

1st Pan American Congress of Nanotechnology - Fundamentals and Applications to Shape the Future

PROGRAM

November 27th - Monday

- 18:00** Registration
17:30 Opening Session
MCTIC Representative, Dr Wilson Aparecido Parejo Calvo – IPEN, Alberto Fazzio – CNPEM
19:45 Keynote: Dr. Mike Roco
20:30 Welcome reception

November 28th – Tuesday

- 09:00** Registration
09:00 Mini course by ANTON PAAR Room 3
09:00 Panel discussion on Entrepreneurship Room 1
Adalberto Fazzio, Omowunmi “Wunmi” Sadik, Fabio Kon, Matthew Hull, SAWDES
10:50 SAWDES Presentation: Dra. Olga Balachova Room 1
11:15 Plenary: Dr. Jorge Gardea-Torresdey Room 1
12:00 Lunch
13:30 Oral Session
Session I - Chemical-nano interactions Room 1
13:30 Boris Lau
A Tale of Two Ligands: From Sulfidation to Deposition of Silver Nanoparticles
14:00 Maria Cecilia Conceição Evora
Functionalization-induced changes in the carbon nanofiber structure via ionizing radiation using vinyl monomers
14:15 Isabel Cristina Escobar
Immobilization of Casein-Coated Silver Nanoparticles on Cellulose Acetate Membranes for Biofouling Control
14:30 Rudolf Arthur Triana
Techniques of obtaining and physical properties of the graphene
14:45 Bin Zhao
A triple functional approach to simultaneously determine type, concentration and size of titanium dioxide particles
15:00 Pedro Henrique Vieira
Barrier properties of Polyethylene/Poly(vinyl alcohol) films containing silica and carbon black
15:15 Arvid Masud
Iron Nanoparticle Impregnated Carbon Nanohybrids Prepared with Ultrasonic Spray Pyrolysis for Cr (VI) Removal
15:30 Hongyi Wan
Combined metal nanoparticles-functionalized membrane technology for toxic organic degradation
16:00 Coffee Break
16:20 Ademar B. Lugao
Radiation-induced "one pot" synthesis for cell therapies
16:50 Joseph Goodwill
Impacts and Characteristics of Ferrate Resultant Particles in Water Treatment
17:05 Andreia Luisa da Rosa
Hybrid density-functional calculations of formic acid on anatase TiO₂(101) surfaces
17:20 Jonnatan Julival Santos
Synthesis of High Stable Gold (198) Nanoparticles for Radiotherapy
17:35 Navadeep Shrivastava
Dual-Mode Investigation of Multifunctional Iron-oxide@NaGdF₄:xCe³⁺,xTb³⁺,yDy³⁺ oval Nanoparticles
17:50 Qinmin Zheng
The smart design of graphitic carbon nitride for photocatalytic water treatment with visible light irradiation
18:05 Drew Story
Aqueous stability of black phosphorus: Aggregation and degradation mechanisms of a novel 2-dimensional nanomaterial
18:20 Daniel Rodrigo Leiva
Processing of Magnesium and Titanium-based Nanomaterials for Hydrogen Storage
Session II - Biological-nano Interactions Room 2
13:30 Carlos Rinaldi
Monitoring Nanoparticle Stability and Mobility In Whole Blood And Tissues In Situ
14:00 Hudson W. P. Carvalho
X-ray fluorescence uncovering the interaction of CuO nanoparticles on Phaseolus vulgaris seeds
14:15 Santiago Romero-Vargas Castrillón
The interaction of bacterial cells with model graphene oxide surfaces: insights from single-cell force spectroscopy
14:30 Latyf Ullah Khan
Protein corona evaluation of magneto-luminescent nanoprobe of Fe₃O₄ with engineered surface chemistry by calixarene and Eu³⁺ TTA complex
14:45 Sudipta Seal
Role of surface valence states in nanoceria in modulating ROS and its role in nanomedicine

15:00 Lucas Freitas de Freitas
Ablation of melanomas with phthalocyanines-gold nanorods complexes for PTT and PDT: histologic and macroscopic results

15:15 Marcin Kruszewski
Toxicity Of Binary Mixture Of AgNPs And TiO₂NPs, Nanoparticles Alone And Silver-Doped TiO₂NPs

15:30 Debora Rodrigues
Antifungal Effects of Nanoparticles: Graphene, Graphene Oxide, Molybdenum Trioxide (h and α)

16:00 **Coffee Break**

16:20 Vicki Colvi
Co-Crystallization of Proteins and Nanocrystals: A Route Towards Nanomaterial Organization"

16:50 SungHee Joo
Influence of organic coating materials for the antibacterial effect of TiO₂ nanoparticles

17:05 Asshutosh Agrawal
Ultradonut topology of the nuclear envelope

17:20 Eakalak Khan
Alterations of Gene and Protein Expressions of Escherichia coli Exposed to Carbon Nanotubes

17:35 Mayra Eliana Valencia Zapata
Bioactive acrylic bone cements nanocomposites modified

17:50 Achintya Bezbarauah
Nanoscale Iron Triggers Iron Uptake in Lettuce (Lactuca sativa) through LsHA2 Gene Regulation

