

NanoFlorida 2024 International Conference

April 19-21, 2024

FAMU Auditorium & Turnbull Conference Center

Friday, April 19

5:30 – 5:45

Registration

1st Floor, College of Pharmacy and Pharmaceutical Sciences, FAMU

5:45 – 7:15

Welcome Reception (Session 1)

2nd Floor, College of Pharmacy and Pharmaceutical Sciences, FAMU

Opening Remarks:

Dean of College of Pharmacy, Johnnie Early, FL A&M Univ

Conf Co Chair, Mandip Sachdeva, FL A&M Univ

Two Decades Nanotechnology Revolution: A fire-side chat on 'UniLabs to Products'

Moderator: **Shyam Mohapatra, Univ of South Florida**

Panelists:

Nasser Nassiri Koopaei Univ of Florida, Gainesville;

Brian McMillan Bravado Pharma, Tampa Florida;

Jeff Whalen FL State Univ, Tallahassee

Saturday, April 20th

8:00 – 9:00

Registration and Poster Setup

Place: Room 208 and Hallway

9:00 – 10:45

Conference Inauguration (Session 2) (Room 208)

Moderators: Steven Lenhart & Mandip Sachdeva

Dignitaries Welcome: (Dr Lenhart, Dr Mohapatra, Dr Sachdeva)

9:00 – 9:15

Charles Weatherford – FAMU VP for research

Michael Shatruk - Florida State Univ

Bill proctor - Leon County Commissioner

(Photo Session)

Keynote:

9:15 – 9:45

Adam Braunschweig: Univ of FL - "Hypersurface Photolithography: A new approach to creating multidimensional hypersurfaces"

9:45 – 9:50

Break

Parallel Sessions

3: Nanomedicine (Room 208)

9:55 – 11:10

4: Nanophysics/Quantum Engineering (Room 205)

5: Nanophysics/Quantum Engineering (Room 201)

Session 3: Nanomedicine (Room 208)

Moderators: Ramesh Kenchappa

9:55 – 10:20

Subhra Mohapatra: Univ of South FL- "A nanomedicine approach to treating Long COVID: What's in the horizon"

10:20 - 10:30

Coffee Break

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| 10:30 - 10:55 | Andrea Raymond: <i>FL International Univ-</i> “ <i>Magnetolectric exosomal-EV latency targeting(MELT) Nanotherapeutic for the eradication of HIV by the Block-Lock-and-Kill strategy</i> ” |
| 10:55 - 11:08 | Jorge David Tovar Castro <i>Univ of Miami-</i> “ <i>Novel Nanodrug Platform for Pharmacologically Inducing Therapeutic Hypothermia (TH) After Traumatic Brain Injury (TBI)</i> ” |
| Session 4: Nanophysics/Quantum Engineering (Room 205) | |
| <i>Moderators: Marc Knecht</i> | |
| 9:55 – 10:20 | Guangxin Ni: <i>FL State Univ-</i> “ <i>3 Area -Scanning Nano-Optical Imaging of Quantum Materials</i> ” / |
| 10:20 - 10:32 | Shyam Raj Karullithodi <i>FL State Univ-</i> “ <i>Exploring the magnetic and transport properties of the new bulk ferromagnets FeCr₃Te₆ and Fe₄Ga</i> ” |
| 10:32 - 10:42 | Coffee Break |
| 10:42 - 10:56 | Mohammad Irfan <i>FL State Univ-</i> “ <i>Robust Topological Surface States in YbB₁₂ A Comparative Study with SmB₆ using planar tunneling spectroscopy</i> ” |
| 10:56 - 11:08 | Omair Faqah <i>FL Atlantic Univ-</i> “ <i>Rapid Testing Platform for HIV Detection</i> ” |
| Session 5: Nanobiotechnology / Nanophysics (Room 201) | |
| <i>Moderators: Jack Judy</i> | |
| 9:55 – 10:20 | Laura Greene: <i>FL State Univ-</i> “ <i>Novel Electron Pairing in the Unconventional Superconductor CeCoIn₅</i> ” |
| 10:20 - 10:32 | Jaideep Katuri <i>FL State Univ-</i> “ <i>Control of cohesive states in colloidal chiral fluids through phoretic interactions</i> ” |
| 10:32 - 10:42 | Coffee Break |
| 10:42 - 10:56 | Arthur Rech Tondin <i>Univ of Miami-</i> “ <i>Enhanced Immunomodulation in Allogeneic Transplantation: Harnessing Mesenchymal Stem Cells with a NanoFibril Rapamycin System for Targeted Inflammat...</i> ” |
| 10:56 - 11:08 | Dr. Navneet Kaur <i>FL State Univ-</i> “ <i>Comparative Analysis of Microparticle Uptake Role of Particle Anisotropy in 2D and 3D Cell Culture</i> ” |
| 11:10 – 11:50 | Lunch Break |
| FAN Steering Committee Meeting (Room 201) | |
| 11:50 - 1:30 | Luncheon session (Room 208) TWO DECADES OF NANOTECHNOLOGY REVOLUTION |
| <i>Moderators: Steven Lenhart & Mandip Sachdeva</i> | |
| 12:10 - 12:35 | Sylvia Daunert: <i>Univ of Miami -</i> “ <i>Nanomedicine, successes, challenges & the frontier</i> ” |
| 12:35 - 1:00 | Ratnesh Lal: <i>UC San Diego -</i> “ <i>Atomic Force Microscope & Nano-Imaging Tools</i> ” |
| 1:00 - 1:25 | Shyam Mohapatra: <i>Univ of South FL -</i> “ <i>Nanotechnology and AI intersection: a new frontier</i> ” |
| 1:30 - 1:45 | Photo session |
| Keynote 1:50 - 2:20 | Jason White Conn Gvt (zoom) “ <i>Nanobiotechnology-based Strategies for Enhanced Crop Stress Resilience</i> ” |
| 2:20 - 3:05 | Parallel Sessions 6: Simulation / AI in Nano (<i>Room 208</i>) 7: Nanoagriculture / Nanomaterials (<i>Room 205</i>) 8: Nanochemistry / Devices for Biosensing (<i>Room 201</i>) |
| Parallel Session 6: Simulation / AI in Nano (Room 208) | |
| <i>Moderators: Sapna Deo</i> | |
| 2:20 - 2:45 | Prem Chapagain: <i>FL International Univ-</i> <i>From structure prediction to nanomolecular design: the rapidly evolving landscape of molecular modeling and simulations</i> ” |

