

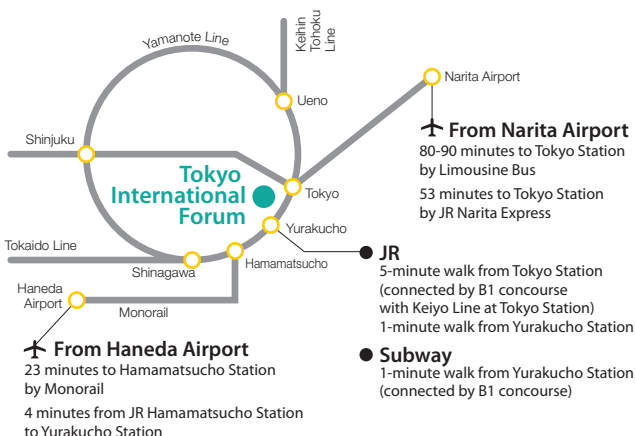
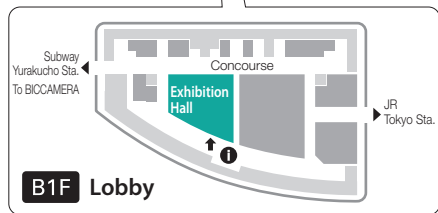
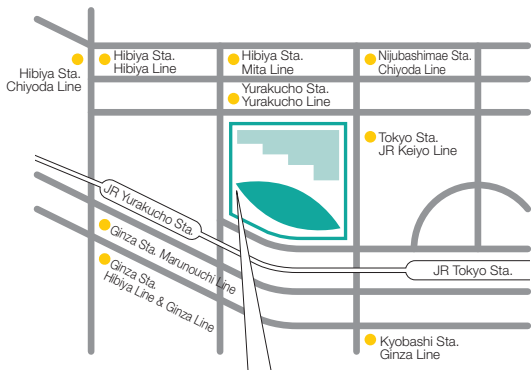
ACCESS

Tokyo International Forum

B2F (Exhibition Hall 2)

3-5-1 Marunouchi, Chiyoda-ku, Tokyo, Japan

Tel: +81-3-5221-9000



75th Anniversary in 2014

Keio Leading-edge Laboratory of Science and Technology (KLL)

3-14-1 Hiyoshi, Kohoku-ku, Yokohama, Kanagawa

223-8522, Japan

Tel: +81-45-566-1794 Fax: +81-45-566-1436

E-mail: ktm@kll.keio.ac.jp

www.kll.keio.ac.jp/ktm/



More Partnerships, More Dreams



15th Annual Keio Science and Technology Exhibition

KEIO TECHNO MALL 2014

5 Dec [fri] 10:00
18:00

Admission Free

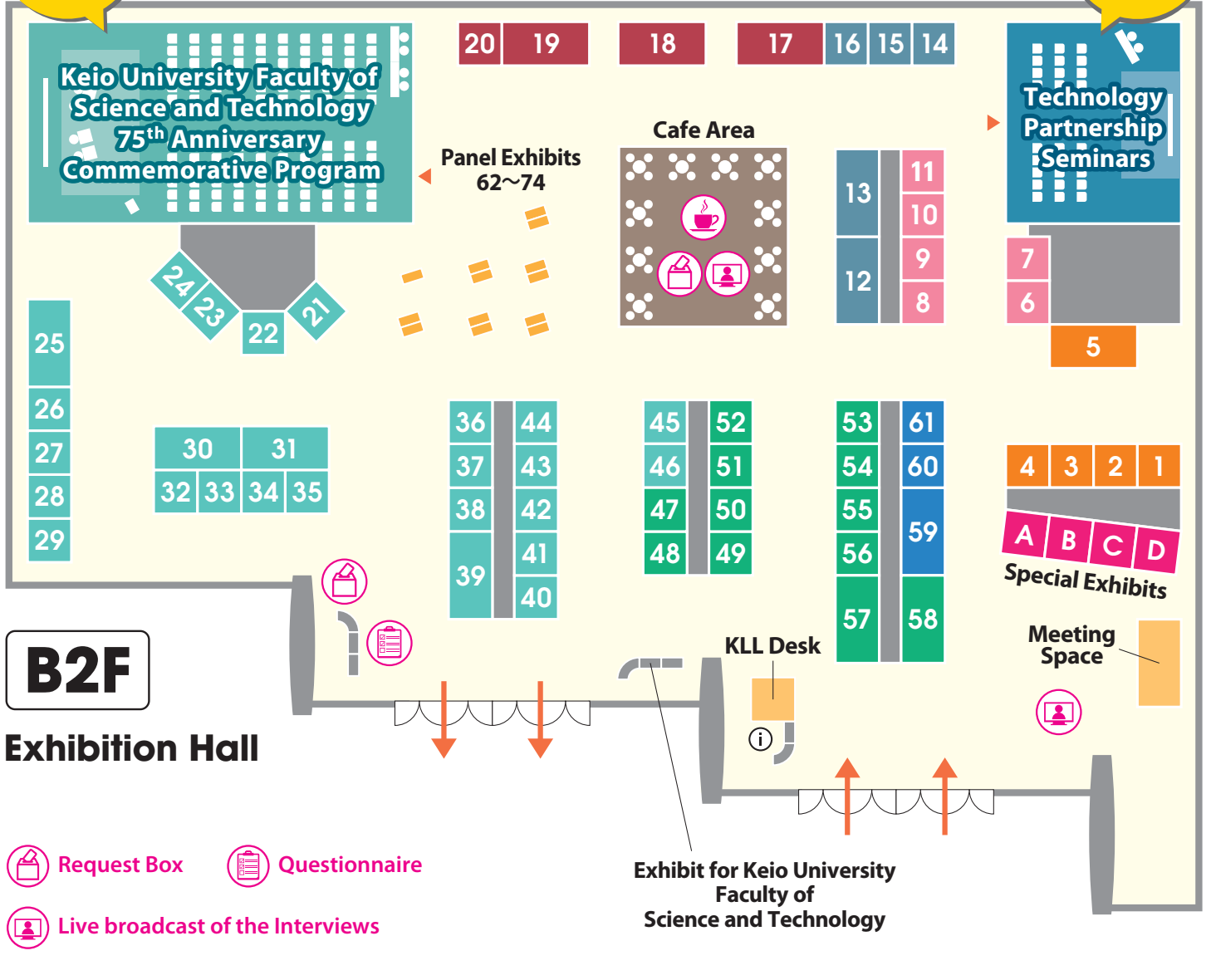
Tokyo International Forum B2F (Exhibition Hall 2)

For Event Schedules, Please refer to the end.

