



6th

NANO Boston Conference

(Virtual)

December 07-09, 2020

Sponsor



NWC-Program

GMT -
Greenwich Mean Time

- 09:30-09:40 AV Check
- 09:40-09:45 Conference Introduction

Session 1: Nanomedicine & Bio-Sensors**Moderator:** **Henriqueta Louro**, National Institute of Health Doutor Ricardo Jorge, Portugal

- 09:45-10:10 **High-Surface Silicate Nanoplatelets Enabling Quorum Quenching Biofunctions of Anti-MRSA, Anti-Flu, Nanocarrier and SERS**
Jiang-Jen Lin, J&A Technology, Taiwan
- 10:10-10:35 **Cerosomes: Novel Ceramide Liposomes for Skin Barrier Recovery**
Jarmila Zbytovska, University of Chemistry and Technology Prague, Czech Republic
- 10:35-11:00 **Potential of Magnetotactic Bacteria as Hyperthermia Agents**
Maria Luisa Fernandez-Gubieda, University of Basque Country, Spain
- 11:00-11:25 **Therapeutic Potential of Magnetic Actuation via Intravascular and/or Extracorporeal Targeting**
Quentin Pankhurst, University College London, UK
- 11:25-11:50 **The Need for Early-stage Safety Assessment in the Development of Nanomaterials – The Role of Nanotoxicology**
Henriqueta Louro, National Institute of Health Doutor Ricardo Jorge, Portugal

Emerging Researcher

- 11:50-12:05 **Lengthening the Lifetime of Common Fluorophores**
Juan Ferrera-González, Universidad de Valencia, Spain

12:05-12:15 Poster Presentations & Break

- P01 12:05-12:10 **Melanin-like Nanoparticles Exhibit a Potential Chelation Therapy for Iron-Overload in β -thalassemia Women during Pregnancy**
Nahla Bakhamis, University of Oxford, United Kingdom
- P15 12:05-12:10 **Design, Preparation and *In Vitro* Ultrasound-Triggered Drug-Release Studies of Targeted Liposomes**
Mohammad Hussein Al-Sayah, American University of Sharjah, United Arab Emirates

Moderator: **Hari Shanker Sharma**, Uppsala University, Sweden**Keynote Talk**

- 12:15-12:50 **Extracellular Vesicles-mediated Angiogenesis**
Giovanni Camussi, University of Turin, Italy

Invited Talks

- 12:50-13:15 **Co-administration of TiO₂-nanowired DL-3-n-butylphthalide (DL-NBP) with Mesenchymal Stem Cells Enhanced Neuroprotection in Parkinson's Disease after Concussive Head Injury**
Hari Shanker Sharma, Uppsala University, Sweden
- 13:15-13:40 **Traumatic Brain Injury Induced Pathology. Neuroprotection by Nanowired Drug and Antibodies**
Ala Nozari, Harvard Medical School, MA

Emerging Researcher

13:40-13:55 **Potential of Spinal Cord Conduction and Neuroprotection Following Nanodelivery of DL-3-n-butylphthalide in Titanium Implanted Nanomaterial in a Focal Spinal Cord Injury Induced Functional Outcome, Blood-spinal Cord Barrier Breakdown and Edema Formation**
[Seaab Sahib](#), University of Arkansas, AR

13:55-14:00 **Break**

Moderator: **Pranoti Kshirsagar**, Springer Nature, Germany

Keynote Talk

14:00-14:35 **Clinical Translation of A PLG Nanoparticle Delivery System for The Tolerogenic Therapy of Celiac Disease**
[Stephen D Miller](#), Northwestern University Medical School, IL

14:35-15:10 **Advances in Nanomedicine: From Fighting Infection to Implantable Sensors**
[Thomas J. Webster](#), Northeastern University, MA

15:10-15:45 **Secretory Nanomachine in Cells: The Porosome**
[Bhanu P. Jena](#), Wayne State University, MI

15:45-16:20 **RNA as A Stable Negative Polymer and Lego Block to Build Defined Nanostructures for Material and Biomedical Applications**
[Peixuan Guo](#), The Ohio State University, OH

Sponsor Talk

16:20-16:40 **Springer Nature: Nano**
[Prathik Roy](#), Springer Nature, NY

16:40-16:45 **Break**

Moderator: **Anu Puri**, Center for Cancer Research, NIH, MD

Invited Talks

16:45-18:10 **Localized delivery of Small Molecule Drugs and RNAi Therapeutics by Photoactivation of Tunable Nanoparticles**
[Anu Puri](#), Center for Cancer Research, NIH, MD

