15th EUROPEAN CONFERENCE
ON INDUSTRIAL FURNACES AND BOILERS
7 - 10 April 2026 - Porto, Portugal

INFUB

Title	Authors	Organisations
AUSTRIA		
Effects of oxygen-enriched combustion on furnace and blooms in an industrial reheating furnace: Coupled CFD simulations with comprehensive measurements.	Kislinger, Christian; Daurer, Georg; Schwarz, Stefan; Demuth, Martin; Gaber, Christian; Hochenauer, Christoph	Graz University of Technology, Austria
Investigation of turbulent NG / H2 flames using optical measurement techniques	Reichenbäck, Sebastian (1); Schwarz, Stefan (1); Daurer, Georg (1); Demuth, Martin (2); Gaber, Christian (2); Hochenauer, Christoph (1)	1: Graz University of Technology, Institute of Thermal Engineering, Austria; 2: Messer Austria GmbH, Austria
Negative Emission Technology: Development of a novel multifuel-furnace for flexible biochar and heat production	Pichler, Martin; Steiner, Maximilian; von Berg, Lukas; Hochenauer, Christoph; Scharler, Robert	Technische Universität Graz, Austria
Assessment of plasma torches as alternative energy supply in furnaces and computational comparison with combustion processes	Prieler, Rene (1); Schwarz, Stefan (1); Daurer, Georg (1); Laurisch, Frank (2); Rückert, Roland (2); Schnick, Michael (2); Hochenauer, Christoph (1)	1: Institute of Thermal Engineering, Graz University of Technology, Austria; 2: Kjellberg Finsterwalde Plasma und Maschinen GmbH, Germany
Development of a Versatile CFD Framework for Carbon-Neutral Furnace Design	Schieder, Manuel; Unterluggauer, Julian; Barz, Tilman; Zauner, Chritsoph	AIT Austrian Institute of Technology GmbH, Austria
BELGIUM		
Torrefaction of Spent Coffee Grounds: Effects of Devolatilization Conditions on Fuel Quality and Performance	Mekonnen, Bassazin Ayalew (1); Fanta, Solomon Workneh (2); De Greef, Johan (3); Van Caneghem, Jo (3); Vanierschot, Maarten (1,4)	1: Department of Mechanical Engineering, Belgium; 2: Faculty of Chemical and Food Engineering, Bahir Dar Institute of Technology, Bahir Dar University, Ethiopia; 3: Department of Materials Engineering, Belgium; 4: Materials Science, Innovation and Modelling (MaSIM) Research Focus Area, North-West University, South Africa

Advanced numerical modelling of thermochemical conversion in single biomass particle pyrolysis	Chen, Yuan (1); De Greef, Johan (2); Vanierschot, Maarten (1)	1: Department of Mechanical Engineering, Group T Leuven campus, KU Leuven, Leuven, Belgium; 2: Department of Materials Engineering, Group T Leuven Campus, KU Leuven, Leuven, Belgium
Multidimensional modelling of polyvinyl chloride thermal decomposition using reduced-order chemistry and computational fluid dynamics	Bouchaar, Zouhir (1); Van Caneghem, Jo (1); Vanierschot, Maarten (2); De Greef, Johan (1)	1: ChEMaRTS – Department of Materials Engineering – Group T campus – KU Leuven – Leuven (Belgium); 2: AFAA – Department of Mechanical Engineering – Group T campus – KU Leuven – Leuven (Belgium)
Design of a novel data-driven model for advanced combustion control in Waste-to-Energy furnace systems	Meynendonckx, Wouter (1); Verbeke, Mathias (2,3); Ishteva, Mariya (4); Jordens, Pieter Jan (5); Alderweireldt, Nick (5); De Greef, Johan (1)	1: Department of Materials Engineering, Group T Leuven Campus, KU Leuven, Leuven, Belgium; 2: DTAI, Department of Computer Science, Bruges Campus, KU Leuven, Belgium; 3: Flanders Make@KU Leuven, Belgium; 4: NUMA-ADVISE, Department of Computer Science, Geel Campus, KU Leuven, Belgium; 5: Indaver NV, Belgium
Time-dependent thermal and chemical behavior of wood waste in a pilot packed-bed combustion reactor	Borremans, Siebe (1); Van Caneghem, Jo (1); Vanierschot, Maarten (2,3); De Greef, Johan (1)	1: Department of Materials Engineering, Group T Leuven Campus, KU Leuven, Leuven, Belgium; 2: Department of Mechanical Engineering, Group T Leuven campus, KU Leuven, Leuven, Belgium; 3: Materials Science, Innovation and Modelling (MaSIM) Research Focus Area, North-West University, Mmabatho 2745, South Africa
Numerical Investigation of the Influence of Hot Charging on Furnace Temperature Distribution and Slab Surface Heat Fluxes	Ahmed, Zaaquib Yunus (1,2); Beyne, Wim (1,2); De Raad, Teun (3); Lecompte, Steven (1,2); De Paepe, Michel (1,2,4)	1: Ghent University, Belgium; 2: Flanders Make, Belgium; 3: Arcelor Mittal Belgium, Belgium; 4: University of Cape Town
Industrial reheating furnace modelling: Impact of partial electrification on products	Avdijaj, Jetnis (1,2); Biswal, Pratibha (1,2); Bentivegni, Marcello (3); Parente, Alessandro (1,2,4); Coussement, Axel (1,2)	1: Université libre de Bruxelles, Belgium; 2: BRussels Institute for Thermal-fluid systems and clean Energy (BRITE), Brussels, Belgium; 3: Aperam Stainless France, Aperam, Isbergues, France; 4: WEL Research Institute, Belgium

Stability, Reactive Structures, and Emissions of Pure, Partially, and Fully Cracked Ammonia in a Semi-Industrial Furnace under MILD Conditions	Rahmani, Ebrahim (1,2); Cid, Natalia (1,2,3); Kamal, M. Mustafa (1,2); Coussement, Axel (1,2); Parente, Alessandro (1,2,3); Lubrano Lavadera, Marco (1,2)	1: Aero-Thermo-Mechanics Department, Université Libre de Bruxelles, Belgium; 2: Brussels Institute for Thermal-Fluid Systems and Clean Energy (BRITE), Université Libre de Bruxelles and Vrije Universiteit Brussel, Belgium; 3: WEL Research Institute, Belgium
Optical and Probe Diagnostics of Hydrogen Oxy-Fuel Combustion in a 150 kW Industrial Test Furnace	Osseily, Tamara (1,2); Kamal, M. Mustafa (1,2); Nowakowski, Tim (3); Leicher, Jörg (3); Giese, Anne (3); Lubrano Lavadera, Marco (1,2); Parente, Alessandro (1,2,4)	1: Université Libre de Bruxelles, Ecole Polytechnique de Bruxelles, Aero-Thermo-Mechanical Laboratory, Belgium; 2: Université Libre de Bruxelles and Vrije Universiteit Brussel, Brussels Institute for Thermal-fluid systems and clean Energy (BRITE) Group, Belgium; 3: Gas- und Wärme-Institut Essen e.V. (GWI), Essen, Germany; 4: WEL Research Institute, Belgium
CFD Modeling of Hydrogen Oxy-Fuel Combustion in a 150 kW Industrial Test Furnace using Fast and Finite-Rate Chemistry Approaches	Osseily, Tamara (1,2); Leicher, Jörg (3); Nowakowski, Tim (3); Giese, Anne (3); Piscopo, Alessandro (1,2,4); Giuntini, Lorenzo (1,2); Kamal, M. Mustafa (1,2); Lubrano Lavadera, Marco (1,2); Parente, Alessandro (1,2,5)	1: Université Libre de Bruxelles, Ecole Polytechnique de Bruxelles, Aero-Thermo-Mechanical Laboratory, Belgium; 2: Université Libre de Bruxelles and Vrije Universiteit Brussel, Brussels Institute for Thermal-fluid systems and clean Energy (BRITE) Group, Belgium; 3: Gas- und Wärme-Institut Essen e.V. (GWI), Essen, Germany; 4: University of Mons, Thermal Engineering & Combustion Unit, Belgium; 5: WEL Research Institute, Belgium
BRAZIL		
Thermal modeling of a boiler economizer using the P-NTU method	Moran, Gabriel; Boeng, Joel; Bazzo, Edson	Laboratory of Combustion and Thermal Systems Engineering - Federal University of Santa Catarina, Brazil
CHINA, PEOPLE'S REPUBLIC OF		
Pulverized Fuel Injection Monitoring of Blast Furnaces through Digital Imaging and Image Processing	Chen, Da (1); Yan, Yong (2)	1: North China Electric Power University, China, People's Republic of; 2: Beihang University, China, People's Republic of
Quantitative Monitoring of Burner Flames through Digital Image Processing	Xu, Weicheng; Yan, Yong	Beihang University, China, People's Republic of

