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<i>Berguerand C., Yuranov I., Cornu I., Rehm T. H., Zapf R., Löb P., Szirbik G., Kiwi-Minsker L.</i>	
<b>F7.7 IMPROVING SELECTIVITY OF AN EXOTHERMAL REACTION IN THE PREPARATION OF CAPROLACTAM WITH MICROREACTOR</b> .....	1930
<i>Wang K., Zhang J. S., Lu Y. C., Luo G. S.</i>	
<b>F7.8 INTENSIFICATION OF CO<sub>2</sub> SORPTION IN TASK-SPECIFIC IONIC LIQUIDS WITH POLYETHYLENE GLYCOL AS CO-SOLVENTS FOR MEMBRANE ABSORPTION PROCESS</b> .....	1931
<i>Li J., Dai Z., Hagg M., Qi Z., Deng L.</i>	
<b>F7.9 ONLINE MONITORING OF EMULSION POLYMERIZATION WITH RAMAN SPECTROSCOPY, CONDUCTIVITY AND MASS SPECTROSCOPY</b> .....	1932
<i>Houben C., Lapkin A.</i>	
<b>F8.1 SPATIALLY RESOLVED CONFOCAL LASER RAMAN SPECTROSCOPY FOR IN SITU STUDIES ON THE KINETICS OF HYDROCARBON OXIDATION IN THE LIQUID PHASE</b> .....	1933
<i>Fräulin C., Shahidi Rad H., Schurr D., Dittmeyer R.</i>	
<b>F8.2 PLASMA GASIFICATION OF SANITATION BIOMASS</b> .....	1934
<i>Sturm G. S. J., Stankiewicz A. I., Stefanidis G. D.</i>	
<b>F8.3 PROCESS INTENSIFICATION IN THE PREPARATION OF COAGULATION-FLOCCULATION AGENTS FOR WATER TREATMENT</b> .....	1935
<i>Salmi T., Wärnå J., L'Huissier M.</i>	
<b>F8.5 DESIGN AND SIMULATION OF AN ULTRASONICALLY INTENSIFIED DISTILLATION PROCESS</b> .....	1936
<i>Ripin A., Ahmad A., Nasef M. M., Mahdi T., Ali M. W.</i>	
<b>G6.9 SIMULTANEOUS EXTRACTION AND ESTERIFICATION OF HIGH FREE FATTY ACID RICE BRAN USING HOMOGENEOUS CATALYST</b> .....	1937
<i>Arora R., Toor A. P., Wanchoo R. K.</i>	
<b>P7.1 BISPHENOL-A PROCESS INTENSIFICATION BY REACTIVE STRIPPING</b> .....	1938
<i>Manchekar A., Anapat S.</i>	
<b>P7.2 INFLUENCE OF DISSOLVED OXYGEN ON DEGRADATION OF 4-CHLOROPHENOL IN PHOTO MICROREACTOR</b> .....	1941
<i>Kluson P., Krištál J., Hejda S., Drhová M.</i>	
<b>P7.3 PROCESS INTENSIFICATION OF THE MDA-PROCESS USING THE DTU PI METHODOLOGY</b> .....	1942
<i>Van Der Ham A. G. J., Van Den Berg H., Benneker A. M., De Waele B., Zeetuw A.-J.</i>	

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<b>L7.1 EU'S FUTURE CHEMICAL MANUFACTURING - NEW REACTORS, PROCESS WINDOWS, PROCESSING PLATFORMS, AND BUSINESS WINDOWS</b> .....	1943
<i>Hessel V.</i>	
<b>L7.2 MAGNETICALLY SEPARABLE CATALYSTS FOR SELECTIVE HYDROGENATION OF UNSATURATED COMPOUNDS</b> .....	1944
<i>Lyubimova N. A., Nikoshvili L. Z., Sulman E. M., Morgan D. G., Mahmoud W. E., Bronstein L. M., Matveeva V. G.</i>	
