

### Oral presentations on Trends in unconventional catalysis

#### Abstract no. Title & authors

<b>5 Tunable cationic backbone-alkaline anion interactions for ultra-selective catalytic synthesis of ethyl methyl carbonate in ionized frameworks</b> Huiyao Huang, Jingjun Xie, Rong Dong, Ting Qiu, Jie Chen <b>Presenting author: Prof. Jie Chen</b> <i>Fuzhou University, College of Chemical Engineering</i>
<b>9 Light-driven water oxidation by bio-inspired Perylene bisimide “Quantasomes”/WO<sub>3</sub> hybrid photoanode</b> Jintao Liu, Francesco Rigodanza, Ilaria Crea, Thomas Gobbato, Gian Andrea Rizzi, Marcella Bonchio <b>Presenting author: Jintao Liu</b> <i>University of Padova, Department of Chemical Sciences</i>
<b>12 New perspectives in catalyst shaping: DLP 3D printing of <math>\gamma</math>-Al<sub>2</sub>O<sub>3</sub> catalyst architectures</b> Luca Mastroianni, Vincenzo Russo, Martino Di Serio, Kari Eränen, Dmitry Yu. Murzin, Tapio Salmi <b>Presenting author: Dr. Luca Mastroianni</b> <i>Abo Akademi University, Industrial Chemistry and Reaction Engineering</i>
<b>13 Metal nanoparticles immobilized on molecularly modified surfaces: toward adaptive catalytic systems</b> Yuyan Zhang, Walter Leitner, Alexis Bordet <b>Presenting author: Dr. Alexis Bordet</b> <i>Max Planck Institute for Chemical Energy Conversion</i>
<b>35 In situ and operando investigation of the reactivity and stability of carbon nitride-based Ni and Cu single-atom catalysts in hydrogenations</b> Nicolò Allasia, Sadaf Fatima Jafri, Gianfranco Pacchioni, Giovanni Di Liberto, Elisa Borfecchia, Lorenzo Mino, Gianvito Vilé <b>Presenting author: Nicolò Allasia</b> <i>Politecnico di Milano, Department of Chemistry, Materials and Chemical Engineering</i>
<b>41 Supercritical catalytic cracking of n-dodecane for cooling in scramjet engines</b> Michael Patrascu, Mira Faour <b>Presenting author: Mira Faour</b> <i>Technion, Faculty of Chemical Engineering</i>
<b>47 Dry reforming of methane in molten In-Sn alloy</b> Nikil Surya R, Genpei Cai, Juhi Srivastava, D. Chester Upham, Vishal Agarwal <b>Presenting author: Nikil Surya R</b> <i>Indian Institute of Technology Kanpur, Department of Chemical Engineering</i>
<b>48 Ab initio molecular dynamics study to elucidate the role of Mo doping in molten KCl for methane activation</b> Aditya Goyal, Baljit Singh, Horia Metiu, Vishal Agarwal <b>Presenting author: Aditya Goyal</b> <i>Indian Institute of Technology Kanpur, Department of Chemical Engineering</i>