On-line identification of pneumatically conveyed pulverized biomass through acoustic emission sensing and VMD-based spectral analysis	Zeng, Xingxing; Yan, Yong	Beihang University, China, People's Republic of
DENMARK		
CFD and experimental investigation of pulsed fluidization for a novel pyrolysis technology for increasing alternative fuel utilization in cement production	Mirzaei, Mohamadali (1); Pedersen, Morten (2); Kumar S, Varun (3); Wu, Hao (1)	1: Technical University of Denmark (DTU), Department of Chemical and Biochemical Engineering; 2: FLSmidth Cement A/S; 3: Indian Institute of Technology
FULL-LOOP OXY-FUEL COMBUSTION SIMULATIONS OF 30 MWth CIUDEN CFB BOILER	Onay, Oguz Kaan (1); Diego Garcia, Ruth (2); Yin, Chungen (1)	1: Aalborg University (AAU), Denmark; 2: Fundacion Ciudad de la Energia (CIUDEN), Spain
FINLAND		
Mathematical modeling of Iron oxide reduction using extended three Interface Random pore model:	D'Angelo, Antonio; Salucci, Emiliano; Russo, Vincenzo; Di Serio, Martino; Grenman, Henrik; Saxen, Henrik	abo akademi, Finland
FRANCE		
Performance Evaluation of Hydrogen and Hydrogen/Natural Gas Blends Combustion in an Industrial-Scale Aluminum Reverberatory Furnace	Piquard, Louis (1); Koeppen, Andreas (2); Iplik, Esin (3); Schmitz, Nico (4)	1: Constellium Technology Center, France; 2: Endress+Hauser SICK GmbH+Co.KG, Germany; 3: Linde Technology, Metals Combustion & Energy EMEA, Sweden; 4: Department for Industrial Furnaces and Heat Engineering, RWTH Aachen University, Germany
Experimental and modeling study from fast biomass pyrolysis to support industrial bio-CLC development	Wittmann, Alice; Schönnenbeck, Cornelius; Brilhac, Jean-François; Brillard, Alain; Gerandi, Guillaume; Tschamber, Valérie	Université de Haute-Alsace, France
Oxidation of Iron Particles in a Low-Temperature Fluidized Bed: Towards Sustainable Metal Fuel Combustion	ROUTURIER, Julie; SCHONNENBECK, Cornelius; BRIHLAC, Jean-François; TSCHAMBER, Valérie	Université de Haute-Alsace, France
Stability and Emissions Characteristics of Syngas and Hydrogen Non-Premixed Flames	IDRISSI, Housna (1,3); LABJAR, Najoua (1); EL HJJAJI, Souad (2); BOUSHAKI, Toufik (3)	1: LS3MN2E, ENSAM, Mohammed V University, Rabat, Morrocco; 2: LS3MN2E, Faculty of Sciences, Mohammed V University, Rabat, Morrocco; 3: CNRS ICARE, France
An experimental study on methane and biogas oxyflames under CO2 dilution for CCS applications	Pirateque-Henao, Laura; Lecordier, Bertrand; Lacour, Corine; Cessou, Armelle; Honoré, David	CORIA, CNRS, UNIROUEN, INSA Rouen, Normandie University

Partially cracked ammonia burner	Rousselle, Christine (1); Brequigny, Pierre (1); Halter, Fabien (2); Moreau, Bruno (1)	1: University of Orleans, France; 2: CNRS, Orleans, France
How does H2 Combustion affects industrial processes: a detailed investigation	Caudal, Jean; Sénéchal, Jean-Baptiste; Amirat, Mohand; Öztarlık, Görkem; Riaute, Nicolas	Air Liquide R&D, France
Towards decarbonised steel: experimental validation of a hydrogen-ready reheating burner	Mohanna, Hassan (1); Gerrikagoitia, Oiane (2); Bilbao, Imanol (2); Caillat, Sébastien (1)	1: Fives Stein, France; 2: Fives Steel Spain, Spain
Flexible roof burner for hydrogen integration in steel reheating furnace	Mohanna, Hassan; Caillat, Sébastien	Fives Stein, France
Iron Fuel Boilers and Burners : A Low-Carbon Pathway for Heat-Intensive Industries.	Laraqui, Driss; Guillaud, Robin	Fenix Energy, France
CFD simulation and validation of solid and gas fuels co-injection model	Sayed Kassem, Ahmad (1); Ghazal, Ghassan (1); Santos Ferreira, Rodolfo (1); Sundara, Vikram (1); Priyadarshi, Harsh (1); NGUYEN, Phuc Danh (1); Huang, Xianai (2); NG, Ka Wing (2)	1: ArcelorMittal Global R&D, France; 2: CanmetENERGY, Natural Resources Canada, Canada
Thermal Radiation – Combustion Coupling in Large-Eddy Simulation of Methane Oxy-Flames	Fauré, Pierre; Illuminati, Paolo; Vicquelin, Ronan	Université Paris-Saclay, CNRS, France.
Large Eddy Simulation of an industrial burner using Virtual Chemical for CH4-H2 configurations	Hustache, Malo (1,2); Darabiha, Nasser (1); Meynet, Nicolas (2); Fiorina, Benoît (1)	1: Université Paris-Saclay, CNRS, CentraleSupélec, Laboratoire EM2C, France; 2: ENGIE Lab Crigen, Engie, France
Experimental Study on Stabilisation of High-Pressure CO2-diluted Swirled CH4-Oxyflames in a Coaxial Burner	Samson, Hugo; Bonnety, Jérôme; Vicquelin, Ronan; Betrancourt, Christopher; Mirat, Clément	Université Paris-Saclay, CNRS, France
YAG:Dy Phosphor Thermometry with the FSF Method in Partially Premixed Hydrogen Combustor	Guivarch, Tobias (1); Samson, Hugo (1); Bonnety, Jérôme (1); Leroy, Maxime (1,2); Mirat, Clément (1); Betrancourt, Christopher (1); Vicquelin, Ronan (1)	1: Université Paris-Saclay, CNRS, CentraleSupélec, Laboratoire EM2C, France; 2: Safran Tech, France
High-efficiency hydrogen-compatible combustion system for radiant tube furnaces	Mohanna, Hassan; Caillat, Sébastien	Fives Stein, France
Ch0C: a low-carbon dioxide and low-NOx oxy-fuel boiler pilot	TARDELLI, Livia (1); RESSENT, Stephan (2); MARIAC, Laurent (3); ESNAULT, Soizic (4); HADDAD, Etienne (5); MAIO, Giampaolo (6); FERRAND, Ludovic (6)	1: NaTran; 2: GRDF; 3: TotalEnergies OneTech; 4: Naldeo Technologies & Industries; 5: Verdemobil Biogaz; 6: ENGIE Lab CRIGEN

