



Infub-12 Accepted Abstracts

Argentina

Modeling of the heating of steel pipes in gas fired furnaces using ANSYS-FLUENT in combination with radiative models

Dolores Demarco (Argentina); Pablo Marino (Argentina)
Tenaris

Austria

Coupled Computational Fluid Dynamics and Discrete Element Method modelling of shaft furnace, including nitrogen emissions

Christoph Spijker (Austria)¹; Werner Pollhammer (Austria)²; Harald Raupenstrauch (Austria)¹
¹ Montanuniversität Leoben; ² K1-MET GmbH

Detailed CFD simulations of the fuel bed of an updraft gasifier and comparison to experimental results

Martina Blank (Austria); Claudia Benesch (Austria); Günter Knauss (Austria); Ingwald Obernberger (Austria)
BIOS BIOENERGIESYSTEME GmbH

Emission minimisation of a 100 t/h waste wood CFB boiler by implementation of an advanced process control (APC) system

Bernhard Kronberger (Austria); Lukas Haffner (Austria)
VOIGT+WIPP Engineers GmbH

Influence of fuel characteristics of alternative residual biomass and ash chemistry on fluidized bed combustion and gasification

Thomas Karel (Austria)^{1 2}; Katharina Wagner (Austria)^{1 2}; Matthias Kuba (Austria)^{1 2}; Hermann Hofbauer (Austria)²

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Modelling radiative heat transfer in an industrial furnace using the lattice Boltzmann method

Rene Prieler (Austria); Paul Burian (Austria); Tobit Flatscher (Austria); Christoph Schluckner (Austria); Christoph Hochenauer (Austria)
Institute of Thermal Engineering, Graz University of Technology

Negative CO2 Emission Technologies - A New Trend In Energy Research?

Tobias Pröll (Austria)

University of Natural Resources and Life Sciences, Vienna

Numerical and experimental investigation of the spheroidization process of non-spherical particles in a semi-industrial furnace

Hannes Gerhardtter (Austria)¹; Mario Knoll (Austria)¹; Marlene Mühlböck (Austria)²; Peter Tomazic (Austria)²; Rene Prieler (Austria)¹; Christoph Hochenauer (Austria)¹

¹ Institute of Thermal Engineering, Graz University of Technology; ² M. Swarovski GmbH

Numerical modelling of the heating characteristic of steel and scale layer formation in different reheating furnaces

Martin Landfahrer (Austria)¹; Hannes Gerhardtter (Austria)¹; Christoph Schluckner (Austria)¹; Thomas Zmek (Austria)²; Jürgen Klarner (Austria)²; Rene Prieler (Austria)¹; Christoph Hochenauer (Austria)¹

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Numerical simulation of fuel nitrogen conversion and NOx emission of solid biomass with an example of a small scale screw burner

Michael Eßl (Austria)¹; Ramin Mehrabian (Austria)¹; Kai Schulze (Austria)¹; Ali Shiehnejad-Hesar (Austria)¹; Joachim Kelz (Austria)¹; Sabine Feldmeier (Austria)¹; Thomas Reiterer (Austria)²; Robert Scharler (Austria)³

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Sensitivity analysis of nitrogen impurities in oxy-fuel combustion of natural gas on NOx formation

Christoph Schluckner (Austria)¹; Christian Gaber (Austria)¹; Martin Demuth (Austria)²; Christoph Hochenauer (Austria)¹

¹ Graz University of Technology, Institute of Thermal Engineering; ² Messer Austria GmbH - Kompetenzzentrum Metallurgie

Simulation of a turbulent combustion and structural mechanics in radiant tube burner using OpenFOAM

Zlatko Raonic (Austria); Dmitry Nikolaenko (Austria); Christoph Spijker (Austria); Harald Raupenstrauch (Austria)

Montanuniversitaet Leoben

Belgium

A two-dimensional pyrolysis model for thermally thick particles

Quynh Hoang N. (Belgium)¹; Maarten Vanierschot (Belgium)²; Tom Croymans (Belgium)³; Rudi Pittoors (Belgium)³; Jo Van Caneghem (Belgium)¹

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Ammonia and Hydrogen Mixtures Combustion in a Quasi-Industrial Moderate or Intense Low-oxygen Dilution Combustion Chamber

Ruggero Amaduzzi (Belgium); Alessandro Parente (Belgium)
Université Libre de Bruxelles

Effect of NH₃/H₂ blends on MILD combustion fuel flexibility

Ruggero Amaduzzi (Belgium); Marco Ferrarotti (Belgium); Alessandro Parente (Belgium)
Université Libre de Bruxelles

