

NANOBIOTECK – 2018

25th – 27th October 2018

Jawaharlal Nehru Auditorium

All India Institute of Medical Sciences, New Delhi

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| Day 1 | 25th October 2018 |
| 08:30 AM – 09:30 AM | REGISTRATION |
| 09:15 AM – 09:30 AM | <p style="text-align: center;">OPENING OF NANOBIOTECK - 2018</p> <p>Welcome - Prof Amit Dinda, General Secretary, ISNM Address - Dr Dhananjay Tiwary, DBT, Gol Remarks - Prof Y K Gupta, President, ISNM</p> |
| 09:30 AM – 10:05 AM Plenary Talk - 1 | <p>Nanobiotechnology and its impact on Healthcare : Current Perspectives and Future Directions</p> <p><i>Prof. P. N. Prasad, State University of New York at Buffalo, USA</i></p> |
| 10:05 AM – 10:40 AM Plenary Talk - 2 | <p>Challenges in Regulatory Research for Safety Evaluation of Nanotechnology Products</p> <p><i>Dr. Anil Patri, US-FDA</i></p> |
| 10:40 AM – 11:00 AM | HIGH TEA |
| 11:00 AM – 02:00 PM | Session I – Nanotherapeutics & Diagnostics |
| <p style="text-align: center;">Chairpersons: <i>Prof. Randeep Guleria, AIIMS and Prof. Y. K. Gupta, THSTI</i></p> <p style="text-align: center;">Rapporteur: <i>Dr. Priyanka Gupta, AIIMS</i></p> | |
| <p>The targeted nanocarrier based drug delivery is in medical practice for more than a decade. Current nanomedicine research focuses on multifunctional nanovehicle and multimodal therapy based on understanding of the disease biology at subcellular and molecular level. Similarly nanoplatform for molecular sensing has a great potential for diagnostic application in-vivo & in-vitro. This session explores the recent advances of nano-intervention in diagnosis and therapy which has a potential to bring in radical changes in current medical practice.</p> | |
| 11:00 AM – 11:40 AM | <p>Translating molecular bioengineering from the lab to the patient</p> <p><i>Prof. Ashutosh Chilkoti, Duke University, USA</i></p> |
| 11:40 AM – 12:10 PM | <p>Enhanced Thermal Effect Due To Gold Nano-Particles During MR-Guided High Intensity Focused Ultrasound HIFU Procedures Using A Mouse-Tumor Model</p> <p><i>Prof. Rupak Banerjee, University of Cincinnati, USA</i></p> |

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| 12:10 PM – 12:40 PM | Decoding the molecular pathology of breast cancer with Raman spectroscopy <i>Dr. Ishan Barman, John Hopkins</i> |
| 12:40 PM – 01:10 PM | Pulmonary delivery of vaccines against tuberculosis- Nano- or micron: Does size matter? <i>Dr. Pavan Muttil, University of New Mexico</i> |
| 01:10 PM – 01:20 PM | <i>Aptamer tagged stimuli-responsive nanoparticles: A potential targeted drug delivery system for treatment of triple negative breast cancer</i> <i>Prof. Dhirender Katti, IIT - Kanpur</i> |
| 01:20 PM – 01:30 PM | Interfacial XNA Probes for Nanomechanical Sensing of Nucleic Acid Sequences <i>Prof. Rupa Mukhopadhyay, IACS, Kolkata</i> |
| 01:30 PM – 02:00 PM Panel Discussion | Emerging Needs for Nanotherapeutics Moderator: Dr. Anil Mishra, INMAS Panelists: Chair and Speakers from the session Discussants: Prof. Govind Makharia, Dr. Karan Madan, Prof. Sanjeev Sinha, Prof. Pradeep Venkatesh, Dr. Padma Devarajan |

