INFUB

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ABSTRACTS ACCEPTED

Authors of accepted Abstracts have already been invited to proceed with the preparation of their draft papers. It should be noted, however, that this invitation does not imply guaranteed acceptance of the final paper since each draft paper will be subject to review by three Referees prior to incorporation in the Conference Programme.

Draft papers should be submitted by 20 October 2016 on our website: Call for Papers

Authors will be notified of final acceptance/rejection by 20 December 2016. Final, completed papers will be required by 20 February 2017.

Austria

MODELING OF A WALKING BEAM FURNACE USING CFD – METHODS
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DEVELOPMENT OF AN ATMOSPHERE PARTICLE KINETIC MODEL FOR PARTICLE REACTIONS, IN A COMBUSTION FLASH-REACTOR USING CFD- METHODS
Franz Edler, Christoph Spijker, Harald Raupenstrauch and Bernhard Geier
K1-met GmbH and Chair of Thermal Processing Technology, Montanuniversitaet Leoben (Austria)

THE VIRTUAL BIOMASS GRATE FURNACE - AN OVERALL CFD MODEL FOR BIOMASS COMBUSTION PLANTS
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BIOENERGY 2020+ GmbH and Institute of Thermal Engineering, Graz University of Technology (Austria)

VALIDATION OF TURBULENCE/CHEMISTRY INTERACTION MODELS FOR USE IN OXYGEN ENHANCED COMBUSTION
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STRATEGIES AND TECHNOLOGIES TOWARDS ZERO EMISSION BIOMASS COMBUSTION BY PRIMARY MEASURES
Ingwald Obernberger, Thomas Brunner and Christoph Mandl
BIOS BIOENERGIESYSTEME GmbH (Austria)

MATERIAL SELECTION FOR EFFICIENT HEAT RECOVERY UNITS - ONLINE MEASUREMENT OF CORROSION RATES AND ACID DEW POINTS IN BIOMASS COMBUSTION PLANTS
Erwin Reisenhofer, Ingwald Obernberger, Thomas Brunner and Werner Kanzian
BIOS BIOENERGIESYSTEME GmbH (Austria)

CFD MODELLING AND PERFORMANCE INCREASE OF A PUSHER TYPE REHEATING FURNACE USING OXY-FUEL BURNERS
Bernhard Mayr, Rene Prieler, Martin Demuth, Luca Moderer and Christoph Hochenauer
Graz University of Technology, Messer Austria GmbH and Marienhütte GmbH (Austria)

CO/CO2 RATIO IN BIOMASS CHAR OXIDATION
Andrés Anca-Couce, Peter Sommersacher, Robert Scharler and Christoph Hochenauer
Institute of Thermal Engineering, Graz University of Technology and BIOENERGY 2020+ GmbH (Austria)

Belgium

COLLABORATIVE SIMULATIONS AND EXPERIMENTS FOR DEVELOPMENT AND UNCERTAINTY QUANTIFICATION OF A REDUCED CHAR OXIDATION AND GASIFICATION MODEL IN OXY-COAL COMBUSTION CONDITIONS
Salvatore Iavarone, Benjamin Isaac, Sean Smith, Philip Smith and Alessandro Parente
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IN-FURNACE MEASUREMENTS OF SPECIES AND TEMPERATURE DURING THE MILD COMBUSTION OF A COG/BFG BLEND ON A 30 KW CHAMBER
Gabriele Mosca and Delphine Lupant
UMONS (Belgium)

ANALYSIS OF A 20 KW FLAMELESS FURNACE FIRED BY METHANE
Marco Ferrarotti, Delphine Lupant and Alessandro Parente
ULB, UMONS, ULB and UMONS (Belgium)

EXPERIMENTAL AND NUMERICAL INVESTIGATION OF A MILD-BASED STIRLING ENGINE FED WITH LANDFILL GAS
Valentina Fortunato, Abdallah Abou-Taouk and Alessandro Parente
Université Libre de Bruxelles and Cleanergy AB (Belgium)