<b>L7.3 BENCHMARKING OF PROCESS OPTIONS OF PHARMACEUTICAL REACTIONS</b> .....	1945
<i>Lapkin A., Yaseneva P., Gordon C., Peace A.</i>	
<b>P7.10 RUNAWAY REACTION IN THE EPOXYDATION OF VEGETABLE OIL</b> .....	1946
<i>Russo V., Di Serio M., Tesser R., Salzano E.</i>	
<b>P7.4 WINDOW OF OPPORTUNITY – POTENTIAL OF INCREASE IN PROFITABILITY USING MODULAR PLANTS AND FLOW PROCESSING</b> .....	1947
<i>Wang Q., Vural Gursel I., Noel T., Hessel V., Lang J.</i>	
<b>P7.5 FLOW CHEMISTRY WITH MICROCHEMICAL SYSTEMS FOR ENERGY, CHEMICALS, AND SUSTAINABILITY</b> .....	1948
<i>Hartman R. L.</i>	
<b>P7.6 INVESTIGATION OF CATALYTIC LACTOSE HYDROGENATION OVER RU-NANOSTRUCTURES IMPREGNATED IN HYPERCROSSLINKED POLYSTYRENE</b> .....	1949
<i>Sulman E. M., Wärnå J., Murzin D. Y., Doluda V. Y., Aho A., Lebedeva M. B.</i>	

<b>P7.7 MATHEMATICAL MODEL FOR ON-LINE CONTROL OF EMULSION COPOLYMERIZATION IN SEMI-BATCH AND SMART-SCALE REACTORS</b> .....	1950
<i>Matuška P., Pokorný R., Zubov A., Kosek J.</i>	
<b>P7.8 REACTOR, CATALYST AND PROCESS DEVELOPMENT FOR PLASMA ASSISTED NITROGEN FIXATION REACTIONS</b> .....	1951
<i>Patil B. S., Wang Q., Lang J., Hessel V.</i>	
<b>P7.9 LIQUID-PHASE METHANOL SYNTHESIS IN THE LOW PRESSURE FIELD</b> .....	1952
<i>Bykov A. V., Sulman E. M., Rubin M. A., Sulman M. G.</i>	
<b>P8.1 PRESENT AND FUTURE OF MODULAR PRODUCTION TECHNOLOGY IN THE CHEMICAL INDUSTRY</b> .....	1953
<i>Stammer A., Brodhagen A., Stenger F., Grün M. P., Bieringer</i>	
<b>P8.2 PILOTING OF AN INTENSIFIED EPOXIDATION PROCESS STEP AT 10 KG/H IN A MODULAR MINIPLANT USING MODULAR MICROSTRUCTURED REACTORS AND DEMONSTRATION OF FUTURE POTENTIALS</b> .....	1954
<i>Kirschneck D., Linhart W., Loeb P., Krtschil U.</i>	
<b>P8.3 ANTICIPATED IMPACT FROM TOSCA PROJECT AND ITS INDUSTRIAL CASE STUDIES</b> .....	1955
<i>Gerbec M., Aneziris O., Nivolianitou Z., Konstantinidou M., Mavridis G., Prast S.</i>	
<b>P8.4 ALCOHOL ETHOXYLATE SULFATION IN A MICROREACTOR OPERATED IN A PILOT PLANT ENVIRONMENT</b> .....	1956
<i>Stavarek P., Krištl J., Jiricný V., Vanhoutte D., Tarchini R.</i>	

### **SUSTAINABLE PROCESS INDUSTRY – BRIGHT FUTURE FOR CHEMICAL ENGINEERS**

<b>F1.1 SUSTAINABILITY METRICS: WHAT SHOULD WE BE MEASURING?</b> .....	1957
<i>Azapagic A.</i>	
<b>F1.2 ASSESSING AND MEASURING THE ENVIRONMENTAL IMPACT AND SUSTAINABILITY</b> .....	1958
<i>Klemeš J. J.</i>	
<b>F1.3 SUSTAINABILITY METRICS FOR THE PROCESS INDUSTRY</b> .....	N/A
<i>Stichnothe H.</i>	