GERMANY		
Impact of Fuel Velocity on a Self-Recuperative Burner in a PP-type Radiant Tube Operating on Natural Gas and Hydrogen: A Numerical Study	Losacker, Johannes (1); Busson, Elsa (1); Effertz, Johanna (1); Schmitz, Nico (1); Wünning, Joachim (2); Wuppermann, Christian (1)	1: RWTH Aachen University, Department for Industrial Furnaces and Heat Engineering, Germany; 2: WS Wärmeprozesstechnik GmbH, Germany
Numerical investigation of the operation performance of an additively manufactured H2-capable gas burner in an EAF	Goßrau, Christian (1); Willkomm, Johannes (2); Krause, Fabian (3); Omri, Riadh (4); Wirsum, Manfred (1); Schleifenbaum, Johannes Henrich (2); Odenthal, Hans-Jürgen (3); Elsabagh, Sami (4)	1: Institute of Power Plant Technology, Steam and Gasturbines (IKDG), RWTH Aachen University, Germany; 2: Chair of Digital Additive Production (DAP), RWTH Aachen University, Germany; 3: SMS group GmbH, Germany; 4: Georgsmarienhütte Gmbh, Germany
Challenges and solutions for NOx emission measurements in industrial oxyfuel combustion conditions with hydrogen	Hasche, Anna; Eckart, Sven; Krause, Hartmut	Institute for gas and thermal engineering systems, TU Bergakademie Freiberg, Germany
Adapting to the fuel: a new approach to low-NOx industrial combustion	Biebl, Marcel (1); Giese, Anne (1); Wieland, Christoph (1); Rupietta, Nicolas (2)	1: Gas- und Wärme-Institut Essen e.V., Germany; 2: Friedrich Ley GmbH
Impact of Geometry and Radiative Effects on Thermal Performance of Electric Resistance Heating Elements in Convective-Dominated Systems	Wilker, Julius; Büschgens, Dominik; Wuppermann, Christian	Department for Industrial Furnaces and Heat Engineering, RWTH Aachen University, Aachen, Germany
Real-Time Combustion Optimization of Hydrogen-Natural Gas Mixtures via Ultrasonic TOF Sensing	Eckart, Sven (2,3,4); Sablowski, Jakob (1); Schierling, Lennart (1); Kunz, Robert (1); Krause, Hartmut (2,3); Kupsch, Christian (1,2)	1: Measurement, Sensor and Embedded Systems Laboratory (MSE Lab), TU Bergakademie Freiberg; 2: Center for Efficient High Temperature Processes and Materials Conversion, ZeHS, TU Bergakademie Freiberg; 3: Chair for Gas and Heat Technology, TU Bergakademie Freiberg; 4: Centre of Excellence for Safety Research (CESAR), VSB – Technical University of Ostrava
NOx emission reduction through fuel staging in regenerative flat flame burners	Scheck, Fabian; Gürler, Ismail; Klein, Wolfgang	Andritz Metals Germany GmbH, Germany
Ammonia combustion for industrial burner systems - Optimization through internal partial cracking	Feller, Bernd (1); Biebl, Marcel (1); Giese, Anne (1); Wieland, Christoph (1,2)	1: GWI Essen e.V., Germany; 2: Chair of Energy Process Engineering and Energy Systems, University of Duisburg-Essen, Germany
Numerical investigation on the influence of burner geometry on the particle formation in an industrial spray roasting reactor	Pölling, Linus; Schiemann, Martin	Institute of Energy Plant Technology, Germany

When Additive Meets Flame: Methane-Hydrogen-Flame exhaust exposure of AM Al_2O_3 at High Temperatures	Thota, Deepak Varma (1); Kerber, Florian (2); Eckart, Sven (1); Krause, Hartmut (1); Aneziris, Christos (2)	1: Chair for Gas and Heat Technology, Institute of Thermal Engineering, TU Bergakademie Freiberg, Germany; 2: Institute of Ceramics, Refractories and Composite Materials, TU Bergakademie Freiberg, Germany
Experimental Study of the Impact of Fuel Velocity on a Self-Recuperative Burner in a PP-type Radiant Tube Operating on Natural Gas and Hydrogen	Busson, Elsa (1); Sanders, Matthias (1); Mühlbach, Meinhard (2); Schmitz, Nico (1); Wünning, Joachim G. (2); Wuppermann, Christian (1)	1: RWTH Aachen University, Department for Industrial Furnaces and Heat Engineering, Germany; 2: WS Wärmeprozesstechnik GmbH
Optical Measurement System for the High-Pressure Entrained-Flow Gasification using a Highspeed-Camera and Image Processing	Matthes, Jörg (1); Kollmer, Max (1); Eberhard, Mark (1,2); Kolb, Thomas (1)	1: KIT, Germany; 2: ARCUS Greencycling Germany
Modeling Ignition and Combustion in Biomass Particle Clouds	Giesen, Matteo; Bernhardt, Daniel; Beckmann, Michael	TU Dresden, Germany
Efficient Modelling of Creep Deformation in Radiant Tubes for the Lifetime Optimization under Cyclic Thermal Operating Conditions	Dinsing, Nicolas; Schmitz, Nico; Wuppermann, Christian	Department for Industrial Furnaces and Heat Engineering, RWTH Aachen University, Germany
Oxyfuel Combustion of Biogenic Pyrolysis Gas for Process Heat Supply and CO_2 Capture	Lehner, Felix; Groves, Christian; Gebhard, Niklas; Meiller, Martin	Fraunhofer-Institut UMSICHT, Germany
New Features for Image-Based Classification of Refuse-Derived Fuel Particles in a Rotary Kiln Environment	Vogelbacher, Markus (1); Zhang, Miao (1); Aleksandrov, Krasimir (2); Gehrmann, Hans-Joachim (2); Matthes, Jörg (1)	1: Institute for Automation and Applied Informatics (IAI), Karlsruhe Institute of Technology (KIT), Germany; 2: Institute for Technical Chemistry (ITC), Karlsruhe Institute of Technology (KIT), Germany
Oxyfuel process for CO2 capture during waste incineration - effects on the operation of waste incineration plants	Lu, Qiu; Bernhardt, Daniel; Wang, Yushuo; Beckmann, Michael	Technische Universität Dresden, Germany
Impact of hydrogen combustion on NOx emissions – physical and regulatory aspects	Leicher, Jörg; Giese, Anne	Gas- und Wärme-Institut Essen e.V., Germany
Greenhouse Gas Emissions during Sewage Sludge Combustion in Germany – Results of emission measurements at real mono-incineration plants	Sohn, Min Su (1); Bernhardt, Daniel (1); Schinke, Michael (2); Beckmann, Michael (1)	1: Chair of Energy Process Engineering, Technical University of Dresden, Germany; 2: ERGO Umweltinstitut GmbH, Germany
Low-emission NH3 combustion using flameless oxidation with partial fuel cracking	Wünning, Christopher (1); Herbort, Linda (1); Schmitz, Nico (1); Wuppermann, Christian (1); Wilke, Marius (2); Wünning, Joachim (2)	1: Department for Industrial Furnaces and Heat Engineering at RWTH Aachen, Germany; 2: WS Wärmeprozesstechnik GmbH, Germany
Experimental study of microwave pyrolysis of biomass	Faber, Felix (1); Barowski, Jan (2); Diéguez Alonso, Alba (3); Vorhauer-Huget, Nicole (1)	1: Otto von Guericke University Magdeburg, Germany; 2: Ruhr University Bochum, Germany; 3: TU Dortmund, Germany
Comparative Analysis of Flue Gas Recirculation in Oxy-Fuel Combustion on Nitrogen, Sulfur and Chlorine based Minority Species	König, Dominik; Hülsbruch, Dennis; Ströhle, Jochen; Epple, Bernd	TU Darmstadt, Institute of Energysystems and Technology, Germany

