

XXIV International conference on Chemical Reactors ChemReactor-24

Milan, Italy – Novosibirsk, Russia, September 12–17, 2021

STREAM I HALL I

SEPTEMBER 13, Monday

Section I. Advances in Chemical Reactor Fundamentals

Chairperson: Professor Dr.-Ing. Gregor Wehinger, Clausthal University of Technology, Clausthal-Zellerfeld, Germany

06.40–07.00 09.40-10.00	OP-I-1	Murzin D.Yu. APPARENT ACTIVATION ENERGY OF STRUCTURE SENSITIVE HETEROGENEOUS CATALYTIC REACTIONS <i>Åbo Akademi University, Laboratory of Industrial Chemistry, Turku, Finland</i>
07.00–07.20 09.00-09.20	OP-I-2	Bracconi M., Maestri M. INCLUSION of kMC INTO MACROSCOPIC REACTOR MODELS BY MEANS OF MACHINE LEARNING TECHNIQUES <i>Politecnico di Milano, Milan, Italy</i>
07.20–07.40 09.20-09.40	OP-I-3	Cheula R., Maestri M. UNRAVELING THE NATURE AND THE IDENTITY OF THE ACTIVE SITES IN HETEROGENEOUS CATALYSIS VIA STRUCTURE-DEPENDENT MICROKINETIC MODELING <i>Politecnico di Milano, Milan, Italy</i>
07.40–08.00 09.40-10.00	OP-I-4	Branco P.D. ¹ , Yablonsky G.S. ² , Marin G.B. ³ , Constaes D. ³ INVARIANT EXPRESSIONS IN CHEMICAL KINETICS <i>¹Flemish Institute for Technological Research (VITO), Mol, Belgium</i> <i>²Washington University in St. Louis, USA</i> <i>³Ghent University, Ghent, Belgium</i>

08.00–08.20
15.00–15.00 **OP-I-5** Voloshin B.^{1,2}, Kovalev I.^{1,3}, Popov M.¹, Bychkov S.¹, **Chizhik S.¹**, Nemudry A.P.¹
EFFECT OF OXYGEN NONSTOICHIOMETRY ON OXYGEN PERMEABILITY PROCESS IN PEROVSKITE OXIDE
¹*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*
²*Novosibirsk State University, Novosibirsk, Russia*
³*Novosibirsk State Technical University, Novosibirsk, Russia*

08.20–08.40
11.20–11.40 **OP-I-6** **Slinko M.M.¹**, Makeev A.G.², Bychkov V.Y.¹, Korchak V.N.¹
SPATIOTEMPORAL PATTERNS DURING CO OXIDATION ON Ni AT ATMOSPHERIC PRESSURE
¹*N.N. Semenov Institute of Chemical Physics RAS, Moscow, Russia*
²*Lomonosov Moscow State University, Moscow, Russia*

08.40–09.00 Coffee break

Section I. Advances in Chemical Reactor Fundamentals

Chairperson: Professor Marina Slinko, Semenov Institute of Chemical Physics RAS, Moscow, Russia

09.00–09.20
16.00–16.20 **OP-I-7** **Lashina E.A.^{1,2}**, Slavinskaya E.M.^{1,2}, Boronin A.I.^{1,2}
NONSTATIONARY DYNAMICS OF CO OXIDATION DEPENDING ON THE STRUCTURE OF PALLADIUM-CERIA CATALYSTS
¹*Borokov Institute of Catalysis SB RAS, Novosibirsk, Russia*
²*Novosibirsk State University, Novosibirsk, Russia*

09.20–09.40
12.20–12.40 **OP-I-8** **Alghamdi N.**, Sarathy M.
MICROKINETIC DESCRIPTION OF CO OXIDATION OVER A RHODIUM CATALYST
King Abdullah University of Science and Technology, Thuwal, Saudi Arabia

