12th EUROPEAN CONFERENCE ON INDUSTRIAL FURNACES AND BOILERS

PORTO, PORTUGAL · 14-17 APRIL 2020

INFUB

PROGRAMME

- **TUESDAY: 14TH APRIL**

15:00 – 18:00 **REGISTRATION**

18:00 – 19:30 **OPENING SESSION**

WELCOME ADDRESS
Albino Reis
Cenertec – Centro de Energia e Tecnologia
Portugal

KEYNOTE LECTURE
A RENEWED AGENDA FOR RESEARCH AND INNOVATION IN EUROPE
Maria da Graça Carvalho
Member of the European Parliament, Portugal

20:00 **WELCOME DINNER AT THE HOTEL HOLIDAY INN PORTO GAIA**

- **WEDNESDAY: 15TH APRIL**

08:30 – 09:20 **KEYNOTE LECTURE II**
CHALLENGES AND DEVELOPMENTS IN HIGHLY SCALABLE BURNER CONCEPTS FOR INDUSTRIAL FURNACES AND BOILERS
Benedikt Roberg
Körting Hannover AG, Germany

09:25 – 10:45 **PARALLEL SESSION I**

Combustion & Heat Transfer	Alternative Fuels
Achieving Industrial Emissions Directive performance and increasing efficiency on least cost basis at a 160T/H refinery steam boiler G. Ridler, M. Kryjak, S. Billett, F. Gnyp & J. Golding RJM International (UK)	**Experimental and numerical investigations of a high-power density sulphur burner** M. Fedoryk, F. Zhang, H. Heidarifatasmi, N. Sebbar, S. Harth, D. Trimis & H. Bockhorn Karlsruhe Institute of Technology (Germany)
High performance Ultra-low NOx burner for industrial boilers L. Morandi, D. Maggiolini, G. Rossiello, M. Torresi, G.D. Rago, L. Fortunato & A. Saponaro Macchi, ITEA SpA, Polytechnic University of Bari, Centro Combustione Ambiente SpA (Italy)	**Valorisation of plastic wastes by pyrolysis for energy production** J.-B. Michel, M. Simeoni & O. Lepez Race for Water Foundation & ETIA S.A.S. Carrefour Jean Monnet (Switzerland/ France)

Influence of potassium in industrial scale fluidized bed combustors and gasifiers M. Seemann Chalmers University (Sweden)	**Microwave heated pyrolysis of CFRP - Characteristics of Gas and Oil products** R. Behrend, T. Krampitz, C. Pätzold, P. Fröhlich, M. Bertau, H. Lieberwirth & H. Krause TU Bergakademie Freiberg (Germany)
Numerical and experimental studies on the ignition of pulverized coal stream and spherical cloud W. Rybak & J. Wach (Poland) Wroclaw University of Science and Technology (Poland)	**Energy Recovery Assessment of Brazilian Municipal Solid Waste by Combustion System** A. C. Gutierrez-Gomez, A. Garrido Gallego, R. Palacios-Bereche, J. Tófano de Campos Leite, A. M. Pereira Neto Federal University of ABC (Brazil)

10:45 – 11:15 **COFFEE – BREAK**

11:15 – 12:35 **PARALLEL SESSION II**

Combustion & Heat Transfer	Alternative Fuels
Oxygen-enriched Combustion Technology using Self-induced Oscillation Phenomenon to Uniformly Heat a Wide Range in Industrial Furnaces M. Yamaguchi, T. Saito, Y. Yamamoto & Y. Hagihara Taiyo Nippon Sanso Corporation (Japan)	**Unresolved issues in modelling thermochemical conversion of biomass** K. Umeki, A. D. Garcia, Thamali R. Jayawickrama, A. Phounglamcheik, A. Bach-Oller & R. Gebart Luleå University of Technology (Sweden)
Flameless Oxyfuel Solutions : Technologies and Results J. von Schéele Linde plc, China	**Carbonization of grape pomace** A. F. Ferreira & M. Costa Instituto Superior Técnico, Universidade de Lisboa, (Portugal)
Combustion using an oxygen lancing in a reheating furnace C. Lee, Insu Kim, Junggoo Hong Hyundai Steel & Kyungpook National University (Republic of Korea)	**Drying and Decomposition Analysis of Hydrochars** E. Kleiber, F. Weigler & F. Herz Anhalt University of Applied Sciences (Germany)
Influence of Hydrogen Admixtures and Swirl Intensity on Shape, Stability and Emissions of Premixed CH4-H2-air Flames M. Hefele, M. Blanas, H. Chaves, S. Eckart & H. Krause TU Bergakademie Freiberg & University of Massachusetts (Germany/ USA)	**Pressurized steam pyrolysis of grape residues for production of valuable liquid hydrocarbons** F. Miccio, A. Natali Murri, E. Papa, E. Landi & M. Minelli University of Bologna (Italy)