Floor Map

Event Stage

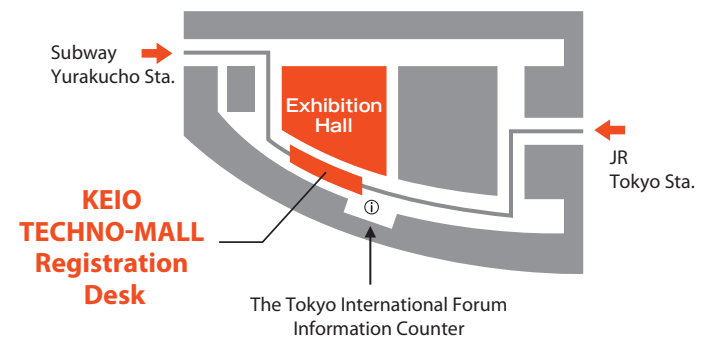
Seminar Stage



B2F Exhibition Hall

- Request Box
- Questionnaire
- Live broadcast of the Interviews

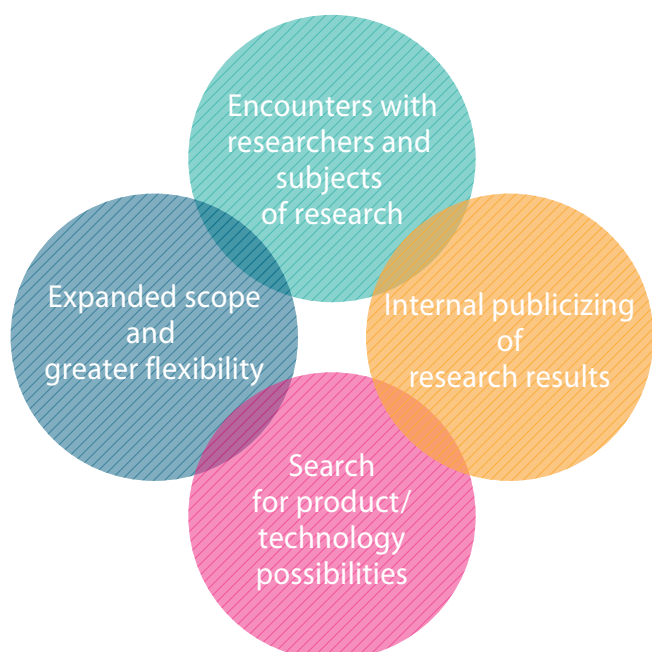
B1F Lobby



- Electronics
- Information and Communication
- Biomedical
- Society & Environment
- Mechanics
- Other Fields
- Materials

KEIO TECHNO-MALL

provides **four** platforms



1 Encounters with researchers and subjects of research

You can be sure of unexpected encounters and first-hand information otherwise unattainable on the internet. More than just topics related directly to your own products or business, perhaps, you will find subjects of research with prospects for new business expansion.

2 Expanded scope and greater flexibility

By learning about the actual research at exhibition booths and seminars, talking directly with the researchers and feeling actual objects, you will be able to get a real feeling for the expanse of possibilities. Also, with regard to collaboration with universities, KLL (Keio Leading-edge Laboratory of Science and Technology) will respond flexibly to requests for advice about procedures and contractual aspects.

3 Internal publicizing of research results

With the KEIO TECHNO-MALL being a venue for the objective, academic publication of research results, you can demonstrate the outcomes of industry-academia collaboration inhouse as part of your R&D activities, and you can utilize it as a place for paving the way for business expansion.

4 Search for product/technology possibilities

Proposals for the utilization of your products and technologies in helping research are also very welcome. The KEIO TECHNO-MALL provides a platform for linking to the development of new products and technologies amid the flow of people, objects, funds and information.

KEIO TECHNO MALL 2014

Program of Events Outline of Exhibits

- ◆ Electronics
- ◆ Biomedical
- ◆ Mechanics
- ◆ Materials
- ◆ Information and Communication
- ◆ Society & Environment
- ◆ Other Fields

Event Information

Venue **Event Stage**

Keio University Faculty of Science and Technology 75th Anniversary Commemorative Program

Keynote Speech 10:30-11:15

37 Years of University Originated Entrepreneurship - Dreams and Realities



NAKAJIMA, Masato
Chairman, Ideaquest Inc.
Professor Emeritus, Keio University

Commemorative Event for Establishing KIF (Keio Innovation Foundry)

Keynote Speech 11:25-12:10

The Japanese Economy Business - Academic Cooperation for Innovation



TAKENAKA, Heizo
Professor, Faculty of Policy Management, Keio University
Director, Global Security Research Institute, Keio University

Commemorative Event for Establishing KIF (Keio Innovation Foundry)

Talk Session 13:30-15:00

A Future Center of Innovative Technology for an Action of Practical Learning (Saiyansu): A True Picture of Innovative Cooperation among Industry, Government and Academia in Our Society

Japan has faced the super-matured society where there has been the ever low-growth economy along with a decrease in population and highly aged society. It is thus certain that Japan should be an innovative nation to aim at development of science, technology and values. For the super-matured society to achieve this, an investment for science and technology and development of highly qualified human resources will be critically needed.

However, we have been facing daunting issues. For instance, ranging from 15 to 20 billion yen, the research funding for the cooperation among industry, government and academia at Department of Science and Technology of Keio University, has little changes for ten years. In addition, many issues on the education of young researchers have been accumulated.

To achieve a role of universities and embody practical learning (Saiyansu) for our society as a watering hole* for a cooperation between a number of excellent industries and technologies, in this Talk Session, Keio Innovation Foundry (KIF) will be introduced and a number of panelists from industries will be invited to discuss issues from a view points of industry and academia: (1) Is Keio University able to contribute to research for industries and to generation of venture companies or entrepreneurs of university and development of human resources in next generations?; (2) As facing the open-innovation era, does an industry actively make its efforts in accepting seeds that have been grown in other companies or universities?