Development and Application of Plasma-Based Heating Technologies in High-Temperature Industrial Furnaces	Eckart, Sven (1,2); Behrend, Ralph (1); Krause, Hartmut (1)	1: TU Bergakademie Freiberg, Germany; 2: Centre of Excellence for Safety Research (CESAR), VSB – Technical University of Ostrava
Investigation of the oxidation behavior of metal fuel particles in oxy-fuel atmospheres using emission spectroscopy	Golab, Daria; Tarlinski, David; Schiemann, Martin; Scherer, Viktor	Institute of Energy Plant Technology, Ruhr-University Bochum, Bochum, Germany
Thermochemical Conversion of Wood-Plastic Composites	Fischer, Christian; Dölz, Michael; Plessing, Tobias	Institut für Wasserstoff- und Energietechnik - Hochschule Hof, Germany;
Sensitivity analysis for the determination of process parameters in the utilization of biogenic residues in the open gas turbine process	Wunder, Luis; Bernhardt, Daniel; Beckmann, Michael	Technische Universität Dresden, Germany
Determination of the lifetime of heating elements for hybrid heating systems	Grimme, Christoph (1); Oskay, Ceyhun (1); Kremer, Frans (2); Galetz, Mathias (1)	1: DECHEMA-Forschungsinstitut, Germany; 2: OWI Science for Fuels, Deutschland
New material solutions for ammonia cracking above 550°C	Beck, Katharina (1); Oskay, Ceyhun (1); Tidona, Fausto (2); Engelmeier, Lena (2); Galetz, Mathias C. (1)	1: DECHEMA Forschungsinstitut, Germany; 2: Zentrum für BrennstoffzellenTechnik GmbH, Germany
Development of novel additively manufactured ceramic hydrogen burner components for innovative energy efficiency strategies	Michel, Jerome (1); Bernhardt, Daniel (1); Martin, Hans-Peter (2); Schönfeld, Katrin (2); Dahms, Steffen (3); Beckmann, Michael (1)	1: Technical University Dresden, Chair of Energy Process Engineering, Germany; 2: Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Dresden, Germany; 3: Günter Köhler Institute for Joining Technology and Materials Testing GmbH, Jena, Germany
Influence of recuperative H2-burners on the operational characteristics of a light metal melting furnace - Experimental data and digital twin predictions	Grimm, Valerie (1); Eckart, Sven (1,2); Kohn, Thiemo (3); Behrend, Ralph (1); Wünning, Joachim (3); Krause, Hartmut (1)	1: TU Bergakademie Freiberg, Germany; 2: Centre of Excellence for Safety Research (CESAR) Ostrava, Czech Republic; 3: WS Wärmeprozesstechnik GmbH Renningen, Germany
Characterisation of the Pyrolysis of Mixed Waste - a Proposal for the Definition of Performance Indicators	Hefele, Martin; Behrend, Ralph; Krause, Hartmut	Technische Universität Bergakademie Freiberg, Germany
Design and operation of a scalable fully electric three-fold hybrid heated glass melting furnace	Pestel, Andreas (1); Behrend, Ralph (1); Eckart, Sven (1); Fuhrmann, Sindy (2); Krause, Hartmut (1)	1: TU Bergakademie Freiberg, Institute of Thermal Engineering, Germany; 2: TU Bergakademie Freiberg, Institute of Glass Science and Technology, Germany
Effects of varied water vapour addition to air in a fixed-bed coke bulk on the operational parameters of a multi-stage test plant combining pyrolysis, coke gasification and product gas combustion of mixed waste	Hefele, Martin (1); Öffner, Felix (2); Behrend, Ralph (1); Krause, Hartmut (1)	1: Technische Universität Bergakademie Freiberg, Germany; 2: LiPRO Energy GmbH & Co. KG

Hydrogen combustion and its influence on corrosion and mechanical behaviour of heat resistant steels	Fritsche, Chris (1); Eckart, Sven (1); Winter, Lisa (2); Rymer, Lisa-Marie (2); Lampke, Thomas (2); Krause, Hartmut (1)	1: Professorchip for Gas and Heat Technology, Institute of Thermal Engineering, TU Bergakademie Freiberg, Germany; 2: Materials and Surface Engineering Group, University of Technology Chemnitz, Germany
Development of novel resistance heating elements using innovative materials and process combinations	Schrade, Luis; Büschgens, Dominik; Wuppermann, Christian	Department for Industrial Furnaces and Heat Engineering, RWTH Aachen University, Aachen, Germany
Development and Optimization of a Thermoacoustic Flame Monitoring System for Hydrogen-Containing Gas Combustion	Juttu Vidyasagar, Muralimohan (1); Eckart, Sven (1); John, Yohan (2); Nailis, Christoph (2); Kuckelberg, Dagmar (2); Krause, Hartmut (1)	1: TU Bergakademie Freiberg, Institute of Thermal Engineering (IWTT), Germany; 2: OWI Science for Fuels gGmbH, Germany
Microwave Assisted Recycling of CFRP Composites in a Continuously Operated Conveyor Belt Furnace - Process Parameters and Results	Juttu Vidyasagar, Muralimohan (1); Behrend, Ralph (1); Zoellner, Mareen (2); Krampitz, Thomas (2); Lieberwirth, Holger (2); Krause, Hartmut (1)	1: TU Bergakademie Freiberg, Institute of Thermal Engineering (IWTT), Germany; 2: TU Bergakademie Freiberg, Institute of Processing Machines and Recycling Systems Technology (IART), Germany
Experimental measurements of fundamental combustion properties for ammonia-based mixtures and its combustion properties	Ghosh, Arkajit; Eckart, Sven; Wagner, Michael; Krause, Hartmut	Institute of Thermal Engineering, TU Bergakademie Freiberg, Germany
Experimental investigation of the radiation profile of inert and reactive particles in a batch reactor	Tyslik, Matthias; Böse, Alexander; Hentschel, Carl; Schiemann, Martin	Ruhr-University Bochum, Germany
Innovative pressure Swing Process for the Absorption of CO2 from industrial Flue Gases with low energy demand	Specht, Eckehard; Kropman, Alexey; Beyrau, Frank	Otto-von-Guericke-Universität Magdeburg, Germany
Experimental investigation of heat penetration and drying efficiency for expanded clay in a rotary kiln	Meitzner, Claudia (1); Herz, Fabian (1); Specht, Eckehard (2)	1: Anhalt University of Applied Sciences; 2: Otto von Guericke University Magdeburg
Thermal treatment of lithium batteries in a rotary kiln	Herz, Fabian; Weigler, Fabian; Hoffmann, Franz	Anhalt University of Applied Sciences, Germany
Experimental and DEM investigation in a honeycomb rotary kiln for the gentle thermal treatment of bulk materials	Hahne, Jannes (1); Herz, Fabian (1); Meitzner, Claudia (1); Bück, Andreas (2)	1: Anhalt University of Applied Sciences; 2: Otto-von-Guericke-University Magdeburg
Advanced Furnace Technologies for Sustainable Silicon Recovery from Fluidized Bed Reactors and Kerf Silicon wastes.	Domingos de Oliveira, Valdiney	Si&Mex Solutions GmbH, Germany
Design-Driven Operational Excellence in Submerged Arc Furnaces for Silicon and Ferroalloy Production	Domingos de Oliveira, Valdiney	Si&Mex Solutions GmbH, Germany
Design and Process Optmization for Fines Reduction in High-Carbon Ferrochrome Production via Submerged Arc Furnace	Domingos de Oliveira, Valdiney	Si&Mex Solutions GmbH, Germany

Numerical Investigations of a fuel-flexible oxyfuel system for carbon-free preheating of transport ladles	Kaiser, Hannah (1); Losacker, Johannes (1); Schmitz, Nico (1); Wuppermann, Christian (1); Volkert, Andreas (2); Firsbach, Felix (3); Schreiber, Danny (2); Schweikle, Ralf (3)	1: Department of Industrial Furnaces and Heat Engineering, RWTH Aachen University, Germany; 2: Badische Stahlwerke GmbH, Germany; 3: Badische Stahl-Engineering GmbH, Germany
Experimental Investigation of Combustion Performance of Iron Based Fuels in a Fluidized Bed Reactor	Johnen, Balte; Marx, Falko; Ströhle, Jochen; Epple, Bernd	Technical University Darmstadt, Germany
Towards Low-Carbon Lime: Combustion and Calcination Modelling for H_2-Natural Gas Blends in Shaft Kilns	Achutha, Vishwajeeth; Jaeger, Bo; Illana, Enric; Scherer, Viktor	Ruhr Universität Bochum, Germany
Morphological analysis of walnut shell and beech wood particles during flash pyrolysis: Investigation of particle shape and porosity	Freisewinkel, Erik (1); Eisenbach, Tim (2); Tralinski, David (1); Schiemann, Martin (1); Span, Roland (2); Scherer, Viktor (1)	1: Institute of Energy Plant Technology, Ruhr-University Bochum, Germany; 2: Thermodynamics, Ruhr University Bochum, Germany
Comparative investigation of the oxidation behavior of pre-reduced iron ore in air and water steam atmospheres in a fluidized bed reactor	Yannakis, Christoph (1); Freisewinkel, Erik (1); Fabozzi, Antonio (2); Schiemann, Martin (1); Cerciello, Francesca (2); Coppola, Antonio (2); Senneca, Osvalda (2); Scherer, Viktor (1)	1: Institute of Energy Plant Technology, Ruhr-University Bochum, Germany; 2: STEMS-CNR, Italy
PFAS measurement campaign at the MSWI in Schweinfurt, Germany	Holfelder, Anna (1); Gehrmann, Dr.-Ing. Hans-Joachim (1); Wohter, Dipl.-Ing. Daniel (2); Quicker, Prof. Dr.-Ing. Peter (2); Warnecke, Dr.-Ing. Ragnar (3); Stapf, Prof. Dr.-Ing. Dieter (1)	1: Karlsruhe Institute of Technology (KIT), Germany; 2: RWTH Aachen University, Germany; 3: Gemeinschaftskraftwerk Schweinfurt GmbH (GKS), Germany
Burning Iron powder in a coal combustion chamber	Mehmood, Rizwan (1); Mehlhose, Sven (1); Fradet, Quentin (1); Grusla, Steffen (2); Zschunke, Tobias (2); Riedel, Uwe (1)	1: German Aerospace Center (DLR), Institute of Low-Carbon Industrial Processes, Germany; 2: Zittau/Görlitz University of Applied Sciences, Institute of Process Engineering, Process Automation and Metrology, Germany
Using system modeling to reduce greenhouse gas emissions in the thermoprocess industry	Bender, Benedikt; Dany, Mohammad; Phadnis, Prithviraj	OWI Science for Fuels gGmbH, Germany
Application of an AI-supported system for waste stream analysis – from waste delivery to influencing combustion control – in the environment of Critical Infrastructure	Zwiellehner, Martin	SAR Group, Process- and Environmental Technology, Germany
Analysis of the transient axial solid transport in rotary kilns	Jie, Haozhi; Herz, Fabian	Anhalt University of Applied Sciences, Germany
Experimental Investigation of NOx Formation in Oxyfuel Combustion of Natural Gas- or Propane-Hydrogen Mixtures using a 20 kW Fuel Flexible High-Impulse Burner.	Ott, Franziska; Harder, Svenja; Schmitz, Nico; Wuppermann, Christian	RWTH Aachen University, Germany
Operating experience with an industrial steam generator converted to Hydrogen Rich Gas operation	Nasri, Samir; Timm, Wolfgang; Löwen, Sven; Zimmermann, Bernhard	Power Service Solutions GmbH, Germany

