



6th NANO Boston Conference

April 20-22, 2020

Tentative Program

Venue

Newton Plaza Hotel Boston
320 Washington St, Newton, MA 02458
United States

08:00-10:00 Registrations
08:50-09:00 Conference Introduction

Plenary Session

@ Hall A

09:00-09:45 Impact of Nanotechnology on the Future of Pharmaceuticals and Nutraceuticals: The Road Toward Precision Medicines –Case Studies
Shaker A. Mousa, Albany College of Pharmacy and Health Sciences, NY

09:45-10:30 Nanotechnologies for Precision Medicine
Srinivas Sridhar, Northeastern University, MA

10:30-10:50 Sponsor Introduction

10:50-11:00 Coffee Break

Keynote Session

@ Hall A

11:00-11:30 Clinical Translation of A PLG Nanoparticle Delivery System for The Tolerogenic Therapy of Celiac Disease
Stephen D. Miller, Northwestern University Medical School, IL

11:30-12:00 Two Decades of Commercializing Nanomedicine with FDA Approval: Helping Real Patients Now
Thomas J. Webster, Northeastern University, MA

12:00-12:30 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

12:30-13:00 Nanoscale Imaging Using Differential Expansion Microscopy
Bhanu Jena, Wayne State University, WI

13:00-14:00 Lunch & Networking Session

Session 1: Nanomedicine & Nano Sensors

@ Hall A

Chairs: Stephen D. Miller, Northwestern University Medical School, IL
Hari Shanker Sharma, Uppsala University, Sweden

14:00-14:25 Impact of a Nutritional Supplement, Intralipid®, on the Delivery of Anti-cancer Nanodrugs
Chien Ho, Carnegie Mellon University, PA

14:25-14:50 AHR-Targeting Nanoparticles for the Induction of Antigen-Specific Tolerance
Francisco J. Quintana, Harvard Medical School, MA

14:50-15:15 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

15:15-15:40 Coffee Break

15:40-16:05 Design and Assembly of Functional Nanoscale Components
Neal Woodbury, Arizona State University, AZ

16:05-16:30 Localized delivery of Small Molecule Drugs and RNAi Therapeutics by Photoactivation of Tunable Nanoparticles
Anu Puri, Center for Cancer Research, NIH, MD

16:30-16:55 Polymer Nanoparticle based Tumor Targeted ChemoDynamic Therapy (CDT): A New Life for Fenton Chemistry
Andre Gesquiere, University of Central Florida, FL

17:00-18:30 Poster Presentations

Keynote Session

@ Hall A

- 08:45-09:15 **Microfluidics-enabled Soft Manufacture**
Li Qiu Wang, The University of Hong Kong, Hong Kong
- 09:15-09:45 TBA
Ahmed A. Busnaina, Northeastern University, MA
- 09:45-10:25 **Panel Discussion: "Lab Bench to the Market Shelf – Road to commercialization from Nanomedicine to Nano Energy"**

Session 3: Energy Storage and Novel Generation; Nanomaterial and Environmental Effects; Oil & Gas