<b>F1.4 MEASURING SUSTAINABILITY--BIOFUELS METRICS AND ENERGY PRODUCTIVITY</b> .....	1960
<i>Schuster D. S.</i>	
<b>F1.5 SOLVENT RECYCLING – SUSTAINABILITY IN PRACTICE. CARBON FOOTPRINTS OF RECYCLED SOLVENTS</b> .....	1961
<i>Creswell R. D.</i>	
<b>F2.1 ALGORITHM FOR MULTICRITERIA DECISION-MAKING DURING THE RETROFIT OF THE METAL SURFACE TREATMENT PLANT</b> .....	1962
<i>Roter A., Novak Pintaric Z.</i>	
<b>F2.2 KEY SUSTAINABILITY DESIGN AND OPERATION PRINCIPLES FOR ALL INDUSTRIAL SYSTEM LEVELS</b> .....	1963
<i>Harmsen J.</i>	
<b>F2.3 THE UK CAR FLEET 1995-2005: MEASURING SUSTAINABILITY USING METRICS</b> .....	1964
<i>Smith T. W., Axon C. J., Darton R. C.</i>	
<b>F2.4 SUSTAINABILITY EVALUATION OF A CIRCULATING FLUIDIZED BED BOILER USING TARGET-CENTRED DESIGN</b> .....	1965
<i>Chery O., Mehrabani Golzar M. R., Boly V.</i>	
<b>F2.5 OBJECTIVE FUNCTIONS IN THE ENVIRONMENTAL SUSTAINABILITY ASSESSMENT OF CHEMICAL PROCESSES AND/OR PRODUCTS</b> .....	1966
<i>Irabien Gullas A.</i>	
<b>F2.6 TECHNO-ECONOMIC AND ENVIRONMENTAL ASSESSMENT OF A LIGNIN BASED BIOREFINERY</b> .....	1967
<i>Hernández V., Castro E., Cardona C. A., Carvajal J. C.</i>	
<b>P1.221 ANAEROBIC REDUCTION OF CHLOROPHENOLS USING BIOLOGICAL ACTIVATED CARBON</b> .....	1968
<i>Chirinos J., Fortuny A., Bengoa C., Fabregat A., Font J., Stüber F. E.</i>	
<b>P1.222 BIODEGRADATION OF ACID ORANGE 7 IN AN ANAEROBIC - AEROBIC SEQUENTIAL TREATMENT SYSTEM</b> .....	1969
<i>Fortuny A., Bengoa C., García Y., Fabregat A., Font J., Stüber F. E., Chirinos J.</i>	
<b>P1.223 NEW THEORETICAL METHODOLOGIES FOR INCREASING SUSTAINABILITY IN PHARMACEUTICAL PLANT CLEANING</b> .....	1970
<i>Martin E. B., Carr W. A., Talford M. C., Double J. M.</i>	
<b>P1.224 THE OUTCOMES OF CONTINUAL IMPROVEMENT OF UREA PRODUCTION PROCESS, IS AN APPROPRIATE INDEX FOR INDUSTRY SUSTAINABLE KNOWLEDGE BASED DEVELOPMENT</b> .....	1971
<i>Ranjbar R.</i>	
<b>P1.225 TREATMENT OF OILY WASTEWATER BY ELECTROFLOCCULATION SYSTEM</b> .....	1979
<i>Nascimento I. L., Cometti M. F., Rocha S. M. S., Fabiano D. P.</i>	

### **PRES 2014**

<b>A3.1 RENEWABLE ENERGY SYSTEMS - A SMART ENERGY SYSTEMS APPROACH TO THE CHOICE AND MODELLING OF 100% RENEWABLE SOLUTIONS (PRES PLENARY LECTURE)</b> .....	1992
<i>Lund H.</i>	

<b>H1.1 DISTILLATE RANGE OF HYDROCARBON PRODUCTION FROM BIO-ETHANOL DEHYDRATION USING HY AND HBETA AS SUPPORTS OF PHOSPHORUS OXIDE</b> .....	1993
<i>Jitkarnka S., Kittikarnchanaporn J.</i>	
