

18<sup>TH</sup> EDITION OF THE INTERNATIONAL  
CONFERENCE ON

# CATALYSIS, CHEMICAL ENGINEERING, AND TECHNOLOGY

*“From Discovery to Application: Catalytic  
Innovations for Industrial Progress”*



## Our SCIENTIFIC COMMITTEE



STANISLAW DZWIGAJ  
Sorbonne University,  
France



MICHELE ARESTA  
Innovative Catalysis for Carbon  
Recycling-IC2R, Italy



VICTOR CERDA  
University of the Balearic  
Island, Spain



MARTA I LITTER  
University of General San  
Martin, Argentina



DAI YEUN JEONG  
Jeju National University, Korea,  
Republic of



SERGEY SUCHKOV  
Moscow State University of Food  
Industry (MGUPP),  
Russian Federation



M A MARTIN LUENGO  
Institute of Materials Science of  
Madrid, Spain

### Scientific TOPICS

- Chemical Engineering
- Synthetic Chemistry Techniques
- Catalysis for Renewable Sources
- Green Chemistry
- Catalysis in Nanotechnology
- Catalysis for Energy
- Chemical Kinetics and Catalytic Activity
- Heterogeneous catalysis
- Analytical Methodologies
- Nuclear Chemistry/Radiochemistry
- Catalysis and Applications
- Environmental Catalysis
- Photochemistry, Photobiology and Electrochemistry
- Fluid Mechanics
- Micro-emulsion Catalysis and Catalytic Cracking
- Macrocyclic and Supramolecular Chemistry
- Catalysts and Catalytic processes
- Catalysis and Zeolites
- Catalytic Materials
- Surface Chemistry: Colloid and Surface aspects



17-19  
JUN 2024



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# TENTATIVE PROGRAM

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## Keynote Presentations

<b>Stanislaw Dzwigaj</b> Sorbonne University, France	Title: Application of metal single-site zeolite catalysts in heterogeneous catalysis
<b>Michele Aresta</b> Innovative Catalysis for Carbon Recycling-IC2R, Italy	Title: Towards the carbon cyclic economy: Catalysis for CO <sub>2</sub> conversion into fuels
<b>Victor Cerda</b> University of the Balearic Island, Spain	Title: Autoanalysis, a powerful software for laboratory automation
<b>M A Martin Luengo</b> Institute of Materials Science of Madrid, Spain	Title: Catalysis chemical engineering and technology, catalysis for renewable sources, green chemistry
<b>Sergey Suchkov</b> The Russian Academy of Natural Sciences, Russian Federation	Title: Personalized and Precision Medicine (PPM) as a unique healthcare model to be set up through biodesign-inspired biotech-driven translational applications and upgraded business marketing to secure the human healthcare, wellness and biosafety
<b>Dai Yeun Jeong</b> Jeju National University, Korea, Republic of	Title: The limitations inherent in sustainable development and how to overcome them
<b>Venko Beschkov</b> Bulgarian Academy of Sciences, Bulgaria	Title: Energy production by integrated adsorption and catalysis in fuel cells – the case of hydrogen sulfide
<b>Marta I Litter</b> University of General San Martin, Argentina	Title: TiO <sub>2</sub> photocatalytic removal of hexavalent chromium and arsenic

## Oral Presentations

<b>Haibo Ge</b> Texas Tech University, Unites States Of America	Title: Distal functionalization via transition metal catalysis
<b>Bijoy Biswas</b> Auburn University, Unites States Of America	Title: Catalytic hydrothermal liquefaction of food waste: Screening the process parameter on product yield and characterizations
<b>Ismaila Mudi</b> University of Birmingham, United Kingdom	Title: Catalytic hydrogenation of furfural to 2-methylfuran over Ni/acidified biochar catalyst
<b>Mustapha Yusuf</b> University of Birmingham, United Kingdom	Title: Catalytic hydrodeoxygenation of benzoic acid as a typical bio-oil model compound: Reaction and kinetics
<b>Jane Mueller</b> Almac, United Kingdom	Title: IN Silico Informed metaGenomic Harvesting Technology- (INSIGHT) - How a smart platform can accelerate the timelines of genes-to-GMP