Oxyfuel combustion of waste streams with oxygen from electrolysis and Analysis of utilization paths of captured CO2 with H2 (WOxyfuel)	Aleksandrov, Krasimir (1); Hans-Joachim, Gehrmann (1); Nuredin, Vanessa (1); Simon Grathwohl, Simon (2); Maier, Jörg (2); Glorius, Thomas (3); Stapf, Dieter (1)	1: Karlsruhe Institute of Technology (KIT) / Institute for Technical Chemistry, Germany; 2: University of Stutgart / Institute of Combustion and Power Plant Technology (IFK), Germany; 3: REMONDIS Erftstadt, Germany
Effects of Dimethyl ether/natural gas blends on a test rig fired by a Swirl-Stabilized Cold Air Burner	Diewald, Moritz;Schmitz, Nico; Wuppermann, Christian	Department for Industrial Furnaces and Heat Engineering, RWTH Aachen University, Germany
Toward a reliable design methodology for CaL calciners based on pilot-scale CO_2 capture operations	Greco-Coppi, Martin; Ströhle, Jochen; Epple, Bernd	Technical University of Darmstadt, Institute for Energy Systems and Technology, Germany
Acceleration of ammonia combustion by hydrogen radical induced decomposition: Insights into the performance and application of hydrogen-ammonia coupled burners	Cui, Jie (1,2); Yang, Xiu (1); Zhao, Honglei (1); Xiao, Yuhang (1); Yang, Shuo (1); Wirsum, Manfred (2); Xu, Youning (1); Pan, Honggang (1); Qi, Jianhua (3)	1: Shenyang Institute of Engineering, China; 2: RWTH Aachen University, Germany; 3: Liaoyang Guocheng Thermal Power Co., Ltd, China
Progress and Challenges in Modeling Plastic Pyrolysis	Zhang, Feichi; Li, Muhao; Tavakkol, Salar; Stapf, Dieter	Karlsruhe Institute of Technology (KIT), Germany
Combustion Dynamics of Swirl-Stabilized Iron Dust Flames: LES Investigation Across a Range of Oxygen Concentrations	Vahl, Antje; Steffens, Pascal; Nicolai, Hendrik; Hasse, Christian	Technical University of Darmstadt, Germany
Storage (In)Stability: Contaminant-induced Degradation of Plastics Pyrolysis Oils from	Schell, Paul Vincent (1); Straczewski, Grazyna (1); Tavakkol, Salar (1); Schütz, Jochen (2); Stapf, Dieter (1)	1: Karlsruhe Institute of Technology, Institute of Technical Chemistry, Germany; 2: DVGW-Forschungsstelle
Comparison of a novel wet NOx laser-based measurement system with a more conventional dilution based dry NOx measurement in hot wet combustion gases.	Adendorff, Martin (1); Westberg, Jonas (2); Thekkedath Madhu, Nidhin (1); Mabic, Kristina (1); Bjorøy, Ove (2); Zellner, Christoph (3); Geiser, Peter (2)	1: Linde GmbH, Germany; 2: NEO Monitors AS, Norway; 3: Bernt Messtechnik GmbH, Germany
Pore-informed particle model: decoupling intra-particle transport and reaction during biomass pyrolysis	Ryll, Fabienne; Dernbecher, Andrea; Dieguez-Alonso, Alba	Technische Universität Dortmund, Faculty of Biochemical and Chemical Engineering, Laboratory of Transport Processes, Germany
Hydrogen and Oxyfuel Combustion in Industrial Burners: Pathways to Ultra-Low NOx and High Efficiency	Thekkedath Madhu, Nidhin (1,2); Adendorff, Martin (1); Mabic, Kristina (1); Hirmiz, Rafat (3); Iplik, Esin (4); Eckart, Sven (2); Krause, Hartmut (2)	1: Linde GmbH, Germany; 2: Institute of Thermal Engineering, Technische Universität Bergakademie Freiberg, Germany; 3: Linde Inc, United States; 4: Linde Sverige AB, Sweden
From oxidation to nucleation: Reactor network modeling for nanoparticle formation in laboratory-scale iron dust flames	Dübal, Sören (1,2); Steffens, Pascal (2); Mich, Johannes (2); Vahl, Antje (2); Hasse, Christian (2); Nicolai, Hendrik (2); Hartl, Sandra (1)	1: Faculty Mechanical and Systems Engineering, University of Applied Sciences Esslingen, Germany; 2: Institute for Simulation of reactive Thermo-Fluid Systems, TU Darmstadt, Germany
Air/Oxy-Steam Gasification of Biomass in a Fluidized Bed Reactor: Application Potential for Industrial Burner Systems	Reiss, Sabine; Treiber, Peter; Karl, Jürgen	Friedrich-Alexander-University Erlangen-Nuernberg, Germany

