



DAY 1 **Wednesday February 19, 2025**

08:00 - 09:00 **Registration Desk Open, Meet & Greet**

09:00 - 09:30 **Welcome & Opening Remarks**

09:00 - 09:05 Bin Liu (Deputy President (Research and Technology), NUS)
09:05 - 09:10 Roger Foo (Vice-Dean (Research), School of Medicine, NUS)
09:10 - 09:15 Twan Lammers (RWTH Aachen University, CRS Past-President)
09:15 - 09:20 Bruno Sarmiento (University of Porto, CRS IC Board Liaison)
09:20 - 09:25 Giorgia Pastorin (Pharmacy and Pharmaceutical Sciences, NUS)
09:25 - 09:30 Jiong-Wei Wang (Surgery Department, School of Medicine, NUS)

09:30 – 11:00 **Session 1**

Chair: Gert Storm (National University of Singapore, Singapore)
Co-chair: Mirudula Mohankumar (University of Melbourne, Australia)

09:30 – 10:15 **Extended Keynote 1:**
Avi Schroeder (Technion, Israel)
From targeted drug delivery systems to AI-generated synthetic biology medications

10:15 – 10:40 **Invited Keynote 1:**
Dean Ho (National University of Singapore, Singapore)
The biomedically engineered biomedical engineer

10:40 – 10:50 **Abstract Talk:**
Wen Jiang (MD Anderson Cancer Center, USA)
Skeletal Muscle–Targeted Non-Viral Delivery of Full-length Dystrophin mRNA for Duchenne Muscular Dystrophy

10:50 – 11:00 **Abstract Talk:**
Mangala Srinivas (Wageningen University, The Netherlands)
Utility of Multicore PLGA Particles for Enhanced Drug Delivery and Imaging Applications

- 11:00 – 11:30** **Tea + Coffee Break**
- 11:30 – 13:00** **Session 2: Dissolution Science Session**
Sponsored by Sotax & Gaia Science
- Chair: Matthias G. Wacker (National University of Singapore, Singapore)
Co-chair: Tang Wei (National University of Singapore, Singapore)
- 11:30 – 11:55 **Invited Keynote 2:**
Christine Allen (University of Toronto, Canada)
Transforming Drug Formulation Development with AI and Robotics
- 11:55 – 12:20 **Invited Local Chapter Speaker:**
Padma Devarajan (Institute of Chemical Technology, India)
SIDMI - High Efficacy Single Dose Antimalarial Injection
- 12:20 – 12:30 **Sponsor Talk:**
SOTAX Pharma Services
Samir Haddouchi
In Vitro Release Testing of Non-oral Complex Dosage Forms
- 12:30 – 12:40 **Abstract Talk:**
Corrine Ying Xuan Chua (Houston Methodist, USA)
Long-Acting Biodegradable Intratumoral Implant for In Situ Immunotherapeutic Cocktail Delivery for Cancer Treatment
- 12:40 – 12:50 **Abstract Talk:**
Ke Peng (Zhengzhou University, China)
Hybrid microneedle patches integrating hydrogel-forming microneedles with long-acting tip-implants: simultaneous delivery of two drugs at a single use
- 12:50 – 12:55 **Oral Abstract Award Talk:**
Jack Bufton (University of Toronto, Canada)
Self-Driving Optimization of Long-acting Microparticles Manufactured by Microfluidic Flow Focusing
- 12:55 – 13:00 **Oral Abstract Award Talk:**
Dylan Leong (National University of Singapore, Singapore)
Evaluating Drug Release and Mucoadhesion of Buccal Films with a Novel Biopredictive In Vitro Assay
- 13:00 – 14:00** **Lunch + Poster Viewing**

14:00 – 16:00

Session 3

Chair: Bruno Sarmento (i3S and University of Porto, Portugal)
Co-chair: Qianqian Ni (National University of Singapore, Singapore)

14:00 – 14:45

Extended Keynote 2:

Warren Chan (Nanyang Technological University, Singapore)
The mechanisms of nanoparticle delivery to solid tumors

14:45 – 15:10

Invited Keynote 3:

Marianne Ashford (AstraZeneca, Cambridge, UK)
Delivery science - Its increasing importance for innovative medicines

15:10 – 15:20

Sponsor Talk:

Malvern Panalytical
Yu-Su Chen
Mastering fluorescence labelling on urine-derived EVs

15:20 – 15:30

Abstract Talk:

Paul Joyce (University of Adelaide, Australia)
Exploring the Bidirectional Relationship between the Gut Microbiome and Lipid-Based Drug Delivery Formulations

15:30 – 15:40

Abstract Talk:

Jagdish Singh (North Dakota State University, USA)
Co-delivery of Cannabidiol and pBDNF to Brain for Enhanced Neurogenesis and Memory Nanoparticles