<b>H1.2 THEORETICAL STUDY ON THE ETHANOL-FUELLED SOFC SYSTEM INTEGRATED WITH DEHUMIDIFIER</b> .....	1994
<i>Arpornwichanop A., Tippawan P., Assabumrungrat S.</i>	
<b>H1.3 ASSESSMENT OF HYDROGEN AND POWER CO-GENERATION BASED ON BIOMASS DIRECT CHEMICAL LOOPING SYSTEMS</b> .....	1995
<i>Cormos C.-C., Cormos A.-M., Petrescu L.</i>	
<b>H1.4 HEAT-INTEGRATED NOVEL PROCESS OF LIQUID FUEL PRODUCTION FROM BIO RESOURCES – PROCESS SIMULATION AND COSTING STUDY</b> .....	1996
<i>Wang Q., Vural Gursel I., Noel T., Hessel V., Van Veen A., Kolb G.</i>	
<b>H2.1 ON THE EFFICIENT SCREENING AND SELECTION OF POST-COMBUSTION CO<sub>2</sub> CAPTURE SOLVENTS</b> .....	1997
<i>Papadopoulos A. I., Seferlis P., Badr S., Chremos A., Zargiannis T., Papadokostantakis S., Adjiman C. S., Galindo A., Jackson G.</i>	
<b>H2.2 SYNTHESIS AND OPTIMIZATION OF MEMBRANE SYSTEMS FOR CO<sub>2</sub> CAPTURE APPLICATIONS</b> .....	1998
<i>Anantharaman R., Lindqvist K.</i>	
<b>H2.3 MULTI-OBJECTIVE OPTIMISATION OF HYBRID CO<sub>2</sub> CAPTURE PROCESSES USING EXERGY ANALYSIS</b> .....	1999
<i>Hoadley A., Li Yuen Fong J. C., Anderson C., Hooper B.</i>	
<b>H2.4 STRUCTURED PACKING EVALUATION IN SOUR GASES TREATMENT</b> .....	2000
<i>Chavez R. H., Guadarrama J. J.</i>	
<b>H2.5 MODELING AND OPTIMIZATION OF A TWO-STAGE MOF-BASED PRESSURE/VACUUM SWING ADSORPTION PROCESS COUPLED WITH MATERIAL SELECTION</b> .....	2001
<i>You F. Q., Leperi K., Gao H., Snurr R. Q.</i>	
<b>H2.6 OPTIMISATION OF PRESSURE SWING ADSORPTION (PSA) PROCESS FOR PRODUCING HIGH PURITY CO<sub>2</sub> FOR SEQUESTRATION PURPOSES</b> .....	2002
<i>Hoadley A., Ganesh A., Sharma I., Mahajani S. M.</i>	
<b>H2.7 UTILIZATION OF EMISSIONS OF CO<sub>2</sub> BY PRODUCTION OF MINERAL FERTILIZERS</b> .....	2003
<i>Mingaleeva G., Nikolaev A., Shamsutdinov E.</i>	
<b>H2.8 ENERGY SAVING FLOWCHART OF THE FCC GAS CONCENTRATION UNIT IN HIGH PROPYLENE PRODUCTION PLANT</b> .....	2004
<i>Zhao H., Qi W., Yang C., Ma A.</i>	
<b>H3.1 FROM ACADEMIC RESEARCH WORK TO INDUSTRIAL PROCESS IMPLEMENTATION</b> .....	2005
<i>Kalitventzeff B.</i>	
<b>H3.2 DEVELOPMENT AND IMPLEMENTATION OF METHODS OF CYBERNETICS IN TECHNOLOGIES OF CHEMICAL REAGENTS AND HIGH PURITY SUBSTANCES</b> .....	2006
<i>Bessarabov A.</i>	
<b>H3.3 MODELLING THE DYNAMICAL REGIMES OF MASS TRANSFER IN CASCADES OF THROUGH-REACTORS</b> .....	2008
<i>Kalbayeva A., Kurakbayeva S., Zhidibaeva A., Musrepova E.</i>	