<p><b>54 Copper-based Nanocatalysis for the disruption of tumor homeostasis</b> Jesus Santamaria, Javier Bonet Aleta, Jose L Hueso <b>Presenting author:</b> <i>Prof. Jesus Santamaria</i> <i>University of Zaragoza, Department of Chemical and Environmental Engineering</i></p>
<p><b>63 Preparation of palladium nanoparticles within nonwoven brown cotton fabric: application in Suzuki-Miyaura cross-coupling reactions</b> Michael Easson, Jacobs Jordan, John Bland, Doug Hinchliffe, Brian Condon <b>Presenting author:</b> <i>Dr. Michael Easson</i> <i>USDA, Cotton Quality and Innovation</i></p>
<p><b>64 Supported gold catalyst: design, synthesis and catalytic applications</b> Nidhi Kapil, Fabio Cardinale, Tobias Weissenberger, Panagiotis Trogadas, T. Alexander Nijhuis, Michael Nigra, Marc-Olivier Coppens <b>Presenting author:</b> <i>Dr. Nidhi Kapil</i> <i>University College London, Centre for Nature Inspired Engineering and Department of Chemical Engineering</i></p>
<p><b>67 Light-driven Pickering interfacial catalysis for the oxidation of alkenes at near-room temperature</b> Yaoyao Feng, Jean Francois Dechezelles, Quentin D'Acremont, Emmanuel Courtade, Vincent de Waele, Marc Pera-Titus, Véronique Nardello-Rataj <b>Presenting author:</b> <i>Dr. Jean Francois Dechezelles</i> <i>Université de Lille, Unité de Catalyse et Chimie du Solide</i></p>
<p><b>84 Kinetic modelling of plastic pyrolysis over biomass-derived catalysts</b> Syie Luing Wong, Catarina Féteira Escudeiro, Maria do Rosário Ribeiro, Guo Ren Mong, Olaf Hinrichsen, Evgeny Rebrov <b>Presenting author:</b> <i>Dr. Syie Luing Wong</i> <i>Eindhoven University of Technology, Department of Chemical Engineering and Chemistry</i></p>
<p><b>85 Transforming biomass to chemicals: mild upgrading with activated carbon-based catalysts</b> Abhisek Sahoo, Thallada Bhaskar, Kamal K. Pant, Massimiliano Materazzi <b>Presenting author:</b> <i>Abhisek Sahoo</i> <i>University College London, Department of Chemical Engineering</i></p>
<p><b>98 Synergy for the plasma-based CO<sub>2</sub> conversion with the Solid Oxide Electrolysis Cell</b> Xingyu Chen, Aleksandr Pikalev, Vasco Guerra, GuanJun Zhang, Mauritius C.M. van de Sanden <b>Presenting author:</b> <i>Prof. Mauritius C.M. van de Sanden</i> <i>Dutch Institute for Fundamental Energy Research</i></p>

### Oral presentations on **Unconventional catalyst preparation methods and applications**

#### Abstract no. Title & authors

<b>4</b>	<b>Photoelectrochemical system for simultaneous CO<sub>2</sub> reduction to CH<sub>4</sub> and water oxidation</b> Ivan Merino-Garcia, Antia Villamayor, Itziar Azpitarte, Jean-Christophe Berton, Borja Pozo, Jonathan Albo <b>Presenting author:</b> <i>Jonathan Albo</i> <i>University of Cantabria</i>
<b>7</b>	<b>Searching for electric field-based control over zeolite synthesis using nonconventional reactors</b> Mostafa Torka Beydokhti, Gleb Ivanushkin, Michiel Dusselier <b>Presenting author:</b> <i>Mostafa Torka Beydokhti</i> <i>KU Leuven, Microbial and Molecular Systems</i>
<b>19</b>	<b>Combined electrostatic precipitation-photocatalysis technology for indoor air purification</b> Donja Baetens, Siegfried Denys <b>Presenting author:</b> <i>Donja Baetens</i> <i>University of Antwerp, Department of Bioscience Engineering</i>
<b>28</b>	<b>Sm-doped barium cerate as support for cobalt catalyst for ammonia synthesis</b> Hubert Ronduda, Magdalena Zybert, Wojciech Patkowski, Wioletta Raróg-Pilecka <b>Presenting author:</b> <i>Dr. Hubert Ronduda</i> <i>Warsaw University of Technology, Faculty of Chemistry</i>
<b>31</b>	<b>Bimetallic catalysts for the hydrogenation of amides: from experimental to data-driven insights</b> Jorge A. Delgado, Akira Yada, Raphael Wischert, Stephane Streiff <b>Presenting author:</b> <i>Dr. Jorge A. Delgado</i> <i>Syesnsqo, Eco-Efficient Products &amp; Processes Laboratory (E2P2L)</i>
<b>40</b>	<b>Catalysis on Mars: exploring the potential of in-situ available resources for thermal CO<sub>2</sub> conversion</b> Arturo Pajares, Pablo Guardi, M.A. Lwazzani, A.A. García Blanco, Jordi Guilera, Vladimir Galvita, Melchiorre Conti, Jasper Lefevere, Bart Michielsen <b>Presenting author:</b> <i>Dr. Bart Michielsen</i> <i>Flemish Institute of Technology VITO, Unit Sustainable Materials &amp; Chemistry</i>
<b>43</b>	<b>Nanoengineering platinum-copper nanostructures with enhanced light-absorbing properties for photothermal therapy and targeted copper delivery</b> Jose I. Garcia-Peiro, Maria Sancho Albero, Felipe Hornos, Silvia Miguel, Jose Luis Hueso, Jesus Santamaria <b>Presenting author:</b> <i>Jose I. Garcia-Peiro</i> <i>University of Zaragoza</i>
<b>56</b>	<b>Nickel-based monolithic catalysts with segmented construction for CO<sub>2</sub> methanation</b> Karolina Gałęziowska, Piotr Michorczyk <b>Presenting author:</b> <i>Karolina Gałęziowska</i> <i>Cracow University of Technology, Faculty of Chemical Engineering and Technology</i>

