

14th European Conference on Industrial Furnaces and Boilers (INFUB-14)

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University of Adelaide, Australia

Austria

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Christoph Spijker¹, Senthilathiban Swaminathan², Harald Raupenstrauch¹
1: Montanuniversitaet Leoben, Austria; 2: K1-Met GmbH

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Benjamin Ortner¹, Christian Schmidberger², Hannes Gerhardt¹, René Prieler¹, Christoph Hochenauer¹

1: Graz University of Technology, Austria; 2: University of Stuttgart, Germany

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1: Graz University of Technology, Institute of Thermal Engineering, Austria; 2: Messer Austria GmbH, Austria

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Graz University of Technology, Austria

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Georg Daurer¹, Stefan Schwarz¹, Martin Demuth², Christian Gaber², Christoph Hochenauer¹

1: Graz University of Technology, Institute of Thermal Engineering, Austria; 2: Messer Austria GmbH, Austria

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Thermoprozesstechnik, Montanuniversität Leoben

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Lukas Wiszniewski¹, Zlatko Raonic¹, Thomas Hochsteiner¹, Fritz Kittinger², Harald Raupenstrauch¹

1: Montanuniversitaet Leoben, Austria, Chair of Thermal Processing Technology; 2: Montanuniversitaet Leoben, Austria, Chair of Process Technology and Environmental Protection

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Austrian Institute of Technology, Austria

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Zlatko Raonic, Harald Raupenstrauch

Montanuniversitaet Leoben, Austria

Belgium

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Raf Vandeveldel¹, Maarten Vanierschot^{2,3}, Johan De Greef¹

1: ChEMaRTS, Department of Materials Engineering - Leuven Group T Campus KU Leuven, Leuven, Belgium; 2: AFAA, Department of Mechanical Engineering - Leuven Group T Campus KU Leuven, Leuven, Belgium; 3: MaSIM, Material Science, Innovation and Modelling - North-West University, Mmabatho, South Africa

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Wouter Meynendonckx¹, Mariya Ishteva², Mathias Verbeke³, Johan De Greef¹

1: ChEMaRTS, Department of Materials Engineering, Leuven Group T Campus, KU Leuven, Belgium; 2: NUMA-ADVISE, Department of Computer Science, Campus Geel, KU Leuven, Belgium; 3: DTAI, Department of Computer Science, Bruges Campus, KU Leuven, Belgium

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1: Department of Electromechanical, Systems and Metal Engineering, Ghent University; 2: FlandersMake@UGent Corelab EEDT MP Flanders Make, Leuven, Belgium; 3: Department of Electromechanical Engineering, University of Antwerp, Belgium; 4: ArcelorMittal Gent, Belgium

Brazil

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Termica Solutions, Brazil

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André Luiz Tavares
Universidade Federal do Pará, Brazil

Canada

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Pierre Carabin
PyroGenesis Canada Inc., Canada

Denmark

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Margherita Dotti¹, Emil Zacho Rath², Henrik Hofgren², Matthias Mandø¹, Chungeng Yin¹
1: Department of Energy Technology, Aalborg University, Denmark; 2: Babcock & Wilcox Renewable, Denmark

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Aalborg University, Denmark

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Wenhan Cao¹, Yifan Du¹, Sven Andersson², Peter Arendt Jensen¹, Peter Glarborg¹, Thomas Norman³, Niels Peder Hansen¹⁴, Hao Wu¹
1: Technical University Of Denmark, Denmark; 2: Babcock & Wilcox GMAB™ Environmental Technologies, Sweden; 3: Babcock & Wilcox Renewable, Denmark; 4: MEC - Bioheat&Power, Maabjerg Energy Center, Denmark

France

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Kuppuraj Rajamanickam^{1,2}, Ariff Mahuthannan³, Saïd Idlahcen¹, Bertrand Lecordier¹, Corine Lacour¹, Armelle Cessou¹, David Honoré¹

1: CORIA - CNRS, UNIROUEN, INSA Rouen, Normandie Univ; 675 Avenue de l'université, 76801 Saint-Etienne-du-Rouvray, France; 2: Imperial College London, Department of Mechanical Engineering, SW72AZ, UK; 3: SINTEF Energy Research – NTNU, Trondheim, Norway

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Malo Hustache^{1,2}, Tan-Phong Luu¹, Nasser Darabiha¹, Nicolas Meynet², Benoit Fiorina¹
1: Laboratoire EM2C, CentraleSupélec, France; 2: Engie Lab Crigen, France

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Toufik Boushaki¹, Zhiyong GUO²
1: University of Orleans - ICARE CNRS; 2: University of Orleans - ICARE CNRS

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Fives Stein, France

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Thomas Bertus^{1,2}, Jérôme Lemonon², F. Javier Escudero Sanz², Sylvain Salvador²
1: COMPTE.R, France; 2: Centre RAPSODEE, UMR CNRS 5302, IMT Mines Albi, France

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Karine Truffin¹, Paul-Georgian Luca¹, Tran Ngoc Duc Ho¹, Cédric Mehl¹, Victor Coquin^{2,3}, Gilles Cabot², Bruno Renou², Lucio Taddeo³
1: IFP Energies Nouvelles, 1-4 Av. du Bois Préau, 92852 Rueil-Malmaison, France; 2: UNIROUEN, INSA Rouen, CNRS, CORIA, Normandie University, 76000 Rouen, France; 3: CETIAT, 25 Avenue des Arts, 69100 Villeurbanne

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Sébastien Caillat, Hassan Mohanna, Minh Duy Le, Peter Molcan, Patrice Sedmak
Fives Stein, France

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Philippe Dagaut
Centre National de la Recherche Scientifique, France

Germany

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Markus Vogelbacher¹, Miao Zhang¹, Robin Streier², Siegmar Wirtz², Viktor Scherer²,
Jörg Matthes¹

1: Karlsruhe Institute of Technology, Institute for Automation und Applied Informatics, Germany; 2: Ruhr-University Bochum, Department of Energy Plant Technology, Germany

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Markus Röder¹, Philipp Pietsch², Andreas Unterberger³, Fabio Martins³, Anne Giese¹,
Khadijeh Mohri^{3,4,5}

1: Gas- und Wärme-Institut Essen e.V. – GWI, Essen, Germany; 2: Gastechnologisches Institut Freiberg gGmbH – DBI, Freiberg, Germany; 3: Tomography, Institute for Energy and Materials Processes – EMPI, University of Duisburg-Essen, Duisburg, Germany; 4: Fluid Dynamics, EMPI, University of Duisburg-Essen, Duisburg, Germany; 5: Center for Nanointegration Duisburg-Essen – CENIDE, University of Duisburg-Essen, Duisburg, Germany

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Jörg Matthes¹, Patrick Waibel^{1,2}, Lutz Gröll¹, Markus Vogelbacher¹

1: Karlsruhe Institute of Technology, Germany; 2: HeidelbergCement AG

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Martin William Adendorff, Esin Iplik, Joachim von Scheele

Organization(s): Linde GmbH, Germany

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Johannes Scherer¹, Andreas Richter¹, Tobias Ginsberg², Christian Wolfersdorf²

