



5-6TH november, 2020 - LILLE, France

Conference program

All times are given for the CET time zone

5th of November

09:30 Welcome address

09:40 A word from the section chairs

Session 1: Hydrogen combustion (Chair: Aimee Morgans)

10:00 Keynote

Some issues in adapting natural gas powered systems to hydrogen combustion

Thierry Schuller (IMFT – INP Toulouse)

10:30 Break for Q&A

10:45 Contributed talks

Numerical study of a confined hydrogen-enriched premixed methane/air swirling flame using detailed chemistry

Cazères Quentin, Riber Eléonore, Cuenot Benedicte

On the dynamics of $H_2 - CH_4$ turbulent flames in bluff body burner

Rajamanickam Kuppuraj, Franck Lefebvre, Carole Gobin, Godard Gilles, Lacour Corine, Lecordier Bertrand, Cessou Armelle, Honoré David

Designing combustion systems for the use of hydrogen in domestic fires

Tomlin Alison, Andrews Gordon, Dupont Valerie, Phylaktou Herodotis, Michelbach Christian, Quiñonez Arce Jose, Maxfield James

Experimental investigation of conventional domestic burners fueled with increasing hydrogen content up to pure hydrogen operation

Aniello Andrea, Selle Laurent, Schuller Thierry

Overview and recent progress in hydrogen fire and explosions at Warwick FIRE

Wen Jennifer, Ren Zhaoxin, Vendra Chandra, Xu Baopeng

11:45 Break for Q&A

12:00 Lunch break

Session 2: CO₂ capture and utilization (Chair: Ruben Van de Vijver)

13:30 Keynote

Challenges of gas turbine combustion in dilute CO₂ atmospheres for carbon capture applications

Richard Marsh (Cardiff University)

14:00 Break for Q&A

14:15 Contributed talks

A combined modeling and experimental study on low- and high-temperature oxidation chemistry of OME3 as novel fuel additive

De Ras Kevin, Van De Vijver Ruben, Song Hwasup, Tran Luc-Sy, Kusenbergh Marvin, Panaget Thomas, Thybaut Joris, Vanhove Guillaume, Van Geem Kevin

Membrane-based technologies for CO₂ capture and mineralization from energy-intensive industries

Skevis George, Asimakopoulou Akrivi, Koutsonikolas Dimitrios

RCM studies on CO₂ utilization by dry reforming

Drost Simon, Goßler Hendrik, Ebert Marcus, Schießl Robert, Deutschmann Olaf, Maas Ulrich

Modelling the performance of a syngas fuelled engine: Effect of excess air and CO₂ as combustion diluents

Greencorn Michael, Jackson David, Hargraves Justin, Datta Souvik, Paul Manosh

15:05 Break for Q&A

Session 3: Ammonia combustion (Chair: Agustin Valera-Madina)

15:30 Keynote

Ammonia: The 'other' hydrogen for low (to zero) carbon footprint combustion

Christine Rousselle (PRISME, Université d'Orléans)

16:00 Break for Q&A

16:15 Contributed talks

Probing Nitrogen chemistry: A theoretical study for important reactions of N_xH_y, HCN and HNCO oxidation

Li Yang, Sarathy S. Mani

Ammonia-methane interaction in Jet-Stirred and Flow reactor: an experimental and kinetic modeling study

Arunthanayothin Suphaporn, Stagni Alessandro, Song Yu, Herbinet Olivier, Faravelli Tiziano, Battin-Leclerc Frédérique

Interaction of NH₃ on the H₂ oxidation chemistry

Sabia Pino, Manna Maria Virginia, Ragucci Raffaele, De Joannon Mara

Experimental and numerical validation of ammonia combustion in oxygen at high pressures and temperatures

Karan Alka, Dayma Guillaume, Chauveau Christian, Halter Fabien

CFD modelling of an ammonia cracker for the on-board generation of NH₃/H₂ mixture as a CO_x-free fuel

Maleki Hesam, Bertola Volfango

Low NO_x combustor development for NH₃ applications

Pugh Daniel, Valera Medina Agustin, Bowen Philip, Giles Anthony, Runyon Jon, Morris Steve, Goktepe Burak, Marsh Richard

17:30 Break for Q&A

17:45 Adjourn

18:00 Social event: Pub quiz



6th of November

Session 4: Biomass combustion (Chair: Epaminondas Mastorakos)