12:35 – 13:50 **LUNCH**

13:50 – 14:40 **KEYNOTE LECTURE III**

CHALLENGES AND DEVELOPMENTS IN THE CEMENT INDUSTRY - PROCESS DEVELOPMENTS FOR CO-PROCESSING OF WASTE AND CONTROL OF EMISSIONS

Lars Skaarup Jensen
FLSmidth, Denmark

14:45 – 16:05 **PARALLEL SESSIONS III**

Combustion & Heat Transfer	Alternative Fuels
Degassing and Stability Behavior of Oxide Heat Insulation Materials in Vacuum Furnaces R. Arnold, M. Gilbert, R. Behrend & H. Krause Technische Universität Bergakademie Freiberg (Germany)	**polysius® fuel substitution – solution for increasing the alternative fuels rate up to 100% using the prepol® Step Combustor** L. Fit, S. Zühlsdorf & I. Veckenstedt thyssenkrupp Industrial Solutions AG, Germany
Experimental investigation of tailored heating for massive forming S. Thie, J. Hauch, N. Schmitz & H. Pfeifer RWTH Aachen University (Germany)	**Measurement and modelling of a cement calciner fired with solid recovered fuel** M. Nakhaei, H. Wu, Damien Grévain, L. Skaarup Jensen, P. Glarborg & K. Dam-Johansen Technical University of Denmark & FLSmidth A/S (Denmark)
Energy Efficient Coil Coating Process - ECCO M. Schneider, P. Weinbrecht, C. Wieland, C. Weis & D. Trimis Karlsruhe Institute of Technology (Germany)	**Modern concepts for sensor-based process optimization of waste-fired power plants** F. Graube-Kühne, T. Kehr, S. Grahl & M. Beckmann Technische Universität Dresden (Germany)
Flow Control in Large Angle Diffusers: Cold End Protection J. Kitzhofer, L. Moruz, B. Bijvoet & M. Dinulescu Apex Research B.V. (The Netherlands)	**Thermal performance of a domestic boiler burning briquettes made with agricultural wastes** B. Braga, V. Ferreira, A. Sanches & C. Pinho DEMEC-FEUP, INEGI & CEFT-FEUP (Portugal)

16:05 – 16:35 **COFFEE – BREAK**

16:35 – 17:55 **PARALLEL SESSIONS IV**

Combustion & Heat Transfer	Alternative Fuels
Experimental Investigations on Plasma Assisted Solid Fuel Ignition and Combustion R. Youssefi, J. Maier, G. Scheffknecht University of Stuttgart (Germany)	**Design and Application of Low-NOx Pulverized Biomass Burner over Biomass Grate Furnace** S. Hamel, K. Zając, P. Kuczmierczyk & A. Santhirasegaran Steinmüller Engineering GmbH (Germany)
Tail biogas flame stabilization by assistance of thermal plasma reformer N. Striūgas, A. Tamošiūnas, L. Marcinauskas, R. Paulauskas, K. Zakarauskas & R. Skvorčinskienė Lithuanian Energy Institute & Plasma Processing Laboratory (Lithuania)	**Single droplet ignition and combustion of jet-A1, hydroprocessed vegetable oil and their blends in a drop tube furnace** G. Pacheco, A. Silva & M. Costa Instituto Superior Técnico, Universidade de Lisboa & Aerog-LAETA, Universidade da Beira Interior (Portugal)
Effects of microwaves on burning velocity and exhaust gas composition of laminar premixed propane flames S. Eckart, R. Behrend, E. Collins & H. Krause TU Bergakademie Freiberg & Columbia University (Germany/ USA)	**Influence of fuel characteristics of alternative residual biomass and ash chemistry on fluidized bed combustion and gasification** T. Karel, K. Fürsatz, J. Priscak, M. Kuba, N. Skoglund & H. Hofbauer BEST – Bioenergy and Sustainable Technologies GmbH, TU Wien & Umeå University (Austria/ Sweden)

