

VIRTUAL SYMPOSIUM 2023

GENERAL PROGRAM

MORNING SESSION

11:00 AM (ET) WELCOME

11:15 AM (ET) KEYNOTE SPEAKER **DR. VICTOR ZAVALA**
(UNIVERSITY OF WISCONSIN-MADISON)

11:45 AM (ET) RESEARCH SHORT TALKS

11:45 AM BIOTECHNOLOGY: KATHERINE MIRANDA MUNOZ (UNIVERSITY OF ARKANSAS)

"A MULTICOMPONENT MICRONEEDLE PATCH FOR THE DELIVERY OF MELOXICAM FOR VETERINARY APPLICATIONS"

11:57 AM PROCESS ENGINEERING & SUSTAINABLE ENERGY: ANDRES CABEZA (UNIVERSIDAD NACIONAL DE COLOMBIA, PURDUE UNIVERSITY)

"TRIBUTYL CITRATE PRODUCTION FROM CALCIUM CITRATE SALT: REACTION KINETICS AND PROCESS SIMULATION"

12:09 PM ADVANCED MATERIALS: CLARIBEL ACEVEDO (UNIVERSITY OF PUERTO RICO - MAYAGUEZ)

"LIQUID CRYSTAL MICRODROPLETS STABILIZED BY NANOPARTICLES: NEW APPROACHES TO DESIGN DROPLET-BASED SENSORS FOR DETECTION OF AMPHIPHILIC ANALYTES"

12:21 PM COMPUTING AND SIMULATION: PEDRO MACIEL XAVIER (UNIVERSIDADE FEDERAL DO RIO DE JANEIRO)

"QUBO.JL: A JULIA ECOSYSTEM FOR QUADRATIC UNCONSTRAINED BINARY OPTIMIZATION"

12:33 PM NANOTECHNOLOGY: JULIE VANEGAS (UNIVERSITY OF TEXAS RIO GRANDE VALLEY)

"SYNTHESIS OF METAL AND SEMI-METAL NANOPARTICLES WITH SINGLE-STRANDED CIRCULAR DNA PASSIVATION BY REACTIVE HIGH-ENERGY BALL MILLING (RHEBM) AS A POTENTIAL BIOSENSOR"

12:45 PM (ET) PRESENTATION BY JUAN TUBERQUIA, R&D LEADER AT **DOW**

1:00 PM (ET) LUNCH BREAK

VIRTUAL SYMPOSIUM 2023

GENERAL PROGRAM

AFTERNOON SESSION

2:00 PM (ET) WELCOME

2:05 PM (ET) RESEARCH TALKS BY AREA

- ADVANCED MATERIALS
- BIOTECHNOLOGY
- CATALYSIS & REACTIONS
- COMPUTING & SIMULATION
- PROCESS ENGINEERING

2:50 PM (ET) RESEARCH TALKS BY LANGUAGE

- PORTUGUESE (ADVANCED MATERIALS & CATALYSIS)
- SPANISH (CATALYSIS & POLYMERS)
- SPANISH (COMPUTING & ADVANCED MATERIALS)
- SPANISH (BIOTECHNOLOGY & ADVANCED MATERIALS)
- ENGLISH (NANOTECHNOLOGY)

3:30 PM (ET) PRESENTATION BY CHEVRON

3:45 PM (ET) QUESTIONS FOR INDUSTRY SPONSORS

4:00 PM (ET) KEYNOTE SPEAKER **DR. MARKITA LANDRY**
(UNIVERSITY OF CALIFORNIA, BERKELEY)

4:30 PM (ET) AWARD ANNOUNCEMENTS

5:00 PM (ET) NETWORKING (SHOW&TELL)

RESEARCH TALKS BY AREA

SESIONS START AT 2:05 PM (ET)