<b>H3.4 EFFECT OF IMPURITIES IN THE POLYMERIZATION REACTION OF CRUDE GLYCEROL TO PRODUCE POLYGLYCEROL, USING SULPHURIC ACID AS CATALYST</b> .....	2009
<i>Ramirez-Caballero G., Ramirez-Garcia A., Ardila-Suárez C., Rojas-Cristancho J., Pineda-Martínez J.</i>	
<b>H4.1 THE BIOLOGICAL TREATMENT PLANT OPTIMAL DESIGN UNDER UNCERTAINTY</b> .....	2010
<i>Ostrovsky G. M., Lapteva T. V., Ziyatdinov N. N.</i>	
<b>H4.2 COMPUTATION OF THE SOLID CATALYZED GAS PHASE REACTIONS WITH A SIMULTANEOUS CHOICE OF THE SCHEME OF THE REACTIONS FOR DIFFERENT COMPOSITION OF THE INITIAL REACTION MIXTURE</b> .....	2011
<i>Gartman T. N., Sovetin F. S., Proskuro E. A., Shvets V. F., Kozlovskiy R. A., Suchkov Y. P., Sapunov V. N., Loktev A. S., Levchenko D. A., Dedov A. G.</i>	
<b>H4.3 THE ITALIAN-RUSSIAN SCIENTIFIC COLLABORATION IN CHEMICAL ENGINEERING: A LEGACY OF V.V. KAFAROV</b> .....	2012
<i>Dovì V. G., Meshalkin V. P.</i>	
<b>H4.4 STUDY ON SPRAY DRYING FOR THE PRODUCTION OF HIGH VALUE PARTICLES</b> .....	2013
<i>Golman B., Julklang W.</i>	
<b>H4.5 DEVELOPMENT OF A STEP-GROWTH POLYMERIZATION KINETICS MODEL FOR POLYGLYCEROL PRODUCTION</b> .....	2014
<i>Ramirez-Caballero G., Ramirez-Garcia A., Ardila-Suárez C.</i>	
<b>H4.6 TECHNO-ECONOMIC EVALUATION OF QUALITY IMPROVEMENT OF HEAVY GAS OIL WITH DIFFERENT PROCESSES</b> .....	2015
<i>Hancsók J., Eller Z., Varga Z.</i>	
<b>H4.7 REMOVAL OF POLLUTANTS FROM THE VENTILLATION AIR IN A COPPER-ORE MINE USING A COMPACT TRICKLE-BED BIOREACTOR</b> .....	2016
<i>Kasperczyk D., Urbaniec K., Barbusinski K.</i>	
<b>H4.8 FLUIDIZATION BEHAVIOUR IN AN INDUSTRIAL-SCALE LLDPE POLYMERIZATION FLUIDIZED BED REACTOR: IMPACTS OF THE PERFORATED DISTRIBUTOR</b> .....	2017
<i>Akbari V., Godini H. R., Kazemi H., Hamid M. K. A.</i>	

<b>H4.9 INVESTIGATION ON ZERO FLARING DURING START UP IN THE GAS REFINERY .....</b>	<b>2018</b>
<i>Ghaedian M., Sarkari M., Haghighi Asl M., Jamshidi B., Mohajeri A. R.</i>	
<b>H5.1 EXPERIMENTAL APPROACH OF CERAMIC MEMBRANES PARAMETERS FOR THE DESIGN AND SIMULATION OF ULTRAFILTRATION PROCESSES .....</b>	<b>2019</b>
<i>García A., Labidi J., Wukovits W., Friedl A., Egiús I.</i>	
<b>H5.2 EVAPORATION CHARACTERISTICS OF VIPERTEX 1EHT ENHANCED HEAT TRANSFER TUBES .....</b>	<b>2020</b>
<i>Kukulka D. J., Smith R., Li W.</i>	
<b>H5.3 DISCRETE MODELLING OF A MULTIPARTICLE DIFFUSION PROCESS AND FRONT PROPAGATION: DYNAMICS AND SOURCE EFFECTS .....</b>	<b>2021</b>
<i>Dovi V. G., Reverberi A. P., Ferrando R., Fabiano B.</i>	