*It is a place where a variety of researchers and people with their professional expertise from industries gather together, discuss an endeavor and/or idea from every angle and develop it further. It is the foundation where education and research of a university would play continuously a central role in generation of innovations in a society.

Keynote Message (Video)



NIINAMI, Takeshi
President, Member of the Board,
Representative Director, Suntory Holdings Limited



INOUE, Yuji
Toyota
InfoTechnology Center, Co., Ltd. /
Chairman of the Board



MURAKAMI, Norio
President, Norio Murakami
Office Co., Ltd.



FUJIWARA, Hiroshi
Chairman and President CEO,
Broad Band Tower, Inc.



SUZUKI, Tetsuya
Director, KLL



TERASAKA, Koichi
Professor,
Dept. of Applied Chemistry,
Faculty of Science and Technology



KOIKE, Yasuhiro
Professor,
Dept. of Applied Physics and
Physico-informatics,
Faculty of Science and Technology



OHNISHI, Kouhei
Professor,
Dept. of System Design Engineering,
Faculty of Science and Technology



Facilitator:
YAMANAKA, Naoaki
Deputy Director, KLL

Round-table Session 15:40-17:00

Developing a Healthier Society through Technological Innovation

Thanks to the ongoing cooperation between medicine and engineering, recent advances in video image technology have made it feasible to indicate signs of cancer at earlier stages than previously possible. Thus, cross-industry cooperation in medicine, ICT and chemistry etc., have become increasingly important. Living in an aging society, our theme here is to discuss how our society can maintain high health standards by detecting and preventing illness through utilizing advancements in technology.



Ii, Motoyuki
Senior Vice President,
Senior Executive Manager,
Corporate Sales Promotion Headquarters,
Nippon Telegraph and Telephone
East Corporation



OKINAGA, Yoshihito
Chairman of the Board,
President,
Teikyo University



SUEMATSU, Makoto
Dean, Professor,
School of Medicine



SUZUKI, Koji
Professor,
Dept. of Applied Chemistry,
Faculty of Science and Technology



Facilitator:
KOIKE, Yasuhiro
Professor,
Dept. of Applied Physics and
Physico-informatics,
Faculty of Science and Technology

Seminar Information

Venue Seminar Stage

Technology Partnership Seminars (30 min. each)

Seminars are made by the winners of "The Young Scientists' Prize" of "2014 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (MEXT)".

1 10:45-11:15

Terahertz polarization imaging for non-destructive inspection

Terahertz electromagnetic wave attracts much attention for novel light source for nondestructive inspection. In this seminar, I will introduce a principle of a new technology about the terahertz polarization measurement that our group invented and developed, and I will present its application to the nondestructive inspection.



WATANABE, Shinichi

Associate Professor,
Dept. of Physics,
Faculty of Science and Technology

Panel
⇒ P23

2 13:00-13:30

Towards Innovation - A Mathematical Approach to Signal Processing Problems

The research goal is to build a mathematical framework for engineering problems in a wide range of fields such as signal processing. The achievements so far include the development of an adaptive learning algorithm for nonlinear function estimation tasks. The algorithm automatically selects a proper mathematical model in online fashion.



YUKAWA, Masahiro

Assistant Professor,
Dept. of Electronics and Electrical Engineering,
Faculty of Science and Technology

Panel
⇒ P25

3 15:10-15:40

Development of Electro-Adhesive Elastomer and the applications

The functional material of "Electro-Adhesive (EA) Elastomer" have been developed whose adhesive property of the surface can be changed according to applied electric field. The EA sheet is possible to be applied to the brake, clutch and fixture mechanism. In this seminar, the applicability of EA elastomer to these mechanical devices will be shown by introducing the characteristics.



KAKINUMA, Yasuhiro

Associate Professor,
Dept. of System Design Engineering,
Faculty of Science and Technology

Booth
⇒ P12

For **Event Schedules**, please refer to the end.

*Please note that content, etc. of events or seminars are subject to change due to unavoidable circumstances on the day of the exhibit.

Outline of Exhibits

Special symbols used in the following exhibition descriptions



Technology involving patent rights held by Keio University.
For more information, please inquire at the KLL Desk.



Technology Partnership Seminar; detail shown on Page 8.

Electronics

Electronics

Materials

BOOTH
1

Diamond quantum imaging

Professor **ITOH, Kohei**

Associate Professor **HAYASE, Junko**

Department of Applied Physics and Physico-informatics



Using each electron embedded near a diamond surface as a pixel for quantum sensing, magnetic field imaging of the substance placed on top of the diamond surface is realized.

Electronics

Information and Communication

BOOTH
2

Communications and Control Technologies Supporting Next-Generation M2M Infrastructure

Assistant Professor **KUBO, Ryogo**

Department of Electronics and Electrical Engineering



In next-generation M2M (machine-to-machine) networks, low-latency communication and high-precision control technologies are required. We present the concept of smart sensor-actuator networks using optical communication infrastructure from the viewpoint of communications and control engineering.

Electronics

Biomedical

Mechanics

Materials

Information and Communication

Society & Environment

Other Fields

Electronics

Mechanics

BOOTH
3**Responsive Multithreaded Processor for Distributed Real-Time Systems**Professor **YAMASAKI, Nobuyuki**
Department of Information and Computer Science

RMT Processor integrates a processor core (RMT PU), which executes eight threads simultaneously based on their priority. It supports four real-time communication links (Responsive Links), various I/O devices (e.g., SpaceWire, PCI-X, IEEE1394, and PWM), an IPC controller, and a run-time execution tracing.

Electronics

Mechanics

BOOTH
4**Development of Independent Driving Modular Omni-directional Vehicle**Associate Professor **NAKAZAWA, Kazuo**
Department of System Design Engineering

Omni-directional vehicle (ODV) is useful with its high mobility in narrow or crowded place. However, there are some problems with conventional ODVs. In order to improve them, we developed a new ODV with driving wheel modules.

Electronics

BOOTH
5**Medical Haptics**Professor **OHNISHI, Kouhei**
Department of System Design Engineering

Transmission of force sensation between remote areas is realized by bilateral control of master-slave robots. Transmission of force sensation is achieved by position tracking and action-reaction law. We applied the technology to rehabilitation robot for supporting operators by the transmission of force sensation.