Brazil

BEHAVIOR THERMOCHEMICAL THE ASHES OF MUNICIPAL SOLID WASTE AND ITS IMPACT ON COMBUSTION SYSTEMS IN BOILER FOR MASS BURN

Andrea Carolina Gutierrez-Gomez (Brazil); Antonio Garrido Gallego (Brazil); Silvia A. Nebra (Brazil); Juliana Tofano De Campos Leite (Brazil); Ana Maria Pereira Neto (Brazil)
Federal University of ABC (CECS-UFABC)

Energy Recovery assessment of Brazilian Municipal Solid Waste by combustion system

Andrea Carolina Gutierrez-Gomez (Brazil); Antonio Garrido Gallego (Brazil); Reynaldo Palacios-Bereche (Brazil); Juliana Tofano De Campos Leite (Brazil); Ana Maria Pereira Neto (Brazil)
Federal University of ABC (CECS/UFABC)

Experimental Laminar Flame Speed of Fixed Bed Downdraft-Syngas

Guthman Oliveira (Brazil); Maria Esther Sbampato (Brazil); Cristiane Martins (Brazil); Leila Ribeiro (Brazil); Gilberto Barreta (Brazil); Rene Gonçalves (Brazil)
Instituto Tecnológico de Aeronáutica

Experimental Efficiency Analysis of Sugarcane Bagasse Boiler based on the First and Second Law of Thermodynamics

Edgar Fernando Cortes Rodriguez (Brazil)¹; Silvia A Nebra (Brazil)¹; Reynaldo Palacios Bereche (Brazil)¹; Juan Harold Sosa-Arno (Brazil)²
¹ Federal University of ABC (CECS/UFABC); ² Inka'S Boiler

Impact of the Torrefaction Process in the Biomass Energy Quality During Open-Air Storage

Alan Carneiro (Brazil); Diego De Oliveira (Brazil); Fernando Dos Santos (Brazil); Bruno Rodrigues (Brazil); Danielle Guerra (Brazil); Manoel Nogueira (Brazil)
Federal University of Pará

Palm oil EFB torrefaction in laboratorial and pilot scale reactors

Diego Carneiro De Oliveira (Brazil); Alan Nogueira Carneiro (Brazil); Fernando Henrique De Barbosa Dos Santos (Brazil); Danielle Regina Da Silva Guerra (Brazil); Manoel Fernandes Martins Nogueira (Brazil)
Federal University of Pará

The Power of Industry 4.0 on heat treatment

Claudio Goldbach (Brazil)
Perfil Group

Canada

The effects of nozzle design on the combustion of wood-derived fast pyrolysis oil in furnaces, boilers and kilns

Murray Thomson (Canada)

University of Toronto

China

Flameless Oxyfuel Solutions : Technologies and Results

Joachim Von Scheele (China)

Linde plc, Technology Hub Asia Pacific

Czech Republic

Study of the ash fusion temperatures of agricultural wastes

Marek Balas (Czech Republic); Petra Vavrikova (Czech Republic); Martin Lisy (Czech Republic)

Brno University of Technology

Denmark

2D Gas Temperature Profiles for SNCR NO_x Reduction Process Optimization in Waste To Energy Plants

Henrik Hofgren (Denmark)¹; Alexander Fateev (Denmark)²

¹ B&W Vølund; ² DTU Chemical Engineering

Measurement and modelling of a cement calciner firing with solid recovered fuel

Mohammadhadi Nakhaei (Denmark)¹; Hao Wu (Denmark)¹; Damien Grévain (Denmark)²; Peter Garborg (Denmark)¹; Lars Skaarup Jensen (Denmark)²; Kim Dam-Johansen (Denmark)¹

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Finland

Exergy analysis of a large CFB boiler furnace

Aleksi Mankonen (Finland)¹; Esa Vakkilainen (Finland)¹; Juha Kaikko (Finland)¹; Vitaliy Sergeev (Russian Federation)²

¹ Lappeenranta-Lahti University of Technology LUT; ² Peter the Great St.Petersburg Polytechnic University

France

Analysis of premixed H₂/air combustion in a porous burner

Francois Muller (France); Selle Laurent (France); Schuller Thierry (France)

Institut de Mécanique des Fluides de Toulouse, Université de Toulouse

CFD modelling of flameless oxy-fueled combustion technology to boost burner capacity

Phuc Danh Nguyen (France); Ghassan Ghazal (France); Víctor Cuervo Pinera (Spain)

ArcelorMittal Global R&D

CO₂-H₂O dilution effects on non-premixed turbulent flames in a swirl burner

Hajar Zaidaoui (France)¹; Toufik Boushaki (France)¹; Jean-Charles Sautet (France)²; Christian Chauveau (France)³