09.40–10.00
12.40–13.00 **OP-I-9** **Salmi T.¹**, Murzin D.¹, Wärnå J.¹, Russo V.^{1,2}, Kilpiö T.¹, Gemo N.¹, Reinsdorf A.¹,
Schmidt S.¹, Behraves E.¹, Vajglova Z.¹, Suerz R.¹, Balme Q.¹, Kumar N.¹, Eränen K.¹
MICROREACTORS AS STRONG TOOLS IN THE DETERMINATION OF INTRINSIC KINETICS FOR HETEROGENEOUSLY CATALYZED RAPID GAS-PHASE REACTIONS
¹*Åbo Akademi University, Turku/Åbo, Finland*
²*The University of Naples Federico II, Naples, Italy*

10.00–10.30 Coffee break

11.00 – 11.30 Official opening

PLENARY SESSION

Chairpersons:

Professor Tapio Salmi, Åbo Akademi University, Turku, Finland

Professor Dmitry Murzin, Åbo Akademi University, Turku, Finland

11.00 – 12.00

PL-1

Professor Guy Marin

University of Ghent, Belgium

A Professor Mikhail Slin'ko Honorary Lecture

CHEMICAL REACTION AND REACTOR ENGINEERING:

A KEY DISCIPLINE FOR PROCESS OPTIMIZATION, INNOVATION AND INTENSIFICATION

13.00-14.00

14.00-15.00

Dr. Roberto Zennaro

Development & Technical Activity, Eni - Energy Evolution, San Donato Milanese, Italy

PROCESS TECHNOLOGIES FOR ENERGY TRANSITION: PRODUCTION OF HYDROGEN AND CO₂ CAPTURE, STORAGE AND UTILIZATION

12.00 – 13.00

PL-2

13.00–13.15 Coffee break

KEYNOTE SESSION

Chairperson: Professor Luis M. Gandía, Public University of Navarre, Pamplona, Spain

13.15-13.45

KL-1

Professor Dr.-Ing. Hannsjörg Freund

TU Dortmund University, Dortmund, Germany

ADDITIVE MANUFACTURING OF TAILOR-MADE CATALYTIC REACTORS WITH OPTIMAL AND FLEXIBLE TRANSPORT PROPERTIES

15.15-15.45

08.45-09.15

KL-2

Ardagh A.M.^{1,3}, Shetty M.¹, Abdelrahman O.^{2,3}, Professor Paul Dauenhauer^{1,3}