1: TU Bergakademie Freiberg, Germany; 2: RWE Power AG, Forschung und Entwicklung

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German Aerospace Center (DLR), Institute of Low-Carbon Industrial Processes

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Kyra Böge, Jürgen Karl

Chair of Energy Process Engineering, Friedrich-Alexander-Universität Erlangen-Nürnberg, Fürther Straße 244f, 90429 Nürnberg

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Johannes Haimerl, Gabriel J Roeder, Sebastian Fendt, Hartmut Spliethoff

Chair of Energy Systems, Technical University of Munich, Germany

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RWTH Aachen University, Germany

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TU Dresden, Germany

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Abdou Suso, Piotr Plaza, Eva Miller, Jörg Maier, Günter Scheffknecht
Institute of combustion and Power Plant Technology (IFK), University of Stuttgart, Germany

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EST, Technical University of Darmstadt, Germany

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1: Ruhr-Universität Bochum, Germany; 2: VDZ Technology gGmbH

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Janine Wiebe¹, Hans-Joachim Gehrman¹, Krasimir Aleksandrov¹, Dieter Stapf¹,
Christian Reichert²
1: Karlsruhe Institute of Technology (KIT), Institute for Technical Chemistry (ITC), Karlsruhe, Germany; 2:
Bingen Technical University of Applied Sciences (TH-Bingen), Bingen, Germany

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Antonia Nikoletta Sikotakopoulou¹, Daniel Bernhardt¹, Ronald Wilhelm², Michael
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1: Chair of Energy Process Engineering, TU Dresden; 2: Saacke GmbH

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Lars Felkl¹, Chris Fritsche², Hartmut Krause², Olaf Schwedler³, Alexandros Charitos¹
1: Institute for Nonferrous Metallurgy and Purest Materials, TU Bergakademie Freiberg, Germany; 2:
Institute of Thermal Engineering, TU Bergakademie Freiberg, Germany; 3: KME Mansfeld GmbH,
Germany

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Siri Harboe-Minwegen

OWI Science For Fuels, Germany

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Frank Ohnemueller, Marlena Wissel

German Lime Association, Germany

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TU Bergakademie Freiberg, Germany

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TU Bergakademie Freiberg, Institute of Thermal Engineering, Professorship of Gas and Heat Technology
Germany

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Moritz Diewald¹, Linda Giesler¹, Nico Schmitz¹, Herbert Pfeifer¹, Enrico Cresci², Joachim G. Wüning²

1: RWTH Aachen University, Department for Industrial Furnaces and Heat Engineering; 2: WS
Wärmeprozessstechnik GmbH

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Marius Philipp¹, Nico Schmitz¹, Herbert Pfeifer¹, Albert Kowert²

1: RWTH Aachen University, Germany; 2: CombuTec GmbH & Co. KG

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Abouelmagd Abdelsamie^{1,2}, Cheng Chi¹, Zhisong Ou³, Dominique Thevenin¹

1: Lab. of Fluid Dynamics and Technical Flows, Magdeburg University, Germany; 2: Lab. of Fluid Mechanics, Mechanical Power Engineering Department, Faculty of Engineering (El-Mattaria), Helwan University; 3: State Key Laboratory of Geomechanics and Geotechnical Engineering, Institute of Rock and Soil Mechanics, Chinese Academy of Sciences

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1: VDEh-Betriebsforschungsinstitut GmbH, Germany; 2: Swerim AB, Sweden; 3: IOB, RWTH Aachen University, Germany

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Nidhin Thekkedath Madhu, Martin Adendorff, Esin Iplik

Linde GmbH, Carl-von-Linde-Straße, Germany

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Karlsruhe Institute of Technology (KIT), Germany

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RWTH Aachen University, Institute of Heat and Mass Transfer

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RWTH Aachen University, Germany

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Michael Dölz¹, Joachim G. Wüning², Tobias Plessing¹

1: Institute for Hydrogen and Energy Technology; 2: WS Wärmeprozessstechnik GmbH

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Gas- und Wärme-Institut Essen e.V., Germany

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TU Dresden, Germany

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Alexander Kuhn¹, Eric Langner¹, Dennis Hülsbruch¹, Emmi Kallio², Alex Soderholm²,

Vesna Barisic², Jochen Ströhle¹, Bernd Epple¹

1: Institute for Energy Systems and Technology, TU Darmstadt, Germany; 2: Sumitomo SHI FW Energia Oy, Finland

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Christian Schmidberger¹, Benjamin Ortner², Simon Grathwohl¹, Jörg Maier¹, Günter Scheffknecht¹

1: University of Stuttgart, Germany; 2: Graz University of Technology

FLAME-PARTICLE INTERACTION INSIDE A PACKED BED OF PARTICLES: EXPERIMENTS TO
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Mohammadhassan Khodsiani¹, Enric Illana Mahiques², Frank Beyrau¹, Viktor Scherer²,
Benoît Fond^{1,3}

1: Otto-von-Guericke University of Magdeburg, Germany; 2: Institute of Energy Plant Technology, Ruhr-
University Bochum, Bochum, Germany; 3: ONERA, the French Aerospace Lab, Department of
Aerodynamics, Aeroelasticity and Aeroacoustics (DAAA), Paris-Saclay University, F-92190 Meudon

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Elsa Busson¹, Meinhard Mühlbach², Nico Schmitz¹, Joachim G. Wüning², Herbert
Pfeifer¹

1: RWTH Aachen University, Germany; 2: WS Wärmeprozessstechnik GmbH, Germany

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Ralph Behrend, Valerie Grimm, Hartmut Krause

TU Bergakademie Freiberg, Institute of Thermal Engineering, Professorship of Gas and Heat Technology
Germany

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Alex M. Garcia, Johannes Losacker, Lukas Sankowski, Nico Schmitz, Herbert Pfeifer

RWTH Aachen University, Department for Industrial Furnaces and Heat Engineering
Technical University of Munich, Germany

HYDROGEN ADMIXTURE ON A NATURAL GAS-OXYGEN BURNER FOR GLASS-MELTING
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Anna Hasche, Hartmut Krause, Sven Eckart

TU Bergakademie Freiberg, Germany

IMPROVEMENT OF RDF CONVERSION MODELS TO SIMULATE A CEMENT ROTARY KILN
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Robin Alexander Streier¹, Rafael Solana Gómez², Reinhold Kneer², Ines Veckenstedt³,
Anica Vogel³, Thomas Deck³, Karl Lampe³, Viktor Scherer¹

1: Department of Energy Plant Technology, Ruhr-University Bochum, Germany; 2: Institute of Heat and Mass Transfer, RWTH Aachen University, Germany; 3: Cement Process Technology, thyssenkrupp Polysius GmbH, Germany

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Chris Fritsche¹, Katrin Markuske², Tarik Boyraz³, Sven Eckart¹, Matthias Steinbacher³, Hartmut Krause¹

1: TU Bergakademie Freiberg, Chair of Gas and Heat Technology, Germany; 2: TU Bergakademie Freiberg, Chair of Technical Thermodynamics, Germany; 3: Leibniz-Institut für Werkstofforientierte Technologien Bremen, Germany