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<b>Orchidea Maria Lecian</b> Sapienza University of Rome, Italy	Title: Markov chain of the K Ras4B dynamics and new pertinent markov-state model
<b>Fabrizio Ambrosino</b> University of Naples Federico II, Italy	Title: Study and characterization of zeolites for the removal of artificial radionuclides in wastewater samples from nuclear power plants
<b>Jose Angel Siles Lopez</b> University of Cordoba, Spain	Title: Towards improving urban waste management: Characterization and evaluation of odorous impact
<b>Martina Kapp</b> MARVIC EuropaVerde, Germany	Title: Moringa from sustainable cultivation exclusively from Cuba
<b>Elisabete Alegria</b> Instituto Superior de Engenharia de Lisboa, Portugal	Title: Halogen-enhanced metal-organic frameworks: Selective CO <sub>2</sub> capture and sustainable chemical fixation
<b>Parul Verma</b> University of Groningen, Netherlands	Title: Biomimetic approach towards visible light-driven hydrogen generation based on a porphyrin-based coordination polymer gel
<b>Danuta Olszewska</b> AGH University of Krokow, Poland	Title: Catalytic materials for flue gas cleaning based on used drinking water filters
<b>Janusz Lasek</b> Institute of Energy and Fuel Processing Technology, Poland	Title: Simultaneous removal of VOC and NO <sub>x</sub> from air in photo-catalytic process using a pilot-scale photo-reactor
<b>Simon Lukato</b> University of Warsaw, Poland	Title: Green and scalable approaches for synthesis and encapsulation of clean nanoclusters inside cerium MOFs for catalysis: Sustainable synthesis of exovinylene carbonates and glycerol carbonate from CO <sub>2</sub>
<b>Cesar I Mendez Garcia</b> AspenTech, Mexico	Title: Mathematical modeling, optimization and design of control schemes for chemical reactors applied to the production of clean energy
<b>Dror Malka</b> Holon Institute of Technology, Israel	Title: Improving thermo-optic phase shifter technology using silicon strip waveguide with TiN heaters
<b>Sergey Suchkov</b> The Russian Academy of Natural Sciences, Russian Federation	Title: Antibody-proteases as translational tools of the next-step generation to be applied for biotech, bioindustry and personalized and precision medical practice
<b>Vasily Ivanovich Lutsyk</b> Russian Academy of Sciences, Russian Federation	Title: Phase diagrams 3D computer models as a novel tool to design the catalytic materials
<b>Alexey Tsyganenko</b> St.Petersburg State University, Russian Federation	Title: Advances in FTIR spectroscopy of catalysts
<b>Choong Kil Seo</b> Howon University, Korea, Republic of	Title: Harmful gases reduction characteristics according to the additive catalysts and support types of H <sub>2</sub> -SCR

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<b>Muhammad Tayyab</b> Tsinghua University, China	Title: A binary dumbbell visible light driven photocatalyst for simultaneous hydrogen production with the selective oxidation of benzyl alcohol to enzaldehyde
<b>Shunli Wang</b> Smart Energy Storage Institute, China	Title: Large-scale energy storage safety warning and risk monitoring
<b>Chaalal Omar</b> Abu Dhabi University, Abu Dhabi University	Title: Possible application of new natural surfactant extracted from UAE desert plants in EOR of a selected carbonate oil reservoir: An experimental approach
<b>Yarub Al Douri</b> University of Sharjah, United Arab Emirates	Title: Incorporating nanotechnology into renewable energy
<b>Orlando Armando Elguera Ysnaga</b> National University of Engineering, Peru	Title: Review of research topics for scaling-up of sonochemical reactors (sono-reactors)
<b>Osman Adiguzel</b> Firat University, Turkey	Title: Shape reversibility and diffusionless transformations in shape memory alloys
<b>Ozcan Koysuren</b> Ankara University, Turkey	Title: Self-cleaning coatings based on the SiO <sub>2</sub> /WO <sub>3</sub> /ZnO film for solar cells
<b>Cemil Koyunoglu</b> Yalova university, Turkey	Title: Boron-doped catalysts and the production of energy from microalgae
<b>Sandeep Gholap</b> A star Institute of Sustainability for Chemicals, Energy and Environment (ISCE2), Singapore	Title: Single atom catalysis in biomass derived feedstock conversion
<b>Sung Chyr Lin</b> National Chung Hsing University, Taiwan	Title: Preparation and application of modified loofah sponges for metal chelation, protein purification, and enzyme immobilization
<b>Ashanendu Mandal</b> University of Calcutta, India	Title: Phenol removal from wastewater using innovative biological and industrial wastes as adsorbents
<b>Suresh C Ameta</b> Paher University, India	Title: Photocatalysis: A promising green chemical pathway
<b>Prakash Kondekar</b> Indian Institute of Naturopathy, India	Title: Fluid Mechanics for food industry
<b>Ram Sambhar Shukla</b> Inorganic Materials and Catalysis Division, India	Title: Cyclohexane oxidation catalysed by ruthenium complex at atmospheric pressure of molecular oxygen
<b>Sirshendu Guha</b> Engineers India Limited, India	Title: The primary aqueous aluminum-copper battery
<b>Damodar V Prabhu</b> Wilson College, India	Title: Transition metal ion catalysed studies of perfumery alcohols and phenols
<b>Tokeer Ahmad</b> Jamia Millia Islamia, India	Title: Functional heterojunctions nanocatalysts for scalable hydrogen production