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| 02:00 PM – 03:00 PM | LUNCH |
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| 03:00 PM – 04:30 PM | INAUGURAL SESSION |
| 03:00 PM – 03:10 PM | Arrival of Dignitaries, Felicitation and Lamp Lighting |
| 03:10 PM – 03:15 PM | Welcome Address <i>Prof. A. K. Dinda, General Secretary, Indian Society of Nanomedicine</i> |
| 03:15 PM – 03:20 PM | Theme and Background of NANOBIOTECK – 2018 <i>Dr. Dhananjay Tiwary, DBT</i> |
| 03:20 PM – 03:27 PM | Address by NANOBIOTECK – 2018 Chair <i>Prof. Randeep Guleria, AIIMS, New Delhi</i> |
| 03:27 PM – 03:34 PM | Address by Adviser, Department of Biotechnology <i>Dr. Suchita Ninawe</i> |
| 03:34 PM – 03:41 PM | Address by Chairman, Nano biotechnology Task Force <i>Prof. K. N. Ganesh, Director, IISER - Tirupati</i> |

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| 03:41 PM – 03:48 PM | Address by President Indian Society of Nanomedicine <i>Prof. Y. K. Gupta</i> |
| 03:48 PM – 03:55 PM | Address by Director General, ICMR <i>Prof. Balram Bhargava</i> |
| 03:55 PM – 04:02 PM | Address by Secretary, DBT <i>Prof. Renu Swaroop</i> |
| 04:02 PM – 04:09 PM | Address by Secretary, DST <i>Prof. Ashutosh Sharma</i> |
| 04:09 PM – 04:15 PM | Launching of Proceedings of NANOBIOTECK – 2018 and Felicitation of Dignitaries. |
| 04:15 PM – 04:28 PM | Address by Chief Guest <i>Prof. V. K. Paul, Member, NITI Aayog, Govt. of India</i> |
| 04:28 PM – 04:30 PM | Vote of Thanks – Dr. Ambarish Ghosh |
| 04:30 PM – 05:00 PM | HIGH TEA |
| 05:00 PM – 05:30 PM | Nanobiotech Research and Innovations in India <i>Dr. Dhananjay K Tiwary, DBT, Gol</i> |
| 05:30 PM – 06:00 PM | Science at the Nanoscale for Potential Technology <i>Prof. Arun Chattopadhyay, IIT - Guwahati</i> |
| 06:00 PM – 07:15 PM | Poster Session – I |
| 07:15 PM – 08:00 PM | Meet the Professor |
| 08:00 PM Onwards | Networking Dinner |

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| Day 2 | 26th October 2018 |
| 08:30 AM – 09:30 AM | REGISTRATION |

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| 09:30 AM – 12:15 PM | Session II – Nanobots & Artificial Intelligence |
| Chairperson: <i>Prof. Anurag Srivastava, AIIMS</i> Rapporteur : <i>Dr. Neetu Singh, IIT - Delhi</i> | |
| <p>This session deals with the fascinating concept of having nanoscale robots (<i>nanobots</i>) which can travel inside human body such as to carry out various diagnostic and therapeutic tasks. The nanobots of the future will require input from multiple disciplines, e.g. incorporate sensing capabilities to find and monitor diseased organs, transmit data wirelessly that can be analysed using artificial intelligence (AI), and finally deliver therapeutics with higher accuracy than currently available techniques. A system of intelligent blood-swimming nanobots can surely lead to better treatment and monitoring of patients, which may be a reality in near future.</p> | |
| 09:30 AM – 10:15 AM | Science and fiction: From micromotors to biomedical applications <i>Prof. Oliver Schmidt, Institute for Integrative Nanosciences, Germany</i> |
| 10:15 AM – 11:00 AM | 20 Years of Commercializing Medical Devices Using Nanotechnology <i>Prof. Thomas Webster, Northeastern University, USA</i> |
| 11:00 AM – 11:45 AM | Multifunctional biohybrid magnetite microrobots for imaging-guided therapy <i>Dr. Li Zhang, Advanced Nanomaterials & Microrobotics Laboratory, China</i> |
| 11:45 AM – 12:05 PM | AI Initiative: Government's Perspective <i>NITI AAYOG, DST and DBT</i> |
| 12:05 PM – 12:30 PM Panel Discussion | Emerging Technologies in Healthcare Moderator: <i>Dr. Ambarish Ghosh, IISc, Bangalore</i> Panelist: <i>Chair and Speakers from the Session</i> Discussants: <i>Prof. Ashish Suri, Prof. Meenu Bajpau, Prof. Rakesh Kumar, Prof. Smriti Hari, Dr. Subhasish Banerjee</i> |

