# SCIENTIFIC PROGRAM

## Monday, May 8th, 2023

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| 18:00 – 19:00 | **Reception** |
| | ***Welcome Conference***<br>Chairmen: Pedro Lozano and Eduardo García-Verdugo |
| 19:00 – 19:35 | Conference: How to Reinvent our Relationship with the Planet at Molecular Scale<br>  <br>**Javier Garcia-Martinez**.<br>Professor of Inorganic Chemistry<br>University of Alicante - Spain<br>IUPAC President |
| 20:00 – 21:00 | **Welcome Cocktail** |

## Tuesday, May 9th, 2023

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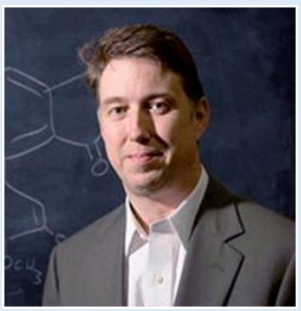
| | ***Session 1***<br>Chairman: Eduardo Garcia-Verdugo |
| 9:00-9:35 | ***Conference***<br>  <br>**Paul T. Anastas**<br>Professor of Environmental Health Sciences, and Teresa and H. John Heinz III Professor in the Practice of Chemistry for the Environment and Chemical & Environmental Engineering<br>Yale University USA |

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| | *Oral Communications* | |
| 9:35-9:55 | **María J. Hernaiz**, (**OC1**). Current Challenges in the Sustainable Synthesis of Glycoconjugates and their Therapeutic Applications | |
| 9:55-10:15 | **José Palomar** (**OC2**) Integrated carbon capture and utilization based on bifunctional ionic liquids | |
| 10:15-10:35 | **Jesus Esteban**(**OC3**) Multiphase strategies for furan production using green solvents | |
| 10:35-10:55 | **Beatriz Giner** (**OC4**) Sustainable strategy to improve the solubility of furosemide, an insoluble drug: combination of Deep Eutectic Solvent and cyclodextrins | |
| 10:55-11:15 | **Coffee Break** | |
| 11:15-11:35 | ***Opening Ceremony*** | ***Authorities*** |
| | ***Session 2***<br>Chairwoman: Belen Altava | |
| 11:35-12:10 | ***Conference:*** *Fire and Ice: Hydrogen and Carbon Dioxide as Green Energy and Carbon Sources for Sustainable Chemistry*<br>  <br>**Walter Leitner**<br>Professor of Molecular Catalysis<br>Executive Director<br>Max Planck Institutes for Chemical Energy Conversions – Germany | |
| | *Oral Communications* | |
| 12:10-12:30 | **Sebastian Wohlrab** (**OC5**) Controlling the formaldehyde selectivity in the selective oxidation of bio-methane | |
| 12:30-12:50 | **V.D. Mercader**(**OC6**) Sorption enhanced hydrogenation of CO2 with Ni/Al2O3 catalyst and LTA 5A zeolite for synthetic natural gas production | |
| 12:50-13:10 | **L. Latorre-Valverde** (**OC7**) Towards synthetic higher ether (e)fuels: catalytic dehydration of higher alcohols over tungstated zirconia solid catalysts | |
| 13:10-13:30 | **Francisco Garcia-Cirujano** (**OC8**) Engineering Zr-MOFs as catalysts for direct C-N bond formations | |
| 13:45-15:30 | **Lunch** | |

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| | ***Session 3***<br>*Chairman: Antonio Donaire* |
| 15:30-16:05 | ***Conference***: Zwitterionic solutions for carbon dioxide capture and separation<br>  <br>**Jairton Dupont**<br>Professor of Molecular Catalysis<br>Universidade Federal Rio Grande do Soul (UFRGS) - Brazil |
| | *Oral Communications* |
| 16:05-16:25 | **Marcileia Zanatta**, (**OC9**) Direct air capture and sequential $CO_2$ transformation |
| 16:25-16:45 | **Jesús Lemus** (**OC10**) Synthesis of novel Ionic Liquids for $CO_2$ chemical absorption processes |
| 16:45-17:05 | **Alejandro Jiménez** (**OC11**). $CO_2$ capture by CaAlFe mixed metal oxides |
| 17:05-17:25 | **Niloufar Atashi** (**OC12**) Structure sensitivity of catalytic methane decomposition on Ni nanocrystals for high-purity hydrogen production |
| 17:25-17:40 | **Coffee Break** |
| | ***Session 4***<br>Chairwoman: Susana Nieto |
| 17:40-18:15 | ***Conference***: *Ene reductases as sustainable biocatalysts for scaled-up asymmetric synthesis*<br>  <br>**Caroline E. Paul**<br>Assistant Professor on Biotechnology<br>Technical University of Delft (TUDelft) - The Netherlands |
| 18:05-19:45 | Visit to Cartagena – Routes 1 and 2 |
| 20:00-20:30 | Major's Reception |

