



## DAY 1                      Wednesday February 19, 2025

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

**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 (Head, 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 CRS Local Chapter Speaker:**  
Zhen Gu (Zhejiang University, China)  
*Bioinspired delivery of biomacromolecules and cells*

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 1:**  
Christine Allen (University of Toronto, Canada)  
*Transforming drug formulation development with AI and robotics*
- 11:55 – 12:20      **Invited Keynote 2:**  
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 Medical Center, 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 – 17:45

**Invited Local Chapter Speaker:**

Kristian Kempe (Monash University, Australia)  
*Drug delivery systems based on poly(cyclic imino ethers): PEG alternatives, nanorods, and their tuneable interactions with biological systems*

17:45 – 17:50

**Oral Abstract Award Talk:**

Indhumathi Thirugnanasambandham (JSS Pharm. College, India)  
*Saquinavir-loaded nanoparticles: Precision PAD4 inhibition and citrullination control to combat joint inflammation*

17:50 – 17:55

**Oral Abstract Award Talk:**

Tianqi Wang (National University of Singapore, Singapore)  
*Leveraging machine learning to decode polymeric long-acting injectables and predict their performance*

17:55 – 18:00

**Oral Abstract Award Talk:**

Suet Yen Chong (National University of Singapore, Singapore)  
*Inhibition of plaque ceramide de novo synthesis mitigates atherosclerosis*

18:00 – 18:05

**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*

**18:05 – 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:

Ding Gong Tao (Universiti Kebangsaan Malaysia, Malaysia)

09:00 – 09:45

**Extended Keynote 3:**

Yunching Chen (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 tumor 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 agent 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:**

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, 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 (Institut de Ciència de Materials de Barcelona ICMAB-CSIC, 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 – 18:00**

**Session 8**

Chair: Paul Joyce (University of Adelaide, Australia)

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

16:30 – 16:55

**Invited Keynote 8:**

Dean Ho (National University of Singapore, Singapore)

*The biomedically engineered biomedical engineer*

16:55 – 17:20

**Invited Local Chapter Speaker:**

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 fiber 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:**

Yuan Ping (Zhejiang University, China)

**Co-chair:**

Alice Chuah Lay Hong (Monash University Malaysia, Malaysia)

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 Pharma

James 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 – 12:40

**Abstract Talk:**

Qianqian Ni (National University of Singapore, Singapore)

*STING-activating polymers enhance mRNA vaccine efficacy for cancer immunotherapy*

12:40 – 12:45

**Oral 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*

12:45 – 12:50

**Oral Abstract Award Talk:**

Youyou Lyu (Huazhong Agricultural University, China)

*Gelatin-based antimicrobial films releasing active nanoparticles for food preservation*

12:50 – 12:55

**Oral 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 – 16:00 Session 11**

Chair: Jiong-Wei Wang (National University of Singapore, Singapore)  
Co-chair: Andy Tay (National University of Singapore, Singapore)

- 14:00 – 14:45      **Extended Keynote 6:**  
Guangjun Nie (National Center for Nanoscience and Technology, China)  
*The emerging nanotherapeutics based on biomolecule delivery*
- 14:45 – 15:10      **Invited Keynote 11:**  
Yi Yan Yang (Bioprocessing Technology Institute, A\*STAR, Singapore)  
*Nanocarriers for targeted delivery of mRNA*
- 15:10 – 15:35      **Invited CRS Local Chapter Speaker:**  
Jui-Yang Lai (Chang Gung University, Taiwan)  
*Advances in biomaterial design for the treatment of dry eye syndrome*
- 15:35 – 15:45      **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*
- 15:45 – 15:55      **Abstract Talk:**  
Suiyang Liao (University of British Columbia, Canada)  
*Designing lipid nanoparticles for RNA therapeutics*
- 15:55 – 16:00      Closing Ceremony (incl. Oral Talk Awards)**

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