ENERGY AND ENVIRONMENTAL PERFORMANCES OF A DOMESTIC HOT WATER CONDENSING BOILER FUELED BY WOOD PELLETS
Philippe Ngendakumana, Fabian Gabriele, Yannick Restivo and Kévin Sartor
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Brazil

COMBUSTION AND HEAT BALANCE FOR OPTIMIZING ONE SHORT ROTARY FURNACE FOR LEAD SMELTING
Gabriel Faé Gomes and Leandro Dalla Zen
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STUDY OF SOUTH BRAZILIAN COAL AND BIOMASS COFIRING USING A BENCH SCALE BUBBLING FLUIDIZED BED COMBUSTOR
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CHARACTERIZATION OF A SWIRL-STABILIZED FLAME BURNER WITH COUPLED GLIDING ARC PLASMA REACTOR
Armando José Pinto, Julio César Sagás and Pedro Teixeira Lacava
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ASSESSMENT OF RADIATIVE HEAT TRANSFER IN CORRUGATED CYLINDRICAL FURNACES
Gleyzer Martins, Oscar Saul Hernandez Mendoza and Enio Pedone Bandarra Filho
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PERFORMANCE QUANTIFICATION OF A CYCLONIC BOILER USING BIOMASS POWDER
Alan Nogueira Carneiro, Diego Carneiro De Oliveira, Matheus Carneiro Rocha, Marcelo De Oliveira E Silva, Danielle Regina Da Silva Guerra and Manoel Fernandes Martins Nogueira
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CFD MODELING OF A SMALL-SCALE CYCLONIC COMBUSTOR CHAMBER USING BIOMASS POWDER
Rodrigo Cavalcanti Ribeiro Lima, Danielle Regina Da Silva Guerra and Manoel Fernandes Martins Nogueira
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LAMINAR BURNING VELOCITY OF BIOGAS-AIR MIXTURES AND FLAME PROPAGATION SPEED CLOSE TO THE CHAMBER WALL
Loreto Pizzuti and Cristiane Martins
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Canada

HIGH PRESSURE OXY-FIRED (HIPROX) DIRECT CONTACT STEAM GENERATION (DCSG) TECHNOLOGY DEVELOPMENT FOR STEAM ASSISTED GRAVITY DRAINAGE (SAGD) APPLICATION TO EXTRACTION OF CANADIAN OIL SAND
Bruce Clements, Ted Herage, Paul Cairns, Mohammed Asiri, Steven Chen and Todd Pugsley
CanmetENERGY and Suncor Energy Inc. (Canada)

China

NUMERICAL SIMULATION OF COMBUSTION PROCESS FOR A MICRO GAS TURBINE COMBUSTOR UNDER OFF-DESIGN CONDITION
Chao Zong, Tong Zhu and Yaya Lyu
Tongji University (China)

FIELD TEST AND ENERGY-SAVING POTENTIAL OF A BATCH-TYPE INDUSTRIAL FURNACE
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Czech Republic

ASSESSMENT OF THE EFFECT OF FUEL AND TYPE OF MEASURING FOR THE HG EMISSIONS FROM COMBUSTION OF COAL
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Denmark

A GENERIC CFD-ORIENTED GAS RADIATION PROPERTY MODEL AND ITS DEMONSTRATION IN NATURAL GAS-FIRED FURNACE MODELLING
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BIOMASS PARTICLE GASIFICATION: DEVELOPMENT AND VALIDATION OF A COMPREHENSIVE MATHEMATICAL MODEL
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Finland

A CORE-ANNULUS-TYPE MATHEMATICAL MODEL AND NUMERICAL SIMULATION FOR THE CFB BOILER FURNACE
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INTEGRATED TRANSIENT SIMULATION OF A BFB BOILER WITH CFD MODELS FOR THE BFB FURNACE AND DYNAMIC SYSTEM MODELS FOR THE STEAM CYCLE AND BOILER OPERATION
Marko Huttunen, Ismo Karppinen, Timo Pättikangas, Hannu Niemistö, Lassi Karvonen and Sirpa Kallio
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ANALYSIS OF THE PROCESSES IN FLUIDIZED BED BOILER FURNACES DURING LOAD CHANGES
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CRITICAL REVIEW ON MATHEMATICAL MODELS OF MOVING GRATE IRON ORE PELLET INDURATION FURNACE
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IMPROVEMENT OF LOAD-FOLLOWING CAPACITY OF GRATE BOILERS BASED ON THE COMBUSTION POWER SOFT-SENSOR
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France