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Claudia Meitzner¹, Fabian Herz², Eckehard Specht¹

1: Otto von Guericke University Magdeburg, Institute of Fluid Dynamics and Thermodynamics, Universitätsplatz 2, 39106 Magdeburg Germany; 2: Anhalt University of Applied Sciences, Applied Biosciences and Process Engineering, Bernburger Str. 55, 06366 Köthen Germany

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Muralimohan Juttu Vidyasagar¹, Ralph Behrend¹, Mareen Zöllner², Thomas Krampitz², Paul Scapan³, Michael Kraft³, Martin Bertau³, Holger Lieberwirth², Hartmut Krause¹

1: TU Bergakademie Freiberg, Institute of Thermal Engineering (IWTT), Chair of Gas and Heat Technology, Freiberg; 2: TU Bergakademie Freiberg, Institute of Processing Machines and Recycling Systems Technology (IART), Freiberg; 3: TU Bergakademie Freiberg, Institute of Chemical Technology (ITC), Freiberg

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Frank Zahorszki

ITEMA GmbH, Germany

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Gabriel J Roeder, Sebastian Fendt, Hartmut Spliethoff

Chair of Energy Systems, Techninal University of Munich, Germany

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Phil Spatz, Siegmar Wirtz, Viktor Scherer

Department of Energy Plant Technology, Ruhr-University Bochum, Germany

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Kristina Mabic^{1,2}, Martin Adendorff¹, Esin Iplik^{1,2}, Ioanna Aslanidou², Konstantions Kyprianidis²

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Julian Andreas Morich¹, Stefan Günther¹, Stefan Odenbach¹, Philipp Pietsch², Johannes Köllner³

1: TU Dresden, Germany; 2: DBI, Germany; 3: SDS, Germany

1: Linde GmbH, Carl-von-Linde-Straße, Germany; 2: Mälardalen University, Sweden

INVESTIGATIONS OF RADIANT TUBE ARRANGEMENTS AND THEIR EFFECT ON RADIATION EXCHANGE IN HORIZONTAL FURNACES

Dominik Büschgens, Herbert Pfeifer

Department for Industrial Furnaces and Heat Engineering, RWTH Aachen University, Aachen, Germany

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Jakob Seidenbecher, Andrea Dernbecher, Shreyas Kulkarni, Suresh Gopalkrishna, Lucas Briest, Nicole Vorhauer-Huget, Liane Hilfert, Nora Kulak, Alba Dieguez-Alonso

Otto von Guericke University Magdeburg, Faculty of Process and Systems Engineering, Magdeburg, Germany

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Daniel Braig¹, Pascal Steffens¹, Janik Hebel², Leon Loni Berkel¹, Hendrik Nicolai¹, Arne Scholtissek¹, Andreas Dreizler², Christian Hasse¹

1: Technical University of Darmstadt, Institute of Simulation of Reactive Thermo-Fluid Systems, Otto-Berndt-Straße 2, 64287 Darmstadt, Germany; 2: Technical University of Darmstadt, Institute of Reactive Flows and Diagnostics, Germany

LIQUID FUEL EVAPORATION UNDER ENTRAINED FLOW GASIFICATION CONDITIONS – INSIGHTS FOR BURNER DEVELOPMENT

Manuel Haas¹, Sabine Fleck¹, Tobias Jakobs¹, Thomas Kolb^{1,2}

1: Institut für Technische Chemie, Karlsruher Institut für Technologie; 2: Engler-Bunte-Institut, Chemische Energieträger - Brennstofftechnologie, Karlsruher Institut für Technologie

LOCALLY-RESOLVED DEM/CFD SIMULATIONS OF A GENERIC SHAFT KILN FOR LIME PRODUCTION

Enric Illana Mahiques, Klidi Qyteti, Torben Bergold, Siegmar Wirtz, Viktor Scherer
Ruhr University Bochum, Germany

MEASUREMENTS OF NOX EMISSIONS FROM BIOMASS COMBUSTION IN MEDIUM TO LARGE-SCALE POWER PLANTS

Gabriel J Roeder¹, Johannes Haimerl¹, Yusheng Chen², Matthias Gaderer², Sebastian Fendt¹, Hartmut Spliethoff¹

1: Chair of Energy Systems, Technical University of Munich, Germany; 2: Professorship of Renewable Energy Systems, Technical University of Munich, Germany

NATURAL GAS-HYDROGEN FLAMES UNDER THE INFLUENCE OF CHANGING WALL CONDITIONS AND AIR STAGING: NUMERICAL AND EXPERIMENTAL INVESTIGATION IN A PILOT PLANT SCALED OPTICALLY ACCESSIBLE COMBUSTION CHAMBER

Sven Eckart, Lars Raschke, Moritz Junge, Hartmut Krause
TU Bergakademie Freiberg, Germany

NUMERICAL STUDY ON THE IMPACT OF SUBMODELS FOR PYROLYSIS AND CHAR CONVERSION IN TURBULENT SWIRLING PULVERISED SOLID FUEL FLAMES UNDER OXYFUEL CONDITIONS

Hossein Askarizadeh¹, Hendrik Nicolai², Stefan Pielsticker¹, Burak Özer¹, Reinhold Kneer¹, Christian Hasse², Anna Maßmeyer¹

1: Institute of Heat and Mass Transfer, RWTH Aachen University, Augustinerbach 6, 52056 Aachen, Germany; 2: Department of Mechanical Engineering, Simulation of Reactive Thermo-Fluid Systems (STFS), Technical University of Darmstadt, Otto-Berndt-Straße 2, Darmstadt 64287, Germany

NUMERICAL INVESTIGATION OF CREEP DEFORMATION IN RADIANT TUBES UNDER CYCLIC THERMAL LOADS USING TRANSIENT CFD AND FEM MODELS

Nicolas Dinsing, Nico Schmitz, Herbert Pfeifer

Department for Industrial Furnaces and Heat Engineering, RWTH Aachen University, Germany

ONLINE CORROSION MONITORING IN A WASTE CO-FIRED FLUIDIZED BED POWER PLANT

Dennis Hülsbruch, Adrian Marx, Jochen Ströhle, Bernd Epple

Technical University Darmstadt, Germany

OPERATIONAL DETERMINATION OF THE FRACTION COMPOSITION DURING WASTE INCINERATION

Antje David¹, Daniel Bernhardt¹, Michael Beckmann¹, Anna Krein², Stefan Vodegel²

1: Dresden University of Technology, Germany; 2: Clausthal Research Center for Environmental Technologies, Germany

OPERATIONAL PARAMETERS OF A 120 KW PYROLYSIS TEST PLANT FOR BIOMASS AND MIXED WASTE

Martin Hefe, Ralph Behrend, Hartmut Krause

TU Bergakademie Freiberg, Germany

OPTIMISATION AND DIGITALISATION STRATEGIES FOR THE "FURNACE OF THE FUTURE" - ESPECIALLY FOR PLANTS OPERATED WITH HETEROGENEOUS SOLID FUELS

