

2019 INTERNATIONAL SYMPOSIUM ON NANOBIO TECHNOLOGY

FROM BASIC SCIENCE
TO CLINICAL RELEVANCE :

NANO-THERANOSTICS, NANOCARRIER DELIVERY, AND NANOSAFETY

February 27 – March 1, 2019

Nanyang Executive Centre (NEC),
Nanyang Technological University, Singapore



12th Annual Symposium on Nanobiotechnology

From basic science to clinical relevance: nano-theranostics, nanocarrier delivery and nanosafety

Wednesday, February 27th

8:00 – 8:30 am **Registration**

8:30 – 8:50 am **Welcome and Introduction**

Session 1 Polymer Nanotherapeutics

Moderated by: Andrea Kasko

8:50 – 9:30 am **Kazunori Kataoka** – Professor, Department of Bioengineering, The University of Tokyo; Director General, Innovative Center of NanoMedicine (iCONM)
Self-assembled Supramolecular Nanosystems for Smart Diagnosis and Targeted Therapy of Intractable Diseases

9:30 – 9:55 am **Jos Paulusse** – Assistant Professor, Biomolecular Nanotechnology, University of Twente
Versatile Single Chain Polymer Nanoparticles in Controlled Drug Delivery

9:55 – 10:20 am **Wooyoung Shim** – Associate Professor, Institute for Basic Science (IBS), Yonsei University
Conducting Polymer Electrode for Biological Applications

10:20 – 10:50 am **Break**

Session 2 Non-Polymer Nanotherapeutics

Moderated by: Daniel Gonzalez

10:50 – 11:30 am **Leonard Rome** – Professor, Biological Chemistry; Associate Director, California NanoSystems Institute (CNSI), UCLA
Vault Nanoparticles for Immuno-oncology and Therapeutic Vaccines

11:30 – 11:55 am **Jeroen J.L.M. Cornelissen** - Professor, Biomolecular Nanotechnology, MESA+ Institute, University of Twente

Protein Cages as New Tools for Nanomedicine

11:55 am – 12:20 pm **Sierin Lim** – Associate Professor, School of Chemical and Biomedical Engineering, Nanyang Technological University

Protein Assemblies at Interfaces: Fundamentals and Opportunities

12:20 – 1:20 pm **Lunch and Poster Session**

Session 3 Cell-Nanomaterial Interactions

Moderated by: Huan Meng

1:20 – 1:45 pm **Junwoo Cheon** – Professor, Department of Chemistry, Yonsei University; Director, Center for Nanomedicine, Institute for Basic Science (IBS)

Interfaces: Nanomaterials and Cells

1:45 – 2:10 pm **Subbu S Venkatraman** - Professor, School of Materials Science and Engineering; Executive Director, NTU Institute for Health Technologies (HealthTech NTU), Nanyang Technological University

Mimicking the Cell as a Delivery Vehicle – Nanolipogels

2:10 – 2:35 pm **Jae-Hyun Lee** – Assistant Professor, Institute for Basic Science (IBS), Yonsei University

Seamless Nano-biointerface and Highly Localized Stimulation of Neuronal Cells

2:35 – 3:00 pm **Young-Wook Jun** – Associate Professor, Department of Otolaryngology, University of California San Francisco

Spatiotemporal Interrogation of Molecular Mechanobiology at the Cell-Cell Signaling Interface with Nanotechnology Tools

3:00 – 3:25 pm **Hiroaki Kinoh** – Principal Research Scientist, Innovative Center of NanoMedicine (iCONM), The University of Tokyo

Novel pH-sensitive Nanomedicine Conjugating (+)-JQ-1 Homolog Inhibits the Growth of the Head and Neck Cancer which Overexpress c-Myc

3:25 – 3:55 pm **Break**

Session 4 Nano-Theranostics

Moderated by: Subbu Venkatraman

3:55 – 4:35 pm **Agneta Richter-Dahlfors** – Professor, Center Director, Swedish Medical Nanoscience Center, Karolinska Institute

Nanomedicine for Infection Research and Diagnostics

4:35 – 5:00 pm **Susanne Löffler** - Assistant Professor, Swedish Medical Nanoscience Center, Karolinska Institutet

Conjugated Luminescent Oligothiophenes for Bacterial Sensing and Imaging

5:00 – 5:25 pm **Balázs Gulyás** – Nanyang Professor, Lee Kong Chian School of Medicine, Nanyang Technological University

