UTokyo ■ Cambridge
Strategic Partnership

## "Materials, devices, and systems for seamless human-computer interactions"

March 28th 9:00-14:00
@Convention hall, Building An
Institute of Industrial Science, The University of Tokyo

This symposium covers the development of materials, devices, and systems to aim for seamless human-computer interaction. Although current information devices and robots are altering our lives, there is still a gap between these devices and humans in terms of their mechanical properties and behavior. Organic supermolecular materials simultaneously achieve tissue-like softness, high toughness, and electronic properties. Sensors or displays made of these supermolecular materials can show excellent conformability to the skins or organs of human because of their similar mechanical properties. In addition to the mechanical and electrical properties, a system development to enable natural interaction between devices and humans is also important. These technologies will enable the next-generation wearables, implantables, and robotics that harmonize with human lives.

Program

9:00-9:10	Welcome
	Prof. Naoji Matsuhisa, Institute of Industrial Science, The University of Tokyo
9:10-9:40	*Advances in Electronic Skins for Robotics and Next-Generation Wearables*"
	Prof. Takao Someya, Executive Director, Vice President
	EEIS, School of Engineering, The University of Tokyo
9:40-10:10	"*High resolution cortical interfaces*"
	Prof. George Malliaras, Prince Philip Professor of Technology
	Department of Engineering, University of Cambridge
10:10-10:40	"TBA"
	Prof. Oren Scherman, Professor of Supramolecular & Polymer Chemistry
	Director of the Melville Laboratory for Polymer Synthesis, University of Cambridge
10:40-11:00	Coffee break
11:00-11:30	"*Embodied material intelligence for sensorised soft robot manipulation*"
	Prof. Fumiya Iida, Professor of Robotics
	Department of Engineering, University of Cambridge
11:30-12:00	"*Collaborative Systems for Nursing Training: Robotics and Human Interaction*"
	Prof. Jun Ota, Professor, School of Engineering, The University of Tokyo
12:00-12:30	"*Soft electronic materials for seamless on-skin interfaces*"
	Prof. Naoji Matsuhisa, Institute of Industrial Science, The University of Tokyo
12:30-14:00	Lunch & Poster session

Free lunch available upon registration using Google Forms. Please register by March 11th.
https://forms.gle/9ogJf1fheAqYqa9s9
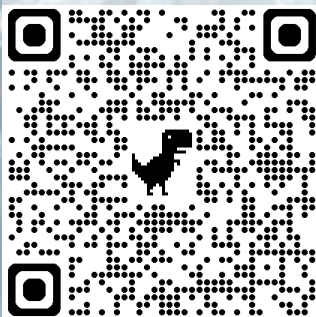
List of poster presentations

1. "*Multimodal flexible sensors powered by reservoir computing*"
   Kuniharu Takei (Professor), Takei Group, Hokkaido University

2. "*Fabrication of Water Vapor Permeable Ultra-Thin Bioelectrodes Composed of Single Wall Carbon Nanotubes with Fibrous Network Structure*"
   Tatsuhiro Horii (Assistant Professor), Fujie Group, Institute of Science Tokyo

3. "*Development of Thin-Film Light-Emitting Devices using Flexible Electronics for Metronomic Photodynamic Therapy*"
   Masato Saito (D3), Fujie Group, Institute of Science Tokyo

4. "*Design and Fabrication of Capacitive Strain Sensor Based on Conductive Nanosheet and Dielectric Elastomer for Monitoring Aerodynamics of Biomimetic Robot*"
   Zichen Gao (M2), Fujie Group, Institute of Science Tokyo

5. "*Fabrication of Thin-Film Coating by Using Compounds with Phenolic Hydroxyl Groups Leveraging Abundant Hydrogen Bonds*"
   Daiki Sekita (M2), Fujie Group, Institute of Science Tokyo

6. "*An ultra-conformal and stretchable electrode array for 3D brain organoid's electrophysiology*"
   Huimin Gong (D2) & Yicheng Zhu (D2), Matsuhisa Group, The University of Tokyo

7. "*Phosphorus-lithium double helix nanoribbon*"
   Chuang Hou (Postdoc), Matsuhisa Group, The University of Tokyo

8. "*Fully invisible skin electronics for facial electrophysiological signals monitoring*"
   Yijun Liu (D2), Matsuhisa Group, The University of Tokyo

9. "*Stretchable Implantable organic photovoltaics for subdermal optical wireless sensing systems*"
   Byunghun Oh (M1), Matsuhisa Group, The University of Tokyo

10. "*Inherently Stretchable Self-doped Conducting Polymers*"
    Tokihiko Shimura (D1), Matsuhisa Group, The University of Tokyo

11. "*Skin-like multimodal sensors based on soft piezoelectric and ionic composite*"
    Liren Wang (D1), Matsuhisa Group, The University of Tokyo

12. "Stretchable low-dark current photodiodes and the printing fabrication"
    Yuanyuan Zhou (M2), Matsuhisa Group, The University of Tokyo

13. "*Mechanically durable direct bonding method for the flexible integrated system*"
    Masahito Takakuwa (Assistant Professor), Yokota Group, The University of Tokyo

14. "*Detachable top electrode-organic photodetector for repeated nondestructive evaluation of device and surface analysis of active layer*"
    Kosei Sasaki (M2), Yokota Group, The University of Tokyo

15. "*Ultraflexible dual-band selective organic photodetector for visible and near-infrared light multispectral sensing*"
    Sachi Awakura (M1), Yokota Group, The University of Tokyo