Experimental study of turbulent Bluff-Body flames stability by simultaneous high speed flame imaging and Particle Image Velocimetry N. Valdez, C. Lacour, B. Lecordier, A. Cessou, D. Honore Normandie Univ (France)	**A study on the influence of sphericity on the mixing of wood particles in a binary fluidized bed** M. Sobhi Alagha, B. Szucs & P. Szentannai Budapest University of Technology and Economics (Hungary)

▪ THURSDAY: 16TH APRIL

08:30 – 09:20 **KEYNOTE LECTURE IV**

USE OF HYDROGEN AS A FUEL IN INDUSTRIAL FURNACES
Joachim von Schéele
The Linde Group, Shanghai

09:25 – 10:45 **PARALLEL SESSIONS V**

Green challenges and renewable future	Modelling
Challenges for the Future Combustion of Green Fuels J.G. Wünning WS Wärmeprozesstechnik GmbH (Germany)	**CFD modelling of flameless oxy-lancing combustion technology to boost burner capacity** Phuc Danh Nguyen, G. Ghazal & V. Cuervo Piñera ArcelorMittal Global R&D (France/ Spain)
Thermodynamic and lifecycle analysis of a CO2-based methanol synthesis M. Dierks, F. Möllenbruck, G. Oeljeklaus & K. Görner University of Duisburg-Essen (Germany)	**Modeling of the heating of steel pipes in gas fired furnaces using ANSYS-FLUENT in combination with radiative models** D. Demarco & P. Marino Tenaris Siderca (Argentina)
Negative CO2 Emission Technologies – A New Trend in Energy Research? T. Pröll University of Natural Resources and Life Sciences (Austria)	**Numerical Analysis of the Transient Heating Characteristics of a Slab in a Re-Heat Furnace** Z. Ahmedab, I. T'Jollynab, S. Lecompteab, T. De Raadc & M. De Paepeab Ghent University, ArcelorMittal Gent & FlandersMake@UGent (Belgium)
Biofficiency: The Challenging Way Towards the Next Generation of Biomass-fired Combined Heat and Power Plants H. Spliethoff, T. de Riese, L. Hansen, R. Nowak Delgado, S. Fendt Technische Universität München & Bayerisches Zentrum für Angewandte Energieforschung e. V (Germany)	**Modelling radiative heat transfer in an industrial furnace using the lattice Boltzmann method** R. Prieler, P. Burian, M. Landl, C. Schluckner, C. Hochenauer Graz University of Technology (Austria)

10:45 – 11:15 **COFFEE – BREAK**

11:15 – 12:35 **PARALLEL SESSIONS VI**

Modelling	Alternative Fuels
Large Eddy Simulation of Reactive Flow on the Fire Side of a Steam Cracking Furnace S. Nadakkal Appukuttan, E. Riber, B. Cuenot, T. Gilles CERFACS & John Zink Hamworthy Combustion (France/ Luxembourg)	**Raw Biogas as a Potential Substitute for Natural Gas in Metallurgical Thermal Processes – Impact on Combustion and Pollutant Emissions** M. Röder, T. Schneider, P. Pietsch, A. Giese, R. Erler & K. Görner

	Gas- und Wärme-Institut Essen e.V. & DBI - Gastechnologisches Institut gGmbH Freiberg (Germany)
Effects of surrounding radiation on the lifetime of radiant tubes in a vertical strip galvanizing line D. Büschgens, N. K. Karthik, C. Schubert, N. Schmitz, W. Lenz & H. Pfeifer RWTH Aachen University, (Germany)	**Material concepts for heat exchangers in the field of high temperature conversion: Results of long-term exposures in corrosive pyrolysis gases** M. Gilbert, L. Schmies, C. Knosalla, W. Lippmann & H. Krause TU Bergakademie Freiberg & TU Dresden (Germany)
Simulation of a turbulent combustion and structural mechanics in radiant tube burner using OpenFOAM Z. Raonic, D. Nikolaenko, C. Spijker, H. Raupenstrauch Montanuniversitaet Leoben (Austria)	**Numerical Simulation of Radiant Burner Performance Burning Syngas Fuels** G. Scribano & Manh-Vu Tran University of Nottingham Malaysia & Monash University Malaysia (Malaysia)
CFD modeling: a powerful tool for high efficiency burner design A. Saponaro, O. Senneca, F. Cerciello, D.J. Brand, M. Torresi, F. Cesareo, M. Valenzano, S. Siena, G. Rago, G. Rossiello, G. Volpi, M. Penati, R. Dadduzio, T. Giani, M. Rogora, L. Fortunato & V. Panebianco Centro Combustione Ambiente S.p.A, ITEA S.p.A, Istituto di Ricerche sulla Combustione (IRC), University, Politecnico di Bari, AC BOILERS S.p.A (Italy/ South Africa)	**Multi-fuel Combustion System for Gaseous and Liquid Biofuels with Low NOx Emissions** M. Röder, D. Möntmann, M. Grote, A. Giese, D. Diarra & K. Görner Gas- und Wärme-Institut Essen e.V. & OWI Oel-Waerme-Institut gGmbH, Herzogenrath (Germany)

