu Yang, Ahmed E. Mansy, Du Wang, Zhen-Yu Tian

108. Feasibility of Cryogenic Ammonia Fuel for Power and Propulsion Through a Recuperated Split Cycle Engine
Angad Panesar, Elisa Wylie

109. Oxy-fuel combustion of biomass with external recirculation in a 100-kW down-fired pulverized reactor
Alexey Sepman, Emil Thorin, Marcus Gullberg, Henrik Wiinikka, Florian Schmidt

110. Effect of Catalyst Loading in a Packed-Bed Reactor for Catalytic Hydrogen-Air Combustion
Md Nur Alam Mondal, Ahmed Radwan, Nader Karimi, David Jackson, Manosh Paul

111. Experimental analysis of swirl number and nozzle design for scale-up of partially cracked ammonia flames
Jordan Davies, Syed Mashruk, Daisuke Sato, Agustin Valera-Medina

112. Internal Radiation Analysis of Coke Oven Gas-Ammonia Flames
Daisuke Sato, Jordan Davies, Sanggak Lee, Syed Mashruk, Agustin Valera-Medina, Ryoichi Kurose

113. Evaluation of effects of hydrogen co-firing on the performance of Gas Turbine Combined Cycle Plant
Seongil Kim, Hyeonrok Choi

114. Investigation of fuel staging in a hydrogen-air multi-nozzle jet-stabilized combustor
Manu Naduvil Mannazhi, Redjem Hadef, Zhiyao Yin, Oliver Lammel

115. Auto-ignition of Hydrogen Over a Wide Range of Equivalence Ratios: Improving the Safety of Future Gas Turbines
Rana Shebly, Marwa Saab, Yann Fenard, Yassir El Amrani, Eric Impellizzeri, Guillaume Vanhove

116. Experimental and Modeling Study of the Oxidation of Methane under CO2 and H2O dilution
Le Minh Dinh, N'Namianse Dan Ebouo, Frédérique Battin-Leclerc, Alessandro Stagni, Tiziano Faravelli, Olivier Herbinet

117. On the bifurcation of flame stabilization of a H2/air dual swirl flame at elevated pressure
Sylvain Marragou, Thibault Guiberti

118. Influence of carrier gas on pyrolysis and gasification of wood pellets
Alice Wittmann, Jean-François Brilhac, Cornelius Schönnenbeck, Guillaume Gerandi, Alain Brillard

119. Advances in Raman spectroscopy for H2 and N2 detection in combustion diagnostics
Riccardo Dal Moro, Fabio Melison, Lorenzo Cocola, Luca Poletto

120. Emissions and Combustion Instabilities of Hydrogen/Propane Mixture with Ar,He and CO2 Dilution under CDC
Durmus Yilmaz

Session 4: Wednesday, April 9th, 15:30–17:30

S4A1 – Spray, droplet, and supercritical combustion / Multi-physics phenomena – Concourse of Appleton Tower

1. Spatiotemporal Imaging of NH2 in Plasma-Assisted NH3 Combustion via Nanosecond Pulsed Discharge
Jinguo Sun, Kailun Zhang, Yupan Bao, Christian Brackmann, Mattias Richter, Alexander A. Konnov, Andreas Ehn

2. Modeling of turbulent flame enhancement by Nanosecond Repetitively Pulsed discharges using a low-order model
Stéphane Wang, Nasser Darabiha, Benoît Fiorina

3. Evaluation of a correction method for point-source approximation applied to Euler-Lagrange simulations of droplet cloud ignition
Antoine Pestre, Thomas Lesaffre, Victor Belpaire, Eleonore Riber

4. Comprehensive characterization of heavy fraction of tire pyrolysis oil and its blends with heavy oil: From liquid evaporation to coke combustion
Taha Poonawala, Alvaro Muelas, Javier Ballester

5. Investigation of the preferential evaporation of fuel mixtures in levitated single droplets
Benjamin Klevansky, Viktoria Huschka, Alexander Christian Petschow, Florian Bauer, Christian Hasse, Stefan Will

6. Phase transition of ammonia-methanol binary droplets from subcritical to supercritical conditions: A molecular dynamics study
Kaiqi Zhang, Xiao Ma, Kai H. Luo, Zhenyu Han, Yanfei Li, Shijin Shuai

7. Numerical investigation of a single water droplet interacting with an hydrogen/air flame front
Maria Rosaria Acquaviva, Ivan Langella

8. Spatio-temporal analysis of sprays by using Phase Doppler Anemometry data
Erika Rácz, Milan Malý, Jan Jedelský, Viktor Józsa

9. Modeling Dense Droplet Spray Combustion with Multiple-Mapping Conditioning
Jan Wilhelm Gärtner, Ka Ho Lam, Andreas Kronenburg

10. Liquid ammonia injection CFD simulations and model-based spray penetration model development
Charalambos Chasos

11. Assessment of the combustion regime in sCO2 oxy-methane combustion systems
Giada Senatori, Simone Castellani, Antonio Andreini

12. The Study of Spray Behaviors for Renewable Diesel in a Constant Volume Combustion Chamber
Wei-Cheng Wang, Jhe-Kai Lin, Rusdan Aditya Aji Nugroho, Chanathip Hongkhamdee

13. Transient and clustering effects of droplet-fueled detonations
Jaime Carpio Huertas, Raúl Hernández Sánchez, César Huete, Daniel Martínez Ruiz

14. Suppressing optical cavity mode effects in laser-induced fluorescence signals of fuel droplets using two dyes
Matthias Koegl, Jake Glahn, Lars Zigan