09:30 Keynote

Biomass thermochemical conversion in the energy mix: Opportunities and challenges

Alba Dieguez-Alonso (TU Berlin)

10:00 Break for Q&A

10:15 Contributed talks

A two-dimensional pyrolysis model for thermally thick particles

Hoang Quynh N., Vanierschot Maarten, Croymans Tom, Pittoors Rudi, Van Caneghem Jo

Parametric study of Syngas laminar flame speed for varying compositions

Rabello De Castro Ricardo, Bréquigny Pierre, Mounaïm-Rouselle Christine, Dufitumukiza Jean-Pierre

Experimental study of the influence of secondary air on the formation of pollutants and soot from wood pellets combustion

Zhu Xiangyu, Morin Céline, Therssen Eric, Delacourt Eric, Delcourt François, Yan Yong

Experimental study of the pulverized biomass flames in a pilot-scale reactor using OH* chemiluminescence imaging and in-flame probe measurements

Mohanna Hassan, Honoré David, Commandre Jean-Michel, Piriou Bruno, Taupin Benoit

Influence of air flow and radiative heating on oxidation of wood char at atmospheric pressure

Delichatsios Michael, Noaki Masaki, Ohmiya Yoshifumi, Kazuma Aok, Hiroto Kohiyama

Particle, CO and NO_x emissions during the combustion of wood pellets as a function of the feeding mode and air staging

Martinez Angel, Lacour Corine, Yon Jérôme, Coppalle Alexis

Conception and elaboration of a prototype of pellet domestic stove and combustion tests with DIN+ pellets

Vitoussia Théophile, Leyssens Gontrand, Schönnenbeck Cornelius, Brillard Alain, Kemajou Alexis, Njeugna Ebenezer, Brilhac Jean-François

The combustion of biomass char in a fluidised bed: The influence of CLOU particles on the rate of combustion

Kwong Kenny, Scott Stuart, Dennis John, Marek Ewa

11:55 Break for Q&A

12:10 Lunch break & Annual General Meeting of the British section (British section only)

Session 5: Biofuels combustion (Chair: Christine Rousselle)

13:30 Keynote:

Combustion Kinetics of Novel Bio(Hybrid) Fuels- Fundamental Combustion Research within the Clusters of Excellence "Tailor-Made Fuels from Biomass" and "The Fuel Science Center"

Alex Heufer (RWTH Aachen)

14:00 Break for Q&A

14:15 Contributed talks (1/2)

A study of the physical properties of cellulose derived biofuel components and diesel blends

Tomlin Alison, Wiseman Scott, Li Hu, Ross Andrew, Dooley Stephen



On the reactivity of carbonate esters examined by weak flames in a micro flow reactor with a controlled temperature profile

Takahashi Shintaro, Morikura Shota, Kanayama Keisuke, Nakamura Hisashi, Tezuka Takuya, Morii Youhi, Maruta Kaoru, Shirane Takayuki, Nakura Kensuke

Identifying potential lignocellulosic octane boosters through co-oxidation studies with isooctane

Sampaio Mergulhao Carolina, Song Hwasup, Vanhove Guillaume

Combustion kinetics of C₃-C₅ ketones

Fenard Yann, Minwegen Heiko, Büttgen René, Heufer Karl Alexander

The influence of iso-butanol blending on spark-ignition engine performance

Tomlin Alison, Michelbach Christian

Combustion and emission characteristics of next generation biofuels – kinetic modelling analysis of dimethyl-ether/heptane flames

Abimbola Nike, Yuan Ruoyang, Hargrave Graham

15:30 Break for Q&A

15:45 Contributed talks (2/2)

Numerical investigation of the effects of spatial distribution of CO₂ dilution on localised forced ignition of stoichiometric biogas-air mixtures

Papapostolou Vassilios, Turquand D'auzay Charles, Chakraborty Nilanjan

High-throughput fuel screening tool toward advanced combustion concepts using machine learning QSPR and chemical kinetic

Li Runzhao

Ignition and kernel to flame transition in a non-premixed CH₄/CO₂/air planar turbulent jet

Turquand D'auzay Charles, Papapostolou Vassilios, Chakraborty Nilanjan

Characteristics of flame heat release and soot emissions of methane and ethylene laminar diffusion flames with dimethyl ether addition

Abu Saleh Abdallah, Hargrave Graham, Yuan Ruoyang

16:35 Break for Q&A

16:50 Concluding remarks and Farewell address