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| 2:45 - 2:57 | Belal Jahannia <i>Univ of FL- “Binarized neural networks”</i> |
| 2:57 - 3:09 | Coffee Break |
| 3:09 - 3:21 | Jiachi Ye <i>Univ of FL- “Demultiplexing structured beams using hybrid optical-electronic neural network”</i> |
| 3:21 - 3:33 | Sophie Jermyn <i>FL State Univ- “Dynamics of Rigid Achiral Magnetic Microswimmers in Shear-Thinning Fluids”</i> |
| Parallel Session 7: Nanoagriculture / Nanomaterials (Room 205) | |
| <i>Moderators: Satya Prakash</i> | |
| 2:20 - 2:45 | Swadesh Santra <i>Univ of Central FL- “Nanotechnology for crop protection”</i> |
| 2:45 - 2:57 | Melissa Deinys <i>Univ of Central FL- “Nanoformulation-based Intervention for Mitigating Pestalotiopsis spp. in Mangrove Die-off A Sustainable Approach for Ecosystem Conservation”</i> |
| 2:57 - 3:09 | Coffee Break |
| 3:09 - 3:21 | Supun Attanayake <i>Univ of South FL- “Size-Tunable Magnetite Superparticles for Magnetic Hyperthermia Therapy”</i> |
| 3:21 - 3:33 | Utkarsh Misra <i>Univ of South FL- “Reduced Graphene Oxide A New Contender for Thermal Management in RF IC Packaging”</i> |
| Parallel Session 8: Nanochemistry / Devices for Biosensing (Room 201) | |
| <i>Moderators: Subhra Mohapatra</i> | |
| 2:20 - 2:45 | Ajeet Kaushik <i>FL Polytechnic Univ- “Smart sensor for health and environmental management”</i> |
| 2:45 - 2:57 | Sawyer Chang <i>Univ of Central FL- “Pragmatic synthesis of loaded tea-derived polymer-polyphenol particles”</i> |
| 2:57 - 3:09 | Coffee Break |
| 3:09 - 3:21 | Yusuf Muhammed <i>FL State Univ- “Drug-induced Cell Death and its Heterogeneity in Single Lung Adenocarcinoma Cells Observed using Scanning Ion Conductance Microscopy”</i> |
| 3:21 - 3:33 | Ana Ramirez <i>FL State Univ- “Functionalization of Nanopipettes with Aptamers for Biosensing of Biomolecules”</i> |
| 3:40 - 6:30 | Poster Sessions 1 and 2 (Hallway) |
| 3:40 - 5:05 | <i>Poster Session 1</i> |
| 5:05 - 6:30 | <i>Poster Session 2</i> |
| *5.00-6:30 | Refreshments (Hallway) |