ADVANCED MATERIALS

- AMBAR VELAZQUEZ-ALBINO (UNIVERSITY OF FLORIDA)
 - "EFFECT OF POST-SYNTHESIS OXIDATION ON MAGNETIC PARTICLE IMAGING (MPI) PERFORMANCE"
- JOSÉ IVÁN ABRAHAM DIEGO (INSTITUTO TECNOLÓGICO DE AGUASCALIENTES)
 - "PHENOL REMOVAL PROCESS IN AQUEOUS SOLUTION USING A TETRA PAK CHAR"
- ANDREA VALERO (UNIVERSITY OF TEXAS, SAN ANTONIO)
 - "CONTROLLING ASPECT RATIO VERSUS AREA FOR HIERARCHICAL STRUCTURE IN SELF-ASSEMBLED NANOSTRUCTURES VIA BIOPISA"
- ANA IVETTE DELGADO MORENO (UNIVERSIDAD DE GUADALAJARA)
 - "DETERMINACIÓN EXPERIMENTAL DE LA INFLUENCIA ENERGÉTICA DEL GRUPO CARBOXILO EN LA 2,2'-BIPYRIDINA"
- PETER ANTOINE EL HAGE (INSTITUTO TECNOLÓGICO DE AGUASCALIENTES)
 - "EVALUATION OF AGAVE RESIDUES AS ADSORBENT AND CATALYST"

BIOTECHNOLOGY

- DANIEL MONTES PINZON (UNIVERSITY OF NOTRE DAME)
 - "DEVELOPMENT OF A HIGH-THROUGHPUT DRUG SCREENING PLATFORM VIA PIPETTING GEL DROPLET MICRO-ORGANOIDS MODELS"
- GISELLA LAMAS-SAMANAMUB (UNIVERSITY OF KENTUCKY - PADUCAH, UNIVERSIDADE FEDERAL DE SAO JOAO DEL REI)
 - "BEST PRACTICES IN ENGINEERING WHEN WORKING WITH BIOFILMS"
- JESSY GONZALEZ (UNIVERSITY OF CALIFORNIA, SANTA BARBARA)
 - "ANAEROBIC GUT FUNGI: ADVANCES IN GENOME EDITING STRATEGIES"
- HANNAH BAGNIS (UNIVERSITY OF FLORIDA)
 - "DYNAMICS OF CHEMICAL AND PHYSICAL CROSSLINKING OF METHACRYLATED SILK FIBROIN HYDROGELS FOR APPLICATIONS IN 3D PRINTING "

CATALYSIS & REACTIONS

- YOMAIRA PAGAN (UNIVERSITY OF PUERTO RICO AT MAYAGUEZ)
 - "TUNING OXYGEN VACANCIES IN NI/CEO₂ FOR CO₂ METHANATION"
- HANSEL MONTALVO-CASTRO (UNIVERSITY OF FLORIDA)
 - "INVESTIGATING CYCLIZATION AND DEHYDROGENATION ROUTES TOWARD THE CONVERSION OF AROMATIC COMPOUNDS DURING METHANOL-TO-OLEFINS IN MFI FRAMEWORK ZEOLITES"
- BLANCA PALOMA ESCALERA VELASCO (INSTITUTO TECNOLÓGICO DE AGUASCALIENTES)
 - "HYDROTHERMAL CARBONIZATION OF CIGARETTE FILTER WASTES FOR THE PREPARATION OF CATALYSTS USED IN LIPIDS TRANSESTERIFICATION"
- EMMANUEL CANALES (UNIVERSITY OF WISCONSIN - MADISON)
 - "CATALYTIC UPGRADING OF ETHANOL INTO DIESEL-FUEL RANGE C₁₀+ ETHERS "
- VIKASH KUMAR (INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI)
 - "SYNTHESIS OF ISOQUINOLINONES FROM BENZAMIDES AND VINYLENE CARBONATES VIA RH(III)- CATALYZED C-H ACTIVATION"

RESEARCH TALKS BY AREA

SESSIONS START AT 2:05 PM (ET)

COMPUTING & SIMULATIONS

- AURORA MUNGIA LOPEZ (UNIVERSITY OF WISCONSIN-MADISON)
 - "EXPLORING THE ECONOMIC AND ENVIRONMENTAL BENEFITS OF SOLVENT-BASED RECYCLING PROCESSES OF MULTI-LAYER PLASTIC FILMS"
- JONATHAN SALMERÓN-HERNÁNDEZ (UNIVERSITY OF CHICAGO)
 - "OUT-OF-EQUILIBRIUM FRAMEWORK PREDICTS LYOTROPIC LIQUID CRYSTALS"
- SAUL HERRERA OVANDO (TECNOLOGICO DE MEXICO EN CELAYA/INSTITUTO TECNOLÓGICO DE CELAYA)
 - "PLASTIC WASTE PROCESSING PATHWAYS FRAMEWORK"
- SANTIAGO FLORES ROMAN (NEW JERSEY INSTITUTE OF TECHNOLOGY)
 - "FLUCTUATION THEORY APPLIED TO ADSORPTION ON MICROPORES"
- TASKINA ZAMAN JUI (UNIVERSITY OF FLORIDA)
 - "SOLVENT EFFECTS ON 2-PYRONE-4,6-DICARBOXYLIC ACID DERIVED BIOPLASTICS PERFORMING MOLECULAR SIMULATIONS"
 -