¹ ICARE CNRS & University of Orleans; ² Normandie University, CORIA; ³ ICARE CNRS

Combination of temperature measurement, CFD calculations and elastoplastic stresses analysis to improve operating conditions and lifetime prediction of W-shape radiant tube in steel processing lines

Catherine Pasquinet (France); Sébastien Caillat (France); Peter Molcan (France)

Fives Stein

Experimental study of turbulent Bluff-Body flames stability by simultaneous high speed flame imaging and Particle Image Velocimetry

Nelson Valdez (France); Corine Lacour (France); Bertrand Lecordier (France); Armelle Cessou (France); David Honoré (France)

Normandie Univ, INSA Rouen, UNIROUEN, CNRS, CORIA

Influence of operation mode of a drop-feed-pellet domestic boiler on gaseous and particulate emissions

Martinez Angel (France); Corine Lacour (France); Jerome Yon (France); Alexis Coppalle (France)

Univ, UNIROUEN, INSA Rouen, CNRS, CORIA

LARGE EDDY SIMULATION OF REACTIVE FLOW ON THE FIRE SIDE OF A STEAM CRACKING FURNACE

Sreejith Nadakkal Appukuttan (France); Eleonore Riber (France); Benedicte Cuenot (France)

CERFACS

Towards Digital Twin Of an Industrial Furnace Operating with Natural Gas / Hydrogen Mixtures

Nicolas Meynet (France)¹; Guy-Alexandre Grandin (France)

ENGIE LAB CRIGEN

Germany

A camera-based flame stability controller for non-oscillating and oscillating combustion

Jörg Matthes (Germany)¹; Patrick Waibel (Germany)¹; Markus Vogelbacher (Germany)¹; Hans-Joachim Gehrman (Germany)²; Dieter Stapf (Germany)²; Hubert Keller (Germany)¹

¹ Institute for Automation and Applied Informatics, Karlsruhe Institute of Technology; ² Institute for Technical Chemistry, Karlsruhe Institute of Technology

Bioefficiency: The challenging way towards the Next Generation of Biomass-fired Combined Heat and Power Plants

Hartmut Spliethoff (Germany)

TU München

Challenges for the Future Combustion of Green Fuels

Joachim Wüning (Germany)

WS GmbH

Characterisation of the combustion process of low-calorific-value gas with fluctuating composition

Marius Philipp (Germany); Henning Bruns (Germany); Christian Schwotzer (Germany); Herbert Pfeifer (Germany)

Department for Industrial Furnaces and Heat Engineering, RWTH Aachen

Combustion Behavior of Lumpy Coke in Mixed Feed Lime Shaft Kilns

Bassem Hallak (Germany); Eckehard Specht (Germany)
Otto von Guericke University Magdeburg

Combustion of biomass derived pyrolysis oil in a CHP boiler

Sergej Warkentin (Germany)¹; Dirk Möntmann (Germany)¹; Melanie Grote (Germany)¹; Sangeetha Ramaswamy (Germany)¹; Thomas Rütten (Germany)²
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Comparison and evaluation of technical approaches aiming the dew point temperature increase for the thermal energy recovery from the humid flue gases

Nataliia Fedorova (Germany)^{1 2}; Pegah Azizianefahani (Germany)¹; Vojislav Jovicic (Germany)^{1 2}; Ana Zbogar-Rasic (Germany)¹; Muhammad Jehanzaib Khan (Germany)¹; Antonio Delgado (Germany)
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Degassing and Stability Behavior of Oxide Heat Insulation Materials in Vacuum Furnaces

Reinhild Arnold (Germany); Maria Gilbert (Germany); Hartmut Krause (Germany)
Technische Universität Bergakademie Freiberg, Institute of Thermal Engineering and Thermodynamics, Professorship of Gas and Heat Technology

Design and Application of Low-NOx-Pulverized Biomass Burner over Biomass Grate Furnace

Stefan Hamel (Germany); Pawel Kuczmiarczyk (Germany); Anojan Santhirasegaran (Germany); Krzysztof Zajac (Germany)
Steinmüller Engineering GmbH

Design of an energy efficient heating system for integrated oxygen production using ceramic membranes

Fabian Scheck (Germany)¹; Christian Schwotzer (Germany)¹; Herbert Pfeifer (Germany)¹; Ralf Kriegel (Germany)²

¹ Department for Industrial Furnaces and Heat Engineering - RWTH Aachen University; ² Fraunhofer Institute for Ceramic Technologies and Systems IKTS

Development of fuel-air inlet system for stabilizing hydrogen-air flame within cylindrical porous ceramic matrix

