

**ISCRE28 16-19.6.2024**

**Preliminary poster programme (26.4.24)**

**The topics of the conference are listed below and the posters are organized accordingly**

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## **Fundamentals of chemical reaction engineering (F)**

### **Poster\_F1**

[Synthesis of a Trimetallic Catalyst for Steam Reforming of Methane to Produce On-Site Ultra-Pure Hydrogen through Membrane Reformer](#)

Anjali Baudh, Rahul Sharma, Sweta Sharma, Rajesh K Upadhyay

### **Poster\_F2**

[Solid Phase Flow Dynamics in Circulating Fluidized Bed Riser at Two Scales Using Radiotracer Technique](#)

Trilokpati Tribedi, Pankaj Tiwari, Harish Jagat Pant, Rajesh Kumar Upadhyay

### **Poster\_F3**

[Advance Process Modelling to Support Vision 2050 Reaction Engineering Roadmap](#)

Stepan Spatenka, Sreekumar Maroor, Mayank Patel

### **Poster\_F4**

[Hydrotalcite-Like Compounds as Catalyst Precursors for Tri-Reforming of Methane Process for Industrial Flue Gas Utilization](#)

Rohit Kumar and K. K. Pant

### **Poster\_F5**

[Novel technologies for chemical hydrogen storage with carbon dioxide](#)

Susanne Lux, Matthaus Siebenhofer

### **Poster\_F6**

[Acid-Mediated Strategy to Construct Oxygen-free Ir-Re Coordination for Matching Configuration of Glycerol to Selective Hydrogenolysis](#)

Zheng Zhou, Yueqiang Cao, Jinghong Zhou\*, Xinggui Zhou

**Poster\_F7**

[Loading of Tin sulfide over Metal Organic Framework for boosting visible-light photocatalytic degradation of Norfloxacin](#)

Shubham Raj, Amar Nath Samanta\*

**Poster\_F8**

[Triacetin hydrolysis by lipase: determination of optimum operational conditions and reaction kinetics](#)

Darja PECAR, Nina BELINA, Andreja GORSEK

**Poster\_F9**

[Mesokinetics as a tool bridging the microscopic-to-macroscopic transition to rationalize catalyst design](#)

Wenyao Chen, Xuezhi Duan, Xinggui Zhou, De Chen, Weikang Yuan

**Poster\_F10**

[Catalytic degradation of polyethylene terephthalate](#)

Darja Pecar, Urban Koler, Andreja Gorsek

**Poster\_F11**

[Impact of soot structure on oxygen reactivity](#)

Antonio Raiolo, Claudius Stockinger, Ulrich Nieken

**Poster\_F12**

[Reactivity in Epoxidation: Comparison Between Soybean Oil and High Oleic Soybean Oil](#)

Gustavo Olivieri, Jacyr de Quadros Jr., Luiz Felipe Ferreira, Guilherme Sapata, Dylan Karis, Reinaldo Giudici

**Poster\_F13**

[Construction of hierarchical pore-network in zeolite catalyst particles using superresolution single-molecule localization techniques](#)

Mingbin Gao; Yuli Liu; Mao Ye; Zhongmin Liu

**Poster\_F14**

[Reverse micelle strategy for effective substitutional Fe-doping in small-sized CeO<sub>2</sub> nanocrystals: adsorption and photodegradation efficiency of ibuprofen under visible light](#)

Martino Di Serio\*, Rosanna Paparo, Olimpia Tammaro, Vincenzo Russo, Serena Esposito

**Poster\_F15**

[A new method for the evaluation of catalyst deactivation phenomena by the moving observer approach.](#)

Andrea Pappagallo, Hugo Petremand, Tilman Schildhauer, Emanuele Moioli

**Poster\_F16**

[Thermodynamic study of pyrolysis and in line dry reforming of waste plastics for syngas production](#)

Leire Olazar, Laura Santamaria, Santiago Orozco, Maria Cortazar, Enara Fernandez, Maite Artetxe, Gartzten Lopez