Martin Hannes Zwiellehner¹, Franz Dannerbeck¹, Mike Sinnreich², Ragnar Warnecke³, Theo Steininger⁴, Maksim Greiner⁴

1: SAR Group GmbH, Process- and Environmental Technology, Germany; 2: Thermische Verwertungsanlage Schwarza, Germany; 3: GKS Gemeinschaftskraftwerk Schweinfurt, Germany; 4: Erium GmbH, Germany

OPTIMIZATION OF THE PLASMA-ASSISTED GASIFICATION PROCESS IN A VERTICAL ENTRAINED-FLOW GASIFIER THROUGH THE CFD SIMULATIONS

Robert Lewtak, Jonas Brandstetter, Johannes Waßmuth, Kentaro Umeki, Andrius Tamosiunas, Sebastian Bastek, Sebastian Fendt, Harmut Spliethoff

Technical University of Munich, Germany

OXY-FUEL COMBUSTION IN AN ENTRAINED FLOW TEST RIG FOR REGENERATION OF SPENT CALCIUM LOOPING SORBENTS

Nico Mader, Jörg Maier, Günter Scheffknecht

University of Stuttgart, Institute of Combustion and Power Plant Technology, Germany

OXYGEN SEPARATION WITH MIEC MEMBRANES ON A LAB SCALE OXY-FUEL FURNACE

Fabian Scheck¹, Nico Schmitz¹, Herbert Pfeifer¹, Ralf Krieger², Martin Demuth³, Wolfgang Bender⁴

1: RWTH Aachen University, Germany; 2: Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany; 3: Messer Austria GmbH, Austria; 4: Hülsenbusch Apparatebau GmbH & Co. KG, Germany

OVERALL PLANT OPTIMIZATION BY AUTOMATIC CONTROLLING WITH ACOUSTIC GAS TEMPERATURE MEASUREMENT – IMPROVEMENT OF EFFICIENCY, EMISSIONS, AND PLANT AVAILABILITY

Martin Brodeck, Maximilian von Campenhausen

Bonnenberg & Drescher GmbH, Germany

PARTICLE-RESOLVED NUMERICAL SIMULATION OF PYROLYSIS PROCESS OF A NON-IDEAL PLASTIC PARTICLE

Feichi Zhang¹, Salar Tavakko¹, Akshay Somvanshi¹, Flavio Galeazzo², Dieter Stapf¹

1: Karlsruhe Institute of Technology, Germany; 2: High Performance Computing Center Stuttgart, Germany

RETROFITTING OF A MAGNESIUM MELTING FURNACE WITH HYDROGEN BURNERS BY MEANS OF ENERGETIC BALANCING AND PROCESS OPTIMIZATION

Valerie Grimm, Ralph Behrend, Sven Eckart, Hartmut Krause

Organization(s): TU Bergakademie Freiberg, Germany

PLASTIC PYROLYSIS: AN EXPERIMENTAL STUDY ON THE CIRCULARITY OF ORGANIC-RICH FRACTION FROM MECHANICAL RECYCLING OF REFRIGERATORS

Salar Tavakkol, Jonas Vogt, Frank Richter, Grazyna Straczewski, Dieter Stapf

Karlsruhe Institute of Technology, Institute for Technical Chemistry, Germany

PYROLYSIS OF HYDROCHARS DERIVED FROM CO-HYDROTHERMAL CARBONIZATION OF BIOMASS AND PLASTICS

Jannik Böttger¹, Osvalda Senneca², Martin Muhler¹, Francesca Cerciello¹

1: Ruhr University Bochum, Germany; 2: Istituto di Scienze e Tecnologia per l'Energia e la Mobilità Sostenibili (STEMS)-CNR, Italy

REACTIVITY ASSESSMENT OF CARBON-ZERO FUELS: METHANE, HYDROGEN, AND AMMONIA

Sven Eckart¹, Gianmaria Pio², Andreas Richter³, Ernesto Salzano², Hartmut Krause¹

1: GWA, TU Bergakademie Freiberg, Germany; 2: Alma Mater Studiorum - University of Bologna; 3: MTK, TU Bergakademie Freiberg, Germany

REHABILITATION OF AN EXISTING NATURAL GAS BOILER TO CO-COMBUSTION OF HYDROGEN RICH GAS

Sven Löwen, Bernhard Zimmermann
Mitsubishi Power Europe GmbH, Germany

SIMULATION MODEL OF A STRIP ANNEALING LINE TO IMPROVE PRODUCT QUALITY IN PRECISION STRIP PRODUCTION

Nico Rademacher¹, Christian Kühnert², Dominik Büschgens¹, Moritz Eickhoff¹, Herbert Pfeifer¹, Thomas Bernard²

1: RWTH Aachen University, Department for Industrial Furnaces and Heat Engineering, Germany; 2: Fraunhofer Institute of Optronics, System Technologies and Image Exploration IOSB, Germany

SOEFC PROCESS FOR HIGH-PURITY OXYGEN GENERATION: A CONCEPT STUDY

Colin Fischer, Jonas Liekenbrock, Christoph Wieland
University Duisburg-Essen, Germany

SPECTRAL RESOLVED RADIATIVE HEAT FLUX MEASUREMENTS IN A COMBUSTION CHAMBER

Lukas Pörtner¹, Burak Özer², Marcel Richter³, König Dominik³, Martin Schiemann¹, Anna Maßmeyer², Jochen Ströhle³, Bernd Epple³

1: Ruhr-University Bochum, Germany; 2: RWTH Aachen University; 3: TU Darmstadt

SUSTAINABLE PROCESS HEAT: CONDITIONING OF BIOGENIC SYNTHESIS GASES FROM GASIFICATION FOR DIRECT USE IN CONVENTIONAL BURNER SYSTEMS

Christian Wondra, Peter Treiber, Jürgen Karl
Chair of Energy Process Engineering, Friedrich-Alexander-University Erlangen-Nuremberg, Germany

THERMOCHEMICAL RECYCLING OF PLASTICS: STATE OF THE ART AND THE PROCESS ENGINEERING CHALLENGES AHEAD

Philip Biessey
Ruhr University Bochum, Germany

THE FLOX-2 PROJECT: A REVIEW OF THE BASIC STUDIES

Linda Giesler¹, Moritz Diewald¹, Nico Schmitz¹, Herbert Pfeifer¹, Enrico Cresci², Joachim G. Wüning²

1: RWTH Aachen University, Department for Industrial Furnaces and Heat Engineering; 2: WS Wärmeprozessstechnik GmbH

THE INFLUENCE OF PARTICLE SIZE ON THE QUARTZ SAND CALCINATION IN ROTARY KILNS

Haozhi Jie, Fabian Herz
Anhalt University of Applied Sciences, Germany

TOWARDS GENERAL REACTOR NETWORK MODELING FOR METAL FUEL COMBUSTION

Sören Dübal¹, Daniel Braig², Pascal Steffens², Leon Loni Berkel², Arne Scholtissek², Christian Hasse², Hendrik Nicolai², Sandra Hartl¹