18:05 Tian Xia
Structure Activity Relationships of Engineered Nanomaterials at the Nano-bio Interface

18:20 Luiz Ricardo Goulart
Converging nanobiotechnologies and impact on biomedical applications

Session III - Sustainability and Ecological-nano interactions

Room 3

13:30 Arturo A Keller
Metabolomics as an early indicator of potential implications of engineered nanomaterials

14:00 Cristina del Carmen Torres Duarte
Effects of soluble copper and copper oxide nanoparticle exposure on the immune system of mussels

14:15 Marina Eller Vance
Nanoparticle-surface interactions: implications for nanoscale dust deposition and resuspension

14:30 Vinka Craver
Effect of growing conditions on the adaptation of bacteria cultures to nanoparticles exposure

14:45 Sanghamitra Majumdar
Response of soybean plants to cadmium sulfide quantum dots as a function of surface coating

15:00 Roberto Javier De La Torre-Roche
Effects of engineered nanoparticles on plants root diseases and crop health

15:15 Ramesh Raliya
Nanotechnology based sustainable and precision agriculture: A systematic understanding of nanoparticle synthesis and its interaction with plants

15:30 Jorge Garden Torresdey
From Gold Phytomining to the Fate of Nanoparticles in Terrestrial Plants: Synchrotron-based Studies

16:00 **Coffee Break**

16:20 Barbara Karn
Nanotechnology: Implications, Applications, Sustainability

16:50 Mayra Eliana Valencia Zapata
Bioactive acrylic bone cements nanocomposites modified with graphene oxide and chitosan

17:05 Wunmi Sadik
Nano-biosensors: From Prototypes to Safer Foods for Consumers

17:20 Diana Aga
Mass Spectrometry-based Metabolomics to Assess Phytotoxicity of Engineered Nanomaterials at Sub-lethal Concentrations

17:35 Dionysios Dionysiou
The applications of nanomaterials in advanced oxidation processes to remove organic contaminants

17:50 Leonardo Fernandes Fraceto
Nanotechnology and botanical insecticides towards a sustainable agriculture

18:05 Andrea Hicks
Nanoenabled textiles: a life cycle case study in environmental benefits and costs

18:20 Ilise Feitshans
Title Global Health Impacts of Nanotechnology Law: The Legend of Asbestos That Haunts Nanotechnology Innovations

18:35 Noela Invernizzi
Nanotechnology Policy in Brazil: advances and challenges

19:00 Poster Session

20:00 **Dinner**

November 29th – Wednesday

09:00 Registration

09:00 Sustainability round table Room 1
Noela Invernizi, Nelson Duran, Jose Mauro Granjeiro, Barbara Karn, Nora Savage

09:00 Oral Session

Education Session Room 2

09:00 Mary Jo Kirisits

An Undergraduate Laboratory Course to Study Nanomaterials from Synthesis through Environmental Impacts

09:30 Matthew Hull

Industrial revolution or opportunities lost: are we missing out on nano (and high-tech) entrepreneurship?

09:45 Boris Lau

Grasping Nano Concepts: How Critical is Prior Knowledge?

10:00 Vinka Craver

Nano Tools course at the University of Rhode Island

09:00 Mini course by Pensabio/Malvern Room 3

10:30 Plenary: Dr. Greg Lowry

11:15 Panel discussion on What it takes to publish in a high impact journal? Room 1

Dr. Greg Lowry, Dionysios Dionysiou, Jorge Gardea-Torresdey, Diana S. Aga, T. Randall Lee

12:00 Lunch

13:30 Oral Session

Session IV - Chemical-nano interactions Room 1

13:30 Stacey M Louie

Formation of heterogeneous protein-humic surface coatings on metal oxide nanoparticles

14:00 Janire Peña Bahamonde

Biodegradation and stability effect in PSU nanocomposites adding rGO nanosheets

14:15 Francisco C. R. Hernandez

Characterization of Advanced Materials by means of Aberration Corrected Transmission Electron Microscopy

14:30 Raquel Greice Alfaya

CO₂ facilitated transport through membranes containing amino-functionalized inorganic particles

14:45 Maria Claudia Felinto

Rare earth compounds as smart materials to biological

15:00 Oomman K Varghese

Nanoarchitectures of Plentiful Materials for Solar Photocatalytic Fuel Generation

15:15 Anabel Laza

Mixed hydroxide synthesis of nanostructured Ni/Pb as modified electrode material for piroxicam analysis

15:30 Stanko Brankovic

Finite Size Effects – A Guiding Principle for Monolayer Catalysts Synthesis and Design

15:45 Wendel Andrade Alves

16:00 Coffee Break

16:20 Randall Lee

Photonic and Magnetic Nanoparticles and Nanoscale

16:35 Matts Jonnson

Radiation synthesis of metal oxide nanoparticles

16:50 Shuo Chen

Enhanced thermoelectric properties of p-type Mg₃Sb₂ via co-doping of Na and Zn

17:15 Mariana Umpierrez

Performance of sulfidated nano zerovalent iron nanoparticles for the remediation of arsenic contaminated sites