Biomedical

Biomedical

Society & Environment

BOOTH
6**Inkjet Printed Chemical Sensors for Healthcare and Environmental Analysis**Professor **CITTERIO, Daniel**
Department of Applied Chemistry

Inkjet printing technology commonly known from home-use inkjet printers has become a tool for industrial-scale mass fabrication. Our laboratory is making use of this technology in combination with paper substrates to develop low-cost, single-use and simple chemical sensors for clinical and environmental applications.

Biomedical

Society & Environment

BOOTH
7**Chemical Sensors and Biosensors for Healthcare and Environmental Analysis**Professor **SUZUKI, Koji**
Department of Applied Chemistry

Our laboratory's research goal is the development of highly sensitive and selective chemical sensors and biosensors. Here, we present (1) novel bright fluorescent and chemiluminescent dyes for various target analytes, (2) functional nanomaterials for medical and environmental sensing, and (3) fluorescent probes for selective bioimaging.

Biomedical

Information and Communication

BOOTH
8**The test of smell for children that can be done for a game sense**Professor **OKADA, Kenichi**
Department of Information and Computer Science

It is important to detect person with Autism Spectrum Disorder (ASD) early to get treatment and education. Recently, the research on olfactory feature of them is advanced. And it is reported that odor detection ability in children with ASD was impaired. In this study, we assess olfaction of children to screen for ASD by olfaction.

Biomedical

BOOTH
9**Innovative thermal angioplasty; Photo-Thermo Dynamic Balloon and thermal drug delivery**Professor **ARAI, Tsunenori**
Department of Applied Physics and Physico-informatics

We will present you an innovative laser technology extending vascular wall without cracks. We reserved number of patents and have practical experiences. We will demonstrate the latest operation of newly developed angioplasty device to extend atherosclerosis vessels as well as drug delivery system, both with heating.

Biomedical

BOOTH
10**Development of the latest therapeutic systems from Keio University**Professor **ARAI, Tsunenori**
Department of Applied Physics and Physico-informatics

Our Arai Lab. presents unique therapeutic systems from the results of basic studies and our patents. Our unique developed systems will be exhibited and demonstrated in our section.

Biomedical

BOOTH
11**The Innovative Arrhythmia Therapy: PD Ablation**Professor **ARAI, Tsunenori**
Department of Applied Physics and Physico-informatics

We have proposed PD Ablation as an application of Photodynamic Therapy to a non-thermal arrhythmia treatment without any side effects and developed a clinical device. We will present new findings of in vitro and in vivo studies.

Mechanics

Mechanics

Information and Communication

BOOTH
12

Healthcare Robot



Associate Professor **KATSURA, Seiichiro**
Department of System Design Engineering



To attain rich lifestyle support services for the elderly, it is necessary to automatize a human contact operation such as rehabilitation, massage, and so on by a robot. We exhibit a healthcare robot that can operate physical contact by motion-copying system. The technique is possible to acquire and reproduce a human motion using a robot.

Mechanics

Information and Communication

BOOTH
13

Motion-Copying System



Associate Professor **KATSURA, Seiichiro**
Department of System Design Engineering



This technology attains motion copying that reproduces motion and force in human motions. In particular, we have succeeded in realizing motion reproduction with contact operation by applying acceleration control. It will be possible to attain an innovative skill tradition, e.g., quantitative evaluation of experts' skills, skill transfer, skill training, etc.

Mechanics

BOOTH
14

Transformable Small ROV

Associate Professor **MORITA, Toshio**
Department of Mechanical Engineering



Underwater robot is expected to use for exploration activities or maintenance of underwater building. However, transport before and after the mission is heavy labor. So, We propose an underwater robot which include transformation mechanism frame for reduce the volume at the transportation.

Mechanics

Electronics

BOOTH
15

Intelligent machine tools -Feasibility of feeling machine tools-

Associate Professor **KAKINUMA, Yasuhiro**
Department of System Design Engineering



We are working on development of a next-generation machine tool which has ability to recognize a cutting condition without any additional sensors. In our booth, we are supposed to introduce the developed feeling machine tool, the portable 5-axis feeling polishing machine, and these application techniques.

Mechanics

Materials

BOOTH
16

Application devices of Electro-adhesive elastomer



Associate Professor **KAKINUMA, Yasuhiro**
Department of System Design Engineering



We have developed the functional material of "electro-adhesive sheet" whose adhesive property of the surface can be changed according to applied electric field. The EA sheet is possible to be applied to the brake, clutch, fixture mechanism and so on. We will exhibit the practical application devices in our booth.

Materials

Materials

Biomedical

BOOTH
17

Ultra-Precision Micro Machining of New Materials



Professor **YAN, Jiwang**
Department of Mechanical Engineering



We develop new technologies for micro/nano-scale machining and surface processing in order to improve the added value of industrial products. Besides mechanical methods, we also use electrical/chemical methods, lasers and ultrasonic vibrations to precisely modify the shapes and surface properties of new materials, such as super hard alloys, optical crystals, semiconductors, glass, diamond, CFRP, and ceramics.

Materials

Society & Environment

BOOTH
18

Fabrication of anti-fouling thin film with multi-function for the application of industry, optics, and medical



Professor **SHIRATORI, Seimei**
Department of Applied Physics and Physico-informatics



We fabricate thin films with multi-function by controlling surface morphology with nanoscale order. Superhydrophobic coating for house surface, highly durable transparent anti-fouling coatings for windows, anti-"blood adhesion" for medical equipments, anti-reflection films for microscopy, and hemostatic micro capsules are studied in our laboratory.

Materials

BOOTH
19

Novel Methods for Large-scale and Fine Synthesis of Nanoclusters



Professor **NAKAJIMA, Atsushi**
Assistant Professor **TSUNOYAMA, Hironori**
Department of Chemistry



*KIPAS Principal Investigator / Research Director, JST-ERATO Nakajima Designer Nanocluster Assembly Project

Novel methods for large-scale and fine synthesis of nanoclusters, super-small particles of sub-bulk size which have unusual and various functionalities, have been developed. Among them we display: 1. High power magnetron sputtering for nanoclusters. 2. Micro-fluid reactor for liquid phase synthesis of nanoclusters protected by organic ligands.

Materials

Biomedical

BOOTH
20**Diamond-like carbon films to biological application**Professor **SUZUKI, Tetsuya**
Department of Mechanical Engineering

Diamond-like carbon (DLC) films have attractive properties such as high gas barrier and low friction coefficient, and been used in many areas. In fact, there are some industrial applications to packaging and automobile parts etc. Here, we show DLC-coated medical device which contains fluorine (F-DLC) with antithrombogenicity property.