¹*University of Minnesota, Minneapolis, MN, USA*

²*University of Massachusetts Amherst, Amherst, MA, USA*

³*Catalysis Center for Energy Innovation, Newark, DE, USA*

DYNAMIC CATALYSTS FOR RENEWABLE ENERGY AND BIO-DERIVED CHEMICALS

13.45-14.15

SEPTEMBER 14, Tuesday

Section I. Advances in Chemical Reactor Fundamentals

Chairperson: Professor Matteo Maestri, Politecnico di Milano, Milan, Italy

06.40–07.00 13.40–14.00	OP-I-10	Enikeeva L.V.^{1,2}, Faskhutdinov A.G.³, Arefyev I.A.², Enikeev M.R.², Gubaydullin I.M.^{2,3} KINETICS AND MECHANISM OF ISOMERIZATION REACTION OF PENTANE-HEXANE FRACTION. MATHEMATICAL MODEL OF THE REACTION <i>¹Novosibirsk State University, Novosibirsk, Russia</i> <i>²Ufa State University, Ufa, Russia</i> <i>³Institute of Petrochemistry and Catalysis RAS, Ufa, Russia</i>
07.00–07.20 09.00–09.20	OP-I-11	Epelde Bejerano E., Díaz M., Ateka A., Camacho I., Aguayo A., Bilbao J. KINETIC MODEL FOR THE OLIGOMERIZATION OF 1-BUTENE TO LIQUID FUELS AT LOW- AND HIGH- PRESSURE CONDITIONS <i>University of the Basque Country, Bilbao, Spain</i>
09.20–09.40 07.20–07.40	OP-I-12	Violet L., Pereira De Oliveira L.C. IMPROVEMENTS IN HYDRODENITROGENATION AND HYDRODESULFURATION KINETIC MODELS OF VACCUM GAS OIL (VGO) WITH ON THE SUPPORT OF MACHINE LEARNING <i>IFP Energies Nouvelles, Solaize, France</i>
10.40–11.00 07.40–08.00	OP-I-13	Wang H.¹, Sarathy S.¹, Takanabe K.² A KINETIC STUDY OF OXIDATIVE COUPLING OF METHANE ON La₂O₃-BASED CATALYSTS WITH Sr and Ce DOPING <i>¹King Abdullah University of Science and Technology, Thuwal, Saudi Arabia</i> <i>²University of Tokyo, Japan</i>
08.00–08.20 11.00–11.20	OP-I-14	Erünal E. KINETIC DATA ANALYSIS OF SUZUKI-MIYAUURA COUPLING REACTIONS CATALYSED VIA MWCNT SUPPORTED Pd NANOPARTICLES <i>Çukurova University, Adana, Turkey</i>
08.20–08.40	OP-I-15	Scaltsoyiannes A., Antzaras A., Lemonidou A. 11.20–11.40 CaO-BASED SORBENTS FOR CALCIUM LOOPING APPLICATIONS: A GENERALIZED KINETIC MODEL FOR CARBONATION REACTION <i>Aristotle University of Thessaloniki, Thessaloniki, Greece</i>

08.40–09.00 Coffee break

POSTER SESSION

09.00–10.45

Chairpersons:

Professor Gianpiero Groppi, Politecnico di Milano, Milan, Italy

Professor Andrey Zagoruiko, Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

5 min - Flash Presentations

2-3 min - questions

FP-1 11.00-12.45	Shtyka O. ^{1,2} , Ciesielski R. ^{1,2} , Kedziora A. ^{1,2} , Dubov S. ² , Gromov D. ² , Maniecki T.P. ^{1,2} PHOTOCATALYTIC REDUCTION OF CARBON DIOXIDE IN CONTINUOUS FLOW PHOTOREACTOR USING TiO₂-BASED COMPOSITES <i>¹Lodz University of Technology, Lodz, Poland</i> <i>²National Research University of Electronic Technology, Zelenograd, Moscow, Russia</i>
FP-2 16.00-17.45	Dolganov I., Dolganova I. , Ivanchina E., Ivashkina E., Solopova A., Bunaev A., Pasyukova M. FORMATION OF TETRALINES AND SULFONES DEPENDING ON THE CONSTRUCTION OF THE LINEAR ALKYL BENZENES FILM SULFONATION REACTOR <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>
FP-3 12.00-13.45	Kumar A., Yuda A., Ebrahimi P. MODELING OF CELLULOSE ASSISTED COMBUSTION SYNTHESIS TECHNIQUE FOR CATALYST PREPARATION FOR HYDROGEN PRODUCTION FROM ETHANOL REFORMING <i>Qatar University, Doha, Qatar</i>
FP-4 12.00-13.45	Manaenkov O. , Kislitsa O., Ratkevich E., Matveeva V., Sulman M., Sulman E. [†] MAGNETICALLY RECOVERABLE POLYMERIC CATALYST FOR CELLULOSE HYDROGENOLYSIS <i>Tver Technical University, Tver, Russia</i>
FP-5 11.00-12.45	Dymek K. ¹ , Kurowski G. ¹ , Kuterasiński Ł. ² , Gancarczyk A. ³ , Sitarz M. ⁴ , Pajdak A. ⁵ , Jodłowski P.J. ¹ METAL ORGANIC FRAMEWORKS SUPPORTED OF CERAMIC FOAMS FOR CYCLOHEXENE AND BENZYL ALCOHOL OXIDATION <i>¹Krakow University of Technology, Krakow, Poland</i> <i>²Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Krakow, Poland</i> <i>³Institute of Chemical Engineering, Polish Academy of Sciences, Gliwice, Poland</i> <i>⁴AGH University of Science and Technology, Krakow, Poland</i> <i>⁵Strata Mechanics Research Institute, Polish Academy of Sciences, Krakow, Poland</i>