17:10-17:35 **Design and Assembly of Functional Nanoscale Components**
[Neal Woodbury](#), Arizona State University, AZ

17:35-18:00 **Impact of a Nutritional Supplement, Intralipid®, on the Delivery of Anti-cancer Nanodrugs**
[Li Liu](#), National Institutes of Health, MD

18:00-18:25 **AHR-Targeting Nanoparticles for the Induction of Antigen-Specific Tolerance**
[Francisco J. Quintana](#), Harvard Medical School, MA

18:25-18:50 **A Novel Lymphatic/Brain Targeting Macromolecular Prodrug System**
[Stephan T. Stern](#), Frederick National Laboratory for Cancer Research, MD

18:50-19:15 **Polymer Nanoparticle based Tumor Targeted ChemoDynamic Therapy (CDT): A New Life for Fenton Chemistry**
[Andre Gesquiere](#), University of Central Florida, FL

19:15-19:30 **Poster Presentations & Break**

P02 **19:15-19:20** ***In Vitro* Assessment of the Effects of Silver Based Nanoparticles on Human Skin Cells Involved in the Wound Healing Process**
[Raluca Tutuianu](#), Nicolae Simionescu Institute of Cellular Biology and Pathology, Romania

- P03 19:20-19:25 Protein Facilitated Small Molecule Detection Using CRISPR/Cas**
[Kirstie Swingle](#), Arizona State University, AZ
- P16 19:25-19:30 Novel Nanosystems based on Perfluorocarbons for Biomedical Applications: Formulation and Biological Evaluation**
[Consuelo Rojas Vidal](#), Pontificia Universidad Católica de Chile, Chile

Moderator: [Tandabany Dinadayalane](#), Clark Atlanta University, GA

Invited Speaker

- 19:30-19:55 If Defects in Nanocarrier Coating are the Reason for the Failure in Targeted Drug Delivery?**
[Igor Sokolov](#), Tufts University, MA
- 19:55-20:20 Interferometric Microscopy for Detection and Visualization of Biological Nanoparticles**
[Selim Unlu](#), Boston University, MA
- 20:20-20:45 Mobile Health Diagnostics with Applications in Medicine**
[Hadi Shafiee](#), Harvard Medical School, MA
- 20:45-21:10 Computational Investigation on the Binding of Naturally Occurring Acyclic α -Amino Acids with Graphene**
[Tandabany Dinadayalane](#), Clark Atlanta University, GA
- 21:10-21:35 Intracellular SERS Probes to Monitor Viral Evolution**
[Laura Fabris](#), Rutgers University, NJ
- 21:35-22:00 Optimizing the Heat Generation in Magnetic Hyperthermia by Adjusting the Magnetic Anisotropy of Fe₃O₄/Zn_xCo_{1-x}Fe₂O₄ Core/Shell Nanoparticles**
[Elin L. Winkler](#), Bariloche Atomic Centre, Argentina
- 22:00-22:25 Targeted Silencing of Nociceptor Neurons with Nanophotonics**
[Christos Boutopoulos](#), University of Montreal, Canada

Moderator: [Laura Fabris](#), Rutgers University, NJ

Emerging Researcher

- 22:25-22:45 Secondary Ion Mass Spectrometry Image Depth Profiling for Visualizing the Uptake and Biodistribution of Gold Nanoparticles in *Caenorhabditis elegans***
[Monique Johnson](#), NIST/DOC, MD
- 22:45-23:05 Novel Conceptualization of BSA-liposome Interactions: Redefining the Protein Corona**
[Sarah McColman](#), Ryerson University, Canada
- 23:05-23:20 First Steps to Nanomedicine: Assessing Interactions between Polystyrene Nanoparticles and Albumin Proteins**
[Selena Osman](#), Ryerson University, Canada
- 23:20-23:35 Novel Thermoresponsive Crosslinker for Surface Crosslinked Micelle Synthesis**
[Mark Q. Tolentino](#), University of Connecticut, CT

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Session 2: Energy Storage and Novel Generation; Nanomaterial and Environmental Effects

Moderator: **Jean Ebothe**, University of Reims Champagne Ardenne, France

Plenary Talk

08:45-09:30 Strategies for Materials Design, Processing and Applications
[Shi Xue Dou](#), University of Wollongong, Australia

Invited Talk

09:30-09:55 Promotion Effect of Air Ultrafine Bubbles on Seed Germination for Sustainable Agriculture
[Seiichi Oshita](#), The University of Tokyo, Japan

Emerging Researcher

09:55-10:10 QCM Gas Sensor for Volatile Organic Compounds Detection using GO/TiO₂ Composite
[Savidya Jayawardena](#), Shizuoka University, Japan