**Poster\_F17**

[Kinetic studies for Extraction of Rare Earths and Uranium from Rock Phosphate employing Organic Solvents \(D2EHPA and TBP\)](#)

Raghav S. Soni\*, Hitarth K. Thakkar, Krish T. Dedhia, Pushpito K. Ghosh, Ashwin W. Patwardhan

**Poster\_F18**

[Operando FT-IR spectroscopy analysis of NO<sub>x</sub> adsorption/desorption over Pd-doped zeolites: Effect of temperature, water and oxygen on NO<sub>x</sub> uptake and release](#)

Y. Hamid, R. Matarrese, S. Morandi, L. Castoldi, L. Lietti\*

**Poster\_F19**

[Kinetic study for the methanation of CO<sub>2</sub> and CO mixed syngas on a Ni/Al<sub>2</sub>O<sub>3</sub> catalyst](#)

Fabio Salomone, Alessio Tauro, Raffaele Pirone, Samir Bensaid

**Poster\_F20**

[Hydrodynamics in bubble column with internals: experiments and simulations](#)

Xiaoping Guan, Ning Yang

**Poster\_F21**

[Lattice Boltzmann Model for Heterogeneous Reactions for Application in Soot Combustion](#)

Claudius Stockinger, Antonio Raiolo, Ulrich Nieken, Mostafa Safdari Shadloo

**Poster\_F22**

[Modeling inulin depolymerization through a Monte Carlo based approach](#)

Riccardo Tesser\*, Henrik Grenman, Tapio Salmi, Vincenzo Russo

**Poster\_F23**

[Dynamic 1D heterogeneous models for the simulation of CO<sub>2</sub> hydrogenation to CH<sub>4</sub> in a fixed bed reactor](#)

Elena Gomez-Bravo, Jose Antonio Gonzalez-Marcos, Juan Ramon Gonzalez-Velasco, Benat Pereda-Ayo

**Poster\_F24**

[In-situ measurement of oxygen release from Ag/SrFeO<sub>3</sub>-Î´ materials for chemical looping catalysis](#)

Alexander Harrison, Simon Fairclough, Beth Willneff, Andrew Britton, Ewa Marek

**Poster\_F25**

[Kinetic modeling of the reduction of pure iron oxide monolayer with hydrogen](#)

Emiliano Salucci, Antonio D'Angelo, Vincenzo Russo, Henrik Grenman, Henrik SaxÃn

**Poster\_F26**

[To Dynamic or To Steady State: When does Non-Steady State Operation lead to Enhancement in the Catalytic Oxidation of Ethane?](#)

Austin Morales, Michael P. Harold, Praveen Bollini

**Poster\_F27**

[Reduced order models for real-time simulations of packed-bed reactors with intra-particle diffusional effects](#)

Bhaskar Sarkar, Ram R. Ratnakar, Vemuri Balakotaiah

**Poster\_F28**

[Quantification of surface reaction rate parameters using modulation excitation spectroscopy-phase sensitive detection](#)

Zhaofeng Li, Michael Patrascu

**Poster\_F29**

[Gas-solid reactions for the removal of hydrogen halides: a critical review in the light of novel challenges in flue gas cleaning applications](#)

Carmela Chianese, Alessandro Dal Pozzo, Valerio Cozzani

**Poster\_F30**

[Effect of Kneading Conditions on the Textural Properties of Heterogeneous Catalyst Supports](#)

Mathilde Auxois, Marine Miniere, Chloe Bertrand-Drira, Jan Verstraete, Thibaut Divoux, Sebastien Manneville

**Poster\_F31**

[Modeling Alumina Supports by Means of 3D Pore Network Models](#)

Gabriel Ledezma, Jan J. Verstraete, Loic Sorbier, Damien Leinekugel-Le Cocq, Elsa Jolimatre, Christian Jallut

**Poster\_F32**

[Fluidization of Wet Particles: Flow, Heat and Mass Transfer](#)

