

**11th Nagoya Biomimetics International Symposium
(NaBIS)**

November 29th (Fri.), 2024

**Nagoya Institute of Technology (NITech)
Gokiso, Showa-ku, Nagoya 466-8555, Japan**

Organized by

NITech and NaBIS Planning Committee

主催：名古屋工業大学、NaBIS実行委員会

Cooperated by

Research Group on Biomimetics of The Society of Polymer Science, Japan

Biomimetics Network Japan

Branch Meeting on Biomimetics of Nanotechnology Business Creation Initiative (NBCI)

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NBCIバイオミメティクス分科会

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趣旨

毎年のように更新される最高気温（もはや異常気象ではなく通常気象？）。ゲリラ豪雨、土砂崩れ、旱魃、山火事による甚大な被害が日本各地で報告されています。地球沸騰化は、自然災害にとどまらず、農産物の生育障害や品質低下、水産資源の変化を引き起こし、私たちの食卓にも影響が出はじめています。地球沸騰化は人類の身勝手に無秩序な経済活動に対する地球からの重大な警告であり、もはや我々人類には一刻の猶予もありません。

今年も2024年11月29日（金）、11th NaBISを名古屋工業大学にて開催します。NaBISはもともと表面・界面、材料工学の研究に特化した国際シンポジウムでしたが、11th NaBISは前回に引き続き、ノンヒューマンセントリック（非 or 脱人間中心主義）な観点を加え、今後の我々の科学技術、産業・経済活動、再エネの在り方について議論するシンポジウムにしたいと考えています。皆様の参加を心よりお待ちしております。

PURPOSE

High temperatures renew every year (no longer abnormal but normal climate?). Severe damages from guerrilla downpours, landslides, droughts, and wildfires have been reported across not only in Japan but also around the world. Global warming is not limited to natural disasters; it is beginning to affect our food supply as well, with growth disturbances and quality deterioration of agricultural products, and changes in fishery resources. Global warming is a serious warning from the earth against mankind's selfish and unregulated economic activities, and we humans no longer have a moment to spare.

NaBIS is originally an international symposium focused on surface/interface and materials research, but in succession from last year, at the 11th NaBIS, we would like to also consider and discuss about the future of our science/technologies, renewable energies and economic activities from a non-human-centric viewpoint. We look forward to your participation.

PROGRAM

29th November, 2024

Hall on the first basement level, Building No.4

10:05-10:10

Opening Remarks

Dr. Atsushi Hozumi, AIST, Japan

Sustainable Energies and Related New Technologies

< Chair: Prof. Kuniharu Ijiri, Hokkaido University, Japan >

10:10-10:40

Prof. Takahiko Hariyama (Hamamatsu University School of Medicine, Japan) 2

“To Reduce Food Loss & Waste and Promote Modal Shift Using the NanoSuit, Innovative Thin Films, Inspired by Biomimetics” (In person)

10:40-11:10

Dr. Chihiro Urata (AIST, Japan) 4

“Self-Lubricating Organogels (SLUGs) for Snow Hazard Mitigation: Recent Progress and Social Implications” (In person)

Surface & Interface/Nanomaterials

< Chair: Dr. Chihiro Urata, AIST, Japan >

11:10-11:40

Prof. Sanghyuk Wooh (Chung-Ang University, Korea) 6

“Interfacial Bridge for Hydrogel Surface Modification” (In person)

11:40-13:00

Lunch Break

13:00-13:30

Dr. Narendra Singh (Indian Institute of Technology Tirupati, India) 8

“Functionalized Polymer/Metal Oxide Materials for Anticorrosion and Environmental Applications” (Online)

< Chair: Prof. Sanghyuk Wooh, Chung-Ang University, Korea >

13:30-14:00

Prof. Syuji Fujii (Osaka Institute of Technology, Japan) 10

“Stimulus-Responsive Gas Marbles” (In person)

14:00-14:30

Prof. Josephine Galipon (Yamagata University, Japan) 12

“Technology Development towards Multi-scale Imaging of Shark Skin” (Online)

Environmental Materials and Related Technologies

14:30-15:00

Prof. Christine Luscombe (Okinawa Institute of Science and Technology, Japan)..... 14
“The Fate of Microplastics in Marine Organisms” (Online)

15:00-16:15

Poster session / Coffee break

<Chair: Dr. Atsushi Hozumi, AIST, Japan>

16:15-17:00

Mr. Pavels Hedström (Inxects Studio, Denmark) 16
“Climate-Responsive Design: Integrating Biomimetic Principles in Extreme Environments” (Online)

17:00-17:05

Closing Remarks

Prof. Kuniharu Ijiro, Hokkaido University, Japan

Poster Session

1. Multi-Layered Marble for Hydrogel Encapsulation 19
Hyeonjin Kima^a, Jongkuk Ko^b, Se Youn Jang^c, Ji Eun Lee^a, Jin Yoo^c, Syuji Fujii^d, Sanghyuk Wooh^a
(^aChung-Ang University, ^bGachon University, ^cKorea Institute of Science and Technology, ^dOsaka Institute of Technology)
2. Statically Very Hydrophilic Surfaces Showing Surprising Water Sliding Properties 20
Atsushi Hozumi
(National Institute of Advanced Industrial Science and Technology (AIST))
3. Road CCTV Camera during Blowing Snow that Mimics the Human Eye 21
Toshimitsu Sakurai^a, Hirotaka Takechi^a, Tetsuya Kokubu^{a,b}
(^aCivil Engineering Research Institute for Cold Region, ^bHokkaido Regional Development Bureau)
4. Potential of Membrane-type Surface-stress Sensor as Malodor E-nose 22
Jun Sasa^a, Genki Yoshikawa^b, Riichiro Ohta^a
(^aL'Oréal Research & Innovation, Japan, ^bNational Institute for Materials Science (NIMS))
5. Potential of Low-emissivity Interior Surfaces for Thermal Insulation, Comfort, and Energy Saving in Architecture 23
Hiroshi Kakiuchida^a, Aya Yokoe^b
(^aNational Institute of Advanced Industrial Science and Technology (AIST), ^bChubu University)
6. Effect of Pyrolysis Treatment on Porous Properties of Hydrothermally Carbonized Rice Husks..... 24
Sayaka Sugie, Hirotaka Maeda
(Nagoya Institute of Technology)

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