15:40 – 15:45

Oral Abstract Award Talk:

Ayca Altay Benetti (National University of Singapore, Singapore)
Development of proniosome gel formulation for rheumatoid arthritis

15:45 – 15:50

Oral Abstract Award Talk:

Rosanna Le Scouarnec (University of Bordeaux, France)
Proline-based thermoresponsive lipopolymer, towards the design of stimuli-responsive liposomes

15:50 – 15:55

Oral Abstract Award Talk:

Yu Cai (Erasmus MC, The Netherlands)
Development and Functional Validation of Membrane Fusion for Hybrid EV

16:00 – 16:30

Tea + Coffee Break

16:30 – 18:00

Session 4

Chair: Giorgia Pastorin (National University of Singapore, Singapore)
Co-chair: Roger Molto Pallares (RWTH Aachen University, Germany)

16:30 – 16:55

Invited Keynote 4:

Michal Heger (Jiaying University, China)
A foreigner's research adventure in China: Opportunities and challenges

16:55 – 17:20

Invited Local Chapter Speaker:

Darren Svirskis (University of Auckland, New Zealand)
Localising treatments directly to the spinal cord in rats

17:20 – 17:30

Abstract Talk:

Qianqian Ni (National University of Singapore, Singapore)
STING-Activating Polymers Enhance mRNA Vaccine Efficacy for Cancer Immunotherapy

17:30 – 17:35

Oral Abstract Award Talk:

Indhumathi Thirugnanasambandham (JSS Pharm. College, India)
Saquinavir-Loaded Nanoparticles: Precision PAD4 Inhibition and Citrullination Control to Combat Joint Inflammation

17:35 – 17:40

Oral Abstract Award Talk:

Tianqi Wang (National University of Singapore, Singapore)
Leveraging Machine Learning to Decode Polymeric Long-Acting Injectables and Predict Their Performance

17:40 – 17:45

Oral Abstract Award Talk:

Suet Yen Chong (National University of Singapore, Singapore)
Inhibition of Plaque Ceramide de novo Synthesis Mitigates Atherosclerosis

17:45 – 17:50

Oral Abstract Award Talk:

Claudia Martins (University of Porto, Portugal)
Blood-brain barrier/glioblastoma interplay model as a 3D in vitro evaluation tool of anti-cancer (nano-)therapeutics

18:00 – 19:30

Poster Viewing (Incl. Judging. Wine and refreshments will be served)

19:30 – 22:00

Free Evening

DAY 2

Thursday February 20, 2025

08:00 - 09:00

Registration Desk Open, Meet & Greet

09:00 – 10:45

Session 5

Chair:

Yang Shi (RWTH Aachen University, Germany)

Co-chair:

Fazren Azmi (National University of Malaysia, Malaysia)

09:00 – 09:45

Extended Keynote 3:

Yunching Chan (National Tsing Hua University, Taiwan)

Breaking barriers: Drug delivery technologies for cancer immunotherapy

09:45 – 10:10

Invited Keynote 5:

Xiaoyuan Chen (National University of Singapore, Singapore)

Cancer nanotheranostics

10:10 – 10:15

Sponsor Talk:

Leica Microsystems (SEA) Pte. Ltd.

Veronique Teo

Meet TauSTED Xtend, New tools for gentle live imaging at remarkable nanoscale

10:15 – 10:25

Abstract Talk:

Andy Tay (National University of Singapore, Singapore)

DNA barcoding discovers that tumour cells have a preference for pasta-particle shapes

10:25 – 10:30

Oral Abstract Award Talk:

Priyadarshini Sathe (Birla Technology & Sciences Institute, India)

Biomimetic nanomicelles to enhance corneal permeation of natamycin

10:30 – 10:35

Oral Abstract Award Talk:

Nilofer Sayed (National University of Singapore, Singapore)

Targeted delivery of DLL4 inhibitor to the liver sinusoidal endothelial cells ameliorates MASH by restoring the sinusoidal fenestrae

10:35 – 10:40

Oral Abstract Award Talk:

Yen-Nhi Ngoc Ta (National Tsing Hua University, Taiwan)

Enhanced hepatocellular carcinoma therapy using pH-sensitive nanoparticles for targeted glucose oxidase and apoptosis-based anti-cancer agents delivery

10:45 – 11:15

Tea + Coffee Break

11:15 – 13:00

Session 6

Chair: Linda Hong (National University of Singapore, Singapore)

Co-chair: Karri Narayana Reddy (JSS College of Pharmacy, India)

11:15 – 11:40

Invited Keynote 6:

Zhiyuan Zhong (Soochow University, China)

Harnessing targeted delivery for tumor therapy and immunotherapy

11:40 – 12:05

Invited Local Chapter Speaker:

Prof. Jae-Young Lee (Seoul National University, Korea)

From within: harnessing proteins' inherent potential with protein nanocluster technology in cancer therapy

12:05 – 12:25

Sponsor Talk:

CSL Vifor

Reinaldo Digigow

Exploring the potential influence of physicochemical characteristics on biodistribution of iron carbohydrate nanoparticles using a chicken embryo model

12:25 – 12:35

Abstract Talk:

Jeanne Leblond Chain (University of Bordeaux, France)

Poly(oxazoline)-coated lipid nanoparticles enable siRNA delivery for COPD treatment

12:35 – 12:40

Sponsor Talk:

NanoFCM Asia Pte. Ltd.