Qiushi Xu, Xiaoping Guan, Ning Yang

**Poster\_F33**

[Optimization of Slurry Loop Reactors by Understanding the Complex Mesoscale Behaviors of swelling particles](#)

Qiushi Xu, Xiaoping Guan, Ning Yang

**Poster\_F34**

[Paradox of Catalyst Deactivation: How to Extend the Catalyst Lifetime Improving the Catalytic Cycle](#)

Zoe J. G. Gromotka, Gregory S. Yablonsky, Nickolay M. Ostrovskii and Denis Constales

**Poster\_F35**

[Comparative Study of a Variety of Surfactant-Modified Micro-Mesoporous ZSM-5 Catalysts for Enhanced Cracking Ability](#)

Muhammad R Usman, Abdullah Ramzan

**Poster\_F36**

[Carbon dioxide hydrogenation to methanol in a tubular packed-bed chemical reactor: an unsteady particle-resolved CFD simulation in 3D](#)

Pawel Winiarski, Arpad Toldy, Marko Korhonen, Ville Vuorinen, Annukka Santasalo-Aarnio

**Poster\_F37**

[Screening of the potential reuse of air pollution control residues from different industries as alternative CO<sub>2</sub> sorbents in the calcium looping process](#)

Carmela Chianese\*, Alessandro Dal Pozzo, Valerio Cozzani

**Poster\_F38**

[Insights into Precursor Chemistry and Efficiency of Cu/MgO Catalysts for CO<sub>2</sub> Hydrogenation to Methanol](#)

Meenakshi Pokhriyal, Aakash Bhardwaj, and Sreedevi Upadhyayula

**Poster\_F39**

[Illustrating the effect of physicochemical properties within vitrinite and inertinite on residual carbon formation in drop tube furnace](#)

Hua Ma1, Yonghui Bai, \*, Xiaoyong Men, Qingyun Wang, Xudong Song, Peng Lv , Jiaofei Wang , Guanghua Lu , Guangsuo Yu

**Poster\_F40**

[Absorption of CO<sub>2</sub> by a two reactions system: how to access the kinetics constant of the main reaction?](#)

Arnaud Delanney, Alain Ledoux, Lionel Estel, Gabriela Ciriaco Villegas

**Poster\_F41**

[Study of the deposition characteristics of particles on the slag wall of a gasifier](#)

Guangsuo Yu, Jingyun Bai, Xudong Song, Yonghui Bai, Jiaofei Wang, Weiguang Su

**Poster\_F42**

[Robust Mechanism Discovery with Atom Conserving Chemical Reaction Neural Networks](#)

Felix Doeppel, Martin Votsmeier

**Poster\_F43**

[Decomposition of Ethylene carbonate on imidazolium ionic liquid-zinc halide composite catalysts: Active site and mechanism](#)

Zhen-Yang Lu, Zhuo Li, Ji-Xuan Duan, Xue-Gang Li, Cheng-Wei Liu\*, Wen-De Xiao\*

**Poster\_F44**

[Effect of hydrothermal carbonization on woody biomass: From structure to reactivity](#)

Lu Ding, Qinghua Guo, Yan Gong, Guangsuo Yu, Fuchen Wang\*

**Poster\_F45**

[MOFs for Photocatalytic Water Splitting and Carbon Dioxide Conversion](#)

Chenhao Li, Federica Zanka, James McGregor, Sergio Vernuccio, Peyman Z. Moghadam

**Poster\_F46**

[Effect of oxidation treatment on structural characteristics and combustion kinetics of residual carbon from coal gasification fine slag](#)

Qinghua Guo, Liang Ren, Lu Ding, Yan Gong, Guangsuo Yu, Fuchen Wang

**Poster\_F47**

[Hybrid Synthesis Route for Stable and Swellable Lignin Nanoparticles](#)

Rossella Grappa, Virginia Venezia, Brigida Silvestri, Giuseppina Luciani, Aniello Costantini