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<b>Arun K Shandilya</b> Dr.Hari Singh Gour University Sagar, India	Title: The helium in the petroliferous tube wells in Saugor Division, Southern Ganga Basin
<b>Aditi Singhal</b> Ahmedabad University, India	Title: Preparation and oxygen evolution reaction on nanoporous semi-transparent La <sub>0.8</sub> Sr <sub>0.2</sub> CoO <sub>3</sub> coatings: Stability and mechanism in neutral medium
<b>Sanjeev Yadav</b> Shiv Nadar Institution of Eminence, India	Title: Hydrogen rich syngas using steam gasification of mixed food waste via nickel based catalyst
<b>Divya Bajpai Tripathy</b> Galgotias University, India	Title: Introduction, types, properties, and applications of switchable solvents: A review
<b>Raina Sharma</b> Institute of Nano Science and Technology, India	Title: An investigation of the phosphate functionalization, kinetics, and mechanistic aspects of phosphorylated sporopollenin as sustainable catalyst for selective 5-hydroxymethylfurfural formation in water
<b>Komal Verma</b> Indian Institute of Technology Guwahati, India	Title: Enhancing industrial wastewater treatment: Efficacy and optimization of ultrasound-assisted laccase immobilized on magnetic Fe <sub>3</sub> O <sub>4</sub> nanoparticles
<b>Bhawna Rawat</b> Institute of Nano Science and Technology, India	Title: Utilizing the undesirable oxidation of lead-free perovskite for photocatalytic C(sp <sup>3</sup> )H activation: Unraveling the serendipity
<b>RaviKrishna Chatti</b> Tata Steel Ltd, India	Title: Characterization of zinc in blast furnace sludge in an integrated steel plant
<b>Naveen Kulkarni</b> Queensland University of Technology, India	Title: Novel enzymatic route for industrial aldehyde oxidation: A key step towards green chemistry
<b>Neha Pandey</b> Tata Steel Limited, India	Title: Photodegradation of total cyanide with the synergistic approach of H <sub>2</sub> O <sub>2</sub> and NaOCl
<b>Sohan Bir Singh</b> Indian Institute of Technology Guwahati, India	Title: Desulfurization by reactive adsorption over zinc oxide based adsorbents
<b>Baibhav Kumar</b> Delhi Technological University, India	Title: Effect of grain size on machinability and fatigue life of Inconel -718
<b>Tarnveer Kaur</b> Sri Guru Granth Sahib World University, India	Title: Thermophysical and FTIR properties of different amino acids in aqueous 1-butyl-3-methylimidazolium bromide solutions
<b>Sudip Barman</b> National Institute of Science Education and Research, India	Title: IrO <sub>2</sub> -modified RuO <sub>2</sub> nanowires/nitrogen-doped carbon composite for effective overall water splitting in all pH
<b>Alok Kole</b> RCC Institute of Information Technology, India	Title: Application of artificial intelligence in process control & automation of chemical industry