Plenary Talk

10:10-10:55 Engineering at the Nanoscale: A Strategy for Developing High Performance Functional Polymer Nanocomposites
[Sabu Thomas](#), Mahatma Gandhi University, India

10:55-11:10 Break

Moderator: **Eric Buhler**, University of Paris, France

Keynote Talks

11:10-11:45 Microfluidics-enabled Soft Manufacture
[Li Qiu Wang](#), The University of Hong Kong, Hong Kong

11:45-12:20 How to Invest Nanotechnology in Renewable Energy
[Yarub Al Douri](#), University of Malaya, Malaysia

Invited Talks

12:20-12:45 SiC₇ Siligraphene: A Novel Donor Material with Extraordinary Sunlight Absorption
[Liujiang Zhou](#), University of Electronic Science and Technology of China, China

12:45-13:10 Integration of Molecular Machines into Supramolecular Materials: Actuation between Equilibrium Polymers and Crystal-like Gels
[Eric Buhler](#), University of Paris, France

13:10-13:35 Geometrical Impact on Magnetic Properties of Mesoscopic Scale Thick Nickel Thin films
[Jean Ebothe](#), University of Reims Champagne Ardenne, France

Poster Presentations

P04 13:35-13:40 Metal Nanoparticles and Polyoxometalates as Vehicles for the Synthesis of Heterocyclic Compounds
[Ioannis N. Lykakis](#), Aristotle University of Thessaloniki University Campus, Greece

P05 13:40-13:45 Roofing with Integrated Heating Coating Based on Nanocarbon Structures
[Anna Kuziel](#), Silesian University of Technology, Poland

- P06 13:45-13:50** **IoNanoFluids: IL-functionalised-CNTs Systems as Potential Modern Energy Storage Materials**
[Patrycja Wasik](#), Silesian University of Technology, Poland
- P07 13:50-13:55** **Disintegration of Nanostructured Metals with the Formation of Nanoparticles in Electron Microscope**
[Gennady Strukov](#), Russian Academy of Sciences, Russia
- P08 13:55-14:00** **Cobalt Sulfide based Bifunctional Electrocatalysts for Rechargeable Zn-air Batteries**
[Aruna N. Nair](#), The University of Texas at El Paso, TX
- P09 14:00-14:05** **D-band Contraction of Metal Nitride Nanosheets for highly Efficient and Stable Electrochemical Oxidation of Ammonia**
[Shi He](#), Duke Univeristy, NC
- P10 14:05-14:10** **The Amide-containing- α -glucan for a Synthesis of Fluorescent Polymer Nanoparticles**
[Rafaella Ferreira Fernandes](#), University of São Paulo, Brazil
- P11 14:10-14:15** **A Hybrid Membrane of Whey Nanofibers and Activated Carbon to Remove Heavy Metals from Water**
[Laura Cristina Ramirez-Rodriguez](#), Universidad de La Sabana, Colombia

Moderator: **Vishal Sharma**, NREL, CO

Keynote Talks

- 14:15-14:50** **The Dynamic Nature of Structures and Surface Sites of Nanoscale Catalysts and Electrocatalysts**
[Chuan-Jian Zhong](#), State University of New York at Binghamton, NY

Invited Talks

- 14:50-15:15** **Mechanisms of Heat Transport at Nanoscale Solid-Liquid Interface**
[Ethan Languri](#), Tennessee Tech University, TN
- 15:15-15:40** **Mirrors for Earth's Energy Rebalancing (MEER:Reflection)**
[Ye Tao](#), Rowland Institute at Harvard, MA
- 15:40-16:00** **Investigation of the Effect of Activation and Exfoliation on Carbon Nanosheets Properties**
[Peter Baumli](#), University of Miskolc, Hungary

Keynote Talks

- 16:00-16:35** **Application of Nanotechnology in Oil Industry: Reservoir-on-a-Chip Micromodel for Carbonate Reservoir**
[Wei Wang](#), Aramco Services Company, MA

Invited Talks

- 16:35-17:00** **Molecular Design Strategies for Selective Ethylene Oligomerization Catalysis**
[Sibo Lin](#), Aramco Americas, CA
- 17:00-17:25** **Reservoir-on-a-Chip Microfluidic Imaging of Dual-Mode Surface-Enhanced Raman Scattering - Surface-Enhanced Fluorescence (SERS-SEF) Barcoded Nanoparticle Tracers**
[Sehoon Chang](#), Aramco Americas, MA
- 17:25-17:50** **Nonstick Mixed Fluoro/Hydrophilic Self-Assembled Monolayers Interactions on Calcite Surfaces**
[Hsieh Chen](#), Aramco Americas, MA