Muhammad Jehanzaib Khan (Germany); Vojislav Jovicic (Germany); Ana Zbogar-Rasic (Germany); Antonio Delgado (Germany)
Institute of Fluid Mechanics (LSTM), University of Erlangen-Nuremberg

Development of new concepts for an energy efficient firing of ceramics by 2050

Tino Redemann (Germany); Eckehard Specht (Germany)
Otto von Guericke University Magdeburg

Development of Process Model for the manufacturing of sanitary ware in Tunnel Kiln

Denny Mathew Alex (Germany); Eckehard Specht (Germany)
Otto von Guericke University

Effects of surrounding radiation on the lifetime of radiant tubes in a vertical strip galvanizing line

Dominik Büschgens (Germany); Narayana K. Karthik (Germany); Christian Schubert (Germany); Nico Schmitz (Germany); Wolfgang Lenz (Germany); Herbert Pfeifer (Germany)

Department for Industrial Furnaces and Heat Engineering - RWTH Aachen University

Energy Efficient Coil Coating Process – ECCO

Michael Schneider (Germany); Petra Weinbrecht (Germany); Christoph Wieland (Germany); Christof Weis (Germany); Dimosthenis Trimis (Germany)

Karlsruhe Institute of Technology

Experimental analysis of the drying process in rotary kilns

Claudia Meitzner (Germany)¹; Eckehard Specht (Germany)¹; Fabian Herz (Germany)²

¹ Otto-von-Guericke Universität Magdeburg; ² Anhalt University of Applied Sciences

Experimental and numerical investigations of a high-power density sulphur burner

Michal Fedoryk (Germany); Feichi Zhang (Germany); Hosein Heidarifatasmi (Germany); Stefan Harth (Germany); Dimosthenis Trimis (Germany); Henning Bockhorn (Germany)

Engler-Bunte-Institute/Division for Combustion Technology, Karlsruhe Institute of Technology

Experimental investigation of tailored heating for massive forming

Stephanie Thie (Germany); Justin Hauch (Germany); Christian Schwotzer (Germany); Herbert Pfeifer (Germany)

Department for Industrial Furnaces and Heat Engineering at RWTH Aachen University

Experimental Investigations on Plasma Assisted Solid Fuel Ignition and Combustion

Reyhane Youssefi (Germany); Joerg Maier (Germany); Guenter Scheffknecht (Germany)

University of Stuttgart, Institute of Combustion and Power Plant Technology

Flame behaviour of gaseous fuels in rotary kiln

Eckehard Specht (Germany); Abdul Qayyum (Germany)

Otto von Guericke University

Flue gas condensation – One option to maximise cycle efficiency of renewable and fossil fuel fired power plants

Udo Hellwig (Germany); Atul Sharma (Germany)

ERK Eckrohrkessel GmbH

Heat transfer analysis in flighted rotary kilns: Influence of the flight configuration

Jakob Seidenbecher (Germany)¹; Fabian Herz (Germany)²; Eckehard Specht (Germany)¹; Siegmund Wirtz (Germany)³; Viktor Scherer (Germany)³

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Impact of flow maldistribution in Shell-and-tube heat exchangers

Tim Dorau (Germany)¹; Richard Schab (Germany)¹; Simon Unz (Germany)¹; Reza Mohammad Malayeri (Germany)²; Michael Beckmann (Germany)¹

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Impact of mineral additives on deposition behavior when firing straw in a pilot scale (500kW) pulverized combustion furnace

Piotr Plaza (Germany); Manoj Paneru (Germany); Alexander Mack (Germany); Ilia Shesterikov (Germany); Jörg Maier (Germany)
Institute of Combustion and Power Plant Technology, Stuttgart University

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

Henry Merten (Germany)¹; Frederik Bambauer (Germany)¹; Siegmund Wirtz (Germany)¹; Viktor Scherer (Germany)¹; Hauke Bartusch (Germany)³; Rongshan Lin (Germany)²

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Influence of Hydrogen Admixtures on Flame Stability, Shape and Emissions of Premixed Hydrocarbon Flames in a Swirl-Stabilized Combustor

Martin Hefele (Germany)¹; Marinos Blanas (United States of America)²; Sven Eckart (Germany)¹; Hartmut Krause (Germany)¹

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Investigation on the influence of microwaves on the performance of laminar premixed flames: enhancement of burning velocity and exhaust gas composition

Sven Eckart (Germany)¹; Elizabeth Collins (Germany)²; Ralph Behrend (Germany)¹; Hartmut Krause (Germany)¹

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Large Eddy Simulation of pulverized coal combustion under oxy atmospheres using tabulated chemistry