Information and Communication

Information and Communication

BOOTH
21**KANSEI Analyzer Using EEG**Associate Professor **MITSUKURA, Yasue**
Department of System Design Engineering

EEG is the most available system for getting the KANSEI. We proposed the KANSEI detection system using the simplest EEG device. We can detect his/her degree of Sleepiness, Interest, Like or Dislike, Concentration, Stress. Furthermore, you can try to the demonstration on site.

Information and Communication

BOOTH
22**The secure access control schemes towards realization of IoT with high reliability**Professor **SASASE, Iwao**
Department of Information and Computer Science

The research results about routing, media access control, and attack defense which fill power saving, high reliability and high security are shown towards realization of IoT (Internet of Things).

Information and Communication

Society & Environment

BOOTH
23**Real 4K Content Distribution by SDN**Assistant Professor **KANEKO, Kunitake**
Professor **TERAOKA, Fumio**
Department of Information and Computer Science

Large scale of high quality 4K video delivery causes congestions in today's network. Our router using SDN (Software Defined Network) technology monitors paths utilization, navigates overflowed packets to a bypass on demand, and realizes stable 4K video delivery avoiding congestion.

Information and Communication

Society & Environment

BOOTH
24**Future of Network Media**Assistant Professor **KANEKO, Kunitake**
Professor **TERAOKA, Fumio**
Department of Information and Computer Science

In the future network, we believe that the content size and the number of contents will grow much larger. To cope with this, we introduce a large file sharing system (Content Espresso) and an information searching system (Catalogue). Accordingly, we are developing a high-resolution video distribution service and the Campus Museum.

Information and Communication

Materials

BOOTH
25**Photonics polymers for the world fastest plastic optical fiber and high-definition display**Professor **KOIKE, Yasuhiro**
Department of Applied Physics and Physico-informatics

Japan will start the world's first 4K/8K broadcast. We introduce the fastest plastic optical fiber in the world that enables a real-time transmission of the staggering amount of information. Our photonics polymers also bring innovation to the liquid crystal display structure which is getting bigger and more complicated.

Information and Communication

Mechanics

BOOTH
26**Micro Devices for Information Communication Technology**Associate Professor **MIKI, Norihisa**
Department of Mechanical Engineering

Our laboratory develops micro devices for tactile stimulation, eye-tracking, and brain activity measurement for future information communication technologies.

Information and Communication

BOOTH
27**ZINK: ICN on ZNA**Professor **TERAOKA, Fumio**
Assistant Professor **KANEKO, Kunitake**
Department of Information and Computer Science

In today's Internet, when we want to retrieve content we need to specify the server that provides the content. However, we do not have to pay attention to the server's location. We're trying to realize a new content-centric network instead of machine-centric network.

Information and Communication

BOOTH
28**Intelligent Transportation Systems with Vehicular Adhoc Networks**Professor **SHIGENO, Hiroshi**
Department of Information and Computer Science

Intelligent Transportation Systems (ITS) aim to create more convenient and secure automobile society with information technology. In this booth, we will explain an ITS with wireless communications with vehicles. It can provide traffic accident and traffic jam information in real-time and contribute to improve automobile society.

Information and Communication

BOOTH
29**Automatic Hyperlink Generation by Web Index (WIX)**Associate Professor **TOYAMA, Motomichi**
Department of Information and Computer Science

The words on a browser screen turn into hyperlinks by a single click of a button! By selecting the buttons on the toolbar, you can select your destination to Wikipedia, Amazon page or the PDF leaflet of your products. Hyperlink which used to be set by authors, now become to be set by readers.

Information and Communication

Society & Environment

BOOTH
30**Tele-presence system extending socialities**Professor **IMAI, Michita**
Department of Information and Computer Science

Our research focuses on the Augmented Sociality. In this event, we display some systems and robots; wearable avatar manipulated on Niconico live broadcast, telecommunication system for parties, and AR.DRONE showing the third person perspective.

Information and Communication

Society & Environment

BOOTH
31**Environment Sensing System**Professor **MATSUMOTO, Yoshinori**
Department of Applied Physics and Physico-informatics

This booth exhibits the system which measures the weather, radiation or PM2.5 information including position information by using low power sensor and circuit technologies. The data records by tablet mobile device or transmits through 3G or sensor network. The system indicates with a map or photograph after the collection and analysis.

Information and Communication

BOOTH
32**Measurement the size of human body by homologous model using some RGB-D cameras**Associate Professor **AOKI, Yoshimitsu**
Department of Electronics and Electrical Engineering

The sensor called a RGB-D camera which can measure the distance can obtain very cheaply in recent years. Shape of human's body is easily measured using this camera, and we introduce the system which can be applied to clothes selection or a medical field.

Information and Communication

Electronics

BOOTH
33**Analysis of first person vision by image sensing technologies**Associate Professor **AOKI, Yoshimitsu**
Department of Electronics and Electrical Engineering

The First Person Vision camera is a wearable device that attracts a lot of people, especially researchers. It means the device is the hottest of all recording devices that continue evolving. We use the system for obtaining scene information and intensity of movement, and recognize action. We'll show some examples of applications in the exhibition.

Information and Communication

BOOTH
34**Extraction of human behavior from security camera video**Associate Professor **AOKI, Yoshimitsu**
Department of Electronics and Electrical Engineering

In recent years, a number of monitoring camera is increasing. The purpose of our research is to extract human activities from security camera footage automatically. It can apply to a wide variety of fields including surveillance systems, human interface and sports video analysis.

Information and Communication

BOOTH
35**Next Generation Interface using Human State**Associate Professor **AOKI, Yoshimitsu**
Department of Electronics and Electrical Engineering

These days, the way of interaction between humans and computers becomes diverse. The new technology that we operate computers without a keyboard and a mouse receive more attentions. In our booth, an application of new interface is demonstrated which is based on image recognition technologies.

Information and Communication

BOOTH
36**Array Sensor: Monitoring Using Radio Wave**Professor **OTSUKI, Tomoaki**
Department of Information and Computer Science

We introduce Array Sensor that can monitor people using radio wave. The array sensor senses the change of propagation of radio waves, and based on it, it can classify people's state and action.