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| 12:30 PM – 01:45 PM | Research Ideas in Nanobiotechnology |
| Chairperson: Prof. Tapas Kundu, CDRI | |
| 12:30 PM – 12:40 PM | Green Synthesis Of Metal Nanocomposites Using CHFJ: Study That Environs Identification, Optimization, Stability, Characterization, And Antimicrobial Activity Of Biogenic Nanoparticles <i>Dr. Neeraj Kumar, AIMST University, Malaysia</i> |
| 12:40 PM – 12:50 PM | Surface Modification Strategies to Modulate Immune Cell Uptake of Particulates <i>Dr. Siddharth Jhunjunwala, IISc - Bangalore</i> |
| 12:50 PM – 01:00 PM | Emerging approaches for designing peptide based therapeutics <i>Dr. Rituparna Sinha Roy, IISER – Kolkata</i> |
| 01:00 PM – 01:10 PM | Natural and bioinspired nanostructured bactericidal surfaces <i>Dr. Prosenjit Sen, IISc, Bangalore</i> |
| 01:10 PM – 01:20 PM | Pathway driven self-assembly to soft nanostructures in peptide amphiphiles <i>Dr. Asish Pal, INST, Mohali</i> |
| 01:20 PM – 01:30 PM | Non-invasive Imaging of Therapeutic Effect Induced by IL-4 Receptor Targeting Elastin Like Polypeptide (AP1-ELP-KLAK) in Glioblastoma Bearing Mouse Tumor Model <i>Dr. Thoudam Debraj Singh, AIIMS, New Delhi</i> |
| 01:30 PM – 01:40 PM | Gold Nanorattles: An Emerging Nanoplatfrom For Sensing And Theranostic Applications <i>Dr. Amit Jaiswal, IIT - Mandi</i> |
| 01:40 PM – 02:30 PM | LUNCH |

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| 02:30 PM – 05:00 PM | Session III – Regenerative Medicine |
| Chairperson: <i>Prof. Shantikumar Nair, AIMS</i> Rapporteur: <i>Dr. Durba Pal, IIT - Ropar</i> | |
| <p>The concept of “Stem Cell Therapy” has transformed into rapidly progressive medical speciality “Regenerative Medicine” which combines Polymer Science, Nanoscience and Cell Biology to replace the diseased tissue or organs. This session analyses the current developments in this field which can be used in bedside practice.</p> | |
| 02:30 PM – 03:15 PM | Tissue Nanotransfection and Therapeutic Lipid Nanoparticles <i>Prof. Chandan K. Sen, Indiana University, USA</i> |
| 03:15 PM – 03:45 PM | Disease-responsive Biomaterials in Protecting Transplanted Organs <i>Dr. Praveen Vemula, InStem - Bengaluru</i> |
| 03:45 PM – 04:10 PM | Decellularized Scaffolds for Tissue Engineering Applications <i>Prof. Narayan Mishra, IIT - Roorkee</i> |
| 04:10 PM – 04:30 PM | Nitric Oxide Delivery in Neuronal Cells via Peptide Scaffolds <i>Prof. Sandeep Verma, IIT - Kanpur</i> |
| 04:45 PM – 05:00 PM Panel Discussion | Regenerative Medicine – Where do we stand? Moderator: <i>Prof. Maneesh Singhal, AIIMS, New Delhi</i> Panelists: <i>Chair and Speakers from the session</i> Discussant: <i>Prof. Rajesh Malhotra, Prof. Sujay Khandpur, Prof. Radhika Tandon, Prof. Sujata Mohanty, Dr. Hemanga Bhattacharya, Prof. Veena Koul, Dr. Jyostendu Giri, Dr. Piyush Ranjan</i> |
| 05:00 PM – 05:30 PM | TEA BREAK |
| 05:30 PM – 07:00 PM | <ul style="list-style-type: none"> Poster Session – II, GBM of ISNM |