**Poster\_F48**

[Bimetallic alloy palladium catalysts for acetylation of propene: Study on the promotion mechanism](#)

Yong Yan, Cheng-Wei Liu, Xue-Gang Li, Wen-De Xiao

**Poster\_F49**

[Autothermal and Tri reforming of methane at High Temperature and Elevated Pressure under nickel spinelized pellets prepared from a metallurgical residue.](#)

Muhammad Irfan Malik, Nicolas Abatzoglou\*, InÅ's Esma Achouri, Elyssar Samaha;

**Poster\_F50**

[Development of Oxygen-Functionalized Iron-Nickel Sulfide on Nickel Foam for Supercapacitors.](#)

Lan Nguyen, Roshan Mangal Bhattarai, Young Sun Mok

**Poster\_F51**

[Mechanistic studies on bubble and droplet dynamics in turbulent flows](#)

Vikash Vashisth, Ronnie Andersson

**Poster\_F52**

[H<sub>2</sub> Generation by Rotational Gliding Arc Plasma from Ammonia Decomposition](#)

Oai Vu Quoc, Avik Denra, Shirjana Saud, Young Sun Mok

**Poster\_F53**

[Ammonia Cracking in Atmospheric Plasma Discharge for Clean H<sub>2</sub> Production](#)

Avik Denra, Oai Vu Quoc, Young Sun Mok\*

**Poster\_F54**

[Reaction Rate Analysis of Chemical Vapor Deposited Bi-based Perovskite Thin Film](#)

Ziguang Yang, Keito Togami, Maika Tanabe, Shoma Kimura, and Motoaki Kawase\*

**Poster\_F55**

[Evaluation of gas sorption performances of iron oxide and nickel oxide doped ZIF-8 materials](#)

Fulya KÃ¼mbetlioglu Beyza Evgin Ayten AteÅ

**Poster\_F56**

[\(Sub-\)Network analysis of the enzymatic depolymerization of PET](#)

Tobias Heinks, Igor Gamm, Katrin Hofmann, Martin Gerlach, Jan von Langermann, Christof Hamel 1 Otto-von-Guericke University Magdeburg, Institute of Chemistry, 2 Institute of Process Engineering 3 Anhalt University of Applied Sciences

**Poster\_F57**

[Determination of effective parameters for pseudo homogeneous packed bed reactor modelling using particle resolved CFD simulations](#)

Sebastian Ulmer\*, Julian Skagfjord Reinhold, Hans-Jorg Zander

**Poster\_F58**

[Effect of supercritical water gasification conditions on properties of ZrO<sub>2</sub>](#)

Ayten Ates Osman Mert

**Poster\_F59**

[Modeling of Unconventionally Catalytic Heated Reactors](#)

Maxwell P. Bobbin, Arun Senthil Sundaramoorthy, Dionisios G. Vlachos\*

**Poster\_F60**

[Dynamic changes of NH<sub>3</sub> oxidation activity over Pt/Al<sub>2</sub>O<sub>3</sub>: an experimental and modelling study for automotive applications](#)

Bono, Riccardo Uglietti, Riccardo Keitl, Gordon Scheuer, Alexander Dreizler, Andreas Votsmeier, Martin

**Poster\_F61**

[Influence of Oxygen Vacancy in Ni-supported Ceria Nanorod Surface on CO<sub>2</sub> Methanation: Ab-initio Thermodynamics-based Study](#)

Soham Roy, Dr. Jithin John Varghese.