Pyrolysis of glass-fiber-reinforced polymers: FTIR gas analysis and mechanical properties of recovered fibers	Pielsticker, Stefan; Roeske, Sascha; Kneer, Reinhold	RWTH Aachen - Institute of Heat and Mass Transfer
Ammonia in industrial burners: Experimental investigation of the direct energetic utilisation	Frey, Klara (1); Weis, Christof (1); Trimis, Dimosthenis (2)	1: DVGW Research Center at Engler-Bunte-Institut of Karlsruhe Institute of Technology (KIT), Germany; 2: Karlsruhe Institute of Technology, Engler-Bunte-Institute Combustion Technology, Germany
From Waste to Syngas: Addressing H_2S Challenges in Catalytic Reforming for Hot Gas Cleaning	Scharr, Steven Dominic; Mangold, Lukas; Scheffknecht, Günter	University of Stuttgart - Institute of Combustion and Power Plant Technology, Germany
Flash-Boiling-Assisted Combustion of Liquid Ammonia in a Spray Burner: Influence of Nozzle Geometry and Co-Axial Oxygen Injection	Augustin, Peter Wilhelm	WSA Institute of Heat and Mass Transfer, Germany
Experimental and Numerical Evaluation of Hydrogen-Natural Gas Blends and Oxygen Enrichment in a Reheating Furnace	Garcia, Alex M. (1); Cuervo-Piñera, Victor (2); Schmitz, Nico (1); Wuppermann, Christian (1)	1: Department for Industrial Furnaces and Heat Engineering, RWTH Aachen University, Germany; 2: ArcelorMittal Global R&D Spain, Spain
Preliminary Investigations of Iron Fuel Combustion in a Semi-Industrial Combustion Chamber	König, Dominik; Marx, Falko; Ströhle, Jochen; Epple, Bernd	TU Darmstadt, Germany
Process development and evaluation in chemical recycling: Reintegration of high-value chemicals from complex waste streams	Biessey, Philip	Ruhr University Bochum, Germany
Numerical investigation on the influence of anisotropic transport properties on the pyrolysis of wood particles	Hilse, Nikoline; Schiemann, Martin; Scherer, Viktor	Ruhr University Bochum, Germany
Part-electrification of a shuttle kiln	Alex, Denny Mathew; Giese, Rigo	Institut für Ziegelforschung Essen e.V.
Decreasing Excess Air in Energy from Waste Modernization Projects to Improve the Performance of Carbon Capture	Richter, Marcel (1); Kränzel, Georg (1); Schönsteiner, Max (1); Hanenkamp, Axel (1); Martin, Ulrich (1); Ringmann, Stefan (2)	1: Martin GmbH für Umwelt- und Energietechnik, Germany; 2: KVA Linth, Switzerland
Hybrid heated double-P-tubes in Hot Strip Annealing Lines for Steel	Mann, Markus (1); Trabold, Johannes (1); Bullert, Steven (2); Wünning, Joachim G. (2); Keller, Michael (3); Queck, Andreas (4); Stranzinger, Bernhart (4)	1: Kanthal GmbH; 2: WS Wärmeprozesstechnik GmbH; 3: thyssenkrupp Steel Europe AG; 4: VDEh-Betriebsforschungsinstitut GmbH
Development of a Mesh Based Char Combustion Model for DEM/CFD-Simulations	Hentschel, Carl; Illana Mahiques, Enric; Hilse, Nikoline; Scherer, Viktor	Ruhr-Universität Bochum, Germany
Thermal energy storage technologies for the thermoprocessing and process industries, a review	Bender, Benedikt (1); Harboe-Minwegen, Siri (1); Ramaswamy, Sangeetha (1); Kuckelberg, Dagmar (1); Seidel, Torsten (2)	1: OWI Science for Fuels gGmbH, Germany; 2: Fraunhofer-Institut für Fertigungstechnik und Angewandte Materialforschung IFAM, Institutsteil Dresden, Germany

Process development for a hybrid heating concept for highly flexible and low-CO2 billet heating in electric steel mills - FlexHybHeat -	Kulkarni, Samarth; Abohelwa, Mohamed; Eickhoff, Moritz; Wupperman, Christian	RWTH Aachen University, Germany
Experimental and Numerical Study on Mixing and Segregation of a Bulk of Irregularly Shaped Particles on a Batch Stoker Grate: Effect of Particle Sphericity	Hilse, Nikoline; Golab, Daria; Schiemann, Martin; Scherer, Viktor	Ruhr University Bochum, Germany
INDIA		
Modeling of Thermochemical conversion of Solid Recovered Fuels in a pulsating fluidized bed	Bollarapu, Vinod; S, Varunkumar	Thermodynamics and Combustion Engineering Laboratory, Department of Mechanical Engineering, Indian Institute of Technology Madras, Chennai, India.
Thermal Decomposition of Alternative Fuels Using Hot Cement Meal in a Loop seal Pulsating Fluidized Bed	M, Revanth (1); Negi, Kamal (1); Wu, Hao (2); Mirzaei, Mohamadali (2); Nedergaard Pedersen, Morten (3); B, Satyanarayana (4); S, Varunkumar (1)	1: Department of Mechanical Engineering, Indian Institute of Technology Madras, Chennai, India; 2: Department of Chemical and Biochemical Engineering, Technical University of Denmark, Denmark; 3: FLSmidth Cement A/S, Denmark; 4: FLSmidth Cement India LLP, Chennai, India
Simulation Framework for a Waste Heat Driven Pulsating Fluidized Bed Reactor(PFBR) to Improve Alternative Fuel Use in Cement Kilns	Negi, Kamal; Revanth, M; Varunkumar, S	Department of Mechanical Engineering, Indian Institute of Technology Madras, Chennai, India;
ITALY		
From natural gas to hydrogen: a seamless transition for sustainable steel production	Bissoli, Mattia; Astesiano, Davide; Malfa, Enrico	Tenova, Italy
Electrification Pathways for Industrial Heat: A Strategic Portfolio by the Babcock Wanson Group	Orlando, Mattia (1); Sebastiani, Cecilia (1); Claret, Gaetan (2); De Viti, Gaetan (2); Lemmen, Peter (3); Løvland, Martin (4); Olivier, Johan (2); Scheepens, Daan (5); Schimmel, Gijs (5); Schimmel, Stephan (5); Schmitz, Christopher (3); Weijer, Geert van de (5)	1: Babcock Wanson Italiana S.p.A., Italy; 2: Babcock Wanson France S.A.S., France; 3: VKK Standardkessel Köthen GmbH / VKK Standardkessel Service Köthen GmbH, Germany; 4: Parat Halvorsen AS, Norway; 5: Standard Fasel B.V., The Netherlands
Design of a lab-scale plant for the hydrogenation and dehydrogenation of liquid organic hydrogen carriers (LOHC)	Veronesi, Leonardo (1,2); Oricchio, Salvatore (1); Pellegrini, Marco (2); Guzzini, Alessandro (2); Staedler, Zoe (1); Saccani, Cesare (2)	1: IET Institut für Energietechnik, OST Ostschweizer Fachhochschule, Switzerland; 2: Department of Industrial Engineering, University of Bologna, Italy

CFD-based design of a new 50 MW Low-NOx burner for refinery gas with validation against full scale testing	Ettorre, Daniele (1,2); Morandi, Lorenzo (2); Carucci, Domenico (2); Vela, Tiziana (2); Torresi, Marco (1); Saponaro, Alessandro (3); Rossiello, Gianluca (2)	1: Department of Mechanics, Mathematics and Management (DMMM), Polytechnic University of Bari, Italy; 2: Termotecnica Industriale Srl, Italy; 3: Centro Combustione Ambiente SpA (CCA), Italy
Development and optimization of injection strategies for industrial boiler burners fed with low-boiling-point liquid fuel	Ettorre, Daniele (1,2); Morandi, Lorenzo (2); Carucci, Domenico (2); Vela, Tiziana (2); Torresi, Marco (1); Saponaro, Alessandro (3); Rossiello, Gianluca (2)	1: Department of Mechanics, Mathematics and Management (DMMM), Polytechnic University of Bari, Italy; 2: Termotecnica Industriale Srl, Italy; 3: Centro Combustione Ambiente SpA (CCA), Italy
Sorption-enhanced CO2 methanation in a lab-scale fluidized bed using zeolite sorbents	Massa, Fiorella (1); Coppola, Antonio (1); Ruggiero, Roberto (2); Scala, Fabrizio (2)	1: STEMS, CNR, Italy; 2: Università di Napoli Federico II, Italy
CFD modelling of NOx emission for combustion in a coke-oven-battery: simplified vs detailed approach	Ettorre, Daniele (1,2); Vela, Tiziana (1); Torresi, Marco (1); Campodonico, Alberto (3); Vicentini, Alberto (3); Rossiello, Gianluca (2)	1: Department of Mechanics, Mathematics and Management (DMMM), Polytechnic University of Bari, Italy; 2: Termotecnica Industriale Srl, Italy; 3: Centro Combustione Ambiente SpA (CCA), Italy
Fate of nitrogen upon thermal conversion of terrestrial and marine nitrogen rich biomasses in fixed bed reactors	Migliaccio, Renata (1); Jiang, Ding (2); Chagtmi, Raouia (1); Oliano, Maria Maddalena (1); Maaoui, Assia (1); Cerciello, Francesca (1); Russo, Carmela (1); Apicella, Barbara (1); Wang, Shuang (2); Senneca, Osvalda (1)	1: Istituto di Scienze e Tecnologia per l'Energia e la Mobilità Sostenibili, Consiglio Nazionale delle Ricerche, Italy; 2: School of Energy and Power Engineering, Jiangsu University, China
Thermal Valorization of Industrial Iron(II) Oxalate Byproduct from Metal Pickling: Pathways to Magnetite Production and Circular Economy Applications	Fabozzi, Antonio (1); Salucci, Emiliano (2); Cerciello, Francesca (1); Chagtmi, Raouia (1); D'Angelo, Antonio (3); Bellucci, Francesco (4); Francesca, Rosa (5); Grénman, Henrik (2); Saxen, Henrik (2); Di Serio, Martino (3); Russo, Vincenzo (3); Senneca, Osvalda (3)	1: Istituto di Scienze e Tecnologia per l'Energia e la Mobilità Sostenibili (STEMS)-CNR, Italy; 2: Department of Chemical Engineering, Åbo Akademi University, Finland; 3: Department of Chemical Science, University of Naples Federico II, Italy; 4: CRdC Tecnologie Scarl, Italy; 5: Irpinia Zinco srl, Italy
Heat Transfer Characteristics of Ammonia Combustion in Industrial Furnaces	Ariemma, Giovanni Battista (1); Sorrentino, Giancarlo (1); Langella, Giuseppe (2); Sabia, Pino (1); Ragucci, Raffaele (1); de Joannon, Mariarosaria (1)	1: Istituto di Scienze e Tecnologie per l'Energia e la Mobilità Sostenibili (STEMS)- C.N.R.; 2: Department of Industrial Engineering - University of Naples "Federico II"