1: Optical Diagnostics and Renewable Energies (ODEE), University of Applied Sciences Darmstadt, Germany; 2: Simulation of reactive Thermo-Fluid Systems (STFS), Technical University of Darmstadt, Germany

TOWARDS USING LARGE EDDY SIMULATION FOR ANALYSIS OF COMBUSTION CHARACTERISTICS IN A 1 MW BIOMASS BURNER

Leon Loni Berkel, Pascal Steffens, Hendrik Nicolai, Christian Hasse

Institut for Simulation of reactive Thermo-Fluid Systems, Technische Universität Darmstadt

TRANSFERABILITY OF EMPIRICAL AND NETWORK PYROLYSIS MODELS TO TORREFACTION BOUNDARY CONDITIONS

Stefan Pielsticker¹, Erik Freisewinkel², David Tarlinski², Lukas Pörtner², Viktor Scherer², Reinhold Kneer¹

1: RWTH Aachen University, Institute of Heat and Mass Transfer; 2: Ruhr-Universität Bochum, Department of Energy Plant Technology

WEIGHTED SUM OF GREY GASES RADIATION MODEL FOR OXYGEN-ENRICHED COMBUSTION OF HYDROGEN-METHANE MIXTURES

Johannes Losacker, Alex M Garcia, Franziska Ott, Nico Schmitz, Herbert Pfeifer

RWTH Aachen University, Department for Industrial Furnaces and Heat Engineering

India

A NOVEL PARTIALLY AERATED SWIRL BURNER DESIGN FOR BIOMASS THERMOCHEMICAL APPLICATIONS

Vignesh B, Muthu Kumar K, Varunkumar S

Thermodynamics and Combustion Engineering Laboratory, IIT Madras, Chennai, India

ENERGY EFFICIENT ALUMINIUM MOLTEN METAL HOLDING FURNACE

Prakash Maladkar¹, Shivranjani Maladkar²

1: Afeco Heating and Automation Private Limited, India; 2: Afeco Heating Systems

HYDROGEN FROM BIOMASS: EFFECT OF OXYGEN ENRICHMENT ON STEAM GASIFICATION

Santhosh P.¹, Muthu Kumar K.¹, Jaganathan V. M.², Rahul Sharma³, Varunkumar S.¹

1: Indian Institute of Technology, Madras, India; 2: National Institute of Technology Trichy, India; 3: Corporate R&D Department, Gas Authority of India Limited, Noida, India

STUDY OF FLAME AND HEAT TRANSFER CHARACTERISTICS OF A PREMIXED HYDROGEN-BLENDED METHANE DUAL FLAME IMPINGING ON A FLAT PLATE

Harish Alagani, Pankaj Kumar Arya, Manoj Kumar, Satish Kumar, Gananath Doulat Thakre

Combustion Lab, Tribology and Combustion Division, Indian Institute of Petroleum, Dehradun, Uttarakhand-248005, India

Italy

CHEMICAL RECYCLING OF PLASTIC WASTE COMPARED TO A CONVENTIONAL VALORISATION PATHWAY

Federico Vigano^{1,2}, Antonio Conversano^{1,2}, Davide Sogni², Daniele Di Bona², Stefano Consonni^{1,2}

1: Department of Energy - Politecnico di Milano, Milan, Italy; 2: LEAP Scarl (Laboratory for Energy and the Environment - Piacenza), Italy

CHEMICAL CHARACTERIZATION OF CONDENSED PHASES FROM WASTE PLASTICS PYROLYSIS

Barbara Apicella¹, Maurizio Azzolini², Francesca Cerciello³, Giovanni Curia², Renata Migliaccio¹, Fabio Moratti¹, Maria Maddalena Olliano¹, Giovanna Ruoppolo¹, Carmela Russo¹, Fernando Stanzione¹, Massimo Urciuolo¹, Osvalda Senneca¹

1: STEMS-CNR; 2: Lifenergy Italia; 3: RUB

COMBUSTION IN A COKE OVEN BATTERY: NUMERICAL MODELLING AND TESTING WITH FOCUS ON NOX EMISSION

Gianluca Rossiello¹, Tiziana Vela¹, Alberto Campodonico², Alberto Vicentini², Silvia Nazzarri², Daniele Ettorre³, Seyed Behzad Ahmadpanah³, Marco Torresi³

1: SEAMTHESIS Srl, Via IV Novembre, 156 – 29122 Piacenza, ITALY; 2: PAUL WURTH Italia SpA (SMS group), Via Balleydier 7 – 16149 Genova, ITALY; 3: DMMM, Department of Mechanics, Mathematics and Management, Polytechnic University of Bari, Via Re David, 200 – 70125 Bari, ITALY

COW BONE WASTE USES AS A CATALYST FOR PYROLYSIS OF LIGNOCELLULOSIC BIOMASSES

Raouia Chagtmi^{1,2}, Assia Maaoui^{1,2}, Francesca Cerciello³, Osvalda Senneca⁴, Fernando Stanzione⁴, Renata Migliaccio⁴, Barbara Apicella⁴, Aida Ben Hassen Trabelsi¹

1: Laboratory of Wind Energy Control and Waste Energy Recovery, LMEEVED, Research and Technology Centre of Energy, CRTEn, B.P. 95, 2050 Hammam-Lif, Tunisia; 2: Department of Geology, Faculty of Sciences of Tunis, University of Tunis El Manar, 2092, El Manar II, Tunis, Tunisia; 3: Laboratory of Industrial Chemistry, Ruhr University Bochum, 44801 Bochum, Germany; 4: Istituto di Scienze e Tecnologia per l'Energia e la Mobilità Sostenibili (STEMS)-CNR, 80125 Napoli, Italy

GREEN HYDROGEN APPLICATION IN THE HARD-TO-ABATE INDUSTRY: A FEASIBILITY STUDY

Marco Pellegrini¹, Alessandro Guzzini¹, Riccardo Manieri¹, Cesare Sacconi¹, Barbara Lodi², Jessica Rosati², Daniele Tocco³

1: University of Bologna, Italy; 2: CPL Concordia Soc. Coop., Italy; 3: Fluorsid S.p.A., Italy

HEAT TRANSFER CHARACTERISTICS OF AMMONIA COMBUSTION IN INDUSTRIAL FURNACES

Giancarlo Sorrentino¹, Giovanni Battista Ariemma¹, Giuseppe Langella², Pino Sabia¹, Raffaele Ragucci¹, Mara de Joannon¹

1: Istituto di Scienze e Tecnologie per l'Energia e la Mobilità Sostenibili (STEMS) - C.N.R., Napoli – Italy; 2: DII - Università degli Studi di Napoli, Federico II, Napoli-Italy

INTEGRATION OF MOLTEN CARBONATE FUEL CELLS (MCFCS) IN THE GLASSMAKING PROCESS TO ALLOW DECARBONISATION AND SUPPORTING ELECTRIFICATION

Federico Vigano^{1,2}, Letizia Cretarola¹, Maurizio Spinelli²

1: Department of Energy - Politecnico di Milano, Milan, Italy; 2: LEAP Scarl (Laboratory for Energy and the Environment - Piacenza), Italy