**Poster\_F62**

[Simulating Catalyst Deactivation in Ethylbenzene Dehydrogenation](#)

Matthias Feigel, Johanna Fernengel, Michael Balakos, Yuma Kuraguchi, Nobuaki Kodakari

**Poster\_F63**

[Experimental Characterisation of Metallic Iron Oxidation](#)

Benedetta A. De Liso, Clement Chanut, Gianmaria Pio and Ernesto Salzano

**Poster\_F64**

[Kinetic study of methanol by-products formation on an industrial catalyst under real reaction conditions](#)

Matteo Guiotto, Udo Armbruster, Stefano Ravasio, Pierdomenico Biasi

**Poster\_F65**

[Sequential deposition of FeNCu tandem CO<sub>2</sub> reduction electrocatalysts towards the low overpotential production of C<sub>2</sub>+ alcohols](#)

Nattaphon Hongrutai, Saurav Ch. Sarma, Mary P. Ryan, Joongjai Panpranot, Jesus Barrio

## **Bridging molecular modelling, thermodynamics and kinetics (B)**

**Poster\_B1**

[Experimental-Computational Coupled Kinetic Model for Oxygen Transfer in Catalyst-Metal-oxide System for Chemical Looping Epoxidation](#)

Xiaoyu Dai, Joseph Gebers, Ewa Marek

**Poster\_B2**

[Exploiting the Underlying Relationships Between Apparent Kinetic Parameters and Surface Coverages](#)

Fernando Vega-Ramon, Christopher Hardacre, Dongda Zhang

**Poster\_B3**

[A DFT Study on the Mechanism of Photocatalytic Nitrogen Reduction](#)

Taja Zibert, Matej Hus, Blaz Likozar

**Poster\_B4**

[A new generation of sulfiding agents – Towards a better understanding of the decomposition chemistry of polysulfides](#)

Cato Pappijn, Georgios Bellos

**Poster\_B5**

[Reaction class-based kinetic model development and automated validation: polycyclic aromatic hydrocarbons growth in toluene and methylnaphthalene oxidation](#)

Luna Pratali Maffei, Niccolò Fanari, Matteo Pelucchi Timoteo Dinelli, Tiziano Faravelli

**Poster\_B6**

[Tunable transesterification of dimethyl carbonate with ethanol on K<sub>2</sub>CO<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub> catalysts – Study on the mechanism and kinetics](#)

Cheng-Wei Liu, Wen-De Xiao\*

**Poster\_B7**

[Solubility of Nitric Oxide from combustion gases in different absorption solutions](#)

Nataly Castro-Ferro, Luis Vaquerizo

**Poster\_B8**

[Determination of kinetic parameters within laboratory scale for polypropylene process modelling.](#)

Anna Konopka, Matthias Feigel, Richard W. Fischer, Olaf Hinrichsen

**Poster\_B9**

[Synthesis of TiO<sub>2</sub> nanotubes for photocatalytic degradation of drugs](#)

Andrea Agustin-Reyna, E. G. Zamora-Rodea, Karina Isidro- Hernandez, I. Hernandez-Perez, J.A. Colán-Luna

**Poster\_B10**

[Understanding the Solvent and Particle Morphology Effects in Furfural Acetalization Reaction on Pd Nanostructures](#)

Pallavi Deorao Dandekar, Govind Porwal, Tuhin Suvra Khan, M. Ali Haider\*, C. P. Vinod\*, Shelaka Gupta\*

**Poster\_B11**

[Revealing Kinetics Parameters for Delignification of Oil Palm Empty Fruit Bunch through Ozonolysis Pre-treatment via Sparse Nonlinear Optimizer](#)

Zahidah Husna Hassan, Amnani Shamjuddin, Wan Nor Nadyaini Wan Omar, Pavitra Thevi Arnandan, Mohd. Asmadi Mohammed Yussuf, Nor Aishah Saidina Amin, Sharul Nizam Hasan, Himiyage Chaminda, and Hemaka Badulsena

**Poster\_B12**

[From ideal gas to liquids and supercritical solvents: expanding the applicability of detailed kinetic models through a ML-based equation of state](#)

Francisco Carlos Paes, Romain Privat, Jean-Noel Jaubert, Baptiste Sirjean

**Poster\_B13**

[Sensitivity Analysis of One-Dimensional Multiphysics Simulation of CO<sub>2</sub> Electrolysis Cell](#)

