

STREAM III HALL III

SEPTEMBER 13, Monday

Section III. CHEMICAL REACTORS AND TECHNOLOGIES FOR TARGETED APPLICATIONS

Chairperson: Professor Mingbin Gao, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China

08.40-09.00 06.40-07.00	OP-III-1	Lanza A., Usberti N., Beretta A. EFFECTS OF FLY ASH DEPOSITION ON THE PERFORMANCE OF SCR MONOLITHS: DEVELOPMENT OF A MICRO-SLAB REACTOR FOR KINETIC AND MASS TRANSFER STUDIES <i>Politecnico di Milano, Milan, Italy</i>
07.00-07.20 09.00-09.20	OP-III-2	Ho P.H.^{1,2}, Jabłońska M.³, Sanghez de Luna G.¹, Palkovits R.², Delahay G.⁴, Fornasari G.¹, Vaccari A.¹, Benito P.¹ FACILE COATING OF Co₃O₄ ON OPEN-CELL METALLIC FOAMS FOR N₂O CATALYTIC DECOMPOSITION ¹ <i>University of Bologna, Italy</i> ² <i>RWTH Aachen University, Aachen, Germany</i> ³ <i>Leipzig University, Germany</i> ⁴ <i>Ecole Nationale Supérieure de Chimie de Montpellier, Institut Charles Gerhardt des Matériaux, Montpellier, France</i>
14.20-14.40 07.20-07.40	OP-III-3	Dubinin Yu.V., Yazykov N.A., Federov A.V., Yakovlev V.A. EXPERIENCE IN OPERATING A PILOT PLANT FOR THE SEWAGE SLUDGE UTILIZATION IN A FLUIDIZED BED OF CATALYST <i>Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia</i>
09.40-10.00 07.40-08.00	OP-III-4	Flagiello D., Erto A., Lancia A., Di Natale F. ADVANCED FLUE-GAS CLEANING BY WET OXIDATIVE SCRUBBING USING NaClO₂ AQUEOUS SOLUTIONS <i>University of Naples, Federico II, Fuorigrotta, Naples, Italy</i>
08.00-08.20 10.00-10.20	OP-III-5	Pelucchi M., Da Silva R.B., Mehl M., Cuoci A., Frassoldati A., Beretta A., Lietti L., Faravelli T. THERMAL DEGRADATION OF NYLON-6 AND REAL MIXTURES OF SOLID PLASTIC WASTE. AN EXPERIMENTAL AND KINETIC MODELLING STUDY <i>Politecnico di Milano, Milan, Italy</i>

09.20-09.40 Rijo B., Briceno J., Kol de Carvalho R., Pereira P., **Lemos F.**, Lemos M.
08.20-08.40 OP-III-6 **THERMAL AND CATALYTIC PYROLYSIS OF WASTE POLYSTYRENE IN A SEMI-BATCH REACTOR**
Instituto Superior Técnico, University of Lisbon, Portugal

08.40-09.00 Coffee break

Section III. CHEMICAL REACTORS AND TECHNOLOGIES FOR TARGETED APPLICATIONS

Chairperson: Professor Francisco Lemos, Instituto Superior Técnico, Lisbon, Portugal

10.00-10.20 OP-III-7
09.00-09.20 OP-II-7 Rijo B., Briceno J., Godinho T., Lemos F., **Lemos M.**
PYROLYSIS OF PLASTIC FROM WEEE IN A REACTIVE DISTILLATION APPROACH
Instituto Superior Técnico, University of Lisbon, Portugal

11.20-10.40 OP-II-8 **Sluiter S.N.**¹, Boon J.¹, James J.¹, Krishnamurthy S.², Lind A.², Blom R.², Grande C.A.², Cormos A.M.³, Sandu V.C.³, de Boer R.¹
09.20-09.40 **3D-PRINTING OF ADSORBENTS FOR INCREASED PRODUCTIVITY IN CARBON CAPTURE APPLICATIONS (3D-CAPS)**
¹TNO Energy Transition, Petten, The Netherlands
²SINTEF Industry, Oslo, Norway
³Babes-Bolyai University, Cluj-Napoca, Romania

11.40-12.00 OP-II-9 **Vilé G.**
09.40-10.00 **A NEW FAMILY OF SINGLE-ATOM CATALYSTS FOR THE DEGRADATION OF PHARMACEUTICAL WATER POLLUTANTS**
Politecnico di Milano, Milan, Italy