15. Numerical modeling of ammonia spray atomization
Paolo Guida, William Roberts

16. Spanwise penetration of supercritical kerosene jet in supersonic crossflow
Gagana Satyanarayan, Eshaan Raj, Muruganandam T M

17. Penetration height Correlation of Tandem and Side-by-side injection of supercritical kerosene in Supersonic crossflow
Eshaan Raj, Gagana Satyanarayan, Muruganandam T M

18. Ammonia Energy Fraction and its Role in Shaping Combustion in Ammonia/ Diesel Dual Fuel Optical Engine
Ketan Warghat, Yogesh Biswal, Sukesh Sharma, Pankaj Sharadchandra Kolhe

19. Parametric FTFs of one-dimensional spray flames: impact of slip velocity and droplet diameter
Agus Nuryadi, Abdulla Ghani

20. Deconvolution of Infrared Spray Images using Optical Depth from Shadowgraphy
Min Son, Lars Zigan, Michael Pfitzner, Tobias Sander

21. Characterization of shear coaxial injection of fuel in supercritical conditions through velocity measurements
Téodor Chazelle, Florian Lespinasse, Saïd Idlahcen, Benoît Barviau, Jean-Bernard Blaisot, Guillaume Ribert

22. Spray Characteristics of a Three-Fluid Injector for Entrained Flow Gasification Applications
Faisal Al Madhoon, Taha Poonawala, Felipe Campuzano, William Roberts, Hong G. Im, Alvaro Muelas, Javier Ballester

23. Numerical Study of the Convective Vaporization and Combustion of Single p-Xylene Droplets in Hot Air
Sachin Tom, Eva Gutheil

24. Investigation of phase change behaviour of model fuels under transcritical conditions within a flow cell
Anton Schaumäker, Lars Zigan

25. Optical depth characterization of superheated ammonia spray using a collimated laser illumination with Fourier filtering
Utkarsha Sonawane, Camille Hespel, Christine Mounaïm-Rousselle

26. Flamelet-based modeling of doubly transcritical methane/oxygen flames
Davide Schintu, Davide Cavalieri, Francesco Creta, Pasquale Eduardo Lapenna

27. Air Nanobubbles and Their Influence on GDI Sprays
Abinash Biswal, Suraj Sharma, Shuo Dong, Hua Zhao, Xinyan Wang

28. Investigating the Long-Term Stability of Air Nanobubbles and Their Impact on Droplet Breakup
Suraj Sharma, Abinash Biswal, Shuo Dong, Hua Zhao, Xinyan Wang

29. Investigation of Spray Morphology and Dynamics Using Rainbow Schlieren Deflectometry with Diethyl Ether
Ketan Warghat, Yogesh Biswal, Sukesh Sharma, Pankaj Sharadchandra Kolhe

S4A2 – Low emission technologies – Mezzanine area of Appleton Tower

36. Machine learning-driven prediction of emissions in CH4/H2 combustion for low-emission technologies
Solmaz Nadiri, Ravi Fernandes

37. Investigation on the combustion characteristics of a high-pressure direct injection of a dodecane-piloted ammonia spray
José Manuel Luján, Gabriela Bracho, Joaquín De La Morena, Daniel Pinilla, Manuel Martino

38. Chemiluminescence -Based Machine Learning Driven Modelling Of Equivalence Ratio And Ammonia Fraction In Premixed Swirling NH3/H2 Fuel Blend
Nwode Agwu, Agustin Valera-Medina, Syed Mashruk, Jordan Davies, Daisuke Sato

39. Effect of Hydrogen enrichment ammonia on performance and emissions of DI diesel dual fuel engine
Lyes Tarabet, Youcef Sehili, Khaled Loubar

40. UV treatment to improve waste tyre pyrolysis
Csenge Emese Tóth, Gábor Nagy

41. Study of combustion characteristics on 100 kWth ammonia combustion burner
Taeyong Chae, Won Yang, Seonghwan Hwang, Woohyun Sim, Jaewook Lee

42. Numerical simulation of RQL combustion chamber fueled by blends of NH3/H2
Gonçalo Pacheco

43. Study of combustion characteristics on 1MWth coal/ammonia co-firing multi burner combustion system
Taeyong Chae, Won Yang, Jaewook Lee, Seonghwan Hwan, Woohyun Sim

44. Numerical Study of Turbulent Flame Behaviour and Emission Characteristics in $NH_3/H_2/N_2$ Mixtures
Joanna Jójka, Ali Alnasif, Nwode Agwu, Syed Mashruk, Agustin Valera-Medina

45. Comparison of Large Eddy Simulation with Raman and PIV experimental results for species, temperature and velocity fields in a non-premixed dual swirl hydrogen flame
Martin Vilespy, Anthony Teixeira, Zeinab Al Hadi, Sylvain Marragou, Thibault Guiberti, Gaetano Magnotti, Thierry Schuller, Laurent Selle, Thierry Poinsot

46. Investigating abnormal combustion in hydrogen-powered internal combustion engines
Suryadeb Malik, Christian Angelberger, Ludovic Nowak, Fabrice Foucher, Olivier Laget

47. Experimental Investigation of Hydrogen-Enriched, Partially Premixed Methane-Laminar Air Flames: Velocity Fields and Flame Stabilization Mechanisms
Rajalakshmi Ravichandran, Sylvain Marc, Michel Le Coeur, Corine Lacour, David Honoré

48. Reactive and non-reactive turbulent flow structure characteristics of NH3-H2 flames by high-speed imaging
Réka Anna Kardos, Jiří Hájek, Jan Jedelský, Milan Malý, Viktor Józsa