# 3rd International Conference of Unconventional Catalysis, Reactors and Applications 2024

Oral and poster presentations

<b>69 Application of neural networks to multi-scale modelling of nanocatalysts</b> Eugeniusz Molga, Robert Cherbański, Tomasz Kotkowski <b>Presenting author:</b> <i>Dr. Tomasz Kotkowski</i> <i>Warsaw University of Technology, Faculty of Chemical and Process Engineering</i>
<b>96 Screening iron-based bimetallic catalysts for hydrogen production in CDM: a DFT-assisted machine learning approach</b> Shashank Shekhar <b>Presenting author:</b> <i>Shashank Shekhar</i> <i>Indian Institute of Technology Delhi, Department of Chemical Engineering</i>
<b>106 Plasma promoted K-catalysts for higher alcohol synthesis</b> Atte Aho, Nima Pourali, Dmitry Murzin, Evgeny Rebrov <b>Presenting author:</b> <i>Prof. Evgeny Rebrov</i> <i>University of Warwick, School of Engineering</i>

## Oral presentations on Unconventional catalytic reactors

### Abstract no. Title & authors

<b>8 Efficiency of micro discharge on plasma catalytic nitrogen fixation</b> Pradeep Lamichhane, Volker Hessel <b>Presenting author:</b> <i>Volker Hessel</i> <i>University of Adelaide, School of Chemical Engineering and Advanced Materials</i>
<b>16 Dynamic electrification toward sustainable and enhanced catalysis</b> Rucha Railkar, Nefeli Kamarinopoulou, Dionisios Vlachos <b>Presenting author:</b> <i>Rucha Railkar</i> <i>University of Delaware, Chemical and Biomolecular Engineering</i>
<b>17 Light olefin production via catalytic, melt, electrified pyrolysis of polyethylene</b> Jacqueline Ngu, Esun Selvam, Arun Sundaramoorthy, Pavel Kots, Dionisios G. Vlachos <b>Presenting author:</b> <i>Dr. Jacqueline Ngu</i> <i>University of Delaware, Department of Chemical and Biomolecular Engineering</i>
<b>18 Computational insights into steady-state and dynamic joule-heated reactors</b> Arnav Mittal, Marianthi Ierapetritou, Dionisios G. Vlachos <b>Presenting author:</b> <i>Arnav Mittal</i> <i>University of Delaware, Department of Chemical and Biomolecular Engineering</i>
<b>20 Ultrasound as a tool in the improvement of enzymatic catalysis: Epoxidation of vegetable oils to valuable products</b> Tapio Salmi, Adriana Freites Aguilera, Pontus Lindroos, Kari Eränen, Pasi Tolvanen <b>Presenting author:</b> <i>Prof. Tapio Salmi</i> <i>Åbo Akademi University, Laboratory of Industrial Chemistry and Reaction Engineering (TKR)</i>
<b>21 Low energy cost ethylene from methane coupling in 3D printed catalytic plasma reactor</b> Fabio Cameli, Marco Scapinello, Georgios Stefanidis <b>Presenting author:</b> <i>Dr. Fabio Cameli</i> <i>Ghent University, Laboratory for Chemical Technology</i>