IRON AS H_2 VECTOR: A MORE ENVIRONMENTALLY SUSTAINABLE PATHWAY FOR SAFE AND SCALABLE HYDROGEN TRANSPORT?	Iannotta, Fulvia (1); Paulillo, Andrea (1); Schmitt, Sebastian (2); Coppola, Antonio (3); Senneca, Osvalda (3); Scherer, Viktor (4); Narin, Oğuzhan (2); Chirone, Roberto (1)	1: eLoop, Italy; 2: Doosan Lentjes, Germany; 3: Institute of Sciences and Technologies for Sustainable Energy and Mobility of National Research Council, STEMS-CNR, Italy; 4: Department of Mechanical Engineering, Ruhr-University (RUB), Germany
KOREA, REPUBLIC OF (SOUTH KOREA)		
Development of a scenario-based forecasting model using deep learning for optimizing attemperator spray water flow in a coal-fired boiler	Koo, Yunha (1); Jo, Hyunbin (2); Jang, Arong (3); Ryu, Changkook (1)	1: Sungkyunkwan university, Korea, Republic of (South Korea); 2: Korea Institute of Energy Research, Korea, Republic of (South Korea); 3: Korea Midland Power, Korea, Republic of (South Korea)
Numerical Evaluation of Ammonia Co-firing Strategies with Coal in a 1000 MWe Wall-Firing Boiler	Ha, Seonkyo (1); Kang, Woosuk (1); Koo, Yunha (1); Ryu, Changkook (1); Kim, Donggyu (2); Park, Kyoungil (2); Baek, Sehyun (2)	1: Sungkyunkwan University; 2: Korea Electric Power Research Institute
Development of AI Models for Predictive Operation in a Circulating Fluidized Bed Ammonia Co-Firing System	Jo, Hyunbin; Yoon, Sung Min; Park, Sung Jin; Mun, Tae-Young	Korea Institute of Energy Research, Korea, Republic of (South Korea)
Development of global reaction mechanism of ammonia for CFD simulations on cofiring with pulverized coal	Kang, Woosuk; Ryu, Changkook	School of Mechanical Engineering, Sungkyunkwan University, Republic of Korea
Heat Transfer Enhancement in Three-Period Spirally Fluted Tubes for Boiler and Power Generation Applications	Kang, Hie Chan	Kunsan National University, Korea, Republic of (South Korea)
Pilot-scale demonstration of a 0.7 t/h electrified continuous annealing furnace for steel-strip processing in a hot-dip galvanizing line	Lee, Hookyung (1,2); Lee, Eun Kyung (1); Jung, Woo-Nam (1,3); Ko, Chang Bog (1); Lee, Dae Keun (1); Choi, Jinheon (1,4); Beck, Kyeong Cheol (5); Kang, Min Jong (5)	1: Korea Institute of Energy Research, Korea, Republic of (South Korea); 2: University of Science and Technology, Korea, Republic of (South Korea); 3: Korea Advanced Institute of Science and Technology, Korea, Republic of (South Korea); 4: Korea University, Korea, Republic of (South Korea); 5: SAMWOOECO Co. Ltd., Korea, Republic of (South Korea)
An experimental study on the characteristics of NOx emission using a pilot-scale coal/ammonia co-firing combustion system	Chae, Tae young; Yang, Won; Lee, Jae wook; Hwang, Seong hwan	Korea institute of industrial technology, Korea, Republic of (South Korea)
Experimental Study on NOx Emission Characteristics Using a 100 kWth Ammonia Combustion Burner	Hwang, Seonghwan (1,2); Chae, Taeyoung (1); Lee, Jae Wook (1); Yang, Won (1); Kwon, Oh Chae (2)	1: Korea Institute of Industrial Technology, Cheonan, Republic of Korea; 2: School of Mechanical Engineering, Sungkyunkwan University, Suwon, Republic of Korea

Dynamic simulation of turquoise hydrogen production using a regenerative non-catalytic pyrolysis reactor under various heat sources	Park, Jiseon (1,2); Lee, Youngjae (1); Lee, Uendo (1); Yang, Won (1); Hong, Jongsup (2); Kim, Seongil (1)	1: Korea Institute of Industrial Technology, Korea, Republic of (South Korea); 2: Yonsei university, Korea, Republic of (South Korea)
An experimental study on the heat transfer charateristics of methane-iron hybrid flames	Byun, chang hee; Chae, tae young; Lee, jae wook; Yang, won	Korea Institute of Industrial Technology(Korea), Korea, Republic of (South Korea)
Numerical Simulation of Oxy-fuel Combustion in Industrial Furnace	Kim, Namsu; Guahk, Yong Tae; Seo, Dongmyung; Kim, Seung-gon; Lim, Seungjae	Korea Institute of Energy Reserach, Korea, Republic of (South Korea)
LITHUANIA		
Low calorific gas combustion in the SI engine under oxygen enrichment	Paulauskas, Rolandas; Jančauskas, Adolfas; Bykov, Ernest; Zakarauskas, Kęstutis	Lithuanian Energy Institute, Lithuania
Experimental Investigation of Ammonia-Syngas Plasma-Assisted Combustion	Jančauskas, Adolfas; Paulauskas, Rolandas; Bykov, Ernest; Zakarauskas, Kęstutis	Lithuanian Energy Institute, Lithuania
Plasma-Assisted Fuel-Flexible Combustion: Advancing Sustainable Heat Generation for the Glass Industry	Striūgas, Nerijus; Tamošiūnas, Andrius	Lithuanian Energy Institute, Lithuania
NORWAY		
High pressure combustion of ammonia blends with industrial gas turbine burners	Ditaranto, Mario; Saanum, Inge	SINTEF Energy Research, Norway
Study of coaxial oxy-fuel hydrogen-methane flames for melting furnace applications	Ditaranto, Mario; Bugge, Mette; Saanum, Inge	SINTEF Energy Research, Norway
PORTUGAL		
Numerical Investigation of Radiative Heat Transfer in Turbulent Hydrogen-Enriched Flames Using Nongray Spectral Modelling and Turbulence–Radiation Interaction: Comparison with Experimental Data	Shafiee, Hamid (1); Coelho, Pedro J (2); Fernandes, Edgar C (3)	1: IN+, Mechanical Engineering Department, Instituto Superior Tecnico, Universidade de Lisboa, Portugal; 2: IDMEC, Mechanical Engineering Department, Instituto Superior Tecnico, Universidade de Lisboa, Portugal; 3: IN+, Mechanical Engineering Department, Instituto Superior Tecnico, Universidade de Lisboa, Portugal
Decarbonizing ceramic firing: assessing electricity and Hydrogen as alternative energy sources	Rondao, Ines; Hennetier, Luc; Almeida, Marisa; Baio Dias, Antonio	Technological Centre of Ceramics and Glass (CTCV), Portugal
Prediction of Limestone Decomposition Using Microwave Heating	Gonçalves, Sofia (1); Albuquerque, Duarte (2); Pereira, José C. F. (1)	1: Instituto Superior Técnico, Portugal; 2: NOVA School of Science and Technology, Portugal