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| Day 3 | 27th October 2018 |
| 08:30 AM – 09:30 AM | REGISTRATION |
| 09:30 AM – 12:30 AM | Session IV – Nanoimmunotherapeutics |
| <p>The engineered nanoparticles in the dimension of virus can be modified to interact specifically with immune cells modulating their response which can be beneficial for the cure of the disease. Thus nano-intervention as a immunomodulator has a wide renage of therapeutic potential ranging from cancer, autoimmune diseases and prevention of diseases. This session explores the emerging possibilities in this area.</p> | |
| <p style="text-align: center;">Chairperson: <i>Prof. G. K. Rath, AIIMS</i> Rapporteur: <i>Dr. Geetika Singh, AIIMS</i></p> | |
| 09:30 AM – 10:15 AM | <p>Recent advances in immunotherapy of cancer <i>Prof. Romero Pedro, University of Lausanne, Switzerland</i></p> |
| 10:15 AM – 10:45 AM | <p>Importance of data integration in translational cancer Research <i>Dr. Binay Panda, Ganit Lab, Bengaluru</i></p> |
| 10:45 AM – 11:15 AM | <p>Dendritic cell vaccine using tumour related proteins as antigens <i>Dr. T. Rajkumar, Cancer Institute, Adyar</i></p> |
| 11:15 AM – 11:45 AM | <p>Novel Nano-platforms for Cancer-Immunotherapy <i>Prof. Manzoor K, AIMS – Kochi</i></p> |
| 11:45 AM – 12:15 PM | <p>Nanointervention for vaccine development <i>Prof. A. K. Dinda, AIIMS, New Delhi</i></p> |
| 12:15 PM – 12:30 PM Panel Discussion | <p>Translational Potential of Nanoimmunotherapeutics Moderator: <i>Prof. Uma Kumar, AIIMS</i> Panelists: Chair and speakers from the sessio <i>Prof. Lalith Kumar, Dr. Pragyan Acharya, Dr. Uma Kanga,</i></p> |
| 12:30 PM – 01:30 PM | LUNCH |

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| 01:30 PM – 03:30 PM | Session IV - Regulatory Research & Commercialization of Nanoproducts |
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The complex interaction of nanosystems with different cellular systems and in in-vivo conditions can not be assessed comprehensively by currently available tests and schedule Y which is followed for a new drug molecule (IND). The situation is more difficult with metal composites, diagnostic agents and other systems (Non-Biological Complex Drug/ NBCD). This session delve into the need of Regulatory framework for commercialisation of Nanoproducts with deliberations from the USFDA experts

Chairperson: *Dr. S. Eswara Reddy, DCGI*

Rapporteur: *Dr. Pooja Gupta, AIIMS*

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| 01:30 PM – 02:00 PM | Delineating Translational Innovation Pathways for Nanomedicine Research <i>Dr. Katherine Tyner, US-FDA</i> |
| 02:00 PM – 02:30 PM | FDA's Approach for regulation of Nanotechnology Products <i>Dr. Anil Patri, US-FDA</i> |
| 02:30 PM – 02:50 PM | Nano-safety Guideline : Indian Scenario <i>Prof. Amit Dinda, AIIMS, New Delhi</i> |
| 02:50 PM – 03:10 PM | DCGI's Viewpoint on Nanosafety Regulation |
| 03:10 PM – 03:30 PM Panel Discussion | Formulation of safety guideline: Challenges in Indian Scenario Moderator: Prof. Y. K. Gupta, THSTI Panelist: Chair and Speakers from the session Clinician's Prespective: Clinical Experts: Discussants: Representative from Academics, Industries and Govt. agencies (DBT, DST, ICMR, FSSAI) |

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| 03:30 PM – 04:00 PM | VALEDICTORY SESSION |
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