<p><b>25 Catalytic hollow fibre-based reactors: design principles</b> Claire Leishman, Timm Krüger, Kang Li, Francisco R. García-García <b>Presenting author:</b> <i>Claire Leishman</i> <i>University of Edinburgh, School of Engineering</i></p>
<p><b>26 Taming light, heat, and mixing challenges in a compact kilo-scale continuous-flow photoreactor</b> Jason T.Y. Chin, Wai Kuan Wong, Dogancan Karan, Longfei Chen, Jie Wu, Shunsuke Chiba, Valerio Isoni, Saif A. Khan <b>Presenting author:</b> <i>Jason T.Y. Chin</i> <i>National University of Singapore, College of Design and Engineering, Chemical and Biomolecular Engineering</i></p>
<p><b>27 Selective and adaptive hydrogenation of amides using a magnetically-responsive Pt/Al<sub>2</sub>O<sub>3</sub> catalyst heated by magnetic induction</b> Sheng-Hsiang Lin, Walter Leitner, Alexis Bordet <b>Presenting author:</b> <i>Sheng-Hsiang Lin</i> <i>Max Planck Institute for Chemical Energy Conversion, Department of Molecular Catalysis</i></p>
<p><b>29 Development of a new CO<sub>2</sub> electrolyzer boosted by the NETmix technology: Challenges and perspectives overview</b> Maria Helena de Sá, Francisco Albuquerque, Marcelo Costa, Francisca C. Moreira, Vítor Vilar, Dânia Constantino <b>Presenting author:</b> <i>Dr. Maria Helena de Sá</i> <i>Net4CO<sub>2</sub> CoLAB</i></p>
<p><b>33 Boosted ammonia decomposition over ruthenium catalysts: a comparative study in a traditional fixed bed, membrane-assisted, and in a catalytic membrane reactor</b> Domenico Maccarrone, Gianfranco Giorgianni, Serena Agnolin, Siglinda Perathoner, Gabriele Centi, Fausto Gallucci, Salvatore Abate <b>Presenting author:</b> <i>Prof. Salvatore Abate</i> <i>University of Messina, ChiBioFarAm</i></p>
<p><b>36 Demonstration of an electrothermal fluidised bed reactor for acid gas conversion</b> Izabel Medeiros Costa, Gleb Veryasov, Joseph Stewart, Joris Thybaut, Helene Retot, Juraj Hrstka, Valentin Valchev, Blaž Likozar, Miha Grilc <b>Presenting author:</b> <i>Dr. Izabel Medeiros Costa</i> <i>TotalEnergies, Low Carbon Processes</i></p>
<p><b>50 Intensification of hydrogen flux in a Pd membrane separator and membrane reactor under an electric field</b> Rimon Dawidowicz, Polina Tereshchuk, Michael Patrascu <b>Presenting author:</b> <i>Rimon Dawidowicz</i> <i>Technion – Israel Institute of Technology, Faculty of Chemical Engineering</i></p>
<p><b>52 Bulk oxidative plasma functionalization of plastic waste</b> Darién Nguyen, Dionisios Vlachos <b>Presenting author:</b> <i>Dr. Darién Nguyen</i> <i>University of Delaware, Department of Chemical and Biomolecular Engineering</i></p>

<p><b>53 Intelligent catalyst carrier concept with reversible wall contact in tubular reactors for an improved wall heat transfer</b></p> <p>Dominik Rudolf, Hannsjörg Freund</p> <p><b>Presenting author:</b> <i>Dominik Rudolf</i></p> <p><i>TU Dortmund University, Institute of Reaction Engineering and Catalysis</i></p>
<p><b>55 Electrified sorption enhanced steam reforming: a novel approach to low-carbon hydrogen production with CO<sub>2</sub> capture</b></p> <p>Federico Nicolini, Abdelrahman Mostafa, Matteo Ambrosetti, Matteo Romano, Alessandra Beretta, Gianpiero Groppi, Enrico Tronconi</p> <p><b>Presenting author:</b> <i>Federico Nicolini</i></p> <p><i>Politecnico di Milano, Department of Energy</i></p>
<p><b>57 Temperature modulation for enhanced catalytic NH<sub>3</sub> decomposition</b></p> <p>Nefeli Kamarinopoulou, Kewei Yu, Yeonsu Kwak, Weiqing Zheng, Dionisios Vlachos</p> <p><b>Presenting author:</b> <i>Nefeli Kamarinopoulou</i></p> <p><i>University of Delaware, Department of Chemical and Biomolecular Engineering</i></p>
<p><b>58 LTA-membrane reactors for CO<sub>2</sub> utilization</b></p> <p>Michael Patrascu</p> <p><b>Presenting author:</b> <i>Prof. Michael Patrascu</i></p> <p><i>Technion – Israel Institute of Technology, Faculty of Chemical Engineering</i></p>
<p><b>78 Hydrogen and CNTs production by catalytic methane decomposition under microwave heating</b></p> <p>David Martín, Fernando Cazaña, Pilar Tarifa, Eva Romeo, Lole Jurado, Miguel Angel Centeno, Jesus Santamaria, Reyes Mallada, Antonio Monzon</p> <p><b>Presenting author:</b> <i>David Martín</i></p> <p><i>Universidad de Zaragoza, Instituto de Nanociencia y Materiales de Aragón</i></p>
<p><b>79 Biphasic furfural synthesis from biorefinery feed using coated 3D foam structures</b></p> <p>Adarsh Patil, Afnan Ahmad, Fernanda Neira d'Angelo</p> <p><b>Presenting author:</b> <i>Adarsh Patil</i></p> <p><i>Technische Universiteit Eindhoven, Department of Chemical Engineering &amp; Chemistry</i></p>
<p><b>81 Parametric study of intensified DME synthesis from CO<sub>2</sub></b></p> <p>Mert Ozden, Ahmet Avci</p> <p><b>Presenting author:</b> <i>Mert Ozden</i></p> <p><i>Bogazici University, Department of Chemical Engineering</i></p>
<p><b>82 Investigation of the limits of unconventional NH<sub>3</sub> synthesis</b></p> <p>Irem Taşpınar, Ahmet Avci</p> <p><b>Presenting author:</b> <i>Irem Taşpınar</i></p> <p><i>Bogazici University, Department of Chemical Engineering</i></p>
<p><b>83 Synthesis and simulation of an intensified NH<sub>3</sub> synthesis process</b></p> <p>Gozde Kara, Ahmet Avci</p> <p><b>Presenting author:</b> <i>Gozde Kara</i></p> <p><i>Bogazici University, Department of Chemical Engineering</i></p>