FP-6 16.00-17.45	Bunaev A. , Dolganova I., Dolganov I., Ivanchina E., Chernyshov M., Mezhova M. SIMULATION OF HYDROCARBON PYROLYSIS NON-STATIONARY PROCESS <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>
FP-7 11.00-12.45	Sindera K. ¹ , Iwaniszyn M. ¹ , Gancarczyk A. ¹ , Korpys M. ¹ , Kolodziej A. ^{1,2} NEW STREAMLINED CATALYTIC CARRIERS OF ENHANCED TRANSPORT PROPERTIES ¹ <i>Institute of Chemical Engineering, Polish Academy of Sciences, Gliwice, Poland</i> ² <i>Opole University of Technology, Opole, Poland</i>
FP-8 12.00-13.45	Matveeva V. , Grigorev M., Mikhailov S., Nikoshvili L., Sulman E. [†] MONO - (Ru) AND BIMETALLIC (Ru-Co) POLYMERIC CATALYSTS FOR LEVULINIC ACID HYDROGENATION <i>Tver Technical University, Tver, Russia</i>
FP-9 18.00-19.45	Suh D. ¹ , Jo H. ^{1,2} , Choi J-W. ¹ , Ha J. ¹ , Choi J. ² DESIGN OF MULTISTAGE REACTOR SYSTEMS FOR THE PRODUCTION OF HIGH CARBON NUMBER HYDROCARBON FUELS FROM FURANS BY DISTRIBUTING MULTIFUNCTIONAL CATALYSTS ¹ <i>Korea Institute of Science and Technology, Seoul, South Korea</i> ² <i>Korea University, Seoul, South Korea</i>
FP-10 12.00-13.45	Matveeva V. ^{1,2} , Sulman A. ¹ , Grebennikova O. ¹ , Tikhonov B. ¹ , Stadolnikova P. ¹ , Sidorov A. ¹ , Sulman E. ^{1†} , Bronstein L. ^{3,4,5} DESIGN OF BIOCATALYSTS FOR EFFICIENT ONE-POT PROCESS FOR CASCADE REACTIONS ¹ <i>Tver State Technical University, Tver, Russia</i> ² <i>Tver State Technical University, Tver, Russia</i> ³ <i>Indiana University, Kirkwood, USA</i> ⁴ <i>A.N. Nesmeyanov Institute of Organoelement Compounds, Moscow, Russia</i> ⁵ <i>King Abdulaziz University, Jeddah, Saudi Arabia</i>
FP-11 12.00-13.45	Stepacheva A. , Markova M., Lugovoy Y., Tiamina I., Sulman M., Matveeva V., Sulman E. [†] BIOMASS AND OILS CO-HYDROPROCESSING IN SUPERCRITICAL CONDITIONS <i>Tver State Technical University, Tver, Russia</i>
FP-12 10.00-11.45	Martins M. ¹ , Lemos M. ¹ , Lemos F. ¹ , Pereira H. ² TORREFACTION OF FOREST RESIDUES USING A LAB-SCALE REACTOR ¹ <i>Instituto Superior Técnico, University of Lisbon, Portugal</i> ² <i>Instituto Superior de Agronomia, University of Lisbon, Portugal</i>

FP-13 Lugovoy Y., Chalov K., Stepacheva A., **Kosivtsov Y.**, Sulman M., Sulman E. †
12.00-13.45 **PYROLYSIS OF CONIFEROUS AND DECIDUOUS WOOD WASTES**
Tver State Technical University, Tver, Russia