49. Dual-fuel characteristics of a lean azimuthal flame (LEAF) combustor
Chetankumar S. Vegad, Orso Birelli Schmid, Khushboo Pandey, Nicolas Noiray

50. Influence of Blending n-Butanol Alcoholysis Derived Advanced Biofuels with Diesel on the Regulated Emissions from a Diesel Hybrid Vehicle
Scott Wiseman, Karl Ropkins, Hu Li, Alison Tomlin

51. Effects of oxidant and fuel condition for low NOx hydrogen/CH4 diffusion flame using exhaust gas self recirculation
Sang Soon Hwang

52. Ignition of ultra-lean and highly-diluted hydrogen-air mixtures by bursts of nanosecond repetitively pulsed discharges
Jianyu Dou, Adrian. Jano Fong, Emre Cenker, Abdullah Alramadan, Deanna Lacoste

53. Acceleration of Optimization of Chemical Kinetic Mechanisms using Independent Component Analysis
Yuki Murakami, Andrea Bertolino, Alessandro Parente

54. Experimental and numerical investigation of methane low-temperature combustion under enriched oxygen conditions
Sara Spano, Florian Hurault, Bruno Moreau, Fabrice Foucher, Francesco Contino, Herve Jeanmart

55. Investigation on a natural gas-hydrogen flames in a pilot plant scaled optically accessible combustion chamber influence of wall conditions, air staging and exhaust gas recirculation
Sven Eckart, Hartmut Krause

56. Dataset influence on Chemical Reactor Networks development and generalization
Arianna Remiddi, Alessandro Piscopo, Asija Tatiana Inciardi, Matteo Savarese, Alessandro Parente

57. NOx Emission Prediction in Ammonia-Hydrogen Combustion via Chemical Reactor Networks

Asija Tatiana Inciardi, Arianna Remiddi, Alessandro Piscopo, Matteo Savarese, Veronique Dias, Alessandro Parente

58. Hybrid modeling of plasma-assisted MILD combustion of ammonia: stability and emissions analysis
Georgios Rekkas-Ventiris, Lorenzo Giuntini, Pino Sabia, Giancarlo Sorrentino, Aurélie Bellemans

59. A transformer-based framework for field reconstruction from multiple arbitrary inputs in a NH$_3$ swirl flame
Runze Mao, Quanjia Xiao, Zhenhua An, Han Li, Zhi X. Chen

60. Experimental and numerical study of NO formation in low-pressure burner stabilized premixed lean-to-rich hydrogen flames

S4M1 – Laminar flames – Basement corridor of McEwan Hall

61. Study of Ammonia Flame Quenching in Coated Submillimeter Cavities under Engine-Relevant Conditions
Adrian Nolte, Marius Hofmeister, Katharina Schmitz, Karl Alexander Heufer

62. Experimental and Numerical Study of Premixed Propane/Syngas Flames with a Heat Flux Burner
Bigeud Bouhentala, Sven Eckart, Hartmut Krause

63. Structure and speed of hydrogen-air triple flames
Kennie Chaplet, Laurent Selle, Thierry Poinsot

64. Mitigating flashback in hydrogen-fueled burners: A DNS and sparse grid-based geometry optimization study
Filippo Fruzza, Rachele Lamioni, Temistocle Grenga, Alessandro Mariotti, Maria Vittoria Salvetti, Chiara Galletti

65. Numerical investigation of autoignition-induced flashback in hydrogen-fueled perforated burners
Filippo Fruzza, Nicola Cozza, Sofiane Al Kassar, Rachele Lamioni, Chiara Galletti, Antonio Attili

66. Low Lewis number flames near a porous plug burner: stability, dynamics and limits of existence
Daniel Fernandez Galisteo, Carmen Jimenez, Vadim Kurdyumov

67. Ignition by a concentrated heat source using a chain-branching model
Rafael Carmona, Carmen Jimenez, Daniel Fernandez Galisteo, Vadim Kurdyumov

68. Hyperspectral imaging of premixed NH3/H2 oxyfuel flames based on molecular emissions
Phillipp Bräuer, Anna Hasche, Maximilian Striegel, Sven Eckart, Fabian Hagen, Stefan Will, Florian Bauer

70. Experimental and numerical kinetic study of OME2 and OME3 combustion in low-pressure laminar flames
Yanan Huo, Veronique Dias, Herve Jeanmart

71. Impact of Detailed Molecular Transport on Ammonia/Hydrogen Ignition Measurements in Rapid Compression Machines
Chunwei Wu, Robert Schießl

72. Impact of differential diffusion in REDIM based reduced modelling of methane hydrogen blends
Sudhi Shashidharan, Viatcheslav Bykov, Ulrich Maas

73. Investigation of Markstein numbers in acoustically excited lean hydrogen-air premixed flames
Frederick Young, Umair Ahmed, Robert Stewart Cant

74. Joint numerical and experimental study of OH* chemiluminescence in a fully premixed hydrogen-air laminar M-flame
Christophe El Hachem, Matthieu Durand, Nicolas Barleon, Thierry Schuller, Quentin Douasbin, Eleonore Riber

75. Experimental study on the stabilization of premixed laminar flames of H2/air mixtures on a perforated plate
Adnane Soule, Cédric Galizzi, Manuel Kühni, Lucio Taddeo

76. A three-dimensional study of the confinement effect on a premixed equidiffusive flame in narrow channels
Ziyin Chen, Song Zhao, Christophe Almarcha, Bruno Denet, Pierre Boivin

77. Numerical Modelling and Experimental Validation of Laminar Flame Flashback in Tube Burners for H2-Enriched Methane-Air Combustion
Muhammad Kamran Zeb, Alvaro Muelas, Javier Ballester