**Wednesday, May 10th, 2023**

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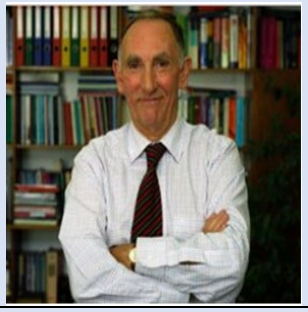
| | ***Session 5***<br>Chairwoman: Rocio Villa |
| 9:00-9:35 | ***Conference:*** Green Chemistry and Biocatalysis: Engineering a Sustainable Future.<br>  <br>**Roger A. Sheldon**<br>Distinguished Professor of Biocatalysis Engineering<br>Delft University-The Netherland / Univ. Witwatersrand-South Africa |
| | *Oral Communications* |
| 9:35-9:55 | **Jose Angel Pérez-Tomás (OC13)** Overcoming enzyme inactivation in biocatalysis by co-entrapment in ionic liquid gel materials |
| 9:55-10:15 | **Susana Nieto (OC14)** Optimization of the sustainable synthesis of panthenyl monoesters scaling-up certified by green metric analysis |
| 10:15-10:35 | **Ana P.M. Tavares (OC15)** Advances in plastic waste recycling: evaluating the additives role in enzymatic-mediated depolymerization of HDPE |
| 10:35-10:55 | **Barbara M.C. Vaz** (OC17). A multiproduct biorefinery approach towards an efficient extraction and purification of MAAs |
| 10:55-11:15 | **Coffee Break** |
| | ***Session 6***<br>Chairman: Francisco G. Cirujano |
| 11:15-11:50 | ***Conference:*** Sustainably sourced monomers and polymers<br>  <br>**Michael North**<br>Professor of Green Organic Chemistry<br>University of York - UK |
| | *Oral Communications* |
| 11:50-12:10 | **David Hermann-Lamparelli (OC17)** TBD-Catalyzed Depolymerization of Limonene-derived Polycarbonates |
| 12:10-12:30 | **Carlos Diez-Poza (OC18)** Aminoacids as a novel amine source for the synthesis of bioderived non-isocyanate polyurethanes |

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| 12:30-12:50 | **Francisco Palazón (OC19)** Solvent-free mechanochemical synthesis of multifunctional nanomaterials |
| 12:50-13:10 | **Alexandra Conde (OC20)** Development of a bioactive membrane against common infections using crayfish chitosan |
| 13:10-13:30 | **Francisco J. Patiño (OC21)** Self-Healable hydrogels for sustainable and resilient soft robotics |
| 13:35-15:30 | **Lunch** |
| | ***Session 7***<br>Chairman: José L. Serrano |
| 15:30-16:05 | ***Conference:*** *Alternative technologies for the selective conversion of bio-based feedstocks to specialty chemicals*<br>  <br>**François Jerome**<br>CNRS Research Director<br>IC2MP - Institut de Chimie des Milieux et Matériaux de Poitiers - France<br>Max Planck Institutes for Chemical Energy Conversions – Germany |
| | *Oral Communications* |
| 16:05-16:25 | **Roberto Gomez (OC22)** Spectroscopic analysis by UV-vis absorbance and fluorimetry to monitor a direct electrochemical lignin depolymerization process |
| 16:25-16:45 | **María Carmen Herrera-Beurnio (OC23)** Study of glycerol photoreforming intermediates in hydrogen photoproduction reactions on Pt-g-C3N4-TiO2 systems |
| 16:45-17:05 | **Beatriz García (OC24)** Catalytic transfer hydrogenation of carbohydrates with Raney Ni |
| 17:05-17:25 | **Alberto J Reynoso (OC25)** Nb-doped Ni-based catalysts for the aqueous-phase glycerol hydrogenolysis with endogenous $H_2$ |
| 17:25-17:40 | **Coffee** |
| | ***Posters Session: Flash presentations***<br>*Chairs:* Belen Altava & Antonio Donaire |
| 17:40-17:45 | **Pedro Megia (FP1).** Influence of Rh addition to transition metal catalysts in the oxidative steam reforming of acetic acid |
| 17:15-17:50 | **Carlos G. Díaz-Maroto (FP2)**. Activated carbons from different origin biomass residues to the removal of NO from polluted urban air |
| 17:50-17:55 | **Rocio Villa (FP3)**. Asymmetric bioreduction of alkenes in non-aqueous media catalysed by an immobilised ene reductase |