Hendrik Nicolai (Germany)¹; Samim Ahmad Doost (Germany)¹; Francesca Di Mare (Germany)²; Christian Hasse (Germany)³; Johannes Janicka (Germany)¹

¹ Institut for Energy- and Powerplant Technology, Technische Universität Darmstadt ² Chair of Thermal Turbomachines and Aeroengines, Ruhr-Universität Bochum ³ Institut for Simulation of reactive Thermo-Fluid Systems, Technische Universität Darmstadt

Material concepts for heat exchangers in the field of high temperature conversion: Results of long-term exposures in corrosive pyrolysis gases

Maria Gilbert (Germany)²; Lennart Schmies (Germany)¹; Christian Knosalla (Germany)¹; Wolfgang Lippmann (Germany)¹; Hartmut Krause (Germany)²

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Methodology of generating model gases for long-term exposures of materials: Synthetic pyrolysis gas formation and analysis

Maria Gilbert (Germany); Tommy Floessner (Germany); Hartmut Krause (Germany)
Technische Universität Bergakademie Freiberg, Institute of Thermal Engineering and Thermodynamics, Professorship of Gas and Heat Technology

Microwave heated pyrolysis of CFRP - Characteristics of Gas and Oil products

Ralph Behrend (Germany)³; Thomas Krampitz (Germany)¹; Carsten Pätzold (Germany)²; Peter Fröhlich (Germany)²; Martin Bertau (Germany)²; Holger Lieberwirth (Germany)¹; Hartmut Krause (Germany)³

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Modern concepts for sensor-based process optimization of waste-fired power plants

Franziska Graube-Kuehne (Germany); Torsten Kehr (Germany); Sebastian Grahl (Germany); Michael Beckmann (Germany)
TU Dresden, Chair of Energy Process Engineering

Multi-fuel Combustion System for Gaseous and Liquid Biofuels with Low NOx Emissions

Markus Röder (Germany)¹; Dirk Möntmann (Germany)²; Melanie Grote (Germany)²; Anne Giese (Germany)¹; David Diarra (Germany)²; Klaus Görner (Germany)¹

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Oscillating Combustion for NOx- Reduction in Pulverized Fuel Boilers

Hans Joachim Gehrman (Germany)¹; Krasimir Aleksandrov (Germany)²; Manuela Hauser (Germany)²; Dieter Stapf (Germany)¹; Helmut Seifert (Germany)²; Jörg Matthes (Germany)²; Patrick Waibel (Germany)²; Markus Vogelbacher (Germany)²; Hubert Keller (Germany)²

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Online Corrosion Monitoring in Industrial Boilers

Müller Andreas (Germany)²; Epple Epple (Germany)¹; Falk Ewert (Germany)³; Bernd Epple (Germany)⁴

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polysius® fuel substitution - solution for increasing the alternative fuels rate up to 100 % using the prepol® step combustor

Lemke Jost (Germany); Veckenstedt Ines (Germany); Fit Leo (Germany)
thyssenkrupp Industrial Solutions AG

PYROLYSIS AND COMBUSTION KINETICS FOR CFBC COAL COMBUSTION MODELING BY BARRACUDA

Sebastian Krusch (Germany)²; Viktor Scherer (Germany)³; Roberto Solimene (Italy)¹; Osvalda Senneca (Italy)¹

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Raw Biogas as a Potential Substitute for Natural Gas in Metallurgical Thermal Processes – Impact on Combustion and Pollutant Emissions

Markus Röder (Germany)¹; Tim Schneider (Germany)¹; Philipp Pietsch (Germany)²; Anne Giese (Germany)¹; Erler Ronny (Germany)²; Klaus Görner (Germany)¹

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Reduction of Thermal and Fuel NO-Formation with Multi Stage Flameless Oxidation

Nico Schmitz (Germany)¹; Enrico Cresci (Germany)²; Joachim G. Wuenning (Germany)²; Herbert Pfeifer (Germany)¹

¹ RWTH Aachen University - Department for Industrial Furnaces and Heat Engineering; ² WS Wärmeprozessestechnik GmbH

Studies on the Waste Feeding Process in large-scale Waste Incineration Plants

Martin Zwiellehner (Germany)¹; Ragnar Warnecke (Germany)²; Florian Grafmans (Germany)²; Martin Weghaus (Germany)³

¹ SAR GmbH, Process- and Environmental Technology; ² Gemeinschaftskraftwerk Schweinfurt GmbH; ³ Weghaus GmbH

The development of an opto-acoustic method for the assessment of critical vibrations and flame noise in boilers and furnaces with a high-speed-camera system

Philipp Pietsch (Germany)¹; Julian Morich (Germany)²; Matthias Werschy (Germany)¹; Johannes Köllner (Germany)⁴; Stefan Günther (Germany)³