78. Effect of hydrogen addition to Natural gas in a domestic gas stove
Mariano Galbusieri, Fabio Cozzi

79. Impact of the chemical modeling on the noise generated by hydrogen-air flames
Francesco Gabriele Schiavone, Davide Laera

80. OH* emissions in unsteady premixed laminar methane-hydrogen-air and hydrogen-air flames
Matthieu Durand, Thierry Schuller

S4M2 – Solid fuels – Auditorium corridor of McEwan Hall

81. Oxygen Dynamics in Smouldering Combustion: Impacts on Reaction Zones and Biochar Production
Fatemeh Khodaparastan, James Bowen, Christine Switzer, Gavin Grant, Joshua Brown, Marco Bazelatto Zanoni, Tarek Rashwan

82. Thermochemical conversion of pulverized carbon carriers under high heating rates and elevated pressures
Markus Bösenhofer, Thomas Nanz, Hugo Stocker, Christoph Feilmayr, Joannes Rieger, Michael Harasek

83. Role of air pressure on single aluminum droplet combustion
Hugo Keck, Christian Chauveau, Guillaume Legros, Stany Gallier, Fabien Halter

84. Experimental study on the liquid-phase particle structure evolution during combustion of millimeter-sized iron particles
Wenjiang Tian, Yuriy Shoshin, Viktor Kornilov, Xiaocheng Mi

85. Biomass Pyrolysis Kinetics Considering Lignin-Hemicellulose Interaction
Leon Loni Berkel, Paulo Debiagi, Hendrik Nicolai, Francesca Cerciello, Muhammad Yusuf Suleiman, Osvalda Senneca, Christian Hasse, Tiziano Faravelli

86. Enrichment of noble metals and rare earth elements in solid residues coming from biomass combustion
Truong Dinh, Helga Kovács, Zsolt Dobó

87. Super-resolution reconstruction of scalar fields from the pyrolysis of pulverised biomass using deep learning
Ali Shamooni Pour Dezfouli, Ruyue Cheng, Thorsten Zirwes, Oliver T. Stein, Andreas Kronenburg

88. Numerical analysis of the Stability of Iron Dust Bunsen Flames
Thijs Hazenberg, Danial Braig, Johannes Mich, Arne Scholtissek, Christian Hasse

89. Effects of preferential concentration on the combustion of iron particles–A numerical study with homogeneous isotropic turbulence
Shyam Hemamalini, Benedicte Cuenot, Xiaocheng Mi

90. Determination of the thermo-physical properties of municipal solid waste from the perspective of its energy utilisation
Monika Uler-Zefikj, Risto Filkoski, Igor Shesho

91. Element Conservation for Neural Networks Predicting Chemical Source Terms
Maximilian Schaefer, Christian Beck, Andreas Kempf

92. Biochar as Coke Substitute in Metallurgy: Feedstock and Pyrolysis Temperature Effects
Corinna Maria Grottola, Paola Giudicianni, Davide Amato, Raffaele Ragucci

93. The influence of temperature on yield and product quality in polyethylene thermal cracking
Balázs Hegedüs, Árpád Bence Palotás, Zsolt Dobó

S4M3 – Gas-phase reaction kinetics – Deans Reception Room of McEwan Hall

101. Automated Training of Global Reaction Mechanisms on Ignition Delay Times and Laminar Burning Velocities
Marius Neumann, Karl Alexander Heufer

102. NH3/H2 reduced chemistry for numerical combustion
Giovanni Grassi, Pascale Domingo, Luc Vervisch

103. Comparison of fitness functions for the assessment of optimized and reduced chemical mechanisms
Martin Kotlarczik, Giovanni Grassi, Damien Aubagnac, Cédric Mehl, Lucia Giarracca-Mehl, Luc Vervisch, Pascale Domingo

104. High Pressure Ignition Investigation of 1-Nitropropane - Kinetic Model Study and Shock Tube Experimental Campaign
Mirko Bardin, Julien Glorian, Barbara Baschung, Karl Alexander Heufer

105. The Kinetic Study of High-Temperature Oxidation of Neopentane in a Jet-Stirred Reactor
Nurlan Amirov, Zeynep Serinyel, Guillaume Dayma, Philippe Dagaut

106. The effect of phosphine on hydrogen/ammonia combustion in a plug flow reactor
Mats-Ole Dewerth, Munko Gonchikzhapov, Tina Kasper

107. An experimental and kinetic modeling study of diethoxymethane
Sascha Jacobs, Thomas Bierkandt, Joachim Schmid, Patrick Oßwald, Torsten Methling, Markus Köhler

108. Linking validation experiments with application-relevant combustion scenarios through reaction network comparison
Francesca Loffredo, Raymond Langer, Sanket Girhe, Marco Vivenzo, Beatriz Binotto, Yiru Wang, Bin Yang, Heinz Pitsch

109. Inhomogeneous ignition of propane in a shock-tube: Methods of measurement and suppression
Jürgen Herzler, Damien Nativel, Christof Schulz, Eric L. Petersen, Matthew G. Sandberg, Mustapha Fikri

110. High-pressure oxidation kinetics of methyl formate in a flow reactor
Thomas Bierkandt, Trupti Kathrotia, Jasmin Bachmann, Joachim Schmid, Fabienne Werner, Nina Gaiser, Patrick Oßwald, Markus Köhler

111. Linking ion formation to fuel conversion in laminar flames of a potential surrogate fuel
Ewald Keksel, Simon Kruse, Munko Gonchikzhapov, Tina Kasper

112. Thermal Induced Break-up of PE Using Atomistic Molecular Dynamics with a Reactive Force Field
Tord Skanke, Anders Lervik, Astrid Silvia De Wijn, Corinna Schulze-Netzer