10.45–11.00 Coffee break

PLENARY SESSION

Chairperson: Professor Kevin M. Van Geem, Ghent University, Belgium

11.00 – 12.00 PL-3 **Professor Freek Kapteijn**
Delft University of Technology, Delft, The Netherlands
13.00-14.00 **PROCESS INTENSIFICATION THROUGH STRUCTURING CATALYST AND REACTOR**

14.00-15.00 PL-4 **Professor Fausto Gallucci**
Eindhoven University of Technology, Eindhoven, The Netherlands
12.00 – 13.00 **MEMBRANE REACTORS AND SEPARATION ENHANCED REACTORS**

13.00–13.15 Coffee break

KEYNOTE SESSION

Chairperson: Professor Hannsjörg Freund, TU Dortmund University, Dortmund, Germany

13.15-13.45 KL-3 **Professor Vladimir Arutyunov**
N.N. Semenov Federal Research Center for Chemical Physics RAS, Moscow, Russia
Institute of Problems of Chemical Physics RAS, Chernogolovka, Moscow region, Russia
16.15-16.45 **NON-CATALYTIC GAS PHASE OXIDATION OF HYDROCARBONS**

09.45-10.15 KL-4 **Professor Suljo Linic**
University of Michigan, Ann Arbor, MI, USA
13.45-14.15 **PHYSICAL CHEMISTRY CONCEPTS OF CHEMICAL ENERGY CONVERSION**

SEPTEMBER 15, Wednesday

Section I. Advances in Chemical Reactor Fundamentals

Chairperson: Professor Ahmet Kerim Avci, Bogazici University, Turkey

11.40-12.00 06.40-07.00	OP-I-16	Koledina K.F.¹, Koledin S.N.², Gubaydullin I.M.¹ MULTIOBJECTIVE OPTIMIZATION IN THE REACTION KINETICS OF METAL COMPLEX CATALYSIS <i>¹Institute of Petrochemistry and Catalysis RAS, Ufa, Russia</i> <i>²Ufa State Petroleum Technological University, Ufa, Russia</i>
07.00-07.20 09.00-09.20	OP-I-17	Portillo Bazaco A., Ateka A., Sanchez-Contador M., Aguayo A., Bilbao J. KINETIC MODEL FOR BIFUNCTIONAL CORE-SHELL CATALYST FOR DME SYNTHESIS <i>University of the Basque Country, Bilbao, Spain</i>
09.20-09.40 07.20-07.40	OP-I-18	Uglietti R.^{1,2}, La Zara D.², Goulas A.², Braconni M.¹, Ommen J.², Maestri M.¹ EXPERIMENTAL AND NUMERICAL INVESTIGATION OF SPECIES TRANSPORT IN CATALYTIC FLUIDIZED BED REACTORS <i>¹Politecnico di Milano, Milan, Italy</i> <i>²Delft University of Technology, Delft, The Netherlands</i>
09.40-10.00 07.40-08.00	OP-I-19	Kreitz B.^{1,2}, Wehinger G.¹, Goldsmith F.², Turek T.¹ MICROKINETIC DEVELOPMENT FOR THE METHANATION OF CO₂ ON Ni CATALYSTS WITH RMG-Cat <i>¹Clausthal University of Technology, Clausthal-Zellerfeld, Germany</i> <i>²Brown University, Providence, USA</i>
08.00-08.20 15.00-15.20	OP-I-20	Glazov N.A., Zagoruiko A., Dik P. STOCHASTIC RECONSTRUCTION USING ENTROPY MAXIMIZATION <i>Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia</i>