SAUDI ARABIA		
Advancing Waste-to-Energy: An Alternate Thermochemical Pathway for Plastic and Solid Waste Valorization	Avudyappan, Senthilrajakumar	Alfanar Global Development, Saudi Arabia
SOUTH AFRICA		
Overfire Air Strategies for Improved Furnace Performance in Industrial Bagasse-Fired Boilers	Rawlins, Brad Travis; Marais, Francois; van der Merwe, Schalk	John Thompson a division of ACTOM (Pty) Ltd, South Africa
SPAIN		
Use of a novel system of modular fixed bed reactors to investigate NO reduction by biomass char	Bertus, Thomas; Graul, Théodore; Cano-Pleite, Eduardo; Soria-Verdugo, Antonio; Anca-Couce, Andrés	Universidad Carlos III de Madrid, Spain
A surrogate model based on Chemical Reactor Networks for hydrogen-enriched industrial furnaces	Shubham, Shubham (1); Mira, Daniel (1); Mohanna, Hassan (2); Caillat, Sebastien (2)	1: Barcelona Supercomputing Center, Spain; 2: Fives Stein, France
SWEDEN		
Heat transfer conditions in a plasma-heated rotary kiln and the effect of coating layer formation	Fakt, Alice (1); Qasim, Ibrahim (1); Mishra, Saumitra (1); Gunnarsson, Adrian (1); Normann, Fredrik (1); Andersson, Klas (1); Wilhelmsson, Bodil (2)	1: Chalmers University of Technology, Sweden; 2: Heidelberg Materials Cement Sverige AB
Electrification and carbon utilisation of dry reforming of methane (DRM) via thermal plasma	Aloisi, Iacopo; Gogolev, Ivan; Berdugo Vilches, Teresa; Seemann, Martin	Chalmers University of Technology, Sweden
How Slag Temperature Governs Gas–Slag Interfacial Reactions in Zinc Recovery in a Slag Fuming Furnace	Mesgarpour, Mehrdad (1); G. Kyprianidis, Konstantinos (1); Bel Fdhila, Rebei (1,2)	1: School of Business, Society and Engineering, Mälardalens University, Sweden; 2: Hitachi Energy Research, Sweden
Lessons learnt from pilot and industrial scale oxyfuel burner installatinos	Iplik, Esin (1); Ekman, Tomas (1); Adendorff, Martin (2); Piquard, Louis (3); Lugnet, Anders (4); Buchholz, Andreas (5)	1: Linde Sverige AB, Sweden; 2: Linde GmbH, Germany; 3: Constellium Technology Center, France; 4: Ovako Hofors, Sweden; 5: Speira Research and Development, Germany
Catalytic Conversion of CO_2 to Solid Carbon: A Step Towards Zero-Emission Steelmaking ($CatCO_2$)	Gulshan, Samina (1); Bouchard, Joshua (1); Nordberg, Nina (2); Pehrson, Hans (2); Yang, Weihong (1)	1: KTH, Sweden; 2: Polestar Performance AB

Data-Driven Assessment of Bed Material Status in Fluidised Beds Using Complementary Diagnostics and Machine Learning	Leffler, Tomas (1); Eriksson, Mats (2); Knutsson, Pavleta (1)	1: Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Sweden; 2: Department of Physics, Chemistry and Biology, Linköping University, Sweden
Effect of oxidizer during steel reheating using hydrogen in a pilot scale walking beam furnace	Falk, Joel; Johnsson, Andreas	SWERIM AB, Sweden
Replacing LPG with hydrogen or electric heating for secondary Aluminium profile production	Rajika Jayawickrama, Thamali; Sjöström, Ulf	Swerim AB, Sweden
Maximizing Carbon-rich Product Yield from Bioresources via an Innovative Two-stage Pyrolysis	Gokyildiz, Yasemin; Dal Belo Takehara, Marcelo; Umeki, Kentaro	Luleå Tecnical University, Sweden
Understanding Degradation Drivers in Electrical Heating Wires Through Model-agnostic Post-hoc Analysis	Mählkvist, Simon (1,2); Söderkvist Vermelin, Wilhelm (2,3); Helander, Thomas (1); Kyprianidis, Konstantinos (2)	1: Kanthal AB, Sweden; 2: Mälardalen University; 3: RISE Research Institutes of Sweden
Lab-scale oxidation trials for evaluation of dimethyl ether as a replacement for fossil fuels in steel reheating furnaces	Häggström, Gustav	Swerim AB, Sweden
Oxidation rate and descaling properties of steel reheated using propane and hydrogen mixtures in a pilot scale batch furnace	Häggström, Gustav	Swerim AB, Sweden
SWITZERLAND		
Fate of Additives & Contaminants in Chemical Recycling of Plastic	MICHEL, Jean-Bernard	Humana Consulting, Switzerland
TURKIYE		
Optimizing Combustion Efficiency and Emission Control in Low-NOx Gas Burners with Hydrogen Blended Natural Gas Combustion	Salci, Onur ; Öztuna, Semiha	Trakya University, Turkiye;
UNITED KINGDOM		
NOx , emissions for a Jet Mix dual fuel hydrogen/natural gas industrial burner.	Andrews, Gordon (1); Quinonez, Ramon (2); Massey, Ray (2); Wakeman, Richard (3); Smith, Steve (3); Phylaktou, Herodotos (1)	1: University of Leeds (Retired), United Kingdom; 2: Clean Burner Systems (CBS) Ltd., Preston, United Kingdon; 3: Nuphalt Ltd., Rugby, United Kingdom
A Low Calorific Value Biomass Pyrolysis Gas (LCVBPG) Jet Mix Burner.	Andrews, Gordon (1); Quinonez, Ramon (2); Olanrewaju, Franics (2); Massey, Ray (2); Maxfield, Jim (2); Wakeman, Richard (3); Smith, Steve (3); Phylaktou, Herodotos (1); Bownes, Ian (4)	1: University of Leeds (Retired), United Kingdom; 2: Clean Burner Systems Ltd., Preston, United Kingdom; 3: Nuphalt Ltd., Rugby, United Kingdom; 4: Colorado Group Ltd., Livingston, United Kingdom

NOx Emissions for a Rich/Lean Dual Fuel Hydrogen/Natural Gas Grid Cone Industrial Burner: the Influence of Air Flow Pressure Loss.	Andrews, Gordon (1); Quinonez, Ramon (2); Massey, Ray (2); Olanrewaju, Francis (2); Wakeman, Richard (3); Smith, Steve (3); Phylaktou, Herodotos (1); Chen, Xueqin (1)	1: University of Leeds (Retired), United Kingdom; 2: Clean Burner Systems Ltd., Preston, United Kingdom; 3: Nuphalt Ltd., Rugby, United Kingdom
CFD predictions of the aerodynamics of a 400 kW Grid Cone Four Hole Natural Gas Burner: Comparison with experimental NOx results for 100 and 400 kW burners.	Andrews, Gordon (1); Quinonez, Ramon (2); Massey, Ray (2); Wakeman, Richard (3); Smith, Steve (3); Phylaktou, Herodotos (1); Chen, Xueqin (1)	1: University of Leeds (Retired), United Kingdom; 2: Clean Burner Systems, Preston, United Kingdon; 3: Nuphalt Ltd., Rugby, United Kingdom
Catalytic Filters for Particulate Emissions Reduction in Biomass Combustion	Hakami, Oday; Lea-Langton, Amanda; Garforth, Arthur; Wilson, Daniel	School of Engineering, University of Manchester, United Kingdom
UNITED STATES OF AMERICA		
Update: Case Studies in Reducing NOx Emissions and Improving Cracking Furnace Performance and Profitability in Energy Transitions with the Callidus® Ultra Blue® Burner System in Technip Energies' Low-Emission Cracking Furnaces	Kraus, Kurt (1); Wang, Yong (2); Pham, Huynh (2); Cremer, Marc (3)	1: Honeywell UOP Callidus Technologies; 2: Technip Energies USA, Inc.; 3: Reaction Engineering International
Ultra-low NOx Combustion Retrofit of Heavy Crude Oil Heater	Hannum, Mark	Fives North American Combustion, United States of America
Automated furnace tuning for temperature uniformity for heat treating metals	Witoff, Benjamin; Dzik, Justin; Hannum, Mark	Fives North American Combustion, United States of America
Recent progress in hydrogen and ammonia combustion for zero-emission boilers and furnaces	Vasu, Subith; Rahman, Ramees; Urso, Justin; Pierro, Michael	CATER, UCF, United States of America