113. Full-scale performance testing of hydrogen combustion mechanisms in a wide range of experimental conditions
Ilya Gerasimov, István Gyula Zsély, Máté Papp, Tamás Turányi

114. Evaluating the performances of recent detailed combustion mechanisms against NH3 and NH3/H2 experimental data
András György Szanthoffer, Máté Papp, Tamás Turányi

115. Chemical effects of hydrogen substitution in methane counterflow diffusion flames
Albert Sagitov, Maximilian Hellmuth, Raymond Langer, Anita Meraviglia, Roman Glaznev, Joachim Beeckmann, Heinz Pitsch

116. Numerical quantification of aluminum profile around a steadily burning aluminum droplet with different gas-phase kinetics
Yue Qiu, Xue-Song Bai, Elna Nilsson

117. Model Optimization through assessment of rate constant dispersion: application to ammonia combustion kinetics.
Alexis Matynia, Pascal Diévart

118. NH3/H2 Retrofitting of a Gas Turbine Engine: A Numerical Perspective Using Reduced-Order Modeling
Leonardo Pachano, Jose M Garcia-Oliver, Jose M. Pastor, Elkin Ramírez-Correa

119. Testing of NH3/CH3OH combustion mechanisms based on a large amount of experimental data
Siyabonga Nxumalo, Boyang Su, Máté Papp, Tamás Turányi

120. Transition of metal oxides from particle to gas phase
Munko Gonchikzhapov, Matthieu Lalanne, Yasin Karakaya, Igor Rahinov, Tina Kasper

Session 5: Thursday, April 10th, 10:30–12:30

S5A1 – Turbulent flames – Concourse of Appleton Tower

1. Hybridisation of the Eddy Dissipation Concept with the Thickened Flame Model for High-Fidelity Multi-Regime Combustion Simulations
Gianmarco Lemmi, Simone Castellani, Roberto Meloni, Naseem Ansari, Stefano Orsino, Reza Farokhi, Antonio Andreini

2. Three-dimensional structure and burning speed of turbulent premixed H2-air and H2/CH4-air Bunsen flames using high-speed tomographic imaging
Tao Li, Haowen Chen, Simone Hochgreb

3. An extended G-equation formulation for simulating thermodiffusively unstable hydrogen flames
Hongchao Chu, Vignesh Varatharajan, Benjamin Pehlivanlar, Terence Lehmann, Lukas Berger, Dominik Golc, Stefania Esposito, Thomas Howarth, Emanuele Porcelli, Davide Laera, Marco Günther, Michael Gauding, Joachim Beeckmann, Stefan Pischinger, Heinz Pitsch

4. Super-resolution of turbulent reacting flows on complex meshes using graph neural networks
Priyabrat Dash, Konduri Aditya, Mathis Bode

5. Turbulence-flame interactions in high Karlovitz number lean premixed hydrogen piloted jet flames
Gilly Russell, Thomas Howarth, Aaron Skiba, Campbell Carter, Andy Aspden

6. Impact of pressure and thickening factor on DTFLES predictions of turbulent flame speed in lean premixed H2 flames
Matteo Amerighi, Simone Castellani, Nicola Scopolini, Antonio Andreini

7. Investigation of hot-spot-induced pre-ignition in methanol- and hydrogen-fueled engines
Dominik Golc, Stefania Esposito, Maziar Kohsravi, Joachim Beeckmann, Heinz Pitsch

8. Simultaneous imaging of OH and temperature in lean premixed hydrogen/air flames: which marker for thermodiffusive instability?
Jinhyun Bae, Oussama Chaib, Lee Weller, Arnab Moitro, Edward Hunt, Andy Aspden, Simone Hochgreb

9. LES of a hydrogen flame controlled by mass flow oscillations and rotating shear layer disturbance
Karol Wawrzak, Agnieszka Wawrzak, Artur Tyliszczak

10. Direct Numerical Simulation Analysis of Premixed Hydrogen-Air Boundary-Layer Flashback in Annular Channels
Edward Richardson, James Bailey

11. Integrating 1-D Kinetics and Artificial Neural Networks for Real-Time Control and Emission Reduction in Industrial Burners
Gökhan Deveci, Ugur Ay

12. Confinement Effects on a Supersonic Hydrogen Jet Flame in a Duct
Lukas Gaipl, Thierry Poinsot

13. Development of a hybrid turbulence model for deflagration
Dorian Trabichet, Laura Gastaldo, Denis Veynante

14. Investigating recess distance effects on dual swirl H2-air flames using an integrated GPU framework
Min Zhang, Qizhe Wen, Qiuli Chen, Yuqiang Li, Zhi X. Chen

15. Planar Imaging Diagnostics of Bio-Fuel Spray Flame Combustion: Aerodynamic Effects of CO and Counter-Swirl with OH and HCHO PLIF
Yogesh Biswal, Pankaj Sharadchandra Kolhe

16. Convective scaling of thermoacoustic instability frequency in a counter rotating radial swirl combustor
Balasundaram Mohan, Sk Thirumalaikumaran, Saptarshi Basu

17. Development of Hybrid Injector for Enhanced Biofuel Combustion
Satender Singh, Gyan Deep, Jai Vardhan, Pravendra Kumar

18. On the generalization of a data-driven subfilter PDF modelling approach for thermodiffusively unstable hydrogen flames
Yifan Xu, Zhi X. Chen, Lukas Berger, Michael Gauding, Heinz Pitsch

19. Ammonia-air Flame-Turbulence Interaction in forced HIT environments
Solène Hoflack, Noé Monnier, Pierre Brequigny, Seif Zitouni, Christine Mounaïm-Rousselle, Quentin Douasbin, Eleonore Riber