Information and Communication

BOOTH
37**Monitoring System Using Low Resolution Infrared Sensor Array**Professor **OTSUKI, Tomoaki**
Department of Information and Computer Science

We introduce monitoring system using low-resolution infrared sensor array. Our system can detect a person's activity and his position without using camera.

Information and Communication

BOOTH
38**Non-Contact Biological Sensing**Professor **OTSUKI, Tomoaki**
Department of Information and Computer Science

We introduce our non-contact biological sensing method without attaching any device. As an example, we demonstrate the method that can sense breathing and cardiac beat wirelessly.

Information and Communication

Materials

BOOTH
39**Optica Devices for
Exa-scale Computing**Associate Professor **ISHIGURE, Takaaki**
Department of Applied Physics and Physico-informatics

Optical interconnect technologies are drawing much attention for realizing exa-scale high-performance computing systems. In this research, polymer optical devices for high-bandwidth-density interconnects are designed and fabricated in order to demonstrate their outstanding performances.

Information and Communication

BOOTH
40**PEACH2: a high speed
switching hub for supercomputers**Professor **AMANO, Hideharu**
Department of Information and Computer Science

PEACH2 is a switching hub to connect node of supercomputing directly using PCIe. Lower latency communication can be achieved compared with Infiniband network mainly used in current supercomputers.

Information and Communication

BOOTH
41**Next-Generation Image Handler**Professor **FUJISHIRO, Issei**
Department of Information and Computer Science

We propose two kinds of next-generation image handlers that provide users with novel styles of illusion of immersion. One system builds on hierarchical relationships among a bunch of snapshots shared on SNSs to allow the users to walk freely through sightseeing spots. The other relies on human motion parallax stereovision system so as to generate "fourth wall-breaking" videos instantly only from a single snapshot.

Information and Communication

BOOTH
42**Energy Efficient Enhanced-type Data
Centric Network**Professor **YAMANAKA, Naoaki**
Department of Information and Computer Science

We have studied ubiquitous Grid Networking (uGrid) that has many on-line resources. We show the demonstration to calculate the energy-aware routing to use multiple slices under ubiquitous Grid Networking Environment.

Information and Communication

BOOTH
43**Automatic reconfiguration
next generation access network
-Elastic Lambda Aggregation Network (EAN)-**Professor **YAMANAKA, Naoaki**
Department of Information and Computer Science

The problems in a communication network are the increase of traffic, the increase in power consumption of the network device, and improve disaster tolerance. In order to solve these problems, we studied the technology of efficient resource allocation, accommodation the multiple services and the topology, and high availability lifeline service. In this exhibition I do a demonstration with a focus on efficient resource allocation technique and its related technologies.

Information and Communication

BOOTH
44**EVNO
~Energy Virtual Network Operator~**Professor **YAMANAKA, Naoaki**
Department of Information and Computer Science

We propose a new structure of electric power network whose generation and delivery systems are separated from each other. A third-party institution called EVNO provides efficient power supply and demand matching considering the real-time without impairing user satisfaction using P1ax by M2M technology.

Information and Communication

BOOTH
45**Single Antenna MIMO Wireless System
for Wearable Display Terminals**Professor **SANADA, Yukitoshi**
Department of Electronics and Electrical Engineering

Our proposed scheme realizes multi-input multi-output communication with a single receive antenna and it is suitable for wearable display terminals.

Information and Communication

Other Fields

BOOTH
46**New Structure of
Internet Service Infrastructure**Professor **NISHI, Hiroaki**
Department of System Design Engineering

New Internet backbone router with DPI function was developed, and it has a potential to change the style and knowledge of Internet Services. It includes the anonymization function of private information. Come on and experience the novel services provided by the new router.

Society & Environment

Society & Environment

Information and Communication

BOOTH
47**New Structure of
Smart Community Infrastructure**Professor **NISHI, Hiroaki**
Department of System Design Engineering

Smart Community is the promising new style of our society. Our laboratory tackles to design its infrastructure through the real field experiment, such as Zero-emission House Project, Green society ICT life-infrastructure in Kurihara City, and Smart Community Implementation in Musashikosugi. These systems are demonstrated and you will experience a new society.

Society & Environment

BOOTH
48**Producing water supersaturated with gases via Venturi-type aeration**Assistant Professor **ANDO, Keita**
Department of Mechanical Engineering

With the Venturi-type aeration system we recently proposed, gases can be dissolved into tap water beyond its saturation limit. Such supersaturated water is expected to be applied to various fields: environmental, medical, and agricultural. Here, we will demonstrate the production of supersaturated water using the newly developed aeration system.

Society & Environment

BOOTH
49**Optimal Management for Smart Energy Network**Professor **NAMERIKAWA, Toru**
Department of System Design Engineering

Currently, distributed energy systems, including renewable energy generators, are drawing attention. We propose optimal and reliable cooperative distributed control, as well as estimation and prediction methodologies, for smart electrical power network management systems, including photovoltaic cells and wind turbines.

Society & Environment

BOOTH
50**Isotopomer ratio analyzer with laser spectroscopy**Professor **SASADA, Hiroyuki**
Department of Physics

Isotopomer ratio reflects production process of molecules. Therefore, we can obtain history of the molecules from the isotopomer ratios. We find the best pair of $^{12}\text{CH}_4$ and $^{13}\text{CH}_4$ transitions, and developed efficient sources tuned at these lines. We introduce an apparatus, which measures absorption intensities and yields the isotopomer ratios.

Society & Environment

BOOTH
51**Development of removal technology for VOCC in exhaust gas by spraying removal solution to heat exchanger**Professor **TANAKA, Shigeru**
Department of Applied Chemistry

The onset of a disease of cancer causing by VOCC such as DCM and TCE in printing factory has become a serious problem. The removal equipment for VOCC in exhaust gas by spraying removal solution to heat exchanger was developed.

Society & Environment

BOOTH
52**The automatic continuous measurement equipment for acidity and chemical ions in PM2.5**Professor **TANAKA, Shigeru**
Department of Applied Chemistry

Recently, many studies point out that the fine particles in the atmosphere has more damage to human health. The automatic continuous measurement equipment for acidity and chemical ions in PM2.5 was developed to understand the behavior of PM2.5 in the atmosphere.