# TENTATIVE PROGRAM

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<b>Haitham Muhammad Bahaidarah</b> King Fahd University of Petroleum and Minerals, Saudi Arabia	Title: A numerical investigation of the performance of a thermoelectric based water distiller
<b>Ahmad Hakamy</b> Umm Al-Qura University, Saudi Arabia	Title: Influence of annealing temperature on the structure and dielectric characterization of Indium-doped Tin Oxide (ITO) thin films on a boro-float substrate prepared by radio frequency sputtering
<b>Safdar Hossain SK</b> King Faisal University, Saudi Arabia	Title: Carbon support materials for the electrocatalyst for the formic acid electrooxidation
<b>Yousef Alqahs Alanezi</b> College of Technological Studies, PAAET, Kuwait	Title: Surface functionalized ceramic membrane using super hydrophilic catalysis to enhance of oil in water separation
<b>Janus Louw</b> Stellenbosch University, South Africa	Title: Techno-economic and life-cycle assessment of biobased plastic production
<b>Janus Louw</b> Stellenbosch University, South Africa	Title: Economic and environmental benefits of bioprocess improvements for the production of 2,3-butanediol and adipic acid in a sugarcane biorefinery
<b>Mangaka Clara Matoetoe</b> Cape Peninsula University of Technology, South Africa	Title: Preparation, characterization, and evaluation of electrochemical properties of binary mixed oxides of silica and ceria nanocomposite
<b>Siphelo Ngqoloda</b> Mintek, South Africa	Title: Application of platinum-alloy nanostructures to enhance ORR activity in PEMFCs
<b>Nyiko Chauke</b> Mintek, South Africa	Title: Tuning photoelectrocatalytic activities of BiVO <sub>4</sub> nanofibers via annealing temperature
<b>Jana Pisk</b> University of Zagreb, Croatia (Hrvatska)	Title: Catalytic potential of vanadium coordination compounds in oxidation reactions
<b>Boungou Cedric Clarfeler</b> Marien Ngouabi University, Congo	Title: Coadsorption of H and Li on perfect and defective Ag(110) and Ag(111) surfaces: A DFT study with and without dispersion correction
<b>Malonda Boungou Brice Rodrigue</b> Marien Ngouabi University, Congo	Title: Adsorption and dissociation of Isocyanic acid (HNCO) on Rh(001) surface: A DFT study
<b>Young Sang Cho</b> Climate and Environmental Research Institute, Korea, Republic of	Title: Production of petroleum-like hydrocarbons on rock particles with H <sub>2</sub> O and carbon compounds
<b>Fouad El Mansouri</b> Abdelmalek Essaadi University, Morocco	Title: Evaluation of different extraction methods on the phenolic profile and the antioxidant potential of ceratonia siliqua L. Pods extracts
<b>Abdelmjid Bouazizi</b> University of Moulay Ismail, Morocco	Title: Preparation and analysis of an efficient nanofiltration membrane with TiO <sub>2</sub> -doped ZrO <sub>2</sub> on pozzolan support for efficient filtration of dyes and heavy metal solution

# TENTATIVE PROGRAM

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<b>Ahmed Tawfik</b> Kuwait University, Kuwait	Title: A Novel Approach Using Household Waste Digestate to Overcome Mono-Ethylene Glycol Inhibition for hydrogen producers
<b>Seongwoo Woo</b> Ethiopian Technical University, Ethiopia	Title: Improving the fatigue design of mechanical systems such as refrigerator
<b>Ilhem Belarbi</b> University of Mostaganem, Algeria	Title: Development and characterization of a new dolomite-based catalyst: Application to the photocatalytic degradation of pentachlorophenol
<b>Siham Barama</b> University of Sciences and Technology Houari Boumediene of Algiers, Algeria	Title: Driven visible-light of strategically photocatalytic degradation of methylene blue in water over Au-Ce@Amb catalyst and g-C <sub>3</sub> N <sub>4</sub> co-catalyst
<b>Ademola Bolanle Raheem</b> University of Port Harcourt, Nigeria	Title: Effective and green catalysts for the chemical depolymerisation of polyethylene terephthalate plastic bottle waste into its monomers and other products
<b>Belhakem Mostefa</b> University of Mostaganem, Algeria	Title: Selective catalytic of CO hydrogenation over functionalized Algerian diatomite
<b>Naitali Fateh</b> University of Science and Technology Houari Boumediene, Algeria	Title: Study of ketoprofen removal kinetics by a semiconductor material in a double tube reactor
<b>Yamina Chergui</b> University of Ahmed draia Adrar Algeria, Algeria	Title: Adsorption of Basic dye on Grape Marc based carbons activated with zinc chloride
<b>Khayit Turayev</b> University Termiz, Uzbekistan	Title: [C <sub>20</sub> H <sub>24</sub> CuNa <sub>2</sub> O <sub>18</sub> S <sub>4</sub> ] <sub>n</sub> complex compound synthesis and analysis
<b>Arzu Akif</b> Academician Y.H.Mammadaliyev Institute of Petrochemical Processes, Azerbaijan	Title: Oxidative dehydrogenation of 4-vinylcyclohexene to styrene in a two section reactor on metal-containing zeolites
<b>Sadiq Hassan Yahya Khoreem</b> Al-Razi University, Yemen	Title: Optical property enhancement of Zn-doped BaNi ferrite for advanced nanotechnology applications
<b>Yahaya Kudush Kawa</b> Njala University, Sierra Leone	Title: Assessment of solidwaste Managementat Panga and Kabonde Chiefdoms in Pujehun District, Southern Sierra Leone
<b>Isham Alzoubi</b> Tehran University, Syria	Title: Predict energy consumption for land leveling using Integrating artificial neural network and PSO algorithm (PSO-ANN), Artificial Neural Networks (ANNs) and regression
<b>Maria Candeia Kuliakita Sakukuma</b> Federal University of Bahia, Syria	Title: Use of organocatalysis for the synthesis of phenyl-hydroxylated-butyrac acids
<b>Reza hadjiaghaie Vafaie</b> University of Bonab, Iran	Title: Control and automation of fluid at micro/nano scale for bio-analysis applications