NUMERICAL CFD SIMULATIONS FOR OPTIMIZING A BIOMASS GASIFIER AND METHANATOR REACTOR DESIGN AND OPERATING CONDITIONS
Victoria Bogdanova and Erwin George
ENGIE Lab CRIGEN (France)

RADIANT TUBES LIFETIME PREDICTION IN STEEL PROCESSING LINES USING FLUID–STRUCTURE INTERACTION MODELLING
Sébastien Caillat and Catherine Pasquinet
Fives Stein (France)

PREHEATED OXYFUEL COMBUSTION ADAPTED TO LOW CALORIFIC BLAST FURNACE GAS
Abou Bâ, Armelle Cessou, Niomar Marcano, Faustine Panier, Rémi Tsiava, Guillaume Cassarino, Ludovic Ferrand and David Honore
CORIA - CNRS, Normandie Université, Université de Rouen, Air Liquide and CMI GreenLine Europe (France)

ON THE EFFECT OF SEPARATED OXYGEN AND CARBON DIOXIDE INJECTIONS ON THE STABILISATION OF DILUTED OXYFUEL FLAMES
Sarah Juma, David Honore, Bertrand Lecordier, Xavier Paubel and Armelle Cessou
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MODELLING OF FLAMELESS OXY-FUEL COMBUSTION WITH EMPHASIS ON RADIATIVE HEAT TRANSFER FOR LOW CALORIFIC VALUE BLAST FURNACE GAS
Phuc Danh Nguyen, Ghassan Ghazal, Víctor Cuervo Piñera, Valerio Battaglia, Anders Rensgard, Tomas Ekman and Moncef Gazdallah
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Germany

DEVELOPMENT OF AN ENERGY-EFFICIENT BURNER FOR HEAT TREATMENT FURNACES WITH A REDUCING GAS ATMOSPHERE
Nico Schmitz, Christian Schwotzer, Herbert Pfeifer and Joachim G. Wünning
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COMBUSTOR CONCEPT FOR INDUSTIAL GAS TURBINES WITH SINGLE DIGIT NOX AND CO EMISSION VALUES
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OXY-FUEL BURNER INVESTIGATIONS FOR CO2 CAPTURE IN CEMENT PLANTS
Francisco Carrasco Maldonado, Jørn Bakken, Mario Ditaranto, Nils Haugen, Øyvind Langørgen, Simon Grathwohl, Jörg Maier and Günter Scheffknecht
IFK - University of Stuttgart (Germany) and SINTEF-ER (Norway)

EXPERIMENTAL INVESTIGATION OF PYROLYSIS GASES RELEASED FROM AL-SCRAP AND THEIR IMPLEMENTATION INTO A NUMERICAL FURNACE MODEL
Henning Bruns, Rukiye Gültekin, Antje Rückert and Herbert Pfeifer
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USE OF LOW-QUALITY BIOGENIC FUELS IN A DECENTRALIZED BIOMASS BOILER FOR THERMAL ENERGY GENERATION
Franziska Reinardt, Helmut Seifert and Hans-Joachim Gehrmann
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NUMERICAL STUDY ON THE INFLUENCE OF OPERATIONAL SETTINGS ON REFUSE DERIVED FUEL CO-FIRING IN CEMENT ROTARY KILNS
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A TECHNOLOGY COMPARISON CONCERNING SCALE DEPENDENCIES OF INDUSTRIAL FURNACES. A CASE STUDY OF GLASS PRODUCTION
Corina Dorn, Ralph Behrend, Volker Uhlig, Dimosthenis Trimis and Hartmut Krause
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CERAMIC HEAT PIPES FOR HIGH TEMPERATURE APPLICATION
Nina Hack, Simon Unz and Michael Beckmann
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INVESTIGATIONS ON CONTAINER MATERIALS IN HIGH TEMPERATURE MICROWAVE APPLICATIONS
Ralph Behrend, Corina Dorn, Volker Uhlig and Hartmut Krause
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STUDY ON THE INFLUENCE OF ETHANOL AND BUTANOL ADDITION ON SOOT FORMATION IN ISO-OCTANE FLAMES
Isabel Frenzel, Dimosthenis Trimis and Hartmut Krause
TU Bergakademie Freiberg, Institute of Thermal Engineering and Karlsruhe Institute of Technology, Engler-Bunte-Institute, Division of Combustion Technology (Germany)