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Thermal process for energy recovery from Waste Electronical and Electrical Equipment under the premiss of bromine recycling

Martin Dunker (Germany); Andreas Hiller (Germany); Michael Beckmann (Germany)
TU Dresden

Thermal treatment of hydrochars in rotary drums

Elisabeth Kleiber (Germany); Fabian Herz (Germany); Fabian Weigler (Germany)
Anhalt University of Applied Sciences

Thermodynamic and lifecycle analysis of a CO₂-based methanol synthesis

Matthias Dierks (Germany); Florian Möllenbruck (Germany); Gerd Oeljeklaus (Germany); Klaus Görner (Germany)
University of Duisburg-Essen

Hungary

Mixing of an Iron-Sand Binary Mixture in a 2D Pseudo Bed: Experimental and Numerical Studies

Mohamed Alagha (Hungary); Botond Szucs (Hungary); Pal Szentannai (Hungary)
Department of Energy Engineering, Faculty of Mechanical Engineering, Budapest University of Technology and Economics (BME)

Numerical Simulations of Dense Fluidized Beds using the EMMS Gas-Solid Drag Model

Mohamed Alagha (Hungary); Pal Szentannai (Hungary)

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Pressure Drop of Irregular/Non-spherical SRF/Wood Particles in Packed Columns

Mohamed Alagha (Hungary); Botond Szucs (Hungary); Pal Szentannai (Hungary)

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A study of sphericity influence on mixing of wood particles in a binary fluidized bed

Mohamed Alagha (Hungary); Botond Szucs (Hungary); Pal Szentannai (Hungary)

Department of Energy Engineering, Faculty of Mechanical Engineering, Budapest University of Technology and Economics (BME)

India

Development and Optimization of Pilot-scale Rotary Kiln Combustor for Municipal Solid Waste Incineration

Punithan Chelladurai (India)

NCCRD, IIT Madras

Development of a coupled modeling approach to evaluate impact of high emissivity coating on cracker furnace performance

Ananth Sharma (India)

SABIC

Italy

Biomass gasification: the use of biochar and mayenite for tar removal

Paolo Venturini (Italy); Franco Rispoli (Italy); Domenico Borello (Italy)

Sapienza University of Rome

CFD modeling: a powerful tool for high efficiency burner design

Alessandro Saponaro (Italy)¹; Osvalda Senneca (Italy)²; Marco Torresi (Italy)³; Jaco Brand (South Africa)⁶; Feliciano Cesareo (Italy)³; Maurizio Valenzano (Italy)³; Simona Siena (Italy)³; Gabriele Rago (Italy)¹; Gianluca Rossiello (Italy)⁵; Guido Volpi (Italy)⁴; Massimo Penati (Italy)⁴; Ruggiero Dadduzio (Italy)⁴; Thomas Giani (Italy)⁴; Massimo Rogora (Italy)⁴; Lorenzo Fortunato (Italy)¹; Vincenzo Panebianco (Italy)⁴

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A Cyclonic flow Cavity for fuel flexible and low emissions combustion systems

Giancarlo Sorrentino (Italy)¹; Giuseppe Ceriello (Italy)¹; Antonio Cavaliere (Italy)¹; Pino Sabia (Italy)²; Mara De Joannon (Italy)²; Raffaele Ragucci (Italy)²

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High performance Ultra -low NOx burner for industrial boilers

Lorenzo Morandi (Italy)¹; Diego Maggiolini (Italy)¹; Gianluca Rossiello (Italy)²; Alessandro Saponaro (Italy)³; Lorenzo Fortunato (Italy)³

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Pressurized steam pyrolysis of grape residues for production of valuable liquid hydrocarbons

Francesco Miccio (Italy)¹; Annalisa Natali Murri (Italy)¹; Elettra Papa (Italy)¹; Elena Landi (Italy)¹; Matteo Minelli (Italy)²

¹ ISTECCNR Faenza; ² DICAM University of Bologna

Research and innovation in residential biomass boilers

Marco Pellegrini (Italy); Cesare Sacconi (Italy)

Department of Industrial Engineering - University of Bologna

Japan

Oxygen-enriched Combustion Technology using Self-induced Oscillation to Uniformly Heat a Wide Range in Industrial Furnaces

Takeshi Saito (Japan); Yasuyuki Yamamoto (Japan)¹; Yoshiyuki Hagihara (Japan)

TAIYO NIPPON SANSO Corporation Masashi Yamaguchi

Republic of Korea

Investigations on hydrogen cyanide (HCN) emission characteristics of NG and COG flames

Yonmo Sung (Korea, Republic of); Changyong Oh (Korea, Republic of)

