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ECGP

XVth International Symposium on

Environment, Catalysis and Process Engineering

November 23-25, 2021 | Virtual Zoom Meeting

Meeting Time Zone: Paris, France (GMT+1)



cochair@ecgpmorocco.com

ZOOM PLATFORM VIRTUAL MEETING INSTRUCTIONS

Join the Zoom Meeting

Meeting Link:

<https://us06web.zoom.us/j/88328201382?pwd=eHdKcVE3RkRPSTNZVkVnRG9xcDZOUT09>

Meeting ID: 883 2820 1382

Passcode: 472696

Join the meeting by clicking on a Zoom meeting link provided by the meeting host => follow the prompts to download and run Zoom => enter the meeting ID if prompted => click to join the audio (OR) if you already have Zoom software installed in your system, simply open Zoom application, click 'join' and enter the meeting code.

Mute/Unmute & Audio Settings

Except for the moderator and the speaker, all attendees' microphones will be muted by the host.

Chat Function

The participants will submit their questions through the chat function and the moderator / chair of the session will pick the questions for the discussion.

To direct your question, tag the speakers name to the questions as you submit them to the chat (e.g., For Dr. Will Torres – Question 1).

For Speakers

You will be allowed to share your screen during your presentation.

Session chair will pick the questions from the participants and asks the speaker depending on the time available. In case if more questions are left in the chat box, we encourage speakers to answer via chat and continue the discussion.

For Poster Presenters

All the poster presentation recorded videos are made available to all the participants to view at any point of time at their convenience.

According to the program, the presenter will be available during the time slot for the Q&A.

Recording

The session will be recorded for training purpose and some for the video library. Most of the speakers have already consented to recording their presentation but please inform us otherwise if you have some content which should not be recorded.

If you have trouble in login or any technical issues, please write to chairman@ecgpmorocco.com or call us at 469-854-2281.

Please check your e-mail for meeting link

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07:20-07:30 Joining the Meeting

07:30-07:40 Introduction by ECGP'15 Conference Chairman: **Prof. Abdelhak Kherbeche****Plenary Presentations****Moderator: Abdelhak Kherbeche**, Université Sidi Mohamed Ben Abdellah - Fez, Morocco07:40-08:30 **Design, Preparation and Characterization of Photofunctional Materials Based on Energy-resolved Distribution of Electron Traps**
Bunsho Ohtani, Hokkaido University, Japan08:30-09:20 **Single-Atom Catalysis: Opportunities and Challenges**
Tao Zhang, Chinese Academy of Sciences, China

09:20-09:40 Break

09:40-10:30 **Electrocatalysis: Role and Prospects to Defossilize Chemical and Energy Production**
Gabriele Centi, University of Messina, Italy10:30-11:20 **Microfluidic Catalytic Processing based on Multi-phase Designer Solvents to Automate Purification and Recycling Reactants**
Volker Hessel, University of Adelaide, Australia**Thematic Presentations**11:20-12:00 **Hydrogen: The Saviour for Climate Change & Net Zero**
Ganapati D. Yadav, Institute of Chemical Technology-Mumbai, India12:00-12:40 **Continuous Catalytic Process for Biomass Conversion**
Christophe Len, PSL University, France

12:40-13:00 Break

13:00-13:40 **SEDIMATERIAUX: Sustainable Development of Dredged Sediments**
Nor Edine Abriak, IMT Lille-Doua, France13:40-14:20 **Hydrogen Production by Microwave Catalytic Dry Reforming of Natural Gas**
Jamal Chaouki, Polytechnique de Montréal, Canada