Maverick Lau

Towards the Gold Standard in assessment of nanoparticle vehicles quality and encapsulation efficiency

12:40 – 12:45

Oral Abstract Award Talk:

Ram Pravin Muthuramalingam (National University of Singapore)

Development of nano-Cell Vesicle Technology system (nCVTs), a novel biohybrid delivery platform to deliver Anti-Sense Oligonucleotides (ASOs) for targeted cancer therapy

12:45 – 12:50

Oral Abstract Award Talk:

Sarjana Raikwar (Institute of Technology and Sciences, India)

Development and Characterizations of Antibody-Conjugated PEGylated pH-Sensitive Liposomes for Breast Cancer Treatment

13:00 – 14:00

Lunch + Poster Viewing

14:00 – 16:00

Session 7

Chair: Wim Hennink (Utrecht University, The Netherlands)
Co-chair: Corrine Ying Xuan Chua (Houston Methodist, USA)

14:00 – 14:45

Extended Keynote 4:

Roy van der Meel (Eindhoven University of Technology, The Netherlands)
Engineering nanotechnology for RNA delivery

14:45 – 15:10

Invited Keynote 7:

Bo Ying (Abogen Biosciences Co. Ltd., China)
Industrial perspective of mRNA-based therapeutics and vaccines

15:10 – 15:20

Sponsor Talk:

Phospholipid Research Center
Simon Drescher
The Phospholipid Research Center – An Introduction and Current Projects

15:20 – 15:30

Abstract Talk:

Roger Molto Pallares (RWTH Aachen University, Germany)
Microbubble Shell Engineering to Enhance Drug Delivery, Ultrasound Imaging, and Biological Barrier Opening

15:30 – 15:40

Abstract Talk:

Mirudula Mohankumar (University of Melbourne, Australia)
Sono-transformation of small molecules into nanodrugs for biomedical applications

15:40 – 15:45

Sponsor Talk:

Exodus Bio from USA
Johnny Zhuang
High efficiency exosome isolation system and its application in Drug Delivery

15:45 – 15:50

Oral Abstract Award Talk:

Judit Tomsen-Melero (Instituto de Salud Carlos III, Spain)
Nanoliposomes for Fabry enzyme replacement therapy: Progress towards Clinical Translation

15:50 – 15:55

Oral Abstract Award Talk:

Susmita Mohanta (National Institute of Technology, India)
Diffusion of Probe Polyelectrolyte in the Acrylamide-co-Sodium Acrylate Polyelectrolyte Gel

16:00 – 16:30

Tea + Coffee Break

16:30 – 17:50

Session 8

Chair: Twan Lammers (RWTH Aachen University, Germany)

Co-chair: Ke Peng (Zhengzhou University, China)

16:30 – 16:55

Invited Keynote 8:

Prof. Zhen Gu (Zhejiang University, China)

Bioinspired delivery of biomacromolecules and cells

16:55 – 17:20

Invited Local Chapter Speaker:

Dr. Sujata Sawarkar (Dr. Bhanuben Nanavati College of Pharmacy, India)

Synergizing nanofiber scaffolds with hydrogel for advanced volumetric muscle loss healing

17:20 – 17:25

Sponsor Talk:

Allay Therapeutics Singapore Pte. Ltd.

Teu Koon Kiat

Introduction to Allay Therapeutics

17:25 – 17:30

Sponsor Talk:

Pharma Test Apparatebau AG

Dirk Beilke

Effective In Vitro Drug Release Testing with innovative Apparatus and optimized Fibre Optic Systems

17:30 – 17:40

Abstract Talk:

Karri Narayana Reddy (JSS College of Pharmacy, India)

Development and Evaluation of Statin-Loaded Polycaprolactone Nanofibers Coated with Silver Nanoparticles and Collagen for Diabetic Wound Management

17:40 – 17:45

Oral Abstract Award Talk:

Lina Wu (King's College London, UK)

Versatile Nanoscaffold-Based 3D Liver Spheroid Platform for in vitro Drug Toxicology Evaluations

17:45 – 17:50

Oral Abstract Award Talk:

Yidi Jiang (National University of Singapore, Singapore)

Development of Cell-Derived Drug Delivery Systems for Targeting Senescence in Non-Alcoholic Steatohepatitis (NASH) treatment