PROCESS ENGINEERING

- MICHELLE HERRERA GONZALEZ (RICE UNIVERSITY)
 - "MECHANISTIC INVESTIGATION OF ASPHALTENE-INDUCED FOULING OF HEAT EXCHANGERS"
- LUIS TORRENS SOTOMAYOR (UNIVERSITY OF PUERTO RICO MAYAGUEZ)
 - "EVALUATION OF MOISTURE CONTENT AND MATERIAL PROPORTION OF LOCALLY SOURCED TROPICAL ROOTS AND FRUITS TABLETS"
- JAVIER GARCÍA-MARTÍNEZ (TECNOLÓGICO NACIONAL DE MÉXICO EN CELAYA)
 - "ANTICIPATING ALLIANCES OF STAKEHOLDERS IN THE OPTIMAL DESIGN OF COMMUNITY ENERGY SYSTEMS"
- BRENDA CANSINO LOEZA (UNIVERSITY OF WISCONSIN-MADISON)
 - "SUSTAINABLE ASSESSMENT OF WATER-ENERGY-FOOD NEXUS AT REGIONAL LEVEL THROUGH A MULTI-STAKEHOLDER OPTIMIZATION APPROACH"
- CRISTEL CAROLINA BRINDIS FLORES (RICE UNIVERSITY)
 - "ENERGY SYSTEMS AND SUSTAINABLE DEVELOPMENT IN LATIN AMERICA"

RESEARCH TALKS BY LANGUAGE

SESSIONS START AT 2:50 PM (ET)

PORTUGUESE (ADVANCED MATERIALS & CATALYSIS)

- SILMARA FURTADO DA SILVA (FEDERAL UNIVERSITY OF RIO DE JANEIRO)
 - "PRODUCTION OF 1,3-BUTADIENE FROM ETHANOL IN A SINGLE-STEP OVER BIMETALLIC SILICA-SUPPORTED CATALYSTS: OPTIMIZING THE REACTION PATHWAY VIA ASPEN PROJECT"
- MELISSA MELLO (NEW JERSEY INSTITUTE OF TECHNOLOGY)
 - "DESIGNING METAL FUELS FOR CUSTOM THERMITE COMPOSITIONS"
- AMANDA JURASKI (UNIVERSIDADE DE SÃO PAULO)
 - "POROUS ANISOTROPIC O-CARBOXYMETHYL-CHITOSAN/ALGINATE AND N,O-CARBOXYMETHYL-CHITOSAN/ALGINATE SCAFFOLDS FOR REGENERATIVE MEDICINE"

SPANISH (CATALYSIS & POLYMERS)

- MIGUEL SEPULVEDA (UNIVERSITY OF PUERTO RICO MAYAGUEZ)
 - "TUNING OXYGEN VACANCIES IN NI/CEO₂ FOR CO₂ METHANATION"
- KARLA LÓPEZ-PEREZ (BENEMÉRTITA UNIVERSIDAD AUTÓNOMA DE PUEBLA)
 - "ESTUDIO DEL CATALIZADOR DE AUCU SOPORTADO EN AL₂O₃ SOBRE LA REACCIÓN DE OXIDACIÓN DE CO"
- JUAN FORONDA-QUIROZ (INSTITUTO TECNOLÓGICO DE AGUASCALIENTES)
 - "PREPARATION OF HETEROGENEOUS CATALYST TO PRODUCE BIOLUBRICANTS"
- MARÍA LORENA MALAGÓN QUINTO (INSTITUTO TECNOLÓGICO DE AGUASCALIENTES)
 - "A DOUBLE LAYER HYDROXIDE BASED CATALYST FOR OIL TRANSESTERIFICATION TO OBTAIN BIODIESEL"
- GONZALO SANTOS LÓPEZ (INSTITUTO TECNOLÓGICO DEL VALLE DE ETLA)
 - "EXTRACTION OF BETA-CAROTENE FROM HUACLE CHILI AND ENCAPSULATION IN A BIOPOLYMERIC MATRIX"

SPANISH (COMPUTING & ADVANCED MATERIALS)