12:35 – 13:50 **LUNCH**

13:50 – 14:30 **POSTER SESSION - SHORT PRESENTATIONS**

14:30 – 15:45 **POSTER SESSION**

Poster Session
A Sonic Sound Device that works like magic to increase thermal efficiency and prevent particulate build up D. F. Cameron Primasonics international Limited (UK)
An Opto-acoustic method for the assessment of critical vibrations and flame noise in boilers and furnaces P. Pietsch, J. Morich & J. Köllner DBI Gas- und Umwelttechnik GmbH, Technische Universität Dresden & SDS Schwingungs Diagnose Service GmbH (Germany)
Brave New World – An Introduction to IIoT O. Seifert Endress+Hauser Flowtec AG (Switzerland)
Co-combustion of waste tires and plastic-rubber wastes with biomass technical and environmental analysis P. Brito Polytechnic Institute of Portalegre (Portugal)

Coupled Computational Fluid Dynamics and Discrete Element Method modelling of shaft furnace, including nitrogen emissions
C. Spijker, R. W. Pollhammer & H. Raupenstrauch
Montanuniversitaet Leoben & K1-MET GmbH (Austria)

Design of an energy efficient heating system for integrated oxygen production using ceramic membranes
F. Scheck, N. Schmitz, H. Pfeifer & R. Kriegel
RWTH Aachen University & Fraunhofer Institute for Ceramic Technologies and Systems IKTS (Germany)

Development and construction of a test bench for the characterisation of the combustion process of low-calorific-value gas with fluctuating composition
M. Philipp, H. Bruns, N. Schmitz & H. Pfeifer
RWTH Aachen (Germany)

Development and Optimization of Pilot-scale Rotary Kiln Combustor for Municipal Solid Waste Incineration
C. Punithan, N. R. Bharathi, V. Kumar, S. R. Chakravarthy, B. V. S. S. S. Prasad, T. Sundararajan & R. Vinu
IIT Madras (India)

Development of a new process to obtain powder metallurgy titanium for aluminium alloying tablets from oil contaminated machining titanium chips
I. Vicario, J. Antoñanzas, L. Yurramendi, J. C. Múgica & A. Abuin
Tecnalia Research & Innovation (Spain)

Development of Process Model for the Manufacturing of Sanitary Ware in Tunnel Kiln
D. M. Alex, T. Redemann & E. Specht
Otto von Guericke University Magdeburg (Germany)

Economic Appraisal of Power Consumption in Pulse Jet Filtration Process
D. Curry, B. Dannatt & B. Nimmo
The University of Sheffield & Durham Filtration (UK)

Experimental analysis of the drying process in rotary kilns
C. Meitzner, E. Specht & F. Herz
Otto von Guericke University Magdeburg & Anhalt University of Applied Sciences (Germany)

Heat transfer analysis in flighted rotary kilns: Influence of the flight configuration
J. Seidenbecher, Herz, F., Specht, E., Wirtz, S. & Scherer, V.
Otto von Guericke University Magdeburg, Anhalt University of Applied Sciences & Ruhr-University Bochum (Germany)

Impact of flow maldistribution on performance of shell-and-tube heat exchangers
T. Dorau, R. Schab, S. Unz, R. Malayeri & M. Beckmann
Technische Universität Dresden (Germany)

Influence of steam addition on biomass gasification in a drop tube furnace
T. Rio, R. Ferreira & M. Costa
Instituto Superior Técnico, Universidade de Lisboa (Portugal)

Mixing of an Iron-Sand Binary Mixture in a 2D Pseudo Bed: Experimental and Numerical Studies
M. Sobhi Alagha, B. Szucs & P. Szentannai
Budapest University of Technology and Economics (BME) (Hungary)