Hyundai Steel Byungwha Jang (Korea, Republic of)

NOx emission characteristics of fuel-pulsed oscillating combustion in a 1 MWth industrial burner

Byunghwa Jang (Korea, Republic of); Changyong Oh (Korea, Republic of)

Hyundai Steel Yonmo Sung (Korea, Republic of)

Lithuania

Tail biogas flame stabilization by assistance of thermal plasma reformer

Nerijus Striūgas (Lithuania)¹; Kęstutis Zakarauskas (Lithuania)¹; Rolandas Paulauskas (Lithuania)¹; Andrius Tamošiūnas (Lithuania)²; Liutauras Marcinauskas (Lithuania)²

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Luxembourg

Process analysis in thermal process engineering with high-performance computing using the example of grate firing

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Malaysia

Numerical Simulation of Radiant Burner Performance Burning Syngas Fuels

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Netherlands

Combustion of Metal Fuel in a Low-Swirl Burn

Jip Krens (Netherlands)¹; B.J.G. Ruis (Netherlands)¹; L.P.H. De Goey (Netherlands)¹; J.A. Van Oijen (Netherlands)¹; Martin Schiemann (Germany)²

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Flow Control in Large Angle Diffusers for Cold End Protection

Jens Kitzhofer (Netherlands); Mircea Dinulescu (Netherlands)
APEX Research B.V.

Poland

Modelling of metal and steam temperature distribution in the superheater of the pulverised coal boiler

Norbert Modliński (Poland)
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Numerical and experimental studies on the ignition of pulverized coal stream and spherical cloud

Konrad Babul (Poland); Janusz Wach (Poland)
Wroclaw University of Science and Technology Wieslaw Rybak Wieslaw Rybak (Poland)

Portugal

Carbonization of grape pomace

Ana Ferreira (Portugal); Mário Costa (Portugal)
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Co-combustion of waste tires and plastic-rubber wastes with biomass technical and environmental analysis

Paulo Brito (Portugal)
1VALORIZA - Research Center for Endogenous Resource Valorization, Polytechnic Institute of Portalegre, Portugal

Influence of H₂O addition on biomass gasification in a drop tube furnace

Tiago Rio (Portugal); Ricardo Ferreira (Portugal); Mário Costa (Portugal)
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Single droplet ignition and combustion of jet fuel, vegetable oil and their blends in a drop tube furnace

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Thermal performance of a domestic boiler burning briquettes made with agricultural wastes

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Slovenia

Heat transfer modelling in 600MWe power plant boiler

Zeljko Warga (Slovenia)

IBE Inc

South Africa

Experimental and Numerical Determination of the Combustion Characteristics of a South African and Polish Coal

Reshendren Naidoo (South Africa) ¹; Norbert Modlinski (Poland) ²; Krzysztof Czajka (Poland) ²; Bonny Nyangwa (South Africa) ³

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Investigation of the effect of ash concentration on radiative heat transfer inside a coal fired furnace

Lesego Moumakoe (South Africa) ^{1, 2}; Walter Schmitz (South Africa) ¹; Reshendren Naidoo (South Africa) ¹

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Modelling of dew point operating conditions in a rotary regenerative air heater

Warren Brandt (South Africa)

Eskom EPPEI - University of the Witwatersrand

Spain

Industrial burners upgrading with oxy-lancing for furnace throughput boosting

Víctor Cuervo-Piñera (Spain); Diego Cifrián-Riesgo (Spain); Juan González-González (Spain); Phuc-Danh Nguyen (France)

ArcelorMittal

Novel heat recovery system for ceramic furnaces using high-temperature phase change materials and integration based on multicriteria analysis development

Patricia Royo (Spain); Luis Acevedo (Spain); Alvaro J. Arnal (Spain); Maryori Diaz-Ramirez (Spain); Tatiana Garcia-Armingol (Spain); Victor J. Ferreira (Spain); German Ferreira (Spain); Ana M. Lopez-Sabiron (Spain)

Research Centre for Energy Resources and Consumption (CIRCE)

Sweden

Comparison of the dynamic behavior between bubbling and circulating fluidized bed combustors

Guillermo Martinez Castilla (Sweden); Ruben M Montañes (Sweden); David Pallarès (Sweden); Filip Johnsson (Sweden)

Chalmers University of Technology

Influence of potassium on the fuel conversion in industrial scale fluidized bed combustors and gasifiers

Martin Seemann (Sweden); Teresa Berdugo (Sweden)

Chalmers University of Technology

Temperature Measurements by Means of SO₂ Spectra and Differential Optical Absorption Spectroscopy in Two Full-Scale Boilers