20. Overpressure resulting from the ignition of a liquid-hydrogen leak
Sébastien Missey, Laurent Selle

21. Edge detection of H2-enriched turbulent kerosene flames
Krisztián Sztankó, Dávid Csemány, Gyöngyvér Tóthpálné Hidegh, Réka Anna Kardos, László Kavas, Viktor Józsa

22. Fixed-bed combustion of olive solid waste: a sustainable energy solution
Mariem Hassene, Brahim Sarh, Hassan El Bari, Toufik Boushaki

23. Structure and pollutant emissions of ammonia/dimethyl-ether/air turbulent premixed flames: A DNS study
Wei Guan, Cheng Chi, Abouelmagd Abdelsamie, Zhixia He, Dominique Thévenin

24. High-fidelity simulations in hydrogen multi-regime combustion
Nikola Sekularac, Laurent Selle

25. A Novel Multi-Species Formalism for Large-Eddy Simulation
Ada Béroudiaux, Luc Vervisch, Quentin Cerutti, Pascale Domingo, Guillaume Ribert

26. Hybrid Navier-Stokes/ANN solver for unsteady simulation of H2 flame
Francesco Cenvinzo, Luc Vervisch, Pascale Domingo

27. A study of near-wall turbulent transport mechanisms in flame-wall interactions using wavelet-based optical flow and OH-LIF
Alexander Nicolas, Florian Zentgraf, Pascal Johe, Benjamin Böhm, Andreas Dreizler, Brian Peterson

28. Stabilization mechanisms of H2 free jet flames above small nozzles
Mohamed Hamdaoui, Nikola Sekularac, Thierry Poinsot, Laurent Selle, Thierry Schuller

29. Transport terms in LES flamelet combustion model: A priori analysis of turbulent premixed hydrogen slot flames
Svenja Nerzak, Thomas Howarth, Michael Gauding, Heinz Pitsch

S5A2 – Low emission technologies – Mezzanine area of Appleton Tower

36. Flame structure and NOx emissions of hydrogen LEan Azimuthal Flames (LEAF)
Khushboo Pandey, Quentin Malé, Nicolas Noiray

37. Investigation of NH3/H2/N2 blends in gas turbine using Chemical Reactor Network approach
Rachele Lamioni, Filippo Fruzza, Luca Mazzotta, Domenico Borello, Christian Romano, Chiara Galletti

38. Performance analysis of detailed reaction mechanisms of neat H2, neat CH4 and H2/CH4 mixtures under oxyfuel combustion conditions
Ákos Veres-Ravai, Anna Hasche, István Gyula Zsély, Hartmut Krause, Tamás Turányi, Sven Eckart

39. Effect of Spark Timing and Hydrogen Enrichment on Combustion and Emissions in a Methane-Fueled Engine: A 1D Simulation Study
Ali Navid, Hartmut Krause, Sven Eckart

40. Combustion and emission characteristics of NH3/H2 under MILD regime in a semi-industrial furnace
Ebrahim Rahmani, Natalia Cid, M. Mustafa Kamal, Axel Coussement, Alessandro Parente, Marco Lubrano Lavadera

41. Hybrid CRN-CFD model of a micro Gas Turbine combustor fueled with methane/hydrogen mixture for emission prediction
Farshid Y. Farrokhi, Alessandro Piscopo, Vincent Thielens, Alessandro Parente, Ward De Paepe

42. Investigating the combustion of dimethyl ether/ammonia mixtures by chemical kinetic modelling
Ákos Veres-Ravai, István Gyula Zsély, Máté Papp, Tamás Turányi

43. Investigating the combustion of dimethyl ether and dimethyl ether/hydrogen mixtures by chemical kinetic modeling
Ákos Veres-Ravai, István Gyula Zsély, Máté Papp, Tamás Turányi

44. Numerical Study of NOx Emissions in Hydrogen-Oxyfuel MILD Combustion Under Air Leakage in a Semi-Industrial Furnace
Alex Mauricio Garcia Vergara, Andreas Buchholz, Nico Schmitz, Christian Wuppermann

45. Evaluation of Oxygen Storage Materials (OSM) for Low-Emission Energy Conversion
Niklas Syguda, Olga Ravkina, Robert Hoffmann, Lars Zigan

46. Development of an Oxyfuel Engine Test Bench for Power-to-X-to-Power Application
Rufat Asgarzade, Tim Franken, Fabian Mauß

47. Using machine learning and chemiluminescence to measure the heat release rate of premixed partially cracked ammonia flames
Daniel Campos, Deanna Lacoste, Thibault Guiberti

48. Comparative effects of N2 and CO2 fuel dilution on NOx suppression in non-premixed hydrogen combustion
Mahdi Jamshidiha, M. Mustafa Kamal, Lorenzo Giuntini, Axel Coussement, Marco Lubrano Lavadera, Alessandro Parente

49. Optical and numerical investigation of ammonia combustion and its intermediates
Krister Aaen Pedersen, Karl Oskar Pires Bjørgen, Helene Hardeland Skancke, Terese Løvås

50. Burning ammonia-hydrogen mixtures in a staged combustor with high efficiency and low pollutant emissions
Alessandro Piscopo, Lorenzo Giuntini, Chiara Novelli, Ward De Paepe, Axel Coussement, Alessandro Parente

51. Experimental study of methane combustion in a stagnation-point reverse-flow combustor
Mohamed Salah Eddine Salah, M. Mustafa Kamal, Lyes Tarabet, Alessandro Parente