Harry Dunne, Weiming Liu, Mohammad Reza Ghaani, Kim McKelvey, Stephen Dooley

**Poster\_B14**

[Rational design of optimal catalysts to produce sustainable fuels from olefin oligomerization](#)

Smitha Gopinath, Sergio Vernuccio

## **Multiphase reactors and new reaction media (M)**

**Poster\_M1**

[Fluidized Bed Scale Up for Sustainability Challenges](#)

Ray Cocco, Jia Wei Chew

**Poster\_M2**

[Modeling fluidized bed reactors for thermochemical storage systems based on calcium looping](#)

Maria anna Murmura, Antonio Brasiello

**Poster\_M3**

[Batch-to-continuous transposition of three-phase reactions involved in hydrogen storage in liquid organic carriers](#)

Carine Julcour, Anne-Marie Billet, Sofiane Bekhti, Priyanka Gairola, Duncan Edel

**Poster\_M4**



[Design of a fountain confined conical spouted bed reactor for biomass torrefaction](#)

Xabier Sukunza, Maider Bolanos, Mikel Tellabide, Idoia Estiati, Roberto Aguado and Martin Olazar

**Poster\_M5**

[From gas-phase to liquid-phase hydroformylation over a solid rhodium catalyst](#)

Maria Herrero Manzano, Jeroen Poissonnier, Se'bastien Siradze, Joris W. Thybaut

**Poster\_M6**

[Sustainable, highly selective and metal free thermal depolymerization of poly-\(3-hydroxybutyrate\) to bio-crotonic acid in recoverable ionic liquids](#)

Piotr Jablonski, Santosh Govind Khokarale, Johan Warna, Dariush Nikjoo, Jyri-Pekka Mikkola, Knut Irgum

**Poster\_M7**

[Towards understanding the interfacial mass transfer during CO<sub>2</sub> capture: Basic Flow Forms of Twin-Liquid Films with Counter-current Gas Shear](#)

Long He, Hanguang Xie, Yuan Zong\*, Ling Zhao, Gance Dai

**Poster\_M8**

[Catalytic membrane contactors for methanol conversion to dimethyl ether](#)

Elisa Avruscio, Massimo Migliori, Enrico Catizzone, Girolamo Giordano, Giuseppe Barbieri, Adele Brunetti\* 1

**Poster\_M9**

[Hydrothermal carbonization of construction wood waste into a valuable product](#)

Sajad Ahmadi, Velma Kimbi Yaah, Riku-Pekka Nikula, Tiina Laitinen, Satu Ojala, Mika Ruusunen, Matti Salmela, Marleena Hagner, Lea Hiltunen

**Poster\_M10**

[Modelling W/O/W double emulsions preparation in static mixers with shear-thinning dispersed phase](#)

Noureddine Lebaz, Kristy Touma, Ranim Chakleh, Fouad Azizi, Nida Sheibat-Othman\*

**Poster\_M11**

[Effect of SBA-15 intermediate layer of hydrogen permeation of porous alumina-supported palladium membrane](#)

Abhishek Anand, Rahul Sharma, Sweta, Satya Vir Singh, Rajesh Kumar Upadhyay

**Poster\_M12**

[Flow regime, gas holdup and volumetric mass transfer coefficient in slurry bubble column with different liquids and solids: An experimental study](#)

Praneet Mishra, Ashutosh Yadav

**Poster\_M13**

[Mathematical model of biomass fast pyrolysis in fluidized bed](#)

Maurizio Troiano, Roberto Solimene, Piero Salatino

**Poster\_M14**

[Electrochemical CO<sub>2</sub> conversion to elementary carbon in binary Li-Ca carbonate](#)

Emma Laasonen, Anafi Nur'Aini, Alireza Charmforoushan, Vesa Ruuskanen, Markku Niemelä, Tuomas Koironen, Jyrki M. Mäkelä