11.20-11.40		Angikath F.¹, Li Y.¹, Hee K.¹, Zhao E.³, Voice A.⁴, Badra J.⁵, Mohan B.¹, Sarathy M.¹
08.20-08.40	OP-I-21	DEVELOPMENT OF FOUR COMPONENT REDUCED CHEMICAL KINETIC MECHANISM FOR GASOLINE SURROGATES ¹ <i>King Abdullah University of Science & Technology, Thuwal, Saudi Arabia</i> ² <i>University of Michigan, Ann Arbor, MI, USA</i> ³ <i>Argonne National Laboratories, Chicago, USA</i> ⁴ <i>Aramco Research Centre, Detroit, USA</i> ⁵ <i>Fuel Technology Division, R & DC, Saudi Aramco, Dhahran, Saudi Arabia</i>

08.40-09.00 Coffee break

Section I. Advances in Chemical Reactor Fundamentals

Chairperson: Professor Alberto Cuoci, Politecnico di Milano, Milan, Italy

11.00-11.20		Müller M.¹, Anderson S.¹, Kutscherauer M.^{1,2}, Mestl G.², Turek T.¹
09.00-09.20	OP-I-22	INVESTIGATION OF THE ROLE OF BY-PRODUCTS IN THE KINETICS OF MALEIC ANHYDRIDE SYNTHESIS USING A MILLISTRUCTURED REACTOR ¹ <i>Clausthal University of Technology, Clausthal-Zellerfeld, Germany</i> ² <i>Clariant AG, Bruckmühl, Germany</i>
11.20-11.40		Russo V.^{1,2}, Rossano C.¹, Tesser R.¹, Salmi T.², Di Serio M.¹
09.20-09.40	OP-I-23	KINETICS OF ETHYL LEVULINATE SYNTHESIS IN A CHROMATOGRAPHIC REACTOR ¹ <i>The University of Naples Federico II, Naples, Italy</i> ² <i>Åbo Akademi University, Turku/Åbo, Finland</i>
11.40-12.00		Micale D., Uglietti R., Bracconi M., Maestri M.
09.40-10.00	OP-I-24	A MULTIPHASE OPERATOR SPLITTING MODEL FOR THE EULER-EULER SIMULATIONS OF REACTIVE FLUIDIZED SYSTEMS <i>Politecnico di Milano, Milan, Italy</i>
12.00-12.20		Ouyang Y., Manzano M.N., Madanikashani S., Vandewalle L.A., Shtern V., Marin G., Heynderickx G., Van Geem K.M.
10.00-10.20	OP-I-25	MICROMIXING IN A GAS-LIQUID VORTEX REACTOR: AN EXPERIMENTAL AND NUMERICAL STUDY <i>Ghent University, Ghent, Belgium</i>

12.20-12.40		Ledezma Lopez G.A.^{1,2}, Verstraete J.¹, Sorbier L.¹, Leinekugel-Le Cocq D.¹, Jolimaitre E.¹, Jallut C.²
10.20-10.40	OP-I-26	MODELLING INTRAGRANULAR TRANSPORT: DIGITALIZATION OF A γ-ALUMINA SUPPORT BY IMPLEMENTING COMPUTATIONAL VERSIONS OF THREE DIFFERENT CHARACTERIZATION TECHNIQUES
		¹ <i>IFP Energies nouvelles, Lyon, France</i>
		² <i>Claude Bernard University Lyon 1, Lyon, France</i>

10.40-11.00 Coffee break

PLENARY SESSION

Chairperson: Professor Freek Kapteijn, Delft University of Technology, The Netherlands

11.00 – 12.00	PL-5	Professor Annemie Bogaerts
13.00-14.00		<i>University of Antwerpen, Antwerpen, Belgium</i>
		ENGINEERING OF PLASMA-ASSISTED REACTIONS
14.00-15.00		Professor Ib Chorkendorff
12.00 – 13.00	PL-6	<i>Denmark Technical University, Copenhagen, Denmark</i>
		CONVERSION OF SUSTAINABLE ENERGY: ELECTRIFIED REACTORS

13.00-13.15 Coffee break

KEYNOTE SESSION

Chairperson: Professor Vladimir Arutyunov, Semenov Federal Research Center for Chemical Physics RAS, Moscow, Russia