<p><b>86 Hydrogen obtaining by ammonia decomposition in gliding discharge plasma-catalytic processes</b> Michał Młotek, Weronika Góral, Zuzanna Strach, Michalina Perron, Hubert Ronduda, Magdalena Zybert, Krzysztof Krawczyk, Wioletta Raróg-Pilecka Presenting author: <i>Dr. Michał Młotek</i> <i>Warsaw University of Technology, Faculty of Chemistry</i></p>
<p><b>88 Enhancement of the rate of electrocatalytic formic acid oxidation by forced periodic modulation</b> Sidhanth Chandra Kanth, Evgeny V. Rebrov Presenting author: <i>Sidhanth Chandra Kanth</i> <i>Eindhoven University of Technology, Department of Chemical Engineering and Chemistry</i></p>
<p><b>89 Ir/BaTiO<sub>3</sub> catalytic coatings for plasma assisted CO<sub>2</sub> hydrogenation to CH<sub>4</sub></b> Yuyan Gong, Nima Pourali, Volker Hessel, Evgeny Rebrov Presenting author: <i>Dr. Yuyan Gong</i> <i>University of Warwick, School of Engineering</i></p>
<p><b>90 Benefits of 3D-printed catalysts: the case of CO<sub>2</sub> methanation</b> Jasper Lefevere, Arturo Pajares, Eduardo Coutino Gonzalez, Vesna Middelkoop, Bart Michielsen Presenting author: <i>Dr. Bart Michielsen</i> <i>Flemish Institute of Technology VITO, Unit Sustainable Materials &amp; Chemistry</i></p>
<p><b>91 Investigation of the multiphase flow using a transparent direct formic acid fuel cell</b> Monika Jałowiecka, Zofia Szewczyk, Arkadiusz Antonowicz, Łukasz Makowski Presenting author: <i>Monika Jałowiecka</i> <i>Warsaw University of Technology, Faculty of Chemical and Process Engineering</i></p>
<p><b>92 Effect of catalyst shaping in microwave-assisted dry reforming of methane</b> Andrea Merlo, Léon Thomann, Nolven Guilhaume, Yves Schuurman Presenting author: <i>Dr. Nolven Guilhaume</i> <i>CNRS and University Claude Bernard Lyon, IRCELYON</i></p>
<p><b>93 Model-assisted scaleup of microwave heated monolith reactors for steam methane reforming</b> Arun Senthil Sundaramoorthy, Raul F. Lobo, Dionisios G. Vlachos Presenting author: <i>Arun Senthil Sundaramoorthy</i> <i>University of Delaware, Department of Chemical and Biomolecular Engineering</i></p>
<p><b>94 Scaling up microwave excited plasmas – an alternative technology for industrial processing</b> Marilena Radoiu Presenting author: <i>Dr. Marilena Radoiu</i> <i>Microwave Technologies Consulting</i></p>
<p><b>103 Continuous biocatalytic production of furfurylamine within a falling film microflow device enabling in situ product separation</b> Marko Božinović, Polona Žnidaršič-Plazl, Igor Plazl Presenting author: <i>Prof. Igor Plazl</i> <i>University of Ljubljana, Faculty of Chemistry and Chemical Technology</i></p>