- HERMELINDA SERVIN CAMPUZANO (TECNOLOGICO NACIONAL DE MEXICO - CELAYA)
 - "OPTIMIZATION MODEL FOR INTERCONNECTED RENEWABLE ENERGY STORAGE SYSTEMS TO MEET THE DEMANDS OF A COMMUNITY"
- SADIE PADILLA BAEZ
 - "MULTICRITERIA ANALYSIS OF THE AVIATION BIOFUEL PRODUCTION PROCESS FROM JATROPHA CURCAS OIL"
- IVÁN ORLANDO ALMANZA STABLE (INSTITUTO TECNOLÓGICO DE AGUASCALIENTES)
 - "AUTOMATED MACHINE LEARNING APPROACH FOR SURFACE TENSION MODELING IN IONIC LIQUIDS"
- VICTOR RIVERA-LLABRES (UNIVERSITY OF FLORIDA)
 - "SIZE TUNABLE FABRICATION OF ARCHITECTURAL MICROPATTERNS IN HYDROGELS USING MAGNETIC ALGINATE MICROPARTICLES AS POROGENS IN MAGNETIC TEMPLATING"
- SERGIO MAYTA PAUCARA (UNIVERSIDAD NACIONAL DE INGENIERÍA)
 - "EXTRACTION AND CHARACTERIZATION OF CELLULOSE NANOCRYSTALS FROM CORN HUSK WASTE AND ITS APPLICATION IN BIOPLASTIC PREPARATION"

RESEARCH TALKS BY LANGUAGE

SESIONS START AT 2:50 PM (ET)

SPANISH (BIOTECHNOLOGY & ADVANCED MATERIALS)

- JOSE EZAGUI (UNIVERSITY OF SOUTH FLORIDA)
 - "ENDOPLASMIC RETICULUM SEQUESTRATION SCREENING EMPOWERS PHOSPHORYLATION PROFILING ON THE YEAST SURFACE"
- MARY JEAN SAVITSKY (FLORIDA AGRICULTURAL AND MECHANICAL UNIVERSITY)
 - "ASSESSMENT OF CELL LOADING ON THE VIABILITY AND PRINTING PARAMETERS OF 3D TISSUE MODELS"
- ASTRID DAUGHERTY (FAMU-FSU COLLEGE OF ENGINEERING)
 - "INVESTIGATION OF OVARIAN CANCER CELL BEHAVIOR IN VARIABLE STIFFNESS 3D TISSUE MODELS"
- MAXIMO MATEO (TUFTS UNIVERSITY)
 - "FOULING RESISTANT MEMBRANES FOR THE SEPARATION OF PROTEIN CONJUGATES FROM SMALL MOLECULES"
- MICHAEL STIVEN CASTANO TORO (INSTITUTO TECNOLÓGICO DE AGUASCALIENTES)
 - "SÍNTESIS DE ADSORBENTES A BASE DE LANTANO EMPLEANDO RESIDUOS AGRÍCOLAS PARA LA REMOCIÓN DE CONTAMINANTES GEOGÉNICOS EN EL AGUA"

ENGLISH (NANOTECHNOLOGY)

- ESTEBAN BERMIDEZ-BERRIOS (UNIVERSITY OF FLORIDA)
 - "AMPHIPHILIC SURFACTANTS TO MEDIATE THE TRANSFER OF IRON OXIDE NANOPARTICLES FROM ORGANIC TO AQUEOUS SOLUTIONS"
- SANTIAGO DIAZ-ARAUZO (NORTHWESTERN UNIVERSITY)
 - "ENHANCED CROSS-FLOW FILTRATION OF 2D MATERIALS THROUGH CERAMIC MEMBRANES"
- JUAN GARCIA (THE UNIVERSITY OF TEXAS RIO GRANDE VALLEY)
 - "EXPLORING PHOTOLUMINESCENCE PROPERTIES, SHAPE, AND SIZE OF HIGH ENERGY BALL-MILLED GOLD, COPPER, SILVER, AND SILICON NANOPARTICLES"
- AMBER GARCIA (THE UNIVERSITY OF TEXAS RIO GRANDE VALLEY)
 - "ENHANCING SOLUBILITY AND BIOCOMPATIBILITY OF CARBON NANOTUBES THROUGH AMINO FUNCTIONALIZATION AND HIGH-ENERGY MECHANICAL BALL MILLING"
- SEBASTIAN MONTERO (UNIVERSITY OF FLORIDA)
 - "IMPACT OF OBJECT SIZE ON MAGNETIC PARTICLE IMAGING (MPI) QUANTIFICATION ACCURACY"