Novel Imaging Probes for Amyloid Detection

6:00 – 8:30 pm **Dinner for Invited Speakers at Cosmo, Campus Clubhouse, NTU**

Thursday, February 28th

Session 1 Polymer Nanotherapeutics

Moderated by: Harm-Anton Klok

- 8:30 – 9:10 am **Andrea Kasko** – Associate Professor, Department of Bioengineering, UCLA
Teaching Old Antibiotics New Tricks: Novel Multifunctional Conjugates to Fight Bacterial Resistance
- 9:10 – 9:35 am **Daniel Gonzalez Carter** – Research Scientist, Innovative Center of NanoMedicine (iCONM), The University of Tokyo
Developing Brain-penetrating Polymeric Nano-micelles to Treat Neurodegenerative Diseases
- 9:35 – 10:00 am **Anjaneyulu Dirisala** – Research Scientist, Innovative Center of NanoMedicine (iCONM), The University of Tokyo
Liver Sinusoidal Blockade by Poly(ethylene glycol)-oligo(amino acid) Block Copolymers for Tuning Pharmacokinetics of Nanomedicine
- 10:00 – 10:30 am **Break**
- 10:30 – 11:10 am **Ellen Sletten** – Assistant Professor, Department of Chemistry & Biochemistry, UCLA
Perfluorocarbon Nanoemulsion Therapeutics and Diagnostics
- 11:10 – 11:35 am **Onur Parlak** – Postdoctoral, Swedish Medical Nanoscience Center, Karolinska Institutet
Conducting Polymers for Drug Delivery and Biosensor Applications
- 11:35 am – 12:00 pm **Yuki Mochida** – Senior Research Scientist, Innovative Center of NanoMedicine (iCONM), The University of Tokyo
Uniform Assembly and Improved Tumor-targeting Ability of Polymeric Micelles Loading Hydrophobic Platform Anticancer Drugs by Helix Formation
- 12:00 – 1:20 pm **Lunch and Poster Session**

Session 5 Nano-Enabled Technologies

Moderated by: Young-Wook Jun

- 1:20 – 2:00 pm **Albert van den Berg** – Professor, Mathematics & Computer Science; Scientific Director, MESA+ Institute, University of Twente
From Lab on Chip to Organ on Chip
- 2:00 – 2:25 pm **Jang-Ung Park** – Associate Professor, Institute for Basic Science (IBS), Yonsei University
Soft, Smart Contact Lenses for Mobile Healthcare Technologies
- 2:25 – 2:50 pm **Huan Meng** – Adjunct Assistant Professor, California NanoSystems Institute (CNSI), UCLA
Nano-enabled Chemo and Immune Therapy in Colorectal Cancer
- 2:50 – 3:15 pm **Break**

3:15 – 3:40 pm

Harm-Anton Klok – Professor, Director, Institute of Materials, Ecole Polytechnique Fédérale de Lausanne (EPFL)
Cell-mediated Delivery of Polymer Nanomedicines

3:40 – 5:00 pm

Panel Discussion
Challenges for Nanomedicine Centres

Moderator:

Leonard Rome – Professor, Biological Chemistry; Associate Director, California NanoSystems Institute (CNSI), UCLA

Participants:

- **Jinwoo Cheon** – Professor, Department of Chemistry, Yonsei University; Director, Center for Nanomedicine, Institute for Basic Science (IBS)
- **Kazunori Kataoka** – Professor, Department of Bioengineering, The University of Tokyo; Director General, Innovative Center of NanoMedicine (iCONM)
- **Subbu S Venkatraman** – Professor, School of Materials Science and Engineering; Executive Director, NTU Institute for Health Technologies (HealthTech NTU), Nanyang Technological University
- **Agneta Richter-Dahlfors** – Professor, Center Director, Swedish Medical Nanoscience Center, Karolinska Institute
- **Albert van den Berg** – Professor, Mathematics & Computer Science; Scientific Director, MESA+ Institute, University of Twente
- **Jeff F. Miller** – Professor, Department of Microbiology, Immunology and Molecular Genetics, Fred Kavli Endowed Chair in NanoSystems Science, Director of the California NanoSystems Institute

Friday, March 1st

Session 6 Nanosafety

Moderated by: Jeff F. Miller

- 8:30 – 9:10 am **Andre Nel** – Distinguished Professor and Chief of NanoMedicine, Department of Medicine; Director of Research, California NanoSystems Institute (CNSI), UCLA; Director of the Center for Environment Implications of Nanotechnology; Associate Editor, ACS Nano
Nano-enabled Chemotherapy and Chemo-immunotherapy for Pancreas and Solid Cancers
- 9:10 – 9:35 am **Ng Kee Woei** – Associate Professor, School of Materials Science and Engineering, Nanyang Technological University
Dermal Exposure to Engineered Nanomaterials: Hazard or Opportunity?
- 9:35 – 10:00 am **Joachim Loo** – Associate Professor, School of Materials Science and Engineering, Nanyang Technological University
Designing Nano-delivery Systems for Food-based Applications Through a Safer-by-choice and Design Approach
- 10:00 – 10:25 am **Chan Bee Eng, Mary** – Professor, School of Chemical and Biomedical Engineering; Director, Nanyang Technological University Food Technology Centre, Nanyang Technological University
Designer Polymer for Combating Resistant and Biofilm Bacteria
- 10:25 – 10:35 am **Presentation of Poster Awards**
- 10:35 – 10:50 am **Closing Remarks**
Subbu S Venkatraman - Professor, School of Materials Science and Engineering; Executive Director, NTU Institute for Health Technologies (HealthTech NTU), Nanyang Technological University
- 11:00 – 12:00 am **Laboratory Tour**

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