**111 Strategies for disruptive reactor design in industrial environment**

Horst-Werner Zanthoff

Presenting author: *Prof. Horst-Werner Zanthoff*

*Evonik Operations GmbH*

**113 A combined experimental and modeling study of a 3D printed gyroidal copper structure for post-plasma chemical process intensification**

Victor Rosa, Dr Fabio Cameli, Prof. Kevin Van Geem, Prof. Georgios Stefanidis

Presenting author: *Victor Rosa*

*Gent University, Laboratory for Chemical Technology*

Oral presentations on **Titan and sister projects**

**Abstract no. Title & authors**

**72 Towards hydrogen production by methane reforming in a microwave-assisted fluidized bed reactor. Hydrodynamics of the Fe/C catalyst fluidized bed**

Robert Cherbański, Stanisław Murgrabia, Leszek Rudniak, Tomasz Kotkowski, Eugeniusz Molga, Andrzej Stankiewicz

Presenting author: *Dr. Robert Cherbański*

*Warsaw University of Technology, Faculty of Chemical and Process Engineering*

**76 Towards hydrogen production by methane reforming in a microwave-assisted fluidized bed reactor. Regeneration of Fe/C catalyst**

Stanisław Murgrabia, Tomasz Kotkowski, Eugeniusz Molga, Andrzej Stankiewicz, Robert Cherbański

Presenting author: *Stanisław Murgrabia*

*Warsaw University of Technology, Faculty of Chemical and Process Engineering*

**108 Ecotoxicological effects of nanocarbon materials from direct biogas conversion into H<sub>2</sub> on soil organisms**

Kateryna Kostyuk, Sven Marhan, Ellen Kandeler

Presenting author: *Dr. Kateryna Kostyuk*

*University of Hohenheim, Institute of Soil Science and Land Evaluation*

**109 Enhancing soil water retention and remediation capabilities through nanocarbonaceous soil amendments: Insights from controlled lab studies**

Hermin Saki, Joachim Ingwersen, Thilo Streck

Presenting author: *Dr. Hermin Saki*

*University of Hohenheim, Institute of Soil Science and Land Evaluation*



### Poster presentations

#### Abstract no. Title & authors

<b>11</b>	<b>Alkaline poly(ionic liquid)s for effective conversion of EC to DMC</b> Xiaoyan Chen, Rongkai Cui, Huiyun Su, Jie Chen, Ting Qiu Presenting author: <i>Prof. Ting Qiu</i> <i>Fuzhou University, College of Chemical Engineering</i>
<b>14</b>	<b>A method to fabricate supported catalytic packing: polydopamine as a “double-sided adhesive” to prepare the fully covered seeding layer</b> Zhouxin Chang, Qiaofei Han, Ting Qiu, Hongxing Wang, Qinglian Wang Presenting author: <i>Qinglian Wang</i> <i>Fuzhou University, College of Chemical Engineering</i>
<b>15</b>	<b>A multi-scale and multi-objective optimization strategy for catalytic distillation process</b> Peiyun Xiong, Qinglian Wang, Ting Qiu, Hongxing Wang Presenting author: <i>Dr. Hongxing Wang</i> <i>Tianjin University of Science &amp; Technology, College of Chemical Engineering and Materials Science</i>
<b>22</b>	<b>Methane removal from ventilation air on a copper oxide catalyst</b> Mateusz Korpyś Presenting author: <i>Dr. Mateusz Korpyś</i> <i>Polish Academy of Sciences, Institute of Chemical Engineering</i>
<b>24</b>	<b>Non-PGM ammonia slip catalysts for green ammonia-fuelled engines</b> Claire Leishman, Benjamin Duheric, Ivan da Silva, Leonidas Bekris, Evangelos I. Papaioannou, Francisco R. García-García Presenting author: <i>Claire Leishman</i> <i>University of Edinburgh, School of Engineering</i>
<b>30</b>	<b>Electrochemical studies of CO<sub>2</sub> reduction towards a new electrolyzer design (eNETmix) for e-methanol synthesis</b> Milana Liubarskaya Barata, Francisca C. Moreira, Dânia Constantino, Maria Helena de Sá Presenting author: <i>Dr. Maria Helena de Sá</i> <i>Net4CO<sub>2</sub> CoLAB</i>
<b>34</b>	<b>Plasma-enhanced chemical vapor deposition of Co<sub>3</sub>O<sub>4</sub> thin films: boosting electrocatalytic oxygen evolution activity</b> Dominik Knozowski, Maciej Fronczak, Aleksandra Kędzierska-Sar, Marta Gmurek Presenting author: <i>Dr. Dominik Knozowski</i> <i>Lodz University of Technology, Department of Molecular Engineering</i>
<b>38</b>	<b>Direct biogas reforming to turquoise H<sub>2</sub> and carbon material by microwave heated catalytic fluidized bed reactor</b> Valentin L'hospital, Leandro Goulart de Araujo, Emmanuel Landrison, Yves Schuurman, Nolven Guilhaume, Marilena Radoiu, David Farrusseng Presenting author: <i>Valentin L'hospital</i> <i>IRCELYON, Rhône</i>