Numerical and experimental investigation of the spheroidization process of non-spherical particles in a semi-industrial furnace
H. Gerhardter, M. Knoll, R. Prieler, C. Hochenauer & P. Tomazic
Graz University of Technology & M. Swarovski Gesellschaft m.b.H. (Austria)

Numerical Simulations of Dense Fluidized Beds using the EMMS Gas-Solid Drag Model
M. Sobhi Alagha & P. Szentannai
Budapest University of Technology and Economics (BME) (Hungary)

Palm oil EFB torrefaction in laboratorial and pilot scale reactors
D. C. de Oliveira, A. N. Carneiro, F. H. B. Santos, D. O. e Silva, D. R. S. Guerra & M. F. M. Nogueira.
Federal University of Pará & Federal University of Southern and Southeastern Pará (Brazil)

Pressure drop of packed bed containing binary mixture with non-spherical active particles
M. Sobhi Alagha, B. Szucs & P. Szentannai
Budapest University of Technology and Economics (BME) (Hungary)

The Power of i4.0 on Heat Treatment
C. Goldbach, M. A. Cemim & D. Donati
Perfil Group & Termica Solutions (Brazil)

Thermochemical Behavior of the Ashes of Municipal Solid Waste and its Impact on Combustion Systems for Mass Burning
A. C. Gutierrez-Gomez, A. Garrido Gallego, S. A. Nebra & A. M. Pereira Neto
Federal University of ABC (Brazil)

16:30 – 20:00 **TOUR: to be announced**

▪ FRIDAY: 17TH APRIL

08:30 – 09:20 **KEYNOTE LECTURE V**
PHOSPHORUS - A CRITICAL ELEMENT AND A CHALLENGE FOR THERMO-PROCESSING TECHNOLOGY
Harald Raupenstrauch
Montanuniversitaet Leoben, Austria

09:25 – 10:45 **PARALLEL SESSIONS VII**

Modelling	Monitoring
Large Eddy Simulation of pulverized coal combustion under oxy atmospheres using tabulated chemistry H. Nicolai, A. Samim Doost, F. di Mare, C. Hasse & J. Janicka Technische Universität Darmstadt & Ruhr-Universität Bochum (Germany)	**A camera-based flame stability controller for non-oscillating and oscillating combustion** J. Matthes, P. Waibel, M. Vogelbacher, H.-J. Gehrmann, D. Stapf & H. B. Keller Karlsruhe institute of Technology (KIT) (Germany)
Impact of the charging strategy, the cohesive zone and a varying blast volume flow on the conditions in the hearth: Transient DEM-CFD simulations of an industrial blast furnace H. Merten, F. Bambauer, S. Wirtz, V. Scherer, H. Bartusch & R. Lin Ruhr-University Bochum, Bochum, VDEh-Betriebsforschungsinstitut, Department Process Optimisation Iron and Steel Making & AG der Dillinger Hüttenwerke (Germany)	**In-furnace thermal imaging for process optimisation and NOx reduction** Christopher Leonard and Neil Simpson Ametek Land & Simpson Combustion

Process analysis in thermal process engineering with high-performance computing using the example of grate firing B. Peters, A. Rousset, X. Besseron, A.W.M Chekaraou, M.G Gallo, F. Sansone, A. Lupi & C. Galletti Campus Belval, Enel Green Power SpA & University of Pisa (Luxemburg/ Italy)	**Temperature Measurements by Means of SO2 Spectra and Differential Optical Absorption Spectroscopy in Two Full-Scale Boilers** T. Leffler, S. Badiei & P. Kallner Vattenfall AB (Sweden)
A two-dimensional pyrolysis model for thermally thick particles Q. N. Hoang, M. Vanierschot, T. Croymans, R. Pittoors & J. Van Caneghem Group T Leuven campus, KU Leuven & Keppel Seghers Belgium NV (Belgium)	**Online Corrosion Monitoring in Industrial Boilers** B. Epple, A. Müller & F. Ewert TU Darmstadt & MHKW Berlin-Ruhleben – Instandhaltung (Germany)