14:20-14:45 Break

Oral Presentations

Session-1: Catalysis: Energy, Materials & Chemical Synthesis

Chair: **Ravikrishnan Vinu**, Indian Institute of Technology-Chennai, India

- 14:45-15:05 **Hydrodeoxygenation of Model Biomass Oxygenate Mixtures: Evidence of Cross-reactivity over Pt/HY Catalyst**
Vallabh Prabhudesai, Indian Institute of Technology-Chennai, India
- 15:05-15:25 **Selective Production of Guaiacol and Alkyl Guaiacols from Lignin via Catalytic Transfer Hydrogenolysis Using Ru-Cu/ZrO₂**
Ravikrishnan Vinu, Indian Institute of Technology-Chennai, India
- 15:25-15:45 **High-Throughput Approach for Gas-to-Chemicals (CO₂ to Methanol)**
Rudolf Wessels, Avantium, Netherlands
- 15:45-16:05 **Conversion of CO₂ and C₂H₆ to Platform Chemicals over Mo₂C-based Catalyst**
Wijnand Marquart, University of Cape Town, South Africa
- 16:05-16:25 **Effect of Potassium Loading on Nickel Ferrite Methanation Activity During the Preferential Oxidation of Carbon Monoxide (CO-PrOx)**
Mohamed Fadlalla, University of Cape Town, South Africa
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- 16:25-16:35 Break
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- Chair: **Alessandro Fortunelli**, National Research Council of Italy, Italy
- 16:35-16:55 **Theoretical Approaches to Nano Catalysis**
Alessandro Fortunelli, National Research Council of Italy, Italy
- 16:55-17:15 **Conversion of Waste Carbon-Dioxide into Fuels by Plasma-Assisted Catalysis**
Stefano Falcinelli, University of Perugia, Italy
- 17:15-17:35 **Models for Impedance Spectroscopy Characterization of PEM Fuel Cells**
Andrei Kulikovskiy, Forschungszentrum Jülich, Germany
- 17:35-17:55 **Nanochemistry Inspired by Molecular Chemistry: Application to CO₂/Bicarbonate Reduction**
Philippot Karine, CNRS National Centre for Scientific Research, France
- 17:55-18:15 **Transition Metal-Catalyzed-Asymmetric-Reductions:-Synthetic-Applications**
Virginie Vidal, PSL Research University, France
- 18:15-18:35 **Ethylene Glycol Production from Glucose Using Consecutive Retro-Aldolisation and Hydrogenation Steps: Comparison between Tungsten/Ruthenium and Molybdenum/Ruthenium Catalytic Systems**
Cognet Patrick, Toulouse INP, France
- 18:35-18:55 **Kinetics Behavior of Waste Plastics Pyrolysis in the Presence of Biomass-Derived Hybrid Catalysts**
Animesh Dutta, University of Guelph, Canada
- 18:55-19:15 **Nickel-rhodium Nanoparticles Supported on Nickel Foam for the Hydrogen Production from Urea Electrooxidation in a Continuous Electrolysis cell**
De Los Santos Meran Sylvia, Université de Toulouse, INP, France

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- 07:00-07:20 **Continuous Production of 3-methyl-2-cyclopentenone *via* an Intramolecular Aldol Condensation of 2,5-hexanedione with Boehmite-Derived Alumina Catalyst**
Shun Nishimura, Japan Advanced Institute of Science and Technology, Japan
- 07:20-07:40 **Photodegradation of Aqueous Isopropanol and Simultaneous Water Splitting to Separate Produced Hydrogen in a Twin-Reactor**
Jeffrey C S Wu, National Taiwan University, Taiwan
- 07:40-08:00 **An Evaluation of Supercritical CO₂ Extraction of Phytol from Carica Papaya linn. Leaves with Ethanol Co-Solvent based on Hansen Solubility Parameter (HSP) Assessment**
Chai Yee Ho, Universiti Teknologi Petronas, Malaysia
- 08:00-08:20 **Supercritical Fluid Extraction of Bio-Repellent and Bio-Pesticidal Compounds from Tropical Biomass Resources**
Suzana Yusup, Universiti Teknologi Petronas, Malaysia
- 08:20-08:40 **Highly Transparent AlGaIn-Based (254-258 nm)-Band DUV LED to Inactivate SARS CoV-2**
Muhammad Ajmal Khan, CPR, Riken, Japan
- 08:40-09:00 **Catalytic Conversion of Renewable Resources into Bulk and Fine Chemicals**
Johannes G. de Vries, Leibniz Institute for Catalysis, Germany
- 09:00-09:20 **Recovery of Rare Earth Elements by Zeolite Materials**
Oscar Jose Maciel Barros, Universidade do Minho, Portugal
- 09:20-09:40 **Coupling Carbon Nanomaterials with Ozone and UV Advanced Oxidation Processes for the Degradation of Dye Products in Waste Water**
Joachim C.G. Esteves da Silva, University of Porto, Portugal
- 09:40-10:00 **Nanostructured Silicas with Enhanced Organosilanes based Acidity for Catalytic Applications**
Maciej Trejda, Adam Mickiewicz University, Poland
- 10:00-10:20 **Deep Eutectic Solvents: Green Applications**
Inas M. Alnashef, Khalifa University of Science and Technology, UAE
- 10:20-10:30 **Break**