10.00-10.30 Coffee break

SEPTEMBER 14, Tuesday

Section III. CHEMICAL REACTORS AND TECHNOLOGIES FOR TARGETED APPLICATIONS

Chairperson: Professor Choji Fukuhara, Shizuoka University, Hamamatsu, Shizuoka, Japan

09.40-10.00 06.40-07.00	OP-III-10	Krasnikov D.V.¹, Semenova N.¹, Ilatovskii D.A.¹, Zabelich B.Yu.¹, Iakovlev V.Ya.¹, Kondrashov V.A.¹, Alekseeva A.A.¹, Khabushev E.M.^{1,2}, Nasibulin A.G.^{1,2} COUPLING ELECTROSTATIC CLASSIFIER WITH SPARK DISCHARGE GENERATOR FOR GENERATION OF MONODISPERSE CATALYST FOR SINGLE-WALLED CARBON NANOTUBE GROWTH <i>¹Skolkovo Institute of Science and Technology, Moscow, Russia</i> <i>²Aalto University, PO, Espoo, Finland</i>
07.00-07.20 09.00-09.20	OP-III-11	Pipitone G.¹, Zoppi G.¹, Rizzo A.M.², Bensaid S.¹, Chiaramonti D.^{1,2}, Pirone R.¹ COUPLING OF HYDROTHERMAL LIQUEFACTION AND AQUEOUS PHASE REFORMING FOR LIGNIN RICH STREAM VALORIZATION <i>¹Politecnico di Torino, Turin, Italy</i> <i>²Renewable Energy Consortium for Research and Development, Scarperia e San Piero, Italy</i>
09.20-09.40 07.20-07.40	OP-III-12	Zoppi G.¹, Pipitone G.¹, Rizzo A.M.², Bensaid S.¹, Chiaramonti D.^{1,2}, Pirone R.¹ AQUEOUS PHASE REFORMING OF LIGNIN-RICH LIQUEFACTION WASTE FOR HYDROGEN PRODUCTION <i>¹Politecnico di Torino, Turin, Italy</i> <i>²Renewable Energy Consortium for Research and Development, Scarperia e San Piero, Italy</i>
14.40-15.00 07.40-08.00	OP-III-13	Zhurenok A.V.¹, Kovtunova L.M.¹, Vasilchenko D.V.², Kozlova E.A.¹ Rh- AND Pt-DOPED g-C₃N₄ FOR THE PHOTOCATALYTIC HYDROGEN EVOLUTION FROM AQUEOUS SOLUTIONS OF TRIETHANOLAMINE UNDER VISIBLE LIGHT <i>¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia</i> <i>²Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia</i>
08.00-08.20 17.00-17.20	OP-III-14	Kim J., Cho K. UREA-PERSULFATE FUEL CELL COMBINED WITH FORWARD OSMOSIS FOR A CONTINUOUS GENERATION OF POWER AND WATER FROM URINE <i>Pohang University of Science and Technology, Pohang, South Korea</i>

17.20-17.40
08.20-08.40 **OP-III-15** **Kim H., Hwang E., Cho K.**
WATER TREATMENT BY A TUBULAR PHOTOELECTROCATALYTIC REACTOR WITH ELECTROCHEMICALLY SELF-DOPED TiO₂ NANOTUBE ARRAYS
University of Science and Technology, Pohang, South Korea

08.40-09.00 Coffee break

SEPTEMBER 15, Wednesday

Section III. CHEMICAL REACTORS AND TECHNOLOGIES FOR TARGETED APPLICATIONS

Chairperson: *Professor Gunther Kolb, Fraunhofer IMM, Mainz, Germany*

09.40-10.00
06.40-07.00 **OP-III-16** **Khabushev E.M.^{1,2}, Krasnikov D.V.¹, Yakovlev V.Ya.¹, Kolodiazhaia J.V.¹, Zaremba O.T.¹, Nasibulin A.G.^{1,2}**
MACHINE LEARNING FOR OPTIMIZATION OF SINGLE-WALLED CARBON NANOTUBE SYNTHESIS BY AEROSOL CVD REACTOR
¹Skolkovo Institute of Science and Technology, Moscow, Russia
²Aalto University, PO, Espoo, Finland

07.00-07.20
10.00-10.20 **OP-III-17** **Polianczyk E.V., Glazov S.V.**
INDUSTRIAL-SCALE GASIFICATION OF MUNICIPAL SOLID WASTE IN SUPERADIABATIC REGIME OF FILTRATION COMBUSTION
Institute of Problems of Chemical Physics RAS, Chernogolovka, Moscow region, Russia