- 10:25-10:50 **Highly Stretchable, Injectable, and Moldable Hydrogels**
Hai-Feng Ji, Drexel University, PA
- 10:50-11:15 **CNT Sensors: An example of Nano Technology Industrialized**
Steve Lerner, Alpha Szensor Inc., MA
- 11:15-11:40 **Application of Nanotechnology in Oil Industry: Reservoir-on-a-Chip Micromodel for Carbonate Reservoir**
Wei Wang, Aramco Services Company, MA
- 11:40-12:05 **Exploring 2-Dimensional Materials for Energy Applications**
Ram Gupta, Pittsburg State University, KS
- 12:05-12:30 **Mechanisms of Heat Transport at Nanoscale Solid-Liquid Interface**
Ethan Languri, Tennessee Tech University, TN
- 12:30-13:30 **Lunch & Networking Session**
- 13:30-13:55 **Synthesis, Processing and Advanced Applications of 3-Dimensional Graphene**
Vesselin Shanov, University of Cincinnati, OH
- 13:55-14:20 **Efficient MOFs-based Catalysts: From Surface/Interface Regulation to Performance Enhancement**
Ge Wang, University of Science and Technology Beijing, China
- 14:20-14:45 **Impact of Nanotechnology in the Upstream Petroleum Industry**
Simone Musso, Aramco Services Company, MA
- 14:45-15:05 **Mirrors for Earth's Energy Rebalancing (MEER:Reflection)**
Ye Tao, Rowland Institute at Harvard, MA
- 15:05-15:25 **Lithium Plating and Stripping Behavior Visualized Through In-Situ and Ex-situ Electron Microscopy**
Katharine L. Harrison, Sandia National Laboratories, NM
- 15:25-15:45 **Geometrical Impact on Magnetic Properties of Mesoscopic Scale Thick Nickel Thin Films**
Jean Ebothe, University of Reims Champagne Ardenne, France
- 15:45-16:05 **Development of a Facile and Efficient Electrochemical Sensor Based on CdSe/ZnS Core-shell Quantum Dots**
Mohammad Rezaul Karim, King Saud University, Saudi Arabia
- 16:05-16:25 **Green and Sustainable Nano Particles Synthesized for Diverse Applications**
Doga Kavaz, Cyprus International University, Turkey
- 16:25-16:45 **Development of Metal/ceramic Nano-multilayers as Low-melting Point Brazing Materials**
Peter Baumli, University of Miskolc, Hungary

- 16:45-17:05 Photocatalytic Degradation of Pirimicarb by Pt Doped AgInS₂ Nanoparticles
Chung-Shin Lu, National Taichung University of Science and Technology, Taiwan
- 17:05-17:25 Nanomechanical Metamaterials for Advanced Metrology Sensors
Hoa Thanh Le, Rowland Institute at Harvard, MA
- 17:25-17:40 Active Reduction of p-nitrophenol by Silver Nanoparticle on Fe₃O₄/ATO Nanocomposite
Hem Prakash Karki, Chonbuk National University, South Korea
- 17:40-17:55 QCM Gas Sensor for Volatile Organic Compounds Detection using GO/TiO₂ Composite
Savidya Jayawardena, Shizuoka University, Japan
- 17:55-18:10 Anisotropic Core-Shell Silica Particles as a Platform for Drug Delivery
Akanksha Dohare, University of Tuebingen, Germany
- 18:10-18:25 Silver Film Structures: Fabrication, Characterization and SERS Application in Sensing of Inorganic Contaminants
Aransselly Quiroz, Pontifical Catholic University of Peru, Peru

DAY-2 • TUESDAY

**April 21
2020**

Session 2: Nanomedicine & Nano Sensors

@ Hall B

- Chair:** Hari Shanker Sharma, Uppsala University, Sweden
- 10:30-10:55 Interferometric Microscopy for Detection and Visualization of Biological Nanoparticles
Selim Unlu, Boston University, MA
- 10:55-11:20 Mechanisms of Nanopulse Stimulation-Induced Immunity
Stephen J. Beebe, Old Dominion University, VA
- 11:20-11:45 Structured Thin Metal Films for Bioanalysis
Frantisek Foret, Czech Academy of Sciences, Institute of Analytical Chemistry, Czech Republic
- 11:45-12:10 High-Surface Silicate Nanoplatelets Enabling Quorum Quenching Biofunctions of Anti-MRSA, Anti-Flu, Nanocarrier and SERS
Jiang-Jen Lin, J&A Technology, Taiwan
- 12:10-12:35 Traumatic Brain Injury Induced Pathology. Neuroprotection by Nanowired Drug and Antibodies
Ala Nozari, Harvard Medical School, MA
- 11:15-11:40 Intracellular SERS Probes to Monitor Viral Evolution
Laura Fabris, Rutgers University, NJ
- 11:40-12:05 Mobile Health Diagnostics with Applications in Medicine
Hadi Shafiee, Harvard Medical School, MA
- 12:05-12:30 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
- 12:30-13:30 Lunch & Networking Session**
- 13:30-13:55 If Defects in Nanocarrier Coating are the Reason for the Failure in Targeted Drug Delivery?
Igor Sokolov, Tufts University, MA