# TENTATIVE PROGRAM

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<b>Ramona Massoud</b> Iran National Standards Organization, Iran	Title: Heavy metals bioremoval by lactobacillus acidophilus in milk as a green technology
<b>Zahra Karimi</b> University of Science and Technology, Iran	Title: Red mud-based catalysts
<b>Mohammad Ebadollahi</b> K.N. Toosi University of Technology, Iran	Title: Feasibility study of using green technologies in order to supply energy and waste management of direct reduction iron plant

*Oral Presentation slots are available*

## Poster Presentations

<b>Marco Antonio Gaya de Figueiredo</b> State University of Rio de Janeiro, Brazil	Title: Technology roadmap: Trends in the use of fluidized bed catalytic cracking catalysts in bio-oil co-processing in refineries
<b>Elisabete Alegria</b> Instituto Superior de Engenharia de Lisboa, Portugal	Title: Nanocomposites based on Fe <sub>3</sub> O <sub>4</sub> and BaTiO <sub>3</sub> in oxidation of benzyl alcohol and 1-phenylethanol using different energy inputs
<b>Xia Li</b> Tianjin Key Laboratory for Prevention and Control of Occupational and Environmental Hazards, China	Title: Catalytic asymmetric diels-alder reaction of 2-Hydroxychalcone as a dienophile with VANOL-borate ester complex
<b>Xia Li</b> Tianjin Key Laboratory for Prevention and Control of Occupational and Environmental Hazards, China	Title: Synthesis and anti-hypoxia activity of salidroside
<b>S R Varadhan</b> Netaji IAS Academy, India	Title: Spectroscopic investigation and vibrational assignments on life saving pharmaceutical compounds
<b>Kapil Satya Pal Singh</b> Indian Institute of Technology Bombay, India	Title: Synthesis of 2-phenyl ethyl acetate using cation exchange resin in multifunctional reactors
<b>Kartik Upadhyay</b> Kurukshetra University, India	Title: Plastic waste to liquid fuel through pyrolysis
<b>Alejandro Martinez Amariz</b> University of Santander, Colombia	Title: Technical feasibility study in obtaining hydrogen through electrolysis using process water from crude extraction wells and existing energy surplus in a Colombia oil field
<b>Abdulaziz Alghamdi</b> King Fahd University of Petroleum and Minerals, Saudi Arabia	Title: Catalytic conversion of low-density polyethylene/HVGO blend to light olefins over zeolite catalyst
<b>Amru Alghamdi</b> King Fahd University of Petroleum and Minerals, Saudi Arabia	Title: Autoignition temperature prediction using machine learning
<b>Mohammed Mesrar</b> University of Sidi Mohamed Ben Abdellah, Morocco	Title: Advancements in dielectric materials: A comprehensive study on properties, synthesis, and applications



# TENTATIVE PROGRAM

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**Al Zahraa Fatima El Cheikh**  
Limerick University, Lebanon

Title: D-Xylose dehydration into 2-furfuraldehyde using novel zinc-copper-based catalysts

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**Rekaik Mouna**

Mohamed Seddik Ben Yahia University of  
Jijel, Algeria

Title: Nickel-alumina composite coatings on a steel substrate

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**Larbi Nour El Houda**

University of Mostaganem, Algeria

Title: The dynamics of dye interactions: Simultaneous (dual) removal of two textile dyes from industrial effluents using humic substances

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**Wapwera Augustine Jidimma**

University of Jos, Nigeria

Title: A review on the the effect of paper mill effluent in improving soil nutrient for agricultural productivity

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**Mohanad Hussein Oleiwi**

University of Babylon, Iraq

Title: Experimental study on the heat transfer enhancement of a latent heat thermal energy storage using air injection technique

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***Poster Presentation slots are available***