**Poster\_M15**

[Multi-compartmental simulation of actinides and lanthanides oxalic precipitation in a vortex reactor in the nuclear energy context](#)

Cristian Camilo RUIZ VASQUEZ, Murielle BERTRAND, Isabelle RAMIERE

**Poster\_M16**

[Similarities in the Hydrodynamic Operation of a Bubble Column with Aqueous Solutions of Alcohols and Salts](#)

Stoyan Nedeltchev

**Poster\_M17**

[Study on Ni-based mono and bimetallic catalysts supported on alumina and ceria support for steam reforming of heavy oil](#)

Anamika Maurya, Rajesh K Upadhyay, Sweta Sharma

**Poster\_M18**

[Experimental Investigation of CO<sub>2</sub> Loss in a Membrane Electrode Assembly-Anion Exchange Membrane Cell.](#)

Weiming Liu, Harry Dunne, Mohammad R. Ghaani, Kim McKelvey, Stephen Dooley

**Poster\_M19**

[Multiscale Modeling Of Biomass Pyrolysis In A Multiphase Reactor: The Effect Of Particle Scale Models On The Secondary Gas-Phase Reactions](#)

Balivada Kusum Kumar and Himanshu Goyal

**Poster\_M20**

[Synthesis of a Trimetallic Catalyst for Steam Reforming of Methane to Produce On-Site Ultra-Pure Hydrogen through Membrane Reformer](#)

Anjali Baudh, Rahul Sharma, Sweta Sharma, Rajesh K Upadhyay

**Poster\_M21**

[THERMOCATALYTIC DEHYDROGENATION OF PLASTIC WASTES ASSISTED BY ZnCl<sub>2</sub>-BASED MOLTEN SALTS](#)

Claudia Prestigiacomo, Dennis Ruvio, Najwa Hamdi, Tony Picaro, Onofrio Scialdone, Alessandro Galia\*

**Poster\_M22**

[Performance and analysis of continuous reactor for hydrothermal carbonization](#)

Charles J. Coronella Saeed Vahed Qaramaleki

**Poster\_M23**

[Multi-scale modelling of a fixed bed catalytic reactor: development of a simplified 1D model enhanced with 3D CFD multiphysics simulations.](#)

Liantsoa Randriambololona, Arnaud Cockx, Philippe Schmitz, Marie-José Huguet, Olivier Peruch

**Poster\_M24**

[Simulation of Droplet Dispersion in a Stirred Tank Using a Probability-Based Droplet Breakup Approach](#)

Jingchang Zhang, Xiaoping Guan, Ning Yang\*

**Poster\_M25**

[Accelerated Machine Learning Model for Biomass Gasification in Fluidized Beds](#)

Mohnin Gopinath M, Racha Varun Kumar, Himanshu Goyal

**Poster\_M26**

[Effect of acid and basic pretreatment on the performance of hydrothermal liquefaction of sewage sludge](#)

Claudia Prestigiacomio\*, Elisa Ciccarello Cicchino, Onofrio Scialdone, Alessandro Galia

**Poster\_M27**

[Homogenization Time and Axial Dispersion in Bubble Column](#)

Mark Terentyak, Sandra Orvalho, Pavel Zeman, Mária Zednáková<sup>1</sup>

**Poster\_M28**

[Modelling the dispersed phase holdup in a pulsed disc and doughnut liquid-liquid extraction columns \(PDDC\) using the Volume of Fluid \(VOF\) method](#)

Vivekananda Sinha\*, Marc Pera Titus

**Poster\_M29**

[Experimental and computational investigation of fluid flow and solid transport in split-and-recombine oscillatory flow reactors for organic chemistry in water](#)

Filippo Nanto, Sándor B. Oltvos, C. Oliver Kappe and Paolo Canu

**Poster\_M30**

[Upscaling bubbling fluidized bed reactors for strongly exothermic methanation](#)

Tilman Schildhauer\*, Martin Kästle, Tanja Wieseler, Julian Indlekofer, Robert Janz, Daniel Erne, Philipp Riechmann, Andreas Gantenbein