- 13:55-14:20 Animal Simulations Facilitate Smart Drug Design and Hazard Assessment Through Prediction of Nanomaterial Transport to Individual Tissue Cells
[Andre Gesquiere](#), University of Central Florida, FL
- 14:20-14:40 Traumatic Brain Injury Exacerbates Parkinson's Disease Neuropathology. Neuroprotective Effects of Co-administration of TiO₂ Nanowired Mesenchymal Stem Cells and Cerebrolysin
[Aruna Sharma](#), Uppsala University, Sweden
- 14:40-15:00 Dental implants: New Osseointegration Concepts Ultra-nano-crystalline Diamond Coating (UNCD)
[Gilberto Lopez](#), Bioingeniería Humana Avanzada, Mexico
- 15:00-15:20 Theoretical and Experimental Drug Delivery by a Based Carbon Nanotubes Reusable Nanovector
[Bahoueddine TANGOUR](#), University of Tunis El Manar, Tunisia
- 15:20-15:40 Development of Novel Core-Shell Molecularly Imprinted Polymer Target Glycan-Based Biomarkers for Cancer Diagnosis
[Rahma Hany](#), Malmo University, Sweden
- 15:40-16:00 Molecular- to Macro- Energy Absorption Mechanisms in a Biological Body Armour Illuminated by in-situ Diffractive Pseudo-tomographic X-ray Imaging
[Yi Zhang](#), Chinese Academy of Science, China
- 16:00-16:20 Gold Nanobipyramids as Optical Coherence Tomography Contrast Agents for Multiplexing Tumor Lymphology Studies in the Second Near Infrared Window
[Peng Si](#), Stanford University, CA
- 16:20-16:40 Novel Conceptualization of BSA-liposome Interactions: Redefining the Protein Corona
[Sarah McColman](#), Ryerson University, Canada
- 16:40-17:00 Potentiation 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
- 17:00-17:20 First Steps to Nanomedicine: Assessing Interactions between Polystyrene Nanoparticles and Albumin Proteins
[Selena Osman](#), Ryerson University, Canada
- 17:20-17:40 Optimized Synthesis, Characterization, Antioxidative, Antibacterial, Anticancer Cells Proliferation and *in vitro* Release Kinetics Study of Chitosan and N, N, N-Trimethyl Chitosan Nanoparticles Loaded with *Ocimum gratissimum* Essential Oil
[Confidence Onyebuchi](#), Cyprus International University, Turkey

Keynote Session

© Hall B

08:30-09:00 Polymer-based Metamaterials
Svetlana V. Boriskina, Massachusetts Institute of Technology, MA

Session 4: Nano Electronics and Photonics

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Chair: Svetlana V. Boriskina, Massachusetts Institute of Technology, MA

09:00-09:25 Nanocoax: A Device Architecture for Bioelectronic Investigations
Michael J Naughton, Boston College, MA

09:25-09:50 Computational Investigation on the Binding of Naturally Occurring Acyclic α -Amino Acids with Graphene
Tandabany Dinadayalane, Clark Atlanta University, GA

09:50-10:15 Novel Functional Nanomaterials Combined by Magnetism and Optics
Yukiko Yasukawa, Chiba Institute of Technology, Japan

10:15-10:30 Coffee Break

10:30-10:50 2D MoS₂ Patterning from Solution-processed Precursor with CVD-free Process
Woon-Seop Choi, Hoseo University, South Korea

10:50-11:10 Plasmonic Grating Integrated Polarization Insensitive Single-photon Detectors
Maria Csete, University of Szeged, Hungary

11:10-11:30 Magnetic Recording Media: Comparative Analysis and Challenges
Horia Gavrila, University "Politehnica" of Buchrest, Romania

11:30-11:50 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

11:50-12:10 Superradiance of Broken-symmetry SiV Diamond Color Center Arrays in Concave Plasmonic Nanoresonators
Maria Csete, University of Szeged, Hungary

12:10-12:30 An Atomically clean Suspended Graphene Substrate for Scanning Force Microscopy
Fanny Hiebel, Rowland Institute at Harvard, MA

12:30-12:45 A Versatile, Nanoaperture-based Platform for SERS and Plasmonic Biosensing
Mihai Suster, University of Warsaw, Poland

12:45-13:00 Dynamical Band Gap Generation in Graphene Induced by Terahertz EM Fields - A Hope for Graphene-based Electronics
Julia Derlikiewicz, University of Warsaw, Poland

13:00-13:15 Best Poster Presentations Award - Closing Remarks and Discussion



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