52. Industrial reheating furnace modelling: Impact of partial electrification on products
Jetnis Avdijaj, Pratibha Biswal, Marcello Bentivegni, Alessandro Parente, Axel Coussement

53. Reactor modeling for multistage flameless oxidation of partially cracked ammonia
Christopher Wünning, Linda Herbort, Alex Mauricio Garcia Vergara, Nico Schmitz, Christian Wuppermann, Marius Wilke, Joachim G. Wünning

54. Numerical investigation of methane/hydrogen combustion in a small scale micro Gas Turbine
Alessandro Piscopo, Farshid Y. Farrokhi, Ward De Paepe, Alessandro Parente

55. Experimental study of CO2 diluted oxycombustion for a decarbonized industry
Laura Pirateque Henao, Bertrand Lecordier, Corine Lacour, Armelle Cessou, David Honoré

56. On the transition of turbulent flames to hydrogen combustion for tiles and bricks industry
Corine Lacour, David Honoré, Oscar Torres, Catherine Poirier, Sarra Houidi, Léo Blanchard, Olivier Lebasle

57. Validating Partially Stirred Reactor Models for Oxy-Fuel Combustion Simulations
Tamara Osseily, Alessandro Piscopo, Lorenzo Giuntini, Marco Lubrano Lavadera, Alessandro Parente

58. Determining the burning velocity of iron powder using an inverted Bunsen flame burner
Helen Prime, Yuriy Shoshin, Roy Hermanns, Philip De Goey

59. Experimental study on the combustion of syngas with different levels of purity
Natalia Cid, M. Mustafa Kamal, Marco Lubrano Lavadera, Alessandro Parente

60. Optical investigation of surface ignition with premixed hydrogen-air mixtures in a high-pressure chamber
Ntarinai Konosidou, Shayan Asmari, Niklas Mirsch, Philipp Adomeit, Stefan Pischinger

S5M1 – Laminar flames – Basement corridor of McEwan Hall

61. Novel methodology for the evaluation of plasma-induced flame speed enhancement
Nicolas Barleon, Omar Dounia

62. Experimental characterization of laminar CH4/H2 diffusion flames
Fabian Hagen, Daniel Kroll, Björn Stelzner, Dimosthenis Trimis

63. Ignition enhancement by nanosecond repetitively pulsed discharge in methane/air mixture with barrier discharge igniter and J-Hook plug
Raghul Nagarajan, Yizhuo Feng, Abinash Biswal, Gengxin Zhang, Xinyan Wang, Hua Zhao

64. Numerical Simulations of Thermodiffusive Instabilities in Lean Premixed Hydrogen Flames: First Step Towards Gas Turbine Operating Conditions.
Alessio Pappa, Kévin Bioche, Rob Bastiaans, Ward De Paepe

65. Experimental and numerical investigation of ammonia counterflow diffusion flames
Hanna Marie Hülsmann, Daniel Kretzler, Florian Bauer, Peter Habisreuther, Björn Stelzner, Dimosthenis Trimis, Fabian Hagen

66. Experimental study of premixed flame/wall interaction for lean hydrogen/air mixtures: effect of pressure and equivalence ratio
Axel Weiss, Suryadeb Malik, Julien Sotton, Marc Bellenoue, Bastien Boust, Camille Strozzi

67. Experimental determination of the laminar burning velocity of hydrogen-methane-oxygen flames through a micro-cone burner
Anna Hasche, Phillipp Bräuer, Florian Bauer, Stefan Will, Hartmut Krause, Sven Eckart

68. Development of a Local Reduced-Order Model Framework for Combustion Systems Using Soft Clustering
Chiara Novelli, Alberto Procacci, Lorenzo Giuntini, Alessandro Piscopo, Axel Coussement, Alessandro Parente

69. Propagation of laminar premixed hydrogen air flames at cryogenic temperature
Mayank Pandey, Krishnakant Agrawal, Anjan Ray

70. Investigation on cellular characteristics of ethanol spherical expanding flames
Miriam Reyes, Rosaura Sastre, Ivan Velázquez, Francisco V. Tinaut

71. Experimental Investigation of Laminar Burning Velocity of Sustainable Aviation Fuel Candidates at Elevated Pressure
Megha Prakash, Jan-Peter Hannappel, David Sanned, Christian Brackmann, Mattias Richter

72. Influence of Transport and Chemistry Models on Intrinsic Flame Instabilities
Terence Lehmann, Mattes Hinrichsen, Thomas Howarth, Michael Gauding, Heinz Pitsch

73. Numerical simulation of Hydrogen-Air-Steam flames
Quentin Cerutti, Guillaume Ribert, Pascale Domingo

74. Accounting for buoyancy and ignition influence in the experimental measurement of laminar flame speeds and Markstein lengths from spherical ammonia/air flames
Seif Zitouni, Roman Glaznev, Heinz Pitsch, Joachim Beeckmann, Pierre Bréquigny, Christine Mounaïm-Rousselle, Fabien Halter

75. Slits versus Holes: Which design leads to wider flashback limits for hydrogen premixed flames?
Faizan Habib Vance, Arne Scholtissek, Christian Hasse

76. Investigation on flame temperature and laminar burning velocity of premixed NH3/N2/H2 flames using 2D Rayleigh thermometry
Yuhang Li, Lukas Bühn, Tao Li

77. Probabilistic Modeling of Nonlinear Flame Dynamics with Bayesian Neural Networks
Axel Zimmermann, Marcel Désor, Wolfgang Polifke