KINETICS OF IRON REDUCTION UPON REDUCTION/OXIDATION CYCLES

Francesca Cerciello¹, Luciano Cortese², Viktor Sherer², Christoph Yannakis¹, Osvalda Senneca¹

1: RUB, DE; 2: CNR, IT

MULTI-MATERIAL INJECTION SYSTEM TO FOSTER CIRCULARITY: VALORIZATION OF RECYCLED POLYMERS FROM WASTE PLASTICS IN ELECTRIC ARC FURNACE

Mattia Bissoli¹, Enrico Malfa¹, Mauro Gizzi¹, Piero Frittella², Francesco Fredi², Mattia Tellaroli², Elisa Marchesan³, Elia Gosparini³, Loredana Di Sante⁴

1: Tenova S.p.A., Castellanza (VA), Italy; 2: Feralpi Siderurgica, Lonato (BS), Italy; 3: IBLU, Pasion di Prato (UD), Italy; 4: RINA Centro Sviluppo Materiali (RM), Italy

RIPLAID CONCEPT FOR VALORIZATION OF WASTE PLASTICS INTO GASOLINE: FROM LABORATORY TO PRE-INDUSTRIAL SCALE

Maurizio Azzolini¹, Giovanni Curia¹, Fabio Moratti¹, Alessandro Bozzoli², Luigi Crema², Michele Bolognese², Matteo Testi², Farhad Farajimoghadam³, Paesano Laura³, Davide Imperiale³, Luca Pagano³, Urbana Bonas³, Marta Marmiroli³, Nelson Marmiroli³, Barbara Apicella⁴, Francesca Cerciello⁵, Renata Migliaccio⁴, Maria Maddalena Olliano⁴, Giovanna Ruoppolo⁴, Fernando Stanzione⁴, Massimo Urciuolo⁴, Osvalda Senneca⁴

1: Lifenergy Italia; 2: Fondazione Bruno Kessler; 3: CINSA; 4: STEMS-CNR; 5: RUB

SIMULATION AND VALIDATION AGAINST FULL-SCALE TESTING OF A 35 MW INDUSTRIAL BURNER WORKING IN MILD COMBUSTION REGIME

Gianluca Rossiello¹, Lorenzo Morandi², Marzio Ferrara², Diego Maggiolini², Andrea Puzo³, Seyed Behzad Ahmadpanah³, Alessandro Saponaro⁴, Virginia Fratolocchi⁵, Marco Torresi³

1: Itea SpA (Sofinter group), Largo Buffoni n.3, 21013 Gallarate (VA), ITALY; 2: Macchi (division of Sofinter SpA), Largo Buffoni n.3, 21013 Gallarate (VA), ITALY; 3: Department of Mechanics, Mathematics and Management, Polytechnic University of Bari, Via Re David, 200 – 70125 Bari, ITALY; 4: Centro Combustione Ambiente SpA (CCA, Sofinter group), via Milano km 1,600, 70023 Gioia del Colle (BA), ITALY; 5: Siemens Digital Industries Software, 200 Shepherds Bush Road, London W6 7NL, UNITED KINGDOM

THERMOCHEMICAL VALORIZATION OF LIGNOCELLULOSIC WASTES INTO SUSTAINABLE BIOMATERIALS AND BIOFUELS

Assia MAAOUI¹, Raouia CHAGTMI², Francesca CERCIELLO³, Aida BEN HASSEN TRABELSI⁴, Fernando STANZIONE⁵, Maria Maddalena OLIANO⁶, Osvalda SENNECA⁷, Barbara APICELLA⁸

1: Laboratory of Wind Energy Control and Waste Energy Recovery, LMEEVED, Research and Technology Centre of Energy, CRTEn, B.P. 95, 2050 Hammam-Lif, Tunisia/Department of Geology, Faculty of

Sciences of Tunis, University of Tunis El Manar, 2092, El Manar II, Tunis, Tunisia; 2: Laboratory of Wind Energy Control and Waste Energy Recovery, LMEEVED, Research and Technology Centre of Energy, CRTEn, B.P. 95, 2050 Hammam-Lif, Tunisia/Department of Geology, Faculty of Sciences of Tunis, University of Tunis El Manar, 2092, El Manar II, Tunis, Tunisia; 3: Laboratory of Industrial Chemistry, Ruhr University Bochum, 44801 Bochum, Germany; 4: Laboratory of Wind Energy Control and Waste Energy Recovery, LMEEVED, Research and Technology Centre of Energy, CRTEn, B.P. 95, 2050 Hammam-Lif, Tunisia; 5: Istituto di Scienze e Tecnologia per l'Energia e la Mobilità Sostenibili (STEMS)-CNR, 80125 Napoli, Italy; 6: Istituto di Scienze e Tecnologia per l'Energia e la Mobilità Sostenibili (STEMS)-CNR, 80125 Napoli, Italy; 7: Istituto di Scienze e Tecnologia per l'Energia e la Mobilità Sostenibili (STEMS)-CNR, 80125 Napoli, Italy; 8: Istituto di Scienze e Tecnologia per l'Energia e la Mobilità Sostenibili (STEMS)-CNR, 80125 Napoli, Italyfjkg

Lithuania

SPECTRAL ANALYSIS OF ALTERNATIVE LOW-CARBON FUEL COMBUSTION IN PLASMA-ASSISTED BURNER

Adolfas Jančauskas, Rolandas Paulauskas, Ernest Bykov, Lina Vorotinskienė
Lithuanian Energy Institute, Lithuania

Luxembourg

XDEM TECHNOLOGY SUPPORTING THE TRANSITION FROM BLAST TO DIRECT REDUCTION IRON (DRI) FURNACES

Bernhard Josef Peters
University of Luxembourg, Luxembourg

Norway

ASSESSMENT OF SYNGAS QUALITY FROM PLASTIC GASIFICATION FOR METHANOL SYNTHESIS

Corinna Schulze-Netzer, Thomas Alan Adams II
Norwegian University of Science and Technology, Norway

GAS TURBINE OPERATION WITH HYDROGEN BLENDS

Mohsen Assadi¹, Reyhaneh Banihabib¹, Mohamed Pourkashanian², Karen Finney², Peter Kutne³, Timo Lingstaedt³

1: University of Stavanger, Norway; 2: Sheffield University; 3: German Aerospace Research Center

Portugal

EXPERIMENTAL AND NUMERICAL INVESTIGATION OF A MILD COMBUSTOR FOR GAS TURBINE APPLICATIONS

Gonçalo Pacheco, Afonso Santoalha, Bruno M. Pinto, Miguel A. A. Mendes, Pedro J. Coelho
IDMEC- Instituto de Engenharia Mecânica, Portugal

GRANULAR MIXING EFFECTS ON RECYCLING OF STEELMAKING BY-PRODUCTS USING MICROWAVE HEATING

Luís Silva, Duarte Albuquerque
Universidade Lisboa, Instituto Superior Técnico, Portugal

South Korea

COMBUSTION CHARACTERISTICS ON PERIODIC FUEL-FLOW CONTROL IN AN INDUSTRIAL FURNACE

Hookyung Lee¹, Dong Myung Seo¹, Jonghyun Kim², Kangmin Ju², Jungsoo Park²

1: Korea Institute of Energy Research, Korea, Republic of (South Korea); 2: Chosun University, Korea, Republic of (South Korea)