Emerging Researcher

- 17:50-18:10** **Evaluation of the Potential of Single Particle ICP-MS for the Accurate Measurement of Number Concentration of AuNPs of Different Sizes and Coatings**
[Antonio R. Montoro Bustos](#), National Institute of Standards and Technology (NIST), MD
- 18:10-18:30** **Silver Film Structures: Fabrication, Characterization and SERS Application in Sensing of Inorganic Contaminants**
[Aranssely Quiroz](#), Pontifical Catholic University of Peru, Peru
- 18:30-18:45** **Anisotropic Core-Shell Silica Particles as a Platform for Drug Delivery**
[Akanksha Dohare](#), University of Tuebingen, Germany

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Session 4: Nano Electronics and Photonics

Invited Talks

Moderator: **Julia Perez Prieto**, University of Valencia, Spain

13:00-13:25 **Controlled Concentration and Transportation of Nanoparticles at the Interface between a Plain Substrate and Droplet**

Junhui Hu, Nanjing University of Aeronautics and Astronautics, China

13:25-13:50 **Enhancing the Performance of Lanthanide-doped Upconversion Nanoparticles**

Julia Perez Prieto, University of Valencia, Spain

13:50-14:15 **Plasmonic Grating Integrated Polarization Insensitive Single-photon Detectors**

Maria Csete, University of Szeged, Hungary

14:15-14:40 **Anti-Hebbian Spike-Timing Dependent Plasticity in N-Type Nanoparticle Organic Memory Field Effect Transistor**

Bilel Hafsi, Institute of Electronics, Microelectronics and Nanotechnology (IEMN), France
Institut Catholique d'Arts et Métiers (ICAM), France

14:40-15:05 **Superradiance of Broken-symmetry SiV Diamond Color Center Arrays in Concave Plasmonic Nanoresonators**

Maria Csete, University of Szeged, Hungary

15:05-15:25 **Break**

Poster Presentations

P12 **15:05-15:10** **Wide-gap semiconductors WO₃ and Bi₂WO₆: role of W-O bond in gas sensitivity**

Alexander Gaskov, Moscow State University, Russia

P13 **15:10-15:15** **Nanostructured Composites of Semiconductor Metal Oxides with Noble Metals (Au, Pt): Comparison of Sensitivity to Volatile Organic Compounds**

Artem Marikutsa, Moscow State University, Russia

P14 **15:15-15:20** **1,2-, 1,3- and 1,4-types of Double Nitrogen Doping in Multiple Rings of Graphene: DFT Study**

Dinushka Herath, Clark Atlanta University, GA

P17 **15:20-15:25** **The efficiency of Photo-Induced Surface Enhanced Raman Spectroscopy (PIERS) WS₂-AuNPs sensor in the detection of MBA residues**

Khouloud Abid, University of Sfax, Tunisia

Moderator: **Ramzi Maalej**, University of Sfax, Tunisia

Keynote Talks

15:25-16:00 **Polymer-based Metamaterials**

Svetlana V. Boriskina, Massachusetts Institute of Technology, MA

Invited Talks

- 16:00-16:25** **Nanocoax: A Device Architecture for Bioelectronic Investigations**
[Michael J Naughton](#), Boston College, MA
- 16:25-16:45** **A Comparative Study of the Fluorescence Spectral and the Dark-field Hyperspectral Analysis of the Interactions between AuNPs/AgNPs and GUVs**
[Qi Lu](#), Delaware State University, DE
- 16:45-17:05** **Hybrid Au@WS₂ Plasmonic Nanosensor for The Detection of 4-Mercaptobenzoic Acid (MBA) at Low Concentrations**
[Ramzi Maalej](#), University of Sfax, Tunisia
- 17:05-17:25** **Nanomechanical Metamaterials for Advanced Metrology Sensors**
[Hoa Thanh Le](#), Rowland Institute at Harvard, MA
- 17:25-17:45** **An Atomically-clean Suspended Graphene Substrate for Scanning Force Microscopy**
[Fanny Hiebel](#), Rowland Institute at Harvard, MA

Emerging Researcher

- 17:45-18:00** **A Versatile, Nanoaperture-based Platform for SERS and Plasmonic Biosensing**
[Mihai Suster](#), University of Warsaw, Poland
- 18:00-18:15** **Dynamical Band Gap Generation in Graphene Induced by Terahertz EM Fields - A Hope for Graphene-based Electronics**
[Julia Derlikiewicz](#), University of Warsaw, Poland



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