Sunday, April 21

Keynote: **Elias Sayour** *Univ of FL- (zoom) “Unlocking cancer immunotherapy with RNA-nanoparticle vaccines”*
9:00 – 9:30

9:30 – 10:20 **University – Industry Education Collaboration (Room 208)**

Moderators: Ratnesh Lal

9:30 – 9:55 **Shyam Mohapatra (FAN- Summer Internship)**

9:55 – 10:20 **Ramesh Kenchappa (Lonza)**

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| 10:25 – 11:50 | Parallel Sessions |
| | 9: Nanomedicine (<i>Room 208</i>) |
| | 10: Nanobiotechnology & Cancer Therapeutics (205) 11: Nanoenergy/Nanomaterials/Nanobiotechnology (<i>Room 201</i>) |
| Parallel Session 9: Nanomedicine (<i>Room 208</i>) | |
| <i>Moderators: Ajeet Kaushik</i> | |
| 10:25 - 10:50 | Nasser Koopaei <i>Univ of FL- “Novel exosomes for targeted delivery of therapeutic cargos”</i> |
| 10:50 - 11:02 | Anatasian Estephan <i>Univ of South FL- “Potential of CBD and Nano-CBD as adjunct therapy for Epilepsy“</i> |
| 11:02 - 11:14 | Break |
| 11:14 - 11:26 | Mounika Aare <i>FL A&M Univ - “CBD camel milk-derived exosome formulation with enhanced bioavailability for the treatment of Breast cancer”</i> |
| 11:26 - 11:38 | Aakash Nathani <i>FL A&M Univ - “Combined role of interleukin-15 stimulated natural killer cell-derived extracellular vesicles and carboplatin in Osimertinib resistant H1975 lung cancer with...”</i> |
| 11:38 - 11:50 | Stephanie Herrera <i>Univ of FL- “Supramolecular peptide-protein granule system for intracellular co-delivery of proteins”</i> |
| Parallel Session 10: Nanobiotechnology & Cancer Therapeutics (<i>Room 205</i>) | |
| <i>Moderators: Steven Lenhart</i> | |
| 10:25 - 10:50 | Satya Prakash <i>McGill Univ - “Nano siRNA formulation as Head and Neck Cancer and Lung Cancer Therapeutics”</i> |
| 10:50 - 11:02 | Torus Washington <i>UC San Diego- “Bowl-Ing for Cancer Drug Delivery Success Striking Down Lung Cancer with Silica Nanobowls”</i> |
| 11:02 - 11:14 | Break |
| 11:14 - 11:26 | Sophia Claymore <i>Univ of South FL- “Utilization of Bixen-loaded Nanoparticles to Ameliorate E-Cig-mediated Dysregulation of Airway iNOS Pathway”</i> |
| 11:26 - 11:38 | Yating Mao <i>FL State Univ- “Microrheological Characterization of Pseudomonas aeruginosa and Staphylococcus aureus Biofilms”</i> |
| 11:38 - 11:50 | Qi Wang <i>FL State Univ- “Fabrication and Propulsion of Erythrocyte-Based Micromotors in Low Reynolds Number Fluids”</i> |
| Parallel Session 11: Nanoenergy / Nanomaterials / Nanobiotechnology (<i>Room 201</i>) | |
| <i>Moderators: Arti Vashist</i> | |
| 10:25 - 10:50 | Nikki Tjahjono <i>“Engineering a novel chemigenetic fluorescent biosensor for multiplexed glutamate imaging”</i> |
| 10:50 - 11:02 | Ryan Green <i>Univ of South FL- “Potential for Cannabidiol to Improve Lung Cancer Patient Treatment, Rehabilitation, and Quality of Life”</i> |
| 11:02 - 11:14 | Break |
| 11:14 - 11:26 | Md Zakariya Mohayman <i>Univ of Central FL- “Exploring the Impact of Lithium Concentration on the Mechanical Properties of Li6PS5Cl Solid Electrolytes for All-Solid-State Lithium Batt”</i> |
| 11:26 - 11:38 | Ahmed Hegazy <i>Univ of Central FL- “Wafer-scale development, characterization, and high temperature stabilization of epitaxial Cr2O3 films grown on Ru(0001)”</i> |
| 11:38 - 11:50 | Samaiyah Mason <i>FL A&M Univ- “The Development of BNNTTi2C3 Silicon Carbide Composite Nanomaterials with Enhanced Thermal and Electronic Properties”</i> |
| 12:00 – 1:30 | Poster Prizes and Closing Remarks (<i>Room 208</i>) |