Tomas Leffler (Sweden); Shahriar Badieli (Sweden); Per Kallner (Sweden)
Vattenfall, Sweden

Unresolved issues in modelling thermochemical conversion of biomass

Angel D. Garcia (Sweden); Thamali R. Jayawickrama (Sweden); Aekjuthon Phounglamcheik (Sweden);
Albert Bach-Oller (Sweden); Rikard Gebart (Sweden)
Luleå University of Technology Kentaro Umeki (Sweden)

Switzerland

Brave new world - An introduction to IIoT

Oliver Seifert (Switzerland)
Endress+Hauser Flowtec AG

Valorisation of plastic wastes by pyrolysis for energy production

Jean-Bernard Michel (Switzerland)¹; Marco Simeoni (Switzerland)¹; Olivier Lepez (France)²
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Turkey

The Comparison of Numerical Modelling Result on Combustion via using Pulverized Coal and Biomass

Cansu Deniz Canal (Turkey); Yakup Erhan Böke (Turkey)
ISTANBUL TECHNICAL UNIVERSITY

Numerical Modeling of a Continuous Glassware Annealing Furnace

Gonenc Can Altun (Turkey); Altug Melik Basol (Turkey); M. Pinar Menguc (Turkey)
Ozyegin University

United Kingdom

Achieving Industrial Emissions Directive performance and increasing efficiency on least cost basis at a 160T/H refinery steam boiler Graeme Ridler (United Kingdom); Mike Kryjak (United Kingdom); Steve Billett (United Kingdom); Frantisek Gnyp (United Kingdom); John Goldring (United Kingdom)
RJM-International

Application of Auxiliary Injection for NO_x reduction on End fired Glass melting Furnaces

Richard Pont (United Kingdom)
Global Combustion Systems Ltd

Control of Oxidative Degradation in CO₂ capture plants by removing Dissolved Oxygen

Muhammad Akram (United Kingdom); Kris Milkowski (United Kingdom); Abdul'aziz Aliyu (United Kingdom); Jon Gibbins (United Kingdom); Mohammed Pourkashanian (United Kingdom)
Translational Energy Research Centre, Energy Institute, University of Sheffield, UK

CFD Simulation of Non-Premixed Combustion in Grid Plate Flame Stabilizers

Jose Quinonez (United Kingdom); Naman Al-Dabbagh (United Kingdom); Alan Burns (United Kingdom); Gordon Andrews (United Kingdom)
University of Leeds

Comparative analysis of biomass combustion under air- and oxy-firing regimes with focus on entrained metal aerosol release profiles

Janos Szuhanski (United Kingdom); Karen Finney (United Kingdom); Kris Milkowski (United Kingdom); Mohamed Pourkashanian (United Kingdom)
University Energy Institute, UK

Economic appraisal of the Pulse Jet Filtration Process in Combustion Processes

Daniel Curry (United Kingdom); Sheraz Daood (United Kingdom); William Nimmo (United Kingdom)
The University of Sheffield

Grid Mix Burner with Slot air Jets for Non-Premixed Low NO_x Combustion at Domestic

Gordon Andrews (United Kingdom); S.A.R. Ahmad (United Kingdom)
University of Leeds

Impact of High Flow Preheaters on the performance of High-Temperature Coil Annealing processes

Lydia Schoina (United Kingdom)¹; Fiona C.J. Robinson (United Kingdom)²; Mark V. Cichuta (United Kingdom)²; Agustin Valera-Medina (United Kingdom)¹

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In-furnace thermal imaging for process optimisation and NO_x reduction

Chris Leonard (United Kingdom)¹; Neil Simpson (United Kingdom)²

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Issues relating to the Combustion of High Asphaltene Heavy Fuel Oils

Amanda Lea-Langton (United Kingdom)¹; Alan Williams (United Kingdom)²

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Jet Mix Hydrogen Burner: Air Temperature Influences on NO_x

Gordon Andrews (United Kingdom); Mohammed Altahar (United Kingdom); Haytham Al Qahtany (United Kingdom)

University of Leeds

Radial Swirler 15 -35 kW Burners with Outlet Throat Wall Fuel Injection for Low NO_x Combustion

Gordon Andrews (United Kingdom); Myeong Kim (Korea, Republic of)

University of Leeds

RANS studies for validation of premixed turbulent combustion models

Siva Muppala (United Kingdom)

Kingston University

SONIC SOOT BLOWERS – THE FUTURE FOR THE POWER INDUSTRY!

Donald Cameron (United Kingdom)

Primasonics, UK

United States of America

Modeling of Combustion in Furnaces and other Enclosures

Ivanka Nikolova (United States of America)

University of Pittsburgh