13.15-13.45	KL-5	Professor Luis M. Gandía¹, Arangoa G.¹, Ursúa A.¹, Sanchis P.¹, Ramírez J.²
15.15-15.45		¹ <i>Public University of Navarra, Pamplona, Spain</i>
		² <i>Nordex Group, Mutilva, Navarra, Spain</i>
		STATUS OF WATER ELECTROLYSIS FOR GREEN HYDROGEN PRODUCTION WITHIN THE CONTEXT OF POWER-TO-X PROCESSES
16.45-17.15		Professor Rufat Abiev
13.45-14.15	KL-6	<i>St. Petersburg State Institute of Technology (Technical University), St. Petersburg, Russia</i>
		MICROMIXING IN MICROREACTORS: EFFECT ON NANOPARTICLES SIZES AND OTHER CHARACTERISTICS

SEPTEMBER 16, Thursday

Section I. Advances in Chemical Reactor Fundamentals

Chairperson: *Dr. Emanuele Moioli, Paul Scherrer Institute, Villigen, Switzerland*

10.00–10.20 08.00–08.20	OP-I-27	Danican A. ¹ , Darrehmane A. ^{1,2} , Chateau T. ¹ , Trad Z. ^{1,2} , Vial C. ¹ , Fontaine J. ¹ DEVELOPMENT OF A MULTIPARTICLE OPTICAL TRAJECTOGRAPHY TECHNIQUE FOR HYDRODYNAMIC ANALYSIS OF A STIRRED TANK DEVOTED TO DARK FERMENTATION ¹ <i>Clermont Auvergne University, CNRS, SIGMA Clermont, Institut Pascal, Clermont-Ferrand, France</i> ² <i>Clermont Auvergne University, LabEx IMobS³, Clermont-Ferrand, France</i>
08.20–08.40 10.20–10.40	OP-I-28	Mohammed A.A. , Lokhat D. APPLICATION OF CENTRIFUGAL FORCE FOR MASS TRANSFER ENHANCEMENT IN A FALLING FILM MICROREACTOR <i>University of Kwazulu Natal, Durban, South Africa</i>
10.40–11.00 08.40–09.00	OP-I-29	Ferroni C. , Ambrosetti M., Bracconi M., Maestri M., Groppi G., Tronconi E. EXPERIMENTAL AND NUMERICAL ANALYSIS OF TRANSPORT PROPERTIES OF CELLULAR MEDIA TO ENABLE REACTOR-SCALE SIMULATIONS <i>Politecnico di Milano, Milan, Italy</i>
11.00–11.20 09.00–09.20	OP-I-30	Franchi F.S. , Ambrosetti M., Bracconi M., Balzarotti R., Groppi G., Tronconi E. ENABLING THE EVALUATION OF MASS TRANSFER PROPERTIES OF 3D PRINTED CATALYST SUBSTRATES WITH RICH H₂ OXIDATION <i>Politecnico di Milano, Milan, Italy</i>
09.20–09.40 11.20–11.40	OP-I-31	Littwin G. ¹ , Freund H. ² HEAT TRANSPORT CHARACTERIZATION AND GEOMETRIC OPTIMIZATION OF PERIODIC OPEN CELLULAR STRUCTURES ¹ <i>Friedrich-Alexander-University of Erlangen-Nürnberg, Erlangen, Germany</i> ² <i>TU Dortmund University, Dortmund, Germany</i>
11.40–12.00 09.40–10.00	OP-I-32	Trad Z. , Rezazadeh N., Danican A., Ursu A.V., Fontanille P., Fontaine J., Vial C. INFLUENCE OF THE GAS PHASE ON HYDRODYNAMICS AND GAS TRANSFER IN A STIRRED TANK UNDER ANAEROBIC DARK FERMENTATION CONDITIONS <i>Clermont Auvergne University, Clermont-Ferrand, France</i>