LAMINAR BURNING VELOCITIES OF LOW CALORIFIC AND HYDROGEN CONTAINING FUEL BLENDS
Sven Eckart, Christina Penke, Stefan Voss and Hartmut Krause
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A METHOD TO DETERMINE THE ASH MELTING BEHAVIOUR OF PULVERISED FUELS UNDER REAL PROCESS CONDITIONS
Christopher Thiel, Sebastian Grahl and Michael Beckmann
TU Dresden (Germany)

MODELING AND VALIDATION OF THE SIDERITE CALCINATION IN A ROTARY KILN
Fabian Herz and Eckehard Specht
Otto von Guericke University Magdeburg (Germany)

INFLUENCE OF PARTICLE SIZE DISTRIBUTION ON THE LIMESTONE DECOMPOSITION IN NORMAL SHAFT KILNS
Hallak Bassem, Fabian Herz, Eckehard Specht, Robin Gröpler and Gerald Warnecke
Otto von Guericke University Magdeburg (Germany)

COMBUSTION BEHAVIOR OF COKE IN SHAFT KILNS WITH HYPERSTOICHIOMETRIC AIR FLOW
Bassem Hallak, Nyein Nyein Linn, Eckehard Specht and Fabian Herz
Otto von Guericke University Magdeburg (Germany)

INFLUENCE OF CIRCULATION SYSTEMS ON THE FIRING OF COARSE CERAMICS IN INDUSTRIAL TUNNEL KILNS
Tino Redemann and Eckehard Specht
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BEHAVIOUR OF ENGINEERED NANOPARTICLES IN A LAB-SCALE FLAME AND COMBUSTION CHAMBER
Werner Baumann, Nadine Teuscher, Manuela Hauser, Hans-Joachim Gehrmann, Dieter Stapf and Hanns-Rudolf Paur
Karlsruhe Institute of Technology (Germany)

BIOGAS AS A CO-FIRING FUEL IN THERMAL PROCESSING INDUSTRIES: IMPLEMENTATION IN A GLASS MELTING FURNACE
Jörg Leicher, Marcel Fiehl, Anne Giese, Klaus Görner and Bernhard Fleischmann
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NATURAL GAS QUALITY FLUCTUATIONS—SURVEYS AND STATISTICS ON THE SITUATION IN GERMANY
Jörg Leicher, Anne Giese, Klaus Görner, Matthias Werschy and Hartmut Krause
Gas- und Wärme-Institut Essen e.V. and DBI Gas- und Umwelttechnik GmbH (Germany)

POWER-TO-GAS AND THE CONSEQUENCES: IMPACT OF HIGHER HYDROGEN CONCENTRATIONS IN NATURAL GAS ON INDUSTRIAL COMBUSTION PROCESSES
Tim Nowakowski, Jörg Leicher, Anne Giese vand Klaus Görner
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LOCAL STEAM TEMPERATURE IMBALANCES OF COAL-FIRED BOILERS AT VERY LOW LOAD
Jens Hinrich Prause, Moritz Hübel, Dorian Holtz, Jürgen Nocke and Egon Hassel
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MODELLING OF BIOMASS COMBUSTION AND DEPOSITION FORMATION IN GRATE FURNACE POWER PLANTS
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India

UNIFIED IGNITION – DEVOLATILIZATION MODEL FOR FIXED BED BIOMASS GASIFICATION /COMBUSTION
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Iran