09.20-09.40
07.20-07.40 **OP-III-18** **Zanco S.E.¹, Ambrosetti M.², Tronconi E.², Groppi G.², Mazzotti M.¹**
TEMPERATURE SWING ADSORPTION FOR CO₂ CAPTURE: PROCESS INTENSIFICATION WITH CONDUCTIVE PACKED FOAMS
¹Swiss Federal Institute of Technology (ETH Zurich), Switzerland
²Politecnico di Milano, Milan, Italy

09.40-10.00
07.40-08.00

OP-III-19

Navarrete L.F.^{1,3}, Reyero I.¹, Amorrortu O.², Sanz O.², Montes M.², Garcés S.I.³, **Bimbela F.¹**, Gandía L.M.¹
CO₂ METHANATION WITH Ni and Co CATALYSTS SUPPORTED ON γ -Al₂O₃ MODIFIED WITH La
¹Public University of Navarre, Pamplona, Spain
²University of the Basque Country, San Sebastián, Spain
³Free University of Colombia, Bogotá, Colombia

08.00-08.20
17.00-17.20

OP-III-20

Fukuhara C., Kamiyama A., Itoh M., Watanabe R.
PROCESS INTENSIFICATION (PI) OF TRANSFORMING CO₂ BY AUTO-METHANATION WITH STRUCTURED CATALYST SYSTEM
Shizuoka University, Shizuoka, Japan

11.20-11.40

08.20-08.40

OP-III-21

Koybasi H., Avci A.K.
MEMBRANE INTEGRATED MICROCHANNEL REACTOR FOR CONVERSION OF CO₂ CONTAINING SYNGAS TO DME
Bogazici University, Istanbul, Turkey

08.40-09.00 Coffee break

Section IV. Advanced Reactors and Technologies for Energy-Related Applications

Chairperson: Dr. Roman Tschentscher, SINTEF Industry, Oslo, Norway

16.00-16.20

09.00-09.20

OP-IV-1

Snytnikov P.V.^{1,2,3}, Rogozhnikov V.N.^{1,2}, Potemkin D.I.^{1,2}, Fedorova Z.A.^{1,2}, Belyaev V.D.^{1,2}, Pechenkin A.A.^{1,2}, Badmaev S.D.^{1,2}, Zazhigalov S.V.¹, Zagoruiko A.N.^{1,2}, Sobyenin V.A.^{1,2}
STRUCTURED CATALYSTS AND REFORMERS AND REFORMERS FOR GASEOUS AND LIQUID HYDROCARBON FUELS PROCESSING TO HYDROGEN-RICH GAS
¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
²Novosibirsk State University, Novosibirsk, Russia
³«UNICAT» LLC, Novosibirsk, Russia

16.20-16.40

09.20-09.40

OP-IV-2

Badmaev S.^{1,2}, Pinegina A.E.^{1,2}, Kulikov A.¹, Snytnikov P.^{1,2}, Sobyenin V.¹
DIMETHOXYMETHANE FUEL PROCESSING FOR SOFC-APU: INSIGHTS FOR CATALYST AND REACTOR DESIGN
¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
²Novosibirsk State University, Russia

18.40-19.00		Jung S.-C.
09.40-10.00	OP-IV-3	DEVELOPMENT OF HYBRID REACTION MODULE LINKED WITH LIQUID PLASMA AND ELECTROLYSIS FOR HYDROGEN PRODUCTION FROM WATER DECOMPOSITION <i>Sunchon National University, South Korea</i>
12.00-12.20		Gantenbein A.^{1,2}, Witte J.¹, Kröcher O.^{1,2}, Biollaz S.¹, Schildhauer T.¹
10.00-10.20	OP-IV-4	FLEXIBLE APPLICATION OF BIOGAS UPGRADING MEMBRANES IN POWER-TO-METHANE PROCESSES ¹ <i>Paul Scherrer Institute, Villigen, Switzerland</i> ² <i>Federal Institute of Technology in Lausanne, Lausanne, Switzerland</i>
12.20-12.40		Moioli E.^{1,2}, Gallandat N.^{1,2}, Zuttel A.^{1,2}
10.20-10.40	OP-IV-5	REALIZATION OF AN INDUSTRIAL-SCALE REACTOR FOR GRID-QUALITY SYNTHETIC NATURAL GAS PRODUCTION ¹ <i>Laboratory of Materials for Renewable Energy, EPFL Valais, Sion, Switzerland</i> ² <i>Swiss Federal Laboratories for Materials Science and Technology (EMPA), Dübendorf, Switzerland</i> <i>Current affiliation: Paul Scherrer Institute, Villigen, Switzerland</i>