Society & Environment

Information and Communication

BOOTH
53**Building Agent-based Simulation Environment with Geographical/Spatial Information for Evacuation Planning**Assistant Professor **IJIMA, Tadashi**
Department of Administration Engineering

The goal of this research is to build a geo-simulation environment for evacuation planning by using an agent-based simulation technique. The agent-based simulation technique is based on modeling of human decision-making and behavior. To improve the reality of the simulation, we attempt to attach spatial and geographical data to the simulation model.

Society & Environment

Information and Communication

BOOTH
54**Building Human Behavior Recognition and feedback to Virtual Space**Assistant Professor **IJIMA, Tadashi**
Department of Administration Engineering

The aim of this research is building support environment for human actions by estimating some kind of situations, such as position, pose, intention of user from observation by various sensors.

Society & Environment

Information and Communication

BOOTH
55**Business Process and Rule Management and Context-based Security Model**Assistant Professor **IJIMA, Tadashi**
Department of Administration Engineering

An electronic distributive document such as a medical record is shared by many people (e.g., doctor, nurse, druggist, clinical technologist, and clerk). The aim of this research is building a document-management environment with role-based fine-grained access control policy on cloud servers.

Society & Environment

Other Fields

BOOTH
56**Challenge to the energy for achievable sustainable society**Professor **UEDA, Toshihisa**
Department of Mechanical Engineering

What kind of energy is used in a future sustainable society? We are doing research on fuel based energy technology (combustion, reformer etc) which is globally used at any place in the world.

Society & Environment

Information and Communication

BOOTH
57**Design management for Fun-to-use**Associate Professor **NAKANISHI, Miwa**
Department of Administration Engineering

How can we design "curiosity," "usability," and "loyalty" for products and services? Let's discuss the theory and application of the design management method in which psychology and engineering are united.

Society & Environment

Other Fields

BOOTH
58**Marketing Data Analysis: Quantification for Customer Satisfaction and Service Quality, and Data Analysis for E-Commerce**Professor **SUZUKI, Hideo**
Department of Administration Engineering

Nowadays, marketing analysis using the Web environment attracts attention. On the other hand, effective information can be also acquired from analysis of the questionnaire which is positioned as a conventional approach. We present various marketing analysis, such as case studies of professional sports services, in which we quantify customer satisfaction and service quality, data analysis for POS with customer ID and e-commerce.

Other Fields

Other Fields

BOOTH
59**Measurement Technique of Water Content Using NMR Sensor**Associate Professor **OGAWA, Kuniyasu**
Department of Mechanical Engineering

We developed the original measurement technique based on the principle of NMR method using small detection coil. This technique is called NMR sensor and can be applied to a PEFC (Polymer Electrolyte Fuel Cell). The NMR sensor can measure water content and current density inside a PEFC in real time.

Other Fields

BOOTH
60**Supply Chain Visualization System (SCVS)**Professor **MATSUKAWA, Hiroaki**
Department of Administration Engineering

Supply Chain Visualization System (SCVS) consists of server and clients (PC, cellular phone or tablet computer etc.), and the primary purpose is supply risk management. Using the system, a company can simplify order processing, can trace and evaluate supply route and risk, can determine proper inventory level as well.

Other Fields

BOOTH
61**Ultrafine Manipulation**Associate Professor **KATSURA, Seiichiro**
Department of System Design Engineering

We have developed an ultrafine manipulation system that transmits manipulated force sensation of nanoscale objects to an operator. Our objective is to apply this technology to medical treatment and production processes.

Panel Presentations

Electronics

Biomedical

PANEL
62**Silica microcavity sensor**Associate Professor **TANABE, Takasumi**
Department of Electronics and Electrical Engineering

In conventional optical sensing, there is a tradeoff between the device size and sensitivity. This is because of the small interaction between light and matter. By means of a microcavity system, which can confine light in a small volume, we can accomplish small size and high sensitivity simultaneously.

Electronics

Materials

PANEL
63**Developments of a high-speed terahertz polarimeter**Associate Professor **WATANABE, Shinichi**
Department of Physics

Polarization information of the terahertz electromagnetic wave will be useful as a novel inspection tool of the strain distribution inside plastic materials. In this panel, we introduce a high-speed terahertz polarization measurement technique which we invented recently, and future industrial applications will be discussed.

Electronics

Information and Communication

PANEL
64**Research and development of photonic functional circuits for untapped optical communication wavelength band**Professor **TSUDA, Hiroyuki**
Assistant Professor **KUBO, Ryogo**
Department of Electronics and Electrical Engineering

The wavelength bands of 1530-1625 nm and 1260-1360 nm are utilized for recent optical communication systems. We can enhance the transmission capacity if we open up new wavelength band (T-band) of 1000-1260 nm. We research on photonic functional circuits with superior performances for such a wavelength band.

Biomedical

Materials

PANEL
65**Dynamics of proteins using computer simulations**Assistant Professor **MITSUTAKE, Ayori**
Department of Physics

The molecular simulations of biomolecules are used for investigating the stability and dynamics of them. I have performed computer simulations of small proteins or peptides. Especially, I have developed simulation algorithms based on physics and chemistry. I would like to extend my research to applications.

Biomedical

Society & Environment

PANEL
66**Development of highly-sensitive single molecule sensing by near-field optics**Professor **SAIKI, Toshiharu**
Department of Electronics and Electrical Engineering

Single molecule biosensing is an attractive technology to realize the personalized medicine. In our laboratory, we are working to develop single molecule biosensor, such as DNA and biomarker, with near field optics. Our technology is much practical way for commercial products, because we do not use any micro / nano fabrication.

Materials

PANEL
67**Functional supramolecular nanomaterials for solar energy conversion and electronics**Associate Professor **HASOBE, Taku**
Department of Chemistry

Recent developments in synthetic and supramolecular techniques enable us to construct photo- and electro-functional molecular nanomaterials for solar energy conversion and electronics. So far, we have reported a variety of molecular nanomaterials. The details on the preparation, structure and application will be discussed in this presentation.

Materials

PANEL
68**Flame synthesis of functional oxide particles**Associate Professor **YOKOMORI, Takeshi**
Department of Mechanical Engineering

Flame synthesis has many potential advantages such as high production rates, versatile, simple industrial process, and short processing time to make oxide particles. Our group has developed this synthesis technique for various functional oxide particles, i.e. nano-phosphors, porous particles and core-shell oxide particles.