**Poster\_M31**

[Evolution of gas–solid binary fluidized bed reactor and investigate the flow dynamics behavior using radioactive particle tracer methods](#)

Anusha Yajurvedi, Vishalkumar Rajabhai Khernar, Harish Jagat Pant, Rajesh Kumar Upadhyay

**Poster\_M32**

[Novel low pressure and temperature production technology of propylene oxide from oxygen, hydrogen and propene in a trickle-bed reactor](#)

Christoph Schmidt, Matias Alvear, Francesco Sandri, Seo Mandon, Mika Lastusaari, Ilari Angervo, Tapio Salmi

## **New reactor structures: from micro to milli and macro (N)**

**Poster\_N1**

[FAME synthesis by transesterification reaction using a vibromixer](#)

Sara Almasi, Luca Schembri, Joelle Aubin, Martine Poux

**Poster\_N2**

[Pure methane from CO<sub>2</sub> utilizing a structured radial flow reactor system employing a novel bi-functional material](#)

Pablo Gangotena, Christian Frilund, Pekka Simell

**Poster\_N3**

[Impact of Soot Loading on CO Oxidation in Catalytic Particulate Filters with Various Coating Structures](#)

Richard Knopp, Miroslav Blazek, Petr Koci, Andrew York

#### **Poster\_N4**

[Mitigating Electrowetting in a CO<sub>2</sub> Electrolyzer by Using a Non-Conductive Gas Diffusion Layer](#)

Robert Haaring, Jae Won Lee, Junpyo Lee, and Hyunjoo Lee\*

#### **Poster\_N5**

[Synthetic and Kinetic Study of Ni/ZrO<sub>2</sub>-coated Wires for the Electrified Steam Reforming of Methane](#)

Meghana Idamakanti, Ram R. Ratnakar, Praveen Bollini

#### **Poster\_N6**

[Structured 3D-Printed Single-Atom Catalysts for Continuous Photocatalytic Applications](#)

Jiachengjun Luo, Vincenzo Ruta, Oleksii Nevskiy, Jody Albertazzi, and GIANVITO VILÀ

#### **Poster\_N7**

[Impact of Confinement in Core@Shell Arrangements on Particle Size Effects in the Fischer-Tropsch synthesis](#)

Kerstin Wein Robert Gätzel

#### **Poster\_N8**

[Copper microreactors for O<sub>2</sub> tolerant SI-ATRP synthesis of polymer brush films](#)

N. Scott Lynn Jr., Volkan Cirik, Monika Spasovova', Markéta Vrabcová', Hana Vaisocherová'-Lisalová'

#### **Poster\_N9**

[Pressure drop measurements of woodpile structures with variable macroporosity and outer surface area](#)

Sebastian Wilmes, Olaf Hinrichsen

## **Process dynamics and safety (D)**

#### **Poster\_D1**

[Experimental Characterization of the Oxidation of PHBV in Flammable Solvents](#)

Benedetta A. De Liso, Gianmaria Pio, Ernesto Salzano

#### **Poster\_D2**

[Operational limits in e-methanol production with variable hydrogen feed](#)

Viet Hung Nguyen, Arto Laari, Tuomas Koiranen

#### **Poster\_D3**

[Rapid online analysis of diesel-range Fischer-Tropsch products via APCI mass spectrometry](#)

Jonas Wentrup, Jorg Thoming

#### **Poster\_D4**

[Low-temperature performance enhancement by periodic operation of three-way catalysts for controlling emissions of hybrid electric vehicles](#)

Daniel Hodonj, Steffen Tischer, Patrick Lott, Olaf Deutschmann

#### **Poster\_D5**

[Data-driven System Identification for Silver Nanoparticle Production in Modular Reactors](#)

Ganapavarapu Sai Tarun, Rohan Saswade, Nirav Bhatt, and Sridharakumar Narasimhan

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