NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

大阪公立大学 Osaka Metropolitan University

研究推進機構 協創研究センター LAC-SYS研究所 RILACS

2026 NTU-OMU JOINT SYMPOSIUM

Innovations in Human and Planetary Health by Optical Manipulation

We explore transformative solutions for human and planetary health by analyzing microorganisms attached to particulate matter and emerging pollutants. Highlighting the intersection of state-of-the-art optoelectronic and biological technologies, including:

- Light-induced Acceleration Systems (LAC-SYS)
- Micro-Electro-Mechanical Systems (MEMS)
- Advanced Drug Delivery Systems (DDS)

13 March (Fri) 13:00 -17:30

NTU EMB Seminar Room (Level 1) & online hybrid
59 Nanyang Dr, Singapore 636921

Register here
https://x.gd/D81pU

Hosts: Nanyang Technological University (NTU) & Osaka Metropolitan University (OMU)
Co-Hosts: Centre for Climate Change and Environmental Health (CCEH), NTU;
Research Institute for Light-induced Acceleration System (RILACS), OMU

13:00 Opening Remarks

13:10 Session 1
Environmental Problems & Optoelectronic Technologies

- Prof. Steve Yim: Air pollution and its health impact under climate change
- Prof. Takuya Iida: Novel Analytical Technology with Light-induced Acceleration System
- Prof. Takeshi Yoshimura: High-Throughput Materials Development Driving MEMS-Based AI Electronics
- Mr. Masatoshi Kanoda: Photothermal-induced Detection of Biological Nanoparticles with Plasmonic Nanobowl Substrate
- Prof. Hidekazu Ikeno: Spectro-Informatics: A Machine-Learning Framework for Spectral Analysis
- Dr. Iravati Ray : Isotope geochemistry research infrastructure for climate and environmental changes
- Ms. Reiko Yuguchi (Director, Singapore Office, Japan Science and Technology Agency (JST)): Overview of Japan-Singapore Collaboration in Science, Technology and Innovation
- Panel discussion

15:20 Tea Break

15:35 Session 2
Microbiomes & Biological Technologies

- Prof. Kazuyuki Kasahara: Role of gut microbiome in cardiometabolic health
- Prof. Eiji Yuba: Design of functional polymer-modified liposomes for immunoengineering
- Prof. Ikuhiko Nakase: High-efficiency intracellular drug delivery techniques using light-concentration technology
- Mr. Yusuke Nakamura: Mixing Condition Dependence of Light-Induced Acceleration of Antigens and Antibodies Reactions for Carbohydrate Antigens by Microparticles
- Prof. Shiho Tokonami: Control of Metabolic Functions of Bacteria with Light-induced Assembly
- Mr. Takumi Kawamoto: Development of Optical condensation for Utilization of Microbial Interactions with Light-Induced Bubbles and Convection
- Dr. Chris Aurand (Open Innovation Leader, Thai Union Group): Corporate Open Innovation
- Panel discussion

17:15 Closing Remarks

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