17:30 Hadi Ghasemi

Toward extreme anti-icing surfaces

17:45 Antonio Domingues dos Santos

Characterization of surface plasmons in noble metal thin film by SNOM

18:00 Solange Sakata

Sustainable synthesis of transition metals/graphene oxide nanocomposites by electron beam irradiation

18:15 Pasan C. Bandara

Development of multifunctional nanocomposite coating for indirect potable reuse water treatment

18:30 Marin Van Heel

Session V - Nanoinformatics and Nanomanufacturing Room 2

13:30 Xianqiao Wang

Mechanical Factors in Cell-Rotating Nanoparticle Interactions via Computational Modeling

14:00 Glécia Virgolino da Silva Luz

3D Syringe Nanorobotic Simulator for Zika Virus Biomolecules Detection

14:15 Diana Farkas

Mechanical Response of Nanoporous Metals

14:30 Marcelo S Rocha

Experimental Study of Radiation Influence on Thermophysical Properties of Al₂O₃ and ZrO₂ Nanofluids

14:45 Hadi Ghasemi
Decoupled Hierarchical Structures for Suppression of Leidenfrost Phenomenon

15:00 Adriana Zaleska-Medynska
Nanostructures for heterogeneous photocatalysis

15:15 Luciana de Souza Neves Ellendersen
Obtaining of Nanochitosan by Physical Process

15:30 Tequila Harris Harris
Hybrid Additive Process for Coating Patterned and Heterogeneous Thin Films

16:00 **Coffee Break**

16:20 Billyde Brown
Industrial Manufacturing of Vertical Carbon Nanostructures for Energy Storage and Heat Transfer Applications

16:50 Jiming Bao
Magnetically aligned graphene for display and broader device applications

17:05 Thenner Silva Rodrigues
Hardwired for success: Ni supported CeO₂-Sm₂O₃ nanowires as a super stable catalyst for ethanol steam reforming

17:20 Tonya W Stone
Molecular dynamics study of the interface structure and properties in Ti-6Al-4V

17:35 Mathias Strauss
Conductive carbons from cellulose and lignin and its use in flexible paper-based devices

17:50 Fernando Vargas
Multimodal Correlative Microscopy of 2D Materials

18:05 Rafael Furlan de Oliveira
Nanomembrane-based transport junctions for integrated molecular electronics

18:20 Dmitri Litvinov
Spin-Valve Based Magnetoresistive Nanoparticle Detector for Applications in Biosensing

18:35 Carlos César Bof Bufon
Hybrid organic/inorganic devices based on nanomembranes

Session VI - Biological-nano Interactions

Room 3

13:30 Samantha Meenach
Development of Nanoparticulates Capable of Penetrating Pulmonary Physiological Barriers

14:00 Robert S Brueggeman
Barley-Engineered Nanoparticle-Phytopathogen Interactions: Induced Physiological Reprogramming of Innate Immunity

14:15 Carlos Henrique Zanini Martins
Bovine plasma protein corona associated with multiwalled carbon nanotubes: characterization, long-term water dispersion and ecotoxicity

14:30 Tianfu Wu
A Nano-polymer sensor for ultrasensitive detection of early biomarkers

14:45 Milena Trevisan Pelegrino
Chitosan nanoparticles for nitric oxide delivery in the skin

15:00 Venkataramana Gadhamshetty
Nanotechnology for Enhancing Microbial-bio-electrochemical processes for Waste-to-Electricity Generation during Long-term Space Exploration

15:15 Kirill Larin
Tissue elastography using “nanobombs”

15:30 Fernando Galembeck
Non-metallic conductive inks, paints, and adhesives for making flexible circuitry supported on paper or cloth

16:00 **Coffee Break**

16:20 Koiti Araki
Multifunctionalized nanoparticles for biomedical applications

16:50 Willie Oliveira Pinheiro
The influence of age on biodistribution and biocompatibility of citrate-coated magnetic nanoparticles administered in mice

17:05 Marcelo Fernandes Cipreste
Functionalized-radiolabeled Tenorite/Hydroxyapatite nanoparticles as theranostic agent for osteosarcoma: synthesis, characterization and biological in vitro assays

17:20 Gisele Eva Bruch
PEGylation of Carbon Nanotubes for Biomedical Applications

18:05 Mariano Grasselli
Plasmonic properties of multilayer Albumin/gold hybrid Nanoparticles

18:35 Clelia Dispensa
Nose-to-brain delivery of insulin enhanced by radiation-engineered nanogels

19:00 Poster Session

20:00 **Dinner**

November 30th – Thursday

09:00 Plenary: Dr. Marcelo J. Kogan
09:45 Plenary: Dr. Nelson Duran

10:30 Plenary: Dr. Kattesh V. Katti
11:15 Remarks – Brazilian organizers
11:30 Remarks – U.S. organizers
11:45 Student Awards
12:00 Final Remarks
12:15 **Lunch**
14:00 **Shuttle departs to the airport**

December 1st – Friday

09:00 Shuttle departs to LNNano facility