<p><b>39 Novel air purification reactor for indoor VOC abatement through active carbon filtration and photocatalytic regeneration</b> Kobe Schoofs, Siegfried Denys <b>Presenting author: Kobe Schoofs</b> <i>UAntwerpen, Department of Bioscience Engineering</i></p>
<p><b>42 CFD modelling of direct biogas conversion for turquoise H<sub>2</sub> and carbon production with a microwave-heated catalytic fluidized bed reactor</b> Leandro Araujo, Valentin L'hospital, Yves Schuurman, Nolven Guilhaume, Marilena Radoiu, David Farrusseng <b>Presenting author: Dr. Leandro Araujo</b> <i>Université de Lyon, Ircelyon</i></p>
<p><b>44 Pd decorated TiO<sub>2</sub> nanomembranes for solar-driven non-oxidative coupling of methane in flow conditions</b> Victor Longo, Luana De Pasquale, Siglinda Perathoner, Gabriele Centi, Chiara Genovese <b>Presenting author: Chiara Genovese</b> <i>University of Messina, ChiBioFarAm</i></p>
<p><b>49 Ultrasound-driven crystallization of amorphous TiO<sub>2</sub> for photocatalysis</b> Arno Raes, Sammy W. Verbruggen <b>Presenting author: Arno Raes</b> <i>University of Antwerp, Department of Bioscience Engineering</i></p>
<p><b>51 Coaxial microwave plasma reactor for continuous production of H<sub>2</sub>O<sub>2</sub> using water and argon</b> Mery Hernandez, Sergey Soldatov, Guido Link, John Jelonnek, Roland Dittmeyer, Alexander Navarrete <b>Presenting author: Dr. Mery Hernandez</b> <i>Karlsruhe Institute of Technology, Institute of Micro Process Engineering</i></p>
<p><b>68 Ammonia for hydrogen storage – NH<sub>3</sub> synthesis on a cobalt catalyst supported on yttrium-modified perovskite support</b> Magdalena Zybert, Hubert Ronduda, Wojciech Patkowski, Andrzej Ostrowski, Wioletta Raróg-Pilecka <b>Presenting author: Dr. Magdalena Zybert</b> <i>Warsaw University of Technology, Faculty of Chemistry</i></p>
<p><b>70 The impact of the type of active metal on the properties and activity of catalysts for ammonia synthesis deposited on neodymium oxide</b> Małgorzata Lemańska, Hubert Ronduda, Magdalena Zybert, Wojciech Patkowski, Wioletta Raróg-Pilecka <b>Presenting author: Małgorzata Lemańska</b> <i>Warsaw University of Technology, Faculty of Chemistry</i></p>
<p><b>71 Cobalt-based catalysts for plasma-catalytic ammonia decomposition</b> Weronika Góral, Hubert Ronduda, Michał Młotek, Magdalena Zybert, Kamil Sobczak, Andrzej Ostrowski, Krzysztof Krawczyk, Wioletta Raróg-Pilecka <b>Presenting author: Weronika Góral</b> <i>Warsaw University of Technology, Faculty of Chemistry</i></p>