10:45 – 11:15 **COFFEE – BREAK**

11:15 – 12:35 **PARALLEL SESSIONS VIII**

Modelling	Pollutant emissions
Studies on the Waste Feeding Process in large-scale Waste Incineration Plants M. H. Zwiellehner, R. Warnecke & F. Grafmans SAR Elektronic GmbH & GKS Gemeinschaftskraftwerk Schweinfurt GmbH (Germany)	**Oscillating Combustion for NOx- Reduction in Pulverized Fuel Boilers** H.-J. Gehrmann, N. Jolibois, K. Aleksandrov, M. Hauser, D. Stapf, Prof. H. Seifert, J. Matthes, P. Waibel, M. Vogelbacher & H.B. Keller Karlsruhe Institute of Technology (KIT) (Germany)
Detailed CFD simulations of the fuel bed of an updraft gasifier and comparison to experimental results M. Blank, C. Benesch, G. Knauss & I. Obernberger BIOS BIOENERGIESYSTEME GmbH (Austria)	**Reduction of thermal and fuel NO-formation with Multi-Stage Flameless Oxidation** N. Schmitz, L. Giesler, E. Cresci, J.G. Wuenning & H.Pfeifer RWTH Aachen University & WS Waermeprozesstechnik GmbH (Germany)
Thermal process for energy recovery from Waste Electronic and Electrical Equipment under the premise of bromine recycling M. Dunker, A. Hiller & M. Beckmann Technische Universität Dresden (Germany)	**Application of Auxiliary Injection for NOx reduction on End fired Glass melting Furnaces** R. Pont Global Combustion Systems Ltd
Combustion Behavior of Lumpy Coke in Mixed Feed Lime Shaft Kilns B. Hallak & E. Specht Otto von Guericke University Magdeburg (Germany)	**Scrutiny of residual nitrogen content and different nozzle designs on NOx formation during oxy-fuel combustion of natural gas** C. Schluckner, C. Gabera, M. Demuth, C. Hochenauer Graz University of Technology & Messer Austria GmbH - Kompetenzzentrum Metallurgie (Austria)

12:35 – 13:50 **LUNCH**

13:50 – 14:40 **KEYNOTE LECTURE VI**
CHALLENGES AND DEVELOPMENT NEEDS IN FLUIDIZED BED TECHNOLOGY
Edgardo Coda Zabetta
Sumitomo SHI FW, Finland

14:40 – 16:00 **PARALLEL SESSIONS IX**

Modelling	Pollutant emissions
Novel heat recovery system for ceramic furnaces using high-temperature phase change materials and integration based on multicriteria analysis development P. Royo, L. Acevedo, A. J. Arnal, M. Diaz-Ramírez, T. García-Armingol, V. J. Ferreira, G. Ferreira & A. M. López-Sabirón Research Centre for Energy Resources and Consumption (CIRCE) & CIRCE Institute (Spain)	**Issues relating to the Combustion of High Asphaltene Heavy Fuel Oils.** A.R. Lea-Langton, K.D. Bartle, F.A. Atiku, J.M. Jones & A. Williams University of Manchester & University of Leeds (UK)
Towards Digital Twin of an Industrial Furnace Operating with Natural Gas/ Hydrogen Mixtures N. Meynet & G.-A. Grandin Engie Lab Crigen (France)	**Influence of operation mode of a drop-feed-pellet domestic boiler on gaseous and particulate emissions** A. Martinez, C. Lacour, J. Yon & A. Coppalle Normandie University (France)
Exergy analysis of a large CFB boiler furnace A. Mankonen, E. Vakkilainen, J. Kaikko & V. Sergeev Lappeenranta-Lahti University of Technology LUT & Peter the Great St.Petersburg Polytechnic University, (Finland/ Russian Federation)	**Development of new concepts for an energy efficient firing of ceramics by 2050** T. Redemann & E. Specht Otto von Guericke University Magdeburg (Germany)
Comparison of the Dynamic Behaviour between Bubbling and Circulating Fluidized Bed Combustors G. Martinez Castilla, R. M. Montañés, D. Pallarès & F. Johnsson Chalmers University of Technology (Sweden)	**Effects of CO2-H2O dilution on non-premixed turbulent oxygen enriched flames in a swirl burner** T. Boushaki, H. Zaidaoui, JC. Sautet, C. Chauveau University of Orleans & Normandie University (France)

16:10 – 16:30 **CLOSING ADDRESS**

Viktor Scherer (Ruhr Universität Bochum, Germany), **Neil Fricker** (University of South Wales, United Kingdom), **Albino Reis** (Cenertec – Centro de Energia e Tecnologia, Portugal)

19:00 **FAREWELL DINNER: to be announced**