ISIT

Institute of Systems, Information Technologies and Nanotechnologies

Toward An Institute
Open to the Community

Chairman
Masayoshi Nuki

President
Seiji Shinkai

Greetings

In 1995, a dramatic change was taking place not only in Japan and but throughout the world. This world-wide trend was called the "Information Revolution" which purported to create a society equipped with advanced information networks. In the same year, ISIT was founded with the aim of contributing to the development of Fukuoka as a hub of information-related industries, and leading the industrial sectors in the future.

Since then, ISIT has played a pioneering role