<p><b>73 Development of new NiCu-based electrocatalysts for ammonia oxidation reaction in low-temperature DAFCs</b></p> <p>Jakub Zabrzycki, Marta Mazurkiewicz-Pawlicka</p> <p><b>Presenting author:</b> <i>Jakub Zabrzycki</i></p> <p><i>Warsaw University of Technology, Faculty of Chemical and Process Engineering</i></p>
<p><b>74 Zirconia functionalized monolithic cores with improved hierarchical porosity for continuous-flow microreactors for cascade reactions</b></p> <p>Agnieszka Ciemięga, Katarzyna Maresz, Julita Mrowiec-Białoń</p> <p><b>Presenting author:</b> <i>Dr. Agnieszka Ciemięga</i></p> <p><i>Polish Academy of Sciences, Institute of Chemical Engineering</i></p>
<p><b>75 Continuous photocatalytic gas-phase CO<sub>2</sub> hydrogenation over metal-deposited MoO<sub>x</sub>Sy/TiO<sub>2</sub> heterojunctions</b></p> <p>Arturo Sanz Marco, Jose Luis Hueso, Victor Sebastian, Francisco Balas, Jesus Santamaria</p> <p><b>Presenting author:</b> <i>Francisco Balas</i></p> <p><i>University of Zaragoza, Institute of Nanoscience and Materials of Aragon</i></p>
<p><b>77 Barium-promoted cobalt supported on lanthanide oxides as ammonia synthesis catalysts – exploring the promoter influence on the catalytic activity</b></p> <p>Wojciech Patkowski, Magdalena Zybert, Hubert Ronduda, Aleksander Albrecht, Dariusz Moszyński, Aleksandra Fidler, Piotr Dłużewski, Wioletta Raróg-Pilecka</p> <p><b>Presenting author:</b> <i>Dr. Wojciech Patkowski</i></p> <p><i>Warsaw University of Technology, Faculty of Chemistry</i></p>
<p><b>80 Fe-Co dual site SAC over N-doped carbons for electrocatalytic oxygen reduction reaction</b></p> <p>Ekaterina Pakrieva, Javier Hernandez-Ferrer, Gema Martinez, Francisco Balas, Enrique García-Bordeje, Alejandro Anson-Casaos, Ana M. Benito, Wolfgang K. Maser, Jose L. Hueso, Jesus Santamaria</p> <p><b>Presenting author:</b> <i>Francisco Balas</i></p> <p><i>Instituto Nanociencia y Materiales de Aragón, University of Zaragoza</i></p>
<p><b>87 Continuous catalytic process for reduction of nitroarenes</b></p> <p>Sebastian Kinas, Julia Kozak, Piotr Jamróż, Piotr Cyganowski</p> <p><b>Presenting author:</b> <i>Sebastian Kinas</i></p> <p><i>Wroclaw University of Science and Technology, Faculty of Chemistry</i></p>
<p><b>95 Multi-scale modeling of microwave reactors for scale-up analysis</b></p> <p>Maxwell Bobbin, Dionisios G. Vlachos</p> <p><b>Presenting author:</b> <i>Maxwell P. Bobbin</i></p> <p><i>University of Delaware, Department of Chemical and Biomolecular Engineering</i></p>
<p><b>101 Sustainable recycling of valuable materials from lithium-ion battery waste via hydrometallurgical process</b></p> <p>Shally Gupta, Kamal K. Pant, Glen Corder</p> <p><b>Presenting author:</b> <i>Shally Gupta</i></p> <p><i>Indian Institute of Technology Delhi, Department of Chemical Engineering</i></p>

<p><b>102 Mixing characteristics of a Taylor vortex reactor with a ribbed rotor</b> Suneha Patil, Georgios Gkogkos, Asterios Gavriilidis <b>Presenting author: Suneha Patil</b> <i>University College London, Department of Chemical Engineering</i></p>
<p><b>104 Intensification of processes in PEM electrolyzers</b> Maria Jarzabek-Karnas, Zuzanna Bojarska, Łukasz Makowski <b>Presenting author: Maria Jarzabek-Karnas</b> <i>Warsaw University of Technology, Faculty of Chemical and Process Engineering</i></p>
<p><b>105 Itaconic esters obtained by enzymatic esterification as monomers for non-polar polymers</b> Ewa Mierzwa, Szczepan Bednarz <b>Presenting author: Ewa Mierzwa</b> <i>Cracow University of Technology, Faculty of Chemical Engineering and Technology</i></p>
<p><b>107 Purification and immobilization of His6-tagged amine transaminase in a microreactor with functionalized nonwoven nanofiber membranes</b> Borut Šketa, Polona Žnidaršič-Plazl <b>Presenting author: Prof. Polona Žnidaršič-Plazl</b> <i>University of Ljubljana, Faculty of Chemistry and Chemical Technology</i></p>