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| 17:55:18:00 | **Maria Romay (FP4).** Key role of Ni in the chemical looping dry reforming of methane using $La_{0.9}Sr_{0.1}Fe_{1-x}Ni_xO_3$ perovskites |
| 18:00-18:05 | **Maia Montaña (FP5).** Synthesis of methyl lactate from hemicellulose hydrolysates with Sn-containing zeolites |
| 18:05-18:10 | **Rafael Estevez. (FP6).** Selective Oxidation of Methanol to Green Oxygenates on Vanadium-based Catalysts |
| 18:10-18:15 | **Maria Orfila (FP7)** Green Hydrogen production through solar driven thermochemical cycles based on La0.8Me0.2NiO3±δ (Me=Al, Ca) |
| 18:15-18:20 | **Claudio Contreras-Diaz (FP8).** Hydrodeoxygenation of 4-(2-furyl)-3-buten-2-one over supported Re with formic acid as H2 source |
| 18:20-18:25 | **Bárbara M.C. Vaz (FP9).** A multiproduct biorefinery approach towards an efficient extraction and purification of MAAs |
| 18:25-18:30 | **Juan A. Madrid (FP10).** Recycling stone Debris: a green approach to synthesize calcium hydroxide suspensions for stone conservation |
| | ***Poster Exhibition*** |
| 18:30-19:30 | Poster / Beer Session |
| 20:00-24:00 | **Gala Dinner**<br>Restaurante Alviento – Pier of Cartagena<br>https://www.espacioalviento.com/restaurante-alviento |

**Thursday, May 11th**

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| | ***Session 8***<br>Chairwoman: Susana Nieto |
| 9:00-9:35 | ***Conference:*** Engineering a bespoke environment for catalysis with ionic liquids and gels<br>  <br>**Andrew C. Marr**<br>Professor of Inorganic Chemistry<br>Queen's University of Belfast - UK |
| | *Oral Communications* |
| 9:35-9:55 | **Oscar Cabeza (OC26)** Strange behabior of conductivity of Ehyl Ammonium Nitrate ionic liquid mixtures with different solvents |
| 9:55-10:15 | **Imane Moulefera (OC27)** Thermal properties of graphene and graphene oxide-based ionanofluids for solar energy |
| 10:15-10:35 | **David Vázquez-García (OC28)** A Sustainable Approach Based on Natural Deep Eutectic Solvents to Optimize Birch Biomass Delignification. |

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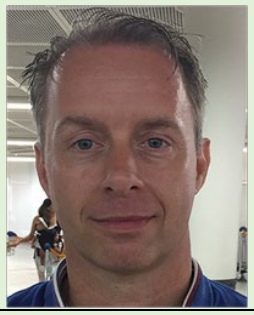
| 10:35-10:55 | **Cristian Moya (OC29)** Preparation of Supported Ionic Liquids (SILP) on commercial porous material for $CO_2$ capture |
| 10:55-11:15 | **Coffee Break** |
| | ***Session 9***<br>Chairman: Juan A. Madrid |
| 11:15-11:50 | ***Conference:*** Catalytic Diversification using Carbon Dioxide: Functional Heterocycles and Polymerizable Monomers<br>  <br>**Arjan Kleij**<br>Professor of Organic Chemistry<br>Institut Catalá d'Investigació Química (ICIQ) – Spain |
| | *Oral Communications* |
| 11:50-12:10 | **Guillermo Diaz-Sainz (OC30)** Optimized electrode fabrication and plasma surface treatment for an enhanced $CO_2$ electroreduction to formate |
| 12:10-12:30 | **Daniel Cosano (OC31)**. Synthesis and characterization of cobalt-based hydrotalcites for light-driven CO2 reduction |
| 112:30-12:50 | **Christopher J. Whiteoak (O32)** Gallium-catalyzed conversions of $CO_2$: A highly active catalyst system for the synthesis of bio-derived cyclic carbonates |
| 12:55-13:30 | **Awards and Closing ceremony** |
| 13:30-15:30 | **Closing Lunch** |