NUMERICAL SIMULATION OF A NON-PREMIXED TUBULAR FLAME
Mahdi Bordbar and Hadi Pasdarshahri
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NUMERICAL STUDY OF THE COMBUSTION CHARACTERISTICS AND EMISSION OF A DUAL-FUEL BURNER IN A POWER PLANT BOILER
Ehsan Mohammadian, Kiumars Mazaheri and Hadi Pasdarshahri
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OPTIMIZATION OF TEMPERATURE DISTRIBUTION IN A CRACKING FURNACE USING CFD
Saber Pilva, Kiumars Mazaheri and Hadi Pasdarshahri
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Italy

AN EXPERIMENTAL AND NUMERICAL STUDY OF MILD COMBUSTION IN A CYCLONIC BURNER
Giancarlo Sorrentino, Ugur Göktolga, Mara De Joannon, Jeroen Van Oijen, Antonio Cavaliere and Philip De Goey
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INNOVATIVE TECHNOLOGICAL SOLUTIONS MOVING TOWARDS THE REALIZATION OF A STAND-ALONE BIOMASS BOILER WITH NEAR-ZERO PARTICULATE EMISSIONS
Cesare Saccani, Augusto Bianchini and Marco Pellegrini
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APPLICATION OF THE CARBON LOOPING (CARBOLOOP) CONCEPT IN A NOVEL TWIN-BED REACTOR
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Japan

ULTRA-LOW NOX OXYGEN-ENRICHED COMBUSTION SYSTEM USING OSCILLATION COMBUSTION METHOD
Yoshiyuki Hagihara, Kimio Iino, Yasuyuki Yamamoto and Tomoyuki Haniji
TAIYO NIPPON SANSO Co., Gas Application Technology Center and TAIYO NIPPON SANSO Co. (Japan)

THE RADIATIVE CHARACTERISTICS OF NH3/N2/O2 NON-PREMIXED FLAME IN 10 KW TEST FURNACE
Ryuichi Murai, Ryohei Omori, Ryuki Kano, Yuji Tada, Hidetaka Higashino, Noriaki Nakatsuka, Jun Hayashi, Fumiteru Akamatsu, Kimio Iino and Yasuyuki Yamamoto
Osaka Univ. Dept. of Mechanical Engineering and Taiyo Nippon Sanso Co..Ltd. (Japan)

Luxembourg

COMBUSTION AND GASIFICATION ANALYSIS OF BIOMASS FUEL IN A FLUIDIZED BED: A FOUR-WAY COUPLING OF DEM-CFD
Mohammad Mohseni and Bernhard Peters
Faculty of Science, Technology and Communication (Luxembourg)

Mexico

SUPERHEATER IMPACT BY COMBUSTIBLE CHANGE IN A POWER PLANT
G. Lizbeth Porras, Vladimir A. Reyes and Alejandro G. Mani
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Netherlands

ADVANCE GASIFICATION FOR REPLACEMENT OF FOSSIL FUELS IN EXISTING BOILERS AND FURNANCE
Martin Van 'T Hoff and Robin Zwart
Dahlman Renewable Technology B.V. (Netherlands)

FURNACE COMBUSTION AND CONTROL RENOVATION TO IMPROVE THE PRODUCTIVITY OF A CONTINUOUS ANNEALING LINE
Hai Wu and Bertie Van Benschop
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Norway

NUMERICAL ANALYSIS OF A NOVEL PARTIAL PREMIXED BLUFF BODY LOW NOX BURNER
Christoph Meraner, Mario Ditaranto and Terese Løvås
NTNU EPT and SINTEF Energy Research (Norway)

Poland

EXPERIMENTAL STUDY OF COMBUSTION PROCESS OF GASEOUS FUELS CONTAINING NITROGEN COMPOUNDS IN NEW, LOW-EMISSION ZONAL VOLUMETRIC COMBUSTION TECHNOLOGY
Slefarski Rafal, Szewczyk Dariusz, Jankowski Radoslaw and Golebiewski Michal
ICS Industrial Combustion Systems Poznan and Poznan University of Technology (Poland)