EFFECT OF NH₃ ADDITION ON A NATURAL GAS FUELED INDUSTRIAL RADIANT TUBE BURNER

Namsu Kim, Young Tae Guahk, Changbog Ko

Korea Institute of Energy Research, Korea, Republic of (South Korea)

EXPERIMENTAL STUDY ON COAL/AMMONIA CO-FIRING IN A 80KW TH SINGLE BURNER SCALE AND 1MW TH MULT BURNER SCALE FURNACE

Taeyoung Chae

Korea institute of industrial technology, Korea, Republic of (South Korea)

NUMERICAL STUDY ON INFLUENCES OF NITROGEN CONTENTS IN FUEL AND OXIDIZER ON NITROGEN OXIDE EMISSIONS DURING OXY-FUEL COMBUSTION OF NATURAL GAS

Yonmo Sung, Wontak Choi, Seunggi Choi

Gyeongsang National University, Korea, Republic of (South Korea)

NUMERICAL INVESTIGATION ON AIR INFILTRATION IMPACT ON NITROGEN OXIDE EMISSIONS DURING NG-O₂ COMBUSTION

Yonmo Sung, Wontak Choi, Seunggi Choi

Gyeongsang National University, Korea, Republic of (South Korea)

NUMERICAL SIMULATION OF INDUSTRIAL BURNERS FOR OXY-FUEL COMBUSTION

Namsu Kim, Young Tae Guahk, Changbog Ko

Korea Institute of Energy Research, Korea, Republic of (South Korea)

THE PARADIGMATIC SHIFT TOWARDS ELECTRIFICATION IN CONTINUOUS STEEL-STRIP ANNEALING FURNACES

Jaejin Yu^{1,2}, Jaewon Chung², Hookyung Lee¹

1: Korea Institute of Energy Research, Korea, Republic of (South Korea); 2: Korea University, Korea, Republic of (South Korea)

Spain

BEHAVIOUR OF DIFFERENT OXYGEN CARRIERS IN THE CHEMICAL LOOPING COMBUSTION OF PLASTIC RESIDUES

Teresa Mendiara, Maria Teresa Izquierdo, Óscar Condori, Lidia García

Instituto de Carboquímica (ICB-CSIC), Zaragoza, Spain.

ENERGY STORAGE USING DIRECT IRON OXIDE REDUCTION AND ENERGY UTILIZATION WITH HIGH TEMPERATURE METAL COMBUSTION

Luis M. Romeo¹, Carmen Mayoral², Santiago Jiménez², Begoña Rubio², José M. Andrés²
1: Universidad de Zaragoza. EINA-Mechanical Engineering Department.; 2: Instituto de Carboquímica (CSIC).

FLEXIBLE GREEN HYDROGEN COMBUSTION

Victor Cuervo-Piñera

ArcelorMittal, Global R&D

Sweden

A COMPREHENSIVE APPROACH FOR SAMPLING AND ANALYZING PRODUCT MIXTURES FROM A SEMI-INDUSTRIAL SCALE FLUIDIZED BED STEAM CRACKER

Chahat Mandviwala, Renesteban Forero Franco, Ivan Gogolev, Teresa Berdugo Vilches, Martin Seemann, Henrik Thunman

Department of Space, Earth and Environment (SEE), Division of Energy Technology, Chalmers University of Technology, Gothenburg, Sweden 41296

CHARACTERIZATION OF PACKED BED REACTORS USING X-RAY MICROTOMOGRAPHY: EFFECT OF PARTICLE IRREGULARITY AND PARTICLE SIZE DISTRIBUTION ON THE BED MORPHOLOGY

Zahra Ghasemi Monfared, Kentaro Umeki, Gunnar Hellström

Lulea University of Technology, Sweden

DIRECT CRACKING IN THERMAL PLASMA - A MEAN FOR DECARBONIZATION OF STEAM CRACKING FURNACES

Ivan Gogolev, Chahat Mandviwala, Nidia Diaz Perez, Renesteban Forero Franco, Martin Seemann

Chalmers University of Technology, Sweden

EXPLORING FLUIDIZED BED TECHNOLOGY FOR BIOCARBON PRODUCTION WITH ALKALI/PHOSPHORUS MITIGATION

Eduardo Arango Durango, Kentaro Umeki

Luleå University of Technology, Sweden

EX-SITU CATALYTIC PYROLYSIS OF ELECTRONIC PLASTIC WASTE USING COMBINED CAO, HZSM-5 AND FE/HZSM-5 CATALYSTS FOR IMPROVING HYDROCARBONS YIELD

Samina Gulshan¹, Hoda Shafaghat², Panagiotis Evangelopoulos³, Weihong Yang¹

1: KTH Royal Institute of Technology, Department of Material Sciences and Engineering; 2: Division of Bioeconomy and Health, Department of Biorefinery and Energy, RISE Research Institutes of Sweden AB; 3: Department of System Transition and Service Innovation, Unit of Resources from Waste, RISE Research Institutes of Sweden AB

HEAT TRANSFER ENHANCEMENT OF A THERMAL PLASMA IN A ROTARY KILN FOR CEMENT PRODUCTION

Adrian Gunnarsson¹, Klas Andersson¹, Bodil Wilhelmsson², Arvid Stjernberg²

1: Chalmers University of Technology, Sweden; 2: Heidelberg Materials Cement Sverige AB, Sweden

IS A TWO-STEP THERMOCHEMICAL CONVERSION AN ALTERNATIVE ROUTE TO MAXIMIZE WASTE TIRES CIRCULARITY?

Nidia Diaz Perez, Chahat Mandviwala, Ivan Gogolev, Isabel Cañete-Vela, Renesteban Forero-Franco, Henrik Thunman, Martin Seemann

Chalmers University of Technology, Sweden

OPTIMIZING CONSUMPTION OF VIRGIN BED MATERIAL WITH FLUIDIZED BED DIAGNOSTIC TOOLS

Tomas Leffler

Chalmers University of Technology, Sweden

OVERVIEW OF EFFECTIVITY AND PRODUCTIVITY IMPROVEMENTS IN REHEATING FURNACES OVER THE LAST 25 YEARS: RESEARCH DEVELOPMENT, STATE OF THE ART AND FUTURE RESEARCH NEEDS

Gustav Häggström, Joel Falk, Andreas Johnsson

Swerim AB, Sweden

THERMOCHEMICAL RECYCLING OF MIXED PLASTIC WASTES THROUGH PYROLYSIS AND STEAM CRACKING – ASSESSMENT OF CENTRALIZED VS. DECENTRALIZED APPROACHES.