78. Combined High-Speed Schlieren and Time-Resolved Rayleigh Scattering Measurements: Radiation Effects in Spherical Methane-Air Flames
Joachim Beeckmann, Frederik Mohr, Fabien Halter, Miguel Buenaflor, Zheng Chen, Christian Chauveau, Roman Glaznev, Thomas Raffius, Christian Schwenzer, Raik Hesse, Heinz Pitsch

S5M2 – Solid fuels – Auditorium corridor of McEwan Hall

81. Thermal Runaway Propagation in a 2170 Li-ion Battery Module for Aviation Applications
Bernhard Stiehl, Andres Sanchez Porras, Nina Sorokina, Wolfgang Bliemetsrieder, Lars Zigan

82. Experimental study on the combustion characteristics of methane-iron non-premixture using a 3 kWth small combustor
Chang Hee Byun, Won Yang, Tae Young Chae, Jaewook Lee

83. Effects of Refuse-Derived Fuel Components on Pyrolysis and Steam Gasification Performance
Emese Sebe, John Kwame Bediako

84. On the role of pellets mixture with miscanthus to reduce pollutant emissions on a domestic boiler
François Delcourt, Nourelhouda Abbas, Manuel Kühni, Damien Méresse, Céline Morin

85. Oxidation of wood chars created under different thermal conditions
Laura Schmidt, Rory Hadden

86. Modeling of phase change of plastics in high temperature conditions
Danny Long, Corinna Schulze-Netzer

87. Continuous hydrogen production from a swirled-stabilized aluminum flame
Cornelius Schönnenbeck, Jean-François Brilhac, Olivier Allgaier, Valérie Tschamber, Ulrich Schubert, Elke Schweers, Norbert Windhab, Lawrence Portugues

88. Parametric Analysis of Coke Conversion Characteristics in the Static Raceway Zone of Blast Furnace: Numerical Investigation
Golnaz Zarabian Ghaeini, Markus Bösenhofer, Michael Harasek

89. Exploring the physiochemistry of char oxidation via μ-Raman spectroscopy
Thomas Theurer, Laura Schmidt, David Muirhead, Rory Hadden

90. Investigation of a Mesh Based Model for Discrete/Lagrangian-Biomass-Particles used for Wildfire Modelling
Leon Bernau, Mohammad Parsa Ghofrani Maab, Fabian Brännström, Andreas Kempf

91. Experimental and numerical investigation of flash reduction of magnetite particles using confined H2-air and CH4/H2-air flames
Atanu Dolai, Jesse Hameete, Giulia Finotello, Xiaocheng Mi

92. Effects of an oxide lobe on the combustion of aluminum particle using boundary layer resolved simulations
Hesheng Bao, Hongchao Chu, Shibam Bose, Heinz Pitsch

93. Fluorescence characteristics of polymer fuels
David Morrisset, Cameron Macleod, Anthony Ojo, Brian Peterson, Rory Hadden

S5M3 – Numerical Combustion – Deans Reception Room of McEwan Hall

101. Resolution criteria and thickening model for Large Eddy Simulations of non-premixed H2-Air flames
Emile-Marie Berthoumieu, Thierry Poinsot, Nicolas Bertier

102. High-order mesh-free direct numerical simulation of lean hydrogen flames in confined geometries
Henry Broadley, Steven Lind, Jack King

103. The influence of flow strain on particle size distribution and flame properties in dispersed iron counter-flow flames, a 1D numerical study
Catharina Van Gool, Jeroen Van Oijen, Philip De Goey

104. Acceleration of chemical kinetics using artificial neural networks with variable time step
Cédric Mehl, Damien Aubagnac

105. On-the-fly Uncertainty-aware Deep Ensembles for Stiff Chemical Kinetics
Cihat Emre Ustun, Amin Paykani

106. Numerical investigation on the combustion characteristics of premixed NH3-air flames using gliding arc plasma
Ziyu Wang, Aravind Balakrishnan, Syed Mashruk, Agustin Valera-Medina

107. latentSMOKE++, a latent variable transport framework with detailed chemistry computation
Eva Munoz Salamanca, Rafi Malik, Alberto Cuoci, Hong G. Im, Alessandro Parente

108. Predicting Differential Diffusion Effects in H2, CH4 and H2/CH4 flames
Evangelia Moutsokou, Sergio Gutierrez Sanchez, Jan Wilhelm Gärtner, Andreas Kronenburg, Thorsten Zirwes

109. Implicit time integration of multi-component species transport for low-Mach reactive flows
Moncef El Moatamid, Yacine Bechane, Roxane Letournel, Kévin Bioche, Vincent Moureau

110. On the performance of the joint velocity-scalar PDF method near walls
Tin-Hang Un, Salvador Navarro-Martinez

111. Clustering-based data-driven multi-fidelity reduced order modeling of ammonia combustion
Aysu Özden, Riccardo Malpica Galassi, Francesco Contino, Alessandro Parente

112. Sparse Sensor Placement for a Cyclonic Burner under MILD Combustion Conditions
Vincenzo Rosati, Giovanni Battista Ariemma, Giancarlo Sorrentino, Raffaele Ragucci, Mara De Joannon

113. Influence of Magnetic Field on Radicals in Hydrogen Flames: A Numerical Study
Vaibhav Mysore Natesh, Ivan Langella

114. Characterisation of multi-stage self-ignition of iron particle clouds in sheared turbulence
Tien Duc Luu, Marlon Göhringer, David Märker, Oliver T. Stein

115. Simultaneous reduction of CPU cost and computational domain by RF-PINNs initialized numerical simulations
Pablo Kandel, Fabio Frohberg, Abdulla Ghani

116. Thermochemical state analysis of DMMP on non-premixed boundary layer flames
Raúl Corrales Flores, Federica Ferraro, Arne Scholtissek