POSSIBLE METHODS OF APPLICATION OF UNBURNT CARBON SEPARATED FROM LIGNITE FLY ASH
Wieslaw Rybak, Anna Kisiela, Wojciech Moroń, Krzysztof Czajka, Karol Król, Arkadiusz Szydełkoand Wieslaw Ferens
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Portugal

AIR LEAKS
Jorge Pereira
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REFUSE DERIVED FUEL FROM MUNICIPAL SOLID WASTE REJECTED FRACTIONS – A CASE STUDY
Isabel Brás, M. E. Silva, G. Lobo, A. Cordeiro, M. Faria and L. T. De Lemos
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ANALYSIS AND MODELING OF COMBUSTION IN BIOMASS FURNACE
João Silva, José Teixeira, Senhorinha Teixeira and Simone Preziati
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Russia

LIQUID HYDROCARBONS COMBUSTION WITH SUPPLYING OF SUPERHEATED STEAM JET
Igor Anufriev, Oleg Sharypov, Evgeniy Kopyev and Sergey Alekseenko
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Saudi Arabia

FLAME AND FLOW FIELD INTERACTION OF HYDROGEN-ENRICHED METHANE NON-PREMIXED FLAMES WITH AND WITHOUT QUARL
Ayman Elbaz and William Roberts
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Slovenia

ADVANCED HEAT TRANSFER MODELILNG OF 600 MWE UTILITY BOILER
Warga Zeljko, Butala Vincenc, Gobbi Massimo and Massimo Gobbi
ICS tehnika (startup) (Slovenia), University of Ljubljana, Dept. for Mech. Eng. (Slovenia) and UNIDO (Italy)

Spain

BLAST FURNACE GAS BASED COMBUSTION SYSTEMS IN STEEL REHEATING FURNACES
Víctor Cuervo Piñera, Diego Cifrián Riesgo, Phuc Danh Nguyen, Valerio Battaglia, Massimiliano Fantuzzi, Alessandro Della Rocca, Marco Ageno, Anders Rensgard, Chuan Wang, John Niska, Tomas Ekman, Carsten Rein and Wolfgang Adler
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Sweden

ON-LINE ALKALI MEASUREMENT DURING OXY-FUEL COMBUSTION
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FLAME STRUCTURE AND SOOT FORMATION IN A PULVERIZED BIOMASS BURNER: EFFECT OF PROCESS PARAMETERS AND ACOUSTIC EXCITATION
Angel David Garcia Llamas, Florian M. Schmidt and Kentaro Umeki
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THE USE OF SOLID AND LIQUID WASTE FRACTIONS FOR CO-COMBUSTION TOGETHER WITH PROPANE
Thomas Ekvall and Klas Andersson
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Ukraine

PREVENTING AUTOIGNITION INSIDE THE BURNER WITH HIGH TEMPERATURE OXIDANT PREHEATING
Boris Soroka, Volodymyr Zgurskyi, Aleksandr Kozlov and Mark Khinkis
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United Kingdom

ROTATING CYLINDERS FOR DEVELOPMENT OF CONVECTION IN HIGH TEMPERATURE COIL ANNEALING (HTCA) FURNACES
Oula Fatla, Agustin Valera-Medina, Fiona Robinson, Mark Cichuta and Nathan
Cardiff University, COGENT Power and TATA Steels (United Kingdom)

EXPERIMENTAL AND NUMERICAL INVESTIGATION OF AN ULTRA-LOW NOX METHANE BURNER
Ingrid El Helou, Jenna Foale, Andrea Giusti, Jenni Sidey and Epaminondas Mastorakos
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CONDITIONAL MOMENT CLOSURE MODELLING FOR TURBULENT PULVERIZED COAL COMBUSTION
Huangwei Zhang and Epaminondas Mastorakos
Universit of Cambridge (United Kingdom)

NOX REDUCTION USING ADVANCED TECHNIQUES IN A 175MWTH MULTI-FUEL CORNER-FIRED BOILER
Michael Kryjak, James Dennis and Graeme Ridler
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USA

CFD MODELLING EVALUATION OF SPRAY NOZZLES
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