Mechanics

Materials

PANEL
69**Contrary to expectations, fine coating and painting are not so easy!**Professor **ASAKURA, Kouichi**
Department of Applied Chemistry

Painting and coating are universal processes in industrial production. Don't you have any experience that you are embarrassed by the spontaneous pattern formations during painting and coating? Here, we show the technology to inhibit the pattern formations developed by the research based on the concept of "growth of fluctuation in far-from-equilibrium system".

Mechanics

Materials

PANEL
70**Self-assembled Micro-Nano Systems and Device Applications**Assistant Professor **ONOE, Hiroaki**
Department of Mechanical Engineering

We present bottom-up self-assembly systems using colloid particle or micro-fabricated hydrogel materials. Those self-assembled materials are integrated with other polymers such as silicone to develop device applications including robotic actuators, sensors, optical devices and medical devices.

Information and Communication

PANEL
71**Action
~Application Coordinated with Transport, IP and Optical Network~**Professor **YAMANAKA, Naoaki**
Department of Information and Computer Science

In the current core network, link utilization is quite low, and energy consumption is too huge. In this research, we aim to reduce power consumption without reducing user satisfaction by combining the photonic leveraging the elastic optical network technology.

Information and Communication

PANEL
72**A Reconfigurable Hardware for Integrating Various Structured Storage Technologies**Assistant Professor **MATSUTANI, Hiroki**
Department of Information and Computer Science

We are developing FPGA-based hardware accelerators for various NOSQL storages that cover key-value store, column store, and graph database.

Information and Communication

PANEL
73**3D Position Detection System by Gradient Projection**Associate Professor **SUGIMOTO, Maki**
Department of Information and Computer Science

We introduce a gradient based 3-dimensional position detection method for optical sensors. This method can be applied for making geometrical consistency between projected visual contents and real objects in a spatial augmented reality environment.

Information and Communication

Electronics

PANEL
74**Towards Innovation - A Mathematical Approach to Signal Processing Problems**Assistant Professor **YUKAWA, Masahiro**
Department of Electronics and Electrical Engineering

The research goal is to build a mathematical framework for engineering problems in a wide range of fields including signal processing. We have so far built a new adaptive learning paradigm using multiple reproducing kernels for nonlinear estimation. In our approach, a proper mathematical model is designed in online fashion.

Special Exhibits

- A Kawasaki Institute of Industry Promotion (IIP)
- B Yokohama Industrial Development Corporation (IDEC)
- C Industry-Government-Academia Joint Project (supported by Ministry of Economy, Trade and Industry) Keio-Kanagawa Manufacturing Center
- D Keio Innovation Foundry (KIF)

KEIO TECHNO-MALL 2014

Event Schedule

Event Stage (120 seats)	
10:00	10:00-10:15 Live broadcast of the Opening Address
10:30	10:30-11:15 Keynote Speech 37 Years of University Originated Entrepreneurship - Dreams and Realities NAKAJIMA, Masato Chairman, Idequest Inc. Professor Emeritus, Keio University
11:00	Commemorative Event for Establishing KIF
11:30	11:25-12:10 Keynote Speech The Japanese Economy Business-Academic Cooperation for Innovation TAKENAKA, Heizo Professor, Faculty of Policy Management, Keio University Director, Global Security Research Institute, Keio University
12:00	12:15-13:15 Live broadcast of the Interviews NAKANISHI, Miwa Booth No. 57 ASAKURA, Kouichi Panel No. 69 ONOE, Hiroaki Panel No. 70
13:00	Commemorative Event for Establishing KIF
13:30	13:30-15:00 Talk Session A Future Center of Innovative Technology for an Action of Practical Learning (Saiyansu): A True Picture of Innovative Cooperation among Industry, Government and Academia in Our Society NIINAMI, Takeshi (Video Message) President, Member of the Board, Representative Director, Suntory Holdings Limited INOUE, Yuji Toyota InfoTechnology Center, Co., Ltd. / Chairman of the Board MURAKAMI, Norio President, Norio Murakami Office Co., Ltd. FUJIWARA, Hiroshi Chairman and President CEO, Broad Band Tower, Inc. SUZUKI, Tetsuya Director, KLL TERASAKA, Koichi Professor, Dept. of Applied Chemistry, Faculty of Science and Technology KOIKE, Yasuhiro Professor, Dept. of Applied Physics and Physico-informatics, Faculty of Science and Technology OHNISHI, Kouhei Professor, Dept. of System Design Engineering, Faculty of Science and Technology Facilitator: YAMANAKA, Naoaki Deputy Director, KLL
14:00	
14:30	
15:00	
15:30	15:40-17:00 Round-table Session Developing a Healthier Society through Technological Innovation II, Motoyuki Senior Vice President, Senior Executive Manager, Corporate Sales Promotion Headquarters, Nippon Telegraph and Telephone East Corporation OKINAGA, Yoshihito Chairman of the Board, President, Teikyo University SUEMATSU, Makoto Dean, Professor, School of Medicine SUZUKI, Koji Professor, Dept. of Applied Chemistry, Faculty of Science and Technology Facilitator: KOIKE, Yasuhiro Professor, Dept. of Applied Physics and Physico-informatics, Faculty of Science and Technology
16:00	
16:30	
17:00	
18:00	

Seminar Stage (30 seats)	
10:00	10:00-10:15 Live broadcast of the Opening Address
10:30	10:45-11:15 Technology Partnership Seminar Terahertz polarization imaging for non-destructive inspection WATANABE, Shinichi Associate Professor, Dept. of Physics, Faculty of Science and Technology
11:00	
11:30	Live broadcast of the Keynote Speech
12:00	
12:30	
13:00	13:00-13:30 Technology Partnership Seminar Towards Innovation - A Mathematical Approach to Signal Processing Problems YUKAWA, Masahiro Assistant Professor, Dept. of Electronics and Electrical Engineering, Faculty of Science and Technology
13:30	
14:00	Live broadcast of the Talk Session
14:30	
15:00	15:10-15:40 Technology Partnership Seminar Development of Electro-Adhesive Elastomer and the applications KAKINUMA, Yasuhiro Associate Professor, Dept. of System Design Engineering, Faculty of Science and Technology
15:30	
16:00	Live broadcast of the Round-table Session
16:30	
17:00	
18:00	