Chair: Jean-François Lamonier, University of Lille, France

- 10:30-10:50 **Cost Effective Catalysts for Production of Hydrogen and Green Chemicals from Bioethanol**
Elka Kraleva, Leibniz Institute for Catalysis, Germany
- 10:50-11:10 **Development of Natural Catalysts for the Synthesis of Green Products: One-Pot Synthesis of Manoyl Oxide based on a Novel and Sustainable "Solid Catalyst-Solvent" System**
Dimitra Makarouni, University of Patras, Greece
- 11:10-11:30 **Microplastics, Environment and Human Health**
Margherita Ferrante, University of Catania, Italy
- 11:30-11:50 **Removal of Hormones and Pharmaceuticals in a Pond-CW System Treating Waste Water from a University Campus**
José A. Herrera-Melián, University of Las Palmas de Gran Canaria, Spain
- 11:50-12:10 **Constructed Wetland as Source of Biomass for High Value Resource Recovery**
Carlos Arias, Aarhus University, Denmark
- 12:10-12:30 **Reaction of Formadehyde Over Manganese Based Catalyst**
Jean-François Lamonier, University of Lille, France
- 12:30-12:50 **La1-x(Sr, Na, K)xMnO₃ Perovskites for HCHO Oxidation: The Role of Oxygen Species on the Catalytic Mechanism**
Royer Sebastien, University of Lille, France

12:50-13:20 Break

Chair: Gabriela Carja, Technical University Gheorge Asachi de Iasi, Romania

- 13:20-13:40 **Removal of Organic Pollutants from Waste Water by Catalytic Wet Peroxide Oxidation**
Fida Baragh, Sidi Mohamed Ben Abdellah University, Morocco
- 13:40-14:00 **Metal-Organic Frameworks (MOFs)-based Adsorption Technology for Phosphate Recovery from Water**
Samir En Hankari, Mohammed VI Polytechnic University, Morocco
- 14:00-14:20 **Incorporation of Cobalt in a Clay-based Ceramic Matrix: Chemical Evaluation**
El Mustafa Iboustaten, Sidi Mohamed Ben Abdellah University of Fez, Morocco
- 14:20-14:40 **Micromechanical Modeling of the Effective Elastic Properties of Sewage Sludge Ashes-Mortars**
Sara Naamane, Abdelmalek Essaadi University, Morocco
- 14:40-15:00 **Lindane Removal by Fenton-Like Oxidation Over Iron Oxide Nanoparticles Confined in SBA-15 Mesoporous Silica**
Cezar Catrinescu, Technical University Gheorge Asachi de Iasi, Romania
- 15:00-15:20 **Mediating the State of Plasmonic Nanoparticles on Layered Double Hydroxides (MeNP/LDH) for Light- Driven Photocatalysis**
Gabriela Carja, Technical University Gheorge Asachi de Iasi, Romania
- 15:20-15:40 **Decentralised Bioenergy from Automatically Controlled Anaerobic Digestion of Food Waste**
Ernesto Hernandez, Canterbury Christ Church University, UK

15:40-15:50 Break

Plenary Talk

15:50-16:30 **Nano and Microstructured Carbon Materials from Bioresources using Pyrolysis and Reforming**
Ange Nzihou, RAPSODEE-CNRS, IMT Mines Albi, France

Chair: Muthanna H. Al-Dahhan, Missouri University of Science and Technology, Rolla, MO

16:30-16:50 **Numerical Modelling of Global Climate Driven Effects on Urban Areas**
Roberto San Jose, Universidad Politecnica de Madrid, Spain

16:50-17:10 **Versatility of the Clay Minerals as Adsorbents for Organic Pollutants**
Francisco Rodrigues, Paraíba State University, Brazil

17:10-17:30 ***In-situ* Molecular Imaging of Green Solvents for CO₂ Capture**
Xiao-Ying Yu, Pacific Northwest National Laboratory, Richland, WA

17:30-17:50 **Identifying the Locations of Heavy Metal Contaminants Entrained with Fluid Flow into a Trickle Bed Reactor (TBR) with Different Catalyst Shapes Using Dynamic Radioactive Particle Tracking**
Muthanna H. Al-Dahhan, Missouri University of Science and Technology, Rolla, MO

17:50-17:55 **Session Poster**
Study the Impact of the Vertical Internal on Solid Velocity Field in Slurry Bubble Column Reactor Using Radioactive Particle Tracking (RPT) Technique
Muthanna H. Al-Dahhan, Missouri University of Science and Technology, Rolla, MO

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Photocatalysis, Electrocatalysis & Biocatalysis****Chair: Nadhir Al-Ansari**, Lulea University of Technology, Sweden

- 08:00-08:20 **Efficient Synthesis of Heterohelicenes and Dehydrohelicenes**
Hiroaki Sasai, Osaka University, Japan
- 08:20-08:40 **Volatile Organic Compounds and Particle Generation During Processing of PE – Analysis and Control Measures**
Sangeetha Karthikeyan, Reliance Industries Limited, India
- 08:40-09:00 **Universal Approach for Fluxes and Dispersion of Organic Compounds from Oil and Chemical Terminals**
Cijo Xavier, Zayed University, UAE
- 09:00-09:20 **Multivariable Statistical Analyses to Air Qualities in Industrial Areas of t13he Arabian Gulf Region**
Manish Sharma, Zayed University, UAE
- 09:20-09:40 **Influence of Well Screen (Depth and Length) on the Performance of Aquifer Thermal Energy Storage ATEs System**
Nadhir Al-Ansari, Lulea University of Technology, Sweden
- 09:40-10:00 **Smart Irrigation Cube for Sustainable Agriculture in the Mediterranean Region (SmaCuMed)**
Edgaro Canas Kurz, Karlsruhe University of Applied Sciences, Germany
- 10:00-10:20 **Effect of Ageing on Decorative and Renovation Products Containing Biocides: Assessment of it's Impact on Indoor Air Quality**
Zine Filali Nouha, IMT Atlantique, France