10.40–10.20 Coffee break

Section I. Advances in Chemical Reactor Fundamentals

Chairperson: Professor Professor Carlo Visconti, Politecnico di Milano, Milan, Italy

10.20–10.40 12.20–12.40	OP-I-33	Němec J., Kočí P. MODELING OF INTERNAL TRANSPORT LIMITATIONS IN CATALYTIC PARTICULATE FILTERS <i>University of Chemistry and Technology, Prague, Czech Republic</i>
10.40–11.00 12.40–13.00	OP-I-34	Romero-Limones A. ^{1,2} , Poissonnier J. ² , Thybaut J. ² , Castillo Araiza C.O. ¹ HEAT TRANSFER ANALYSIS ON α-Al₂O₃ and TiO₂ AS SUPPORT MATERIALS FOR THE OXIDATIVE DEHYDROGENATION OF ETHANE (ODH-C₂) IN AN INDUSTRIAL WALL-COOLED PACKED BED REACTOR ¹ <i>Universidad Autónoma Metropolitana-Iztapalapa, Iztapalapa, Mexico</i> ² <i>Ghent University, Ghent, Belgium</i>
07.00–07.20 11.00–11.20	OP-I-35	Hernandez Lalinde J.A. ¹ , Roongruangsree P. ¹ , Ilsemann J. ² , Bäumer M. ² , Kopyscinski J. ¹ CO₂ METHANATION AND REVERSE WATER GAS SHIFT REACTION. KINETIC STUDY BASED ON <i>IN-SITU</i> SPATIALLY-RESOLVED MEASUREMENTS ¹ <i>McGill University, Montreal, Canada</i> ² <i>University of Bremen, Germany</i>
07.20–07.40 11.20–11.40	OP-I-36	Surendran V. ¹ , Bracconi M. ² , Hernandez Lalinde J.A. ¹ , Maestri M. ² , Kopyscinski J. ¹ IMPROVED CATALYTIC PLATE REACTOR (CPR) DESIGN FOR HIGH QUALITY KINETIC DATA GENERATION USING EXPERIMENTS AND CFD MODELING ¹ <i>McGill University, Montreal, Canada</i> ² <i>Politecnico di Milano, Milan, Italy</i>
11.40–12.00 06.40–07.00	OP-I-37	Ramos-Huerta L.A., Gómez Llanos A.A., Ruiz Martínez R.S., Valadés Pelayo P.J., Castillo Araiza C.O. KINETICS COUPLED WITH RADIATIVE TRANSFER UNDER VISIBLE LIGHT OPERATION REACTIONS ON GRAPHENE OXIDE <i>Universidad Autónoma Metropolitana-Iztapalapa, Iztapalapa, Mexico</i>
07.00–07.20 12.00–12.20	OP-I-38	Hernández-Rodríguez R. ¹ , Castillo Araiza C.O. ¹ , Ochoa Tapia J.A. ¹ , Hernández Martínez E. ² , Hernández Aguirre A. ¹ DEVELOPMENT OF A MACROSCOPIC MODEL FOR HYDRODYNAMICS IN FIXED BED REACTORS WITH LOW d_t/d_p RATIO ¹ <i>Universidad Autónoma Metropolitana-Iztapalapa, Iztapalapa, Mexico</i> ² <i>Universidad Veracruzana-Región Xalapa, Veracruz, México</i>
07.20–07.40 12.20–12.40	OP-I-39	Hernández Aguirre A. ¹ , Hernandez-Martinez E. ² , Dorantes-Landa D.N. ¹ , Castillo-Araiza C.O. ¹ A DNS BASED EFFECTIVE MEDIUM MODEL FOR COMPRESSIBLE FLOW IN A FIXED BED REACTOR WITH LOW d_t/d_p ¹ <i>Universidad Autónoma Metropolitana-Iztapalapa, Iztapalapa, Mexico</i> ² <i>Universidad Veracruzana-Región Xalapa, Veracruz, México</i>

12.40 Closing