18:00 – 19:30

Poster Viewing (Incl. Judging; Wine and refreshments will be served)

19:30 – 22:00

Conference Dinner (Incl. Poster awards)

DAY 3

Friday February 21, 2025

09:30 – 11:00

Session 9

Chair: Marianne Ashford (AstraZeneca, Cambridge, UK)
Co-chair: Paul Joyce (University of Adelaide, Australia)

09:30 – 10:15

Extended Keynote 5:

Mark Muthiah (National University Singapore, Singapore)
MASLD - Challenges in pharmacotherapy

10:15 – 10:40

Invited Keynote 9:

Sai Kiang Lim (Paracrine Therapeutics Pte Ltd, Singapore)
Re-visiting the role of exosomes or extracellular vesicles as efficient intracellular delivery vehicles

10:40 – 10:45

Oral Abstract Award Talk:

Uzma Farooq (School of Pharmacy Education & Research, India)
Intravaginal Myoinositol-Metformin loaded Mucus Penetrating Particles-Based Gel (MPPs-Gel) for PCOS Amelioration: An In-vivo Assessment on Rat Model

10:45 – 10:50

Oral Abstract Award Talk:

Sitong Zhang (National University of Singapore, Singapore)
Milk-derived extracellular vesicles alleviate MASH progression by modulating the gut-liver axis

10:50 – 10:55

Oral Abstract Award Talk:

Junho Byun (Sookmyung Women's University, Korea)
Cold atmospheric plasma-actuated on-site hydrogel for remodeling tumor immune microenvironment

10:55 – 11:00

Oral Abstract Award Talk:

Catarina Leite Pereira (University of Porto, Portugal)
Osteosarcoma 3D modeling in vitro - a novel tool to screening tumor microenvironment-targeted therapies

11:00 – 11:30

Tea + Coffee Break

11:30 – 13:00

Session 10

Chair: Xiaogang Liu (National University of Singapore, Singapore)

Co-chair: Jeanne Leblond Chain (University of Bordeaux, France)

11:30 – 11:55

Invited Keynote 10:

Raymond Schiffelers (University Medical Center Utrecht, The Netherlands)

Targeted lipid nanoparticles for in vivo CAR T cell engineering

11:55 – 12:20

Invited CRS Local Chapter Speaker:

Goh Choon Fu (Universiti Sains Malaysia, Malaysia)

Machine learning predicts the strength and in vitro penetration of microneedles

12:20 – 12:25

Sponsor Talk:

ProMed PharmaJames Arps

Drug Delivery from Molded and Extruded Dosage Forms

12:25 – 12:30

Sponsor Talk:

Anton Paar Singapore Pte. Ltd.

Janice Tan

An Insight into Particle Concentration Measurements via Dynamic Light Scattering

12:30 – 12:35

Short Abstract Award Talk:

Lin Yang (Institute of Lung Health and Immunity, Germany)

LungVis 1.0 enables innovative spatial analysis of nanoparticle delivery to the lung

12:35 – 12:40

Short Abstract Award Talk:

Youyou Lyu (Huazhong Agricultural University, China)

Gelatin-based Antimicrobial Films Releasing Active Nanoparticles for Food Preservation

12:40 – 12:45

Short Abstract Award Talk:

Chenyuan Huang (National University of Singapore, Singapore)

Targeted modulation of cardiac ceramide synthesis attenuates myocardial ischemic injury

13:00 – 14:00

Lunch + Poster Viewing

14:00 – 16:15

Session 11

Chair: Jiong-Wei Wang (National University of Singapore, Singapore)
Co-chair: Mangala Srinivas (Wageningen University, The Netherlands)

14:00 – 14:45

Extended Keynote 6:

Prof. Guangjun Nie (National Center for Nanoscience and Technology, Beijing, China)

The emerging nanotherapeutics based on biomolecule delivery

14:45 – 15:10

Invited Keynote 11:

Prof. Yi Yan Yang (Bioprocessing Technology Institute, A*STAR, Singapore)

Nanocarriers for targeted delivery of mRNA

15:10 – 15:20

Abstract Talk:

Fazren Azmi (National University of Malaysia, Malaysia)

Peptide-Based Biomimetic Nanoparticle Vaccines against Breast Cancer: Prophylactic and Therapeutic Modalities

15:20 – 15:30

Abstract Talk:

Sagar Trivedi (G H Rasoni University, India)

Targeting Glioblastoma Multiforme with repurposed Lentinan via surface-modified nanoshells and experimental substantiation of network pharmacology and Molecular Docking perceptions

15:30 – 14:40

Abstract Talk:

Suiyang Liao (University of British Columbia, Canada)

Designing Lipid Nanoparticles for RNA therapeutics

15:40 – 16:00

Closing Ceremony (incl. Oral Talk Awards)

- Diamond Sponsor -

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