<b>H5.4 DEVELOPMENT OF AN INDUSTRIAL IRON-MAKING MELTER GASIFIER MODEL WITH MULTIPHASE EQUILIBRIUM CALCULATIONS .....</b>	<b>2022</b>
<i>Almpantis-Lekkas O., Wukovits W., Weiss B.</i>	
<b>H5.5 A THEORETICAL AND EXPERIMENTAL INVESTIGATION OF WASTEWATER TREATMENT FOR A POLYETHYLENE TEREPHTHALATE PRODUCTION UNIT .....</b>	<b>2023</b>
<i>Khorasheh F., Vafajoo L., Mohammadpour A.</i>	
<b>H5.6 APPLICATION OF INTERVAL ANALYSIS TO THE RECONCILIATION OF PROCESS DATA WHEN MODELS SUBJECT TO UNCERTAINTIES ARE USED .....</b>	<b>2024</b>
<i>Vocciante M., Dovi V. G., Reverberi A. P.</i>	
<b>H5.7 COST BENEFITS ANALYSIS FOR WASTE HEAT UTILIZATION IN SINTER COOLING BED .....</b>	<b>2025</b>
<i>Liu Y., Yang J., Cheng Z. L., Wang J., Wang Q. W.</i>	
<b>H5.8 EXPERIMENTAL AND NUMERICAL INVESTIGATIONS ON STRUCTURED CATALYSTS FOR METHANE STEAM REFORMING INTENSIFICATION .....</b>	<b>2026</b>
<i>Ciambelli P., Palma V., Miccio M., Ricca A., Meloni E.</i>	
<b>H5.9 THE OLIGOMERIZATION OF HIGH OLEFIN CONTAINING HYDROCARBON FRACTIONS ON ION EXCHANGE RESIN CATALYST .....</b>	<b>2027</b>
<i>Kriván E., Tomasek S., Hancsók J.</i>	
<b>H6.1 THERMO-ECONOMIC ASSESSMENT TOOL FOR INDUSTRIAL MILK SPRAY DRYER EXHAUST HEAT RECOVERY SYSTEMS WITH PARTICULATE FOULING .....</b>	<b>2028</b>
<i>Atkins M. J., Neale J. R., Walmsley M. R. W., Walmsley T. G.</i>	
<b>H6.2 TEMPERATURE CONTROL OF BATCH SUSPENSION POLYVINYL CHLORIDE REACTORS .....</b>	<b>2029</b>
<i>Németh S., Bárkányi Á., Lakatos B. G.</i>	
<b>H6.3 A HEURISTIC FRAMEWORK FOR INHERENT OCCUPATIONAL HEALTH ASSESSMENT IN CHEMICAL PROCESS DESIGN .....</b>	<b>2030</b>
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<b>H6.4 MINIMUM SOLVENT FLOW RATE FOR COUNTERCURRENT LIQUID-LIQUID EXTRACTION COLUMNS .....</b>	<b>2031</b>
<i>Plesu V., Bonet Ruiz A. E., Llorens J., Bonet J., Tuluc A., Iancu P.</i>	
<b>H6.5 A STUDY ON THE COMBUSTION DYNAMICS OF A BIOMASS FUEL BED IN A BIOGRATE BOILER .....</b>	<b>2032</b>
<i>Jämsä-Jounela S.-L., Boriouchkine A., Sharifi V., Swithenbank J.</i>	
<b>H6.6 BIO-ETHANOL DEHYDRATION TO HYDROCARBONS USING GA<sub>2</sub>O<sub>3</sub>/BETA ZEOLITES WITH VARIOUS SI/AL<sub>2</sub> RATIOS .....</b>	<b>2033</b>
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<b>H6.7 PERFORMANCE IMPROVEMENT OF BIOMASS COGENERATION PLANT BY DUAL LOOP ORGANIC RANKINE CYCLE .....</b>	<b>2034</b>