Ivan Gogolev¹, Nidia Diaz Perez¹, Chahat Mandviwala¹, Renesteban Forero Franco¹, Ann-Christine Johansson², Andre Selander², Martin Seemann¹

1: Chalmers University of Technology, Sweden; 2: Research Institutes of Sweden (RISE)

TOWARDS SUSTAINABLE TEXTILE WASTE MANAGEMENT: EXPLORING VALUABLE CHEMICALS PRODUCTION THROUGH STEAM CRACKING IN A DUAL FLUIDIZED BED

Renesteban Forero Franco, Isabel Cañete-Vela, Chahat Mandviwala, Teresa Berdugo-Vilches, Nidia Diaz Perez, Ivan Gogolev, Henrik Thunman, Martin Seemann

Chalmers University of Technology, Sweden

Switzerland

TECHNICAL AND MARKET CHALLENGES IN THE CHEMICAL RECYCLING OF PLASTIC WASTES

Jean-Bernard MICHEL

Humana Sàrl, Switzerland

THE ENERGY TRANSITION AND ITS EFFECTS ON PROCESS INSTRUMENTATION

Oliver Seifert

Endress+Hauser Flow, Switzerland

Tunisia

COMBINED EFFECTS OF SQUARE FITTED WAVY WINGS AND RADIATIVE NANOFUID ON COOLING ELECTRONIC DEVICES

Mohamed Dhia Massoudi¹, Mohamed Bechir Ben Hamida^{1,2,3}

1: Laboratory of Ionized Backgrounds and Reagents Studies (EMIR), Preparatory Institute for Engineering Studies of Monastir (IPEIM), University of Monastir; 2: College of Engineering, Imam Mohammad Ibn

Saud Islamic University (IMSIU), Riyadh, Saudi Arabia; 3: Higher School of Sciences and Technology of Hammam Sousse (ESSTHS), University of Sousse, Tunisia

Turkey

NUMERICAL ANALYSIS OF HEATING ZONE OF THE CONTINUOUS ANNEALING FURNACE: EFFECT OF HEIGHT AND THICKNESS OF THE GLASS BOTTLES ON THE TEMPERATURE DISTRIBUTION OF GLASS BOTTLES.

Gönenç Can Altun, Oğuzhan Aşık, Hazar Şişik, Altuğ Melik Başol
Özyeğin University, Türkiye

NUMERICAL INVESTIGATION OF THERMAL RADIATION IN THE COMBUSTION ZONE OF A GLASS MELTING FURNACE

Berkay Halvaşi, Tolga Altınoluk, Altuğ M. Başol, M. Pınar Mengüç
Özyeğin University, Türkiye

OPTIMIZING HEAT TREATMENT FURNACE OPERATING CONDITIONS: AN INVERSE SOLUTION METHODOLOGY

Ersin Yıldız¹, Altuğ M. Başol¹, M. Pınar Mengüç^{1,2}

1: Özyeğin University, Türkiye; 2: Center for Energy, Environment and Economy (CEEE/EÇEM), Özyeğin University, Türkiye

United Kingdom

A 2-ZONE MATHEMATICAL MODEL FOR THERMAL DESIGN AND NOX FORECASTING ON HIGH TEMPERATURE INDUSTRIAL FURNACES

Robert Tucker, Neil Fricker
Global Combustion Systems, Livingstone, United Kingdom

APPLICATION OF GLASS MELTER NOX REDUCTION TECHNIQUES TO STEEL REHEATING FURNACES FIRING NATURAL GAS, COKE OVEN GAS AND HYDROGEN.

Neil Fricker, Richard Pont, Iain Shoveller
Global Combustion Systems, Livingstone, United Kingdom

CFD BASED SOLUTIONS TO RESOLVE COMBUSTION AND EMISSIONS ISSUES OF WASTE-TO-ENERGY PLANTS

Anura Perera, Thomas Ball, John Goldring, Gerry Riley
RJM International, United Kingdom

CHEMICAL RECYCLING OF PLASTIC WASTE VIA PYROLYSIS USING WASTE-DERIVED CATALYSTS

Gerardo Martinez Narro, Anh N. Phan
Newcastle University, United Kingdom

COMPARISON OF THE NOX EMISSIONS FOR A 70KW DUAL FUEL HYDROGEN/NATURAL GAS INDUSTRIAL BURNER

Gordon Andrews^{1,2}, Ramon Quinonez², Ray Massey², Richard Wakeman², Jason Poon¹, Herodotus Phylaktou¹, Steve Smith²
University of Leeds, UK; 2: Clean Burner Systems Ltd., UK

EXPERIMENTAL INVESTIGATIONS & ALGEBRAIC COMBUSTION MODEL PREDICTIONS FOR HYDROGEN-ENRICHED LEAN HYDROCARBON/AIR MIXTURES OF DIFFERENT LEWIS NUMBERS

Siva Muppala, Sooraj Mana Paleli Vasudevan
Kingston University London, United Kingdom

HYDROGEN FOR INDUSTRIAL DECARBONISATION

M Pourkashanian, Andy Heeley, Maria Fernanda Rojas Michaga, Kris Milkowski
Translational Energy Research Centre, The University of Sheffield, United Kingdom

USE OF CRACKED AMMONIA FOR THE REPLACEMENT OF PROPANE IN INDUSTRIAL BOILERS

Agustin Valera-Medina¹, Syed Mashruk¹, Marsh Richard¹, James Rudman², Joanna Jojka³, Phil Bowen¹
1: Cardiff University, United Kingdom; 2: FloGas; 3: Poznan University of Technology, Poland

QUANTIFICATION OF ORGANIC VOLATILE SPECIES FROM BIOMASS COMBUSTION

Amanda Lea-Langton, James Allan, Arthur Garforth
The University of Manchester, United Kingdom

QUANTIFYING THE EFFECT OF RESIDENCE TIME AND EQUIVALENCE RATIO ON RADIATIVE HEAT TRANSFER FROM HYDROGEN-METHANE BLENDED FLAMES BY USE OF A DIFFUSION SWIRL BURNER

Benjamin Rhys White¹, Steven Morris¹, Burak Goktepe¹, Anthony Giles¹, Richard Marsh¹, Andrew Price²
1: Cardiff University, United Kingdom; 2: CR PLUS

WHISKY DISTILLERY BIOMASS WASTE PRODUCTS AND THEIR POTENTIAL, USING AIR GASIFICATION, TO GENERATE A BIOMASS GASIFICATION GAS (BGG) TO DECARBONISE THE DISTILLERY HEAT.

Gordon Andrews^{1,2}, Ramon Quinonez², Francis Olanrewaju², Mohammed Khan¹, Ray Massey², Richard Wakeman², Hu Li¹, Herodotus Phylaktou¹, Steve Smith²
1: University of Leeds, United Kingdom; 2: Clean Burners Systems Ltd (CBS), United Kingdom

United States

A COMPARISON OF REHEATING METALS IN COMBUSTION PROCESSES USING NATURAL GAS AND HYDROGEN FUELS

Mark Hannum, Justin Dzik, Alexis Omilion
Fives North American Combustion, Inc.

COMBUSTION AND CONVECTION RESEARCH

Ivanka Petkova Nikolova

University of Pittsburgh, United States of America

CUTTING NOX EMISSIONS WITH THE CALLIDUS® ULTRA BLUE® BURNER SYSTEM

Kurt Kraus

Honeywell UOP Callidus, United States of America