10.40-11.00 Coffee break

SEPTEMBER 16, Thursday

Section IV. Advanced Reactors and Technologies for Energy-Related Applications

Chairperson: Professor Sang-Chul Jung, Sunchon National University, South Korea

08.00-08.20	OP-IV-6	Godinho T.¹, Rijo B.¹, Lemos M.¹, Carabineiro H.², Tarelho L.³, Lemos F.¹
09.00-09.20		THERMAL AND CATALYTIC PYROLYSIS OF POLYOLEFINS WITH VACUUM GAS OIL ¹ <i>Instituto Superior Técnico, University of Lisbon, Portugal</i> ² <i>Galp, Sines Refinery, Sines, Portugal</i> ³ <i>Aveiro University, Aveiro, Portugal</i>

08.20–08.40 10.20–10.40	OP-IV-7	Moroni G. , Nardi L., Donazzi A., Maestri M. MECHANISM OF C-FORMATION IN METHANE DRY REFORMING ON RH REVEALED BY SPATIALLY-RESOLVED OPERANDO-RAMAN AND MICROKINETIC ANALYSES <i>Politecnico di Milano, Milan, Italy</i>
10.40–11.00 08.40–09.00	OP-IV-8	Vela Diaz F.J., Trueba D., Lezcano G., Palos R. , Arandes J., Gutierrez A. AN INNOVATIVE KINETIC MODEL OF THE HYDROCRACKING OF A HDPE/VGO BLEND <i>University of Basque Country UPV/EHU, Bilbao, Spain</i>
16.00–16.20 09.00–09.20	OP-IV-9	Belinskaya N.S. , Ivanchina E., Mauzhigunova E., Bykova V. DEVELOPMENT OF THE MATHEMATICAL MODEL OF DIESEL FUEL HYDRODEWAXING PROCESS TAKING INTO ACCOUNT N-PARAFFINS DISTRIBUTION IN THE FEEDSTOCK <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>
09.20–09.40 16.20–16.40	OP-IV-10	Esipov D. , Cherny S. NUMERICAL SIMULATION OF THE WORK OF A SOAKER VISBREAKING UNIT <i>Kutateladze Institute of Thermophysics of SB RAS, Novosibirsk, Russia</i>
16.40–17.00 09.40–10.00	OP-IV-11	Aleksandrov P.V., Reshetnikov S.I. , Bukhtiyarova G.A., Noskov A.S. DEEP HYDRODESULFURIZATION OF GAS OILS WITH HIGH SULFUR CONTENT: KINETIC MODELING <i>Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia</i>

10.00–10.20 Coffee break

Section IV. Advanced Reactors and Technologies for Energy-Related Applications

Chairperson: Professor Pavel Snytnikov, Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

12.20–12.40 10.20–10.40	OP-IV-12	Korica N. , Mendes P.S., De Clercq J., Thybaut J. IMPACT OF CYCLOALKANES ADMIXTURE IN ALKANE HYDROCRACKING <i>Ghent University, Ghent, Belgium</i>
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12.40-13.00

10.40-11.00

OP-IV-13

Tschentscher R.¹, Simon L.², Biller P.³, Arumugam P.⁴, Stensrød R.E.¹
HYDROTREATMENT OF CRUDE BIO OILS USING LOW COST SLURRY CATALYSTS

¹*SINTEF Industry, Oslo, Norway*

²*École Normale Supérieure de Rennes, Rennes, France*

³*Aarhus University, Denmark*

⁴*Anna University, Chennai, India*

13.00-13.20

11.00-11.20

OP-IV-14

Straß-Eifert A., Güttel R.

**MULTIFUNCTIONAL COBALT-BASED NANOREACTORS FOR THE COMBINED FISCHER-TROPSCH SYNTHESIS AND HYDROPROCESSING:
MATERIAL SYNTHESIS AND CATALYSIS**

Ulm University, Ulm, Germany

13.20-13.40

11.20-11.40

OP-IV-15

Pirro L.¹, Mendes P.S.¹, De Keulenaer J.¹, Vandegheuchte B.D.², Marin G.B.¹, Thybaut J.¹

MODELLING LAYERED FIXED-BED CATALYTIC REACTORS FOR THE OXIDATIVE COUPLING OF METHANE

¹*Ghent University, Ghent, Belgium*

²*Total Research and Technology Feluy, Ghent, Belgium*

12.40 Closing
HALL I