10:20-10:35 **Break**

Chair: Luis Maria Esquivias Fedriani, Universidad de Sevilla

- 10:35-10:55 **Photocatalytic Valorization of Organic Pollutant into High Added Value Product**
Chantal Guillard, CNRS-University of Lyon, France
- 10:55-11:15 **Effective Catalytic Delignification and Fractionation of Lignocellulosic Biomass in Water over Zn₃V₂O₈ Mixed Oxide**
Khadija khallouk, Université Sidi Mohammed Ben Abdellah, Morocco
- 11:15-11:35 **Direct and Indirect Photolysis of Fluorinated Pesticides in Water: Kinetic Study, Transformation Products and Toxicity Evaluation**
Richy Brel Merveille DIAKABOU OBY, University of Poitiers, France
- 11:35-11:55 **Structure and Characterization of CO₂ Sequestering Agents based on Industrial Waste**
Luis Maria Esquivias Fedriani, Universidad de Sevilla, Spain

- 11:55-12:15 **Photocatalytic Degradation of Pharmaceutical Pollutants in the Presence of Organic Acids and Transition Metals in Aqueous Solution**
Tahar Sehili, University of Constantine, Algeria
- 12:15-12:35 **Optimization of Fenton-type Reaction for Water Treatment using Bimetallic Catalysts based in Porous Materials by Box-Behnken Desing**
Ouissal Assila, University Sidi Mohammed Ben Abdellah Fez, Morocco
- 12:35-12:55 **Operational Modeling of Waste Recovery in Construction**
Mahfoud Benzerzour, IMT Nord Europe, France
- 12:55-13:25 **Break**
- Moderator: Abdelhak Kherbeche**, Université Sidi Mohamed Ben Abdellah - Fez, Morocco
- 13:25-13:45 **Photocatalysis of Organic Pollutants Under Solar-Light Irradiation of Au@WO₃ Nanocomposites: Efficiency and Mechanism**
Madjid Arab, Toulon University, France
- 13:45-14:05 **Self-Supported IrOx Nano-Clusters for Efficient and Durable Water Oxidation at High Current Densities in Acidic Media**
Lifeng Liu, International Iberian Nanotechnology Laboratory, Portugal
- 14:05-14:25 **Quest for the Key to Malic Acid Production by Aspergillus Oryzae**
Monique Geyer-Johnson, University of Pretoria, South Africa
- 14:25-14:45 **Immobilization of Iron Nanoparticles in Polymeric Matrixes for Removal of Cr(VI) in Water: The Case of Hierarchically Channelled Polyacrylonitrile**
Nahuel Montesinos, CNEA-CONICET, Argentina
- 14:45-15:05 **Biosorption of Ibuprofen from Aqueous Solution Using Activated Carbon: Theoretical Study**
Norberto Escobar Morales, Universidad Autónoma del Carmen, Mexico
- 15:05-15:25 **Laccases for Trace Organic Contaminants Elimination from Wastewater: Toward the Development of Robust Biocatalysts**
Hubert Cabana, Université de Sherbrooke, Canada
- 15:25-15:45 **Chemical Composition and Source-Specific Toxicity of Ambient Particulate Matter in Riyadh, Saudi Arabia**
Constantinos Sioutas, University of Southern California, Los Angeles, CA
- 15:45-16:05 **Pyrolysis of Waste Plastics for Fuel and Chemicals Recovery**
Jude Onwudili, Aston University, Birmingham, UK
- 16:05-16:25 **Synthesis and Characterization of Ag₂CO₃/Pd Nanocomposites and their Photocatalytic Activity for Orange G Decomposition under Visible Light Irradiation**
Sara GHAZI, Cadi Ayyad University, Morocco
- 16:25-16:30 **Session Poster**
Energy Valorization of the Waste of Anaerobic Digestion of Pomace from Wine Industry in a Conical Spouted Bed Reactor
Sonia Alvarez Perez, University of Basque Country, Spain
- 16:30-16:35 **Session Poster**
Co-Digestion of Sewage Sludge With Sludge from the Paper Industry and Digestate Remediation
Maria Jose San Jose Alvarez, University of Basque Country, Spain
- 16:35- **Concluding Remarks**

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