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<b>H7.1 THE DEVELOPMENT OF HEAT SUBSTATION FOR DRYING WASTE HEAT UTILIZATION .....</b>	<b>2035</b>
<i>Kusakov S. K., Tovazhnyanskyy L. L., Anokhin P., Gariev A. O., Arsenyeva O. P., Kapustenko P. O., Klemeš J. J., Cucek L.</i>	
<b>H7.10 OPTIMAL DESIGN TECHNOLOGIES FOR GAS-FIRE PLANT AND INTEGRATION IN CO<sub>2</sub> CAPTURE .....</b>	<b>2036</b>
<i>Smith R., Perry S. J., Bulatov I., Pan M., Gharaie M., Ijeoma A. A.</i>	
<b>H7.2 RATE-BASED MODELLING OF CO<sub>2</sub> CAPTURE PROCESS BY REACTIVE ABSORPTION WITH MEA .....</b>	<b>2037</b>
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<b>H7.3 IMPROVING HEAT RECOVERY OF HEAT EXCHANGER NETWORK WITH INTENSIFIED HEAT TRANSFER .....</b>	<b>2039</b>
<i>Smith R., Bulatov I., Pan M.</i>	
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<i>Varbanov P. S., Boldyryev S.</i>	
<b>H7.5 HYTIME – COMBINED BIOHYDROGEN AND BIOGAS PRODUCTION FROM 2<sup>ND</sup> GENERATION BIOMASS .....</b>	<b>2041</b>
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<b>H7.6 A METHODOICAL APPROACH FOR ENERGY EFFICIENCY ANALYSIS BASED ON EXISTING PROCESS MODELS .....</b>	<b>2042</b>
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<b>H7.7 LOW GRADE HEAT RECOVERY AT PROCESS SITES AND LOCAL ENERGY SYSTEMS .....</b>	<b>2043</b>
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<b>H7.8 ABOUT THE POSSIBILITIES OF THE HEAT EXCHANGERS NETWORK RETROFIT FOR POST-COMBUSTION CO<sub>2</sub> CAPTURE UNIT WITHOUT STREAM SPLITTING .....</b>	<b>2044</b>
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<b>H7.9 SHIFTED RETROFIT THERMODYNAMIC DIAGRAM: A MODIFIED TOOL FOR RETROFITTING ON HEAT EXCHANGER NETWORK</b> .....	2045
<i>Yong J. Y., Varbanov P. S., Klemeš J. J.</i>	
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<b>H8.3 IDENTIFICATION OF PROCESS INTEGRATION OPTIONS FOR CO<sub>2</sub> CAPTURE IN GREEK LIGNITE-FIRED POWER PLANT</b> .....	2048
<i>Zhang N., Seferlis P., Liew P. Y., Doukelis A., Klemeš J. J.</i>	
<b>H8.4 EFFICIENT TRANSSHIPMENT-BASED FRAMEWORK FOR ENERGY TARGETING AND RETROFITTING INDUSTRIAL TOTAL SITES</b> .....	2049
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<i>Voccianti M., Cucek L., Varbanov P. S., Dovi V. G., Kapustenko P. O., Yong J. Y., Klemeš J. J., Kravanja Z., Zirnigast K., Mantelli V., Gariev A.</i>	
<b>H8.7 A NEW ABSORPTION-DESORPTION PILOT PLANT FOR CO<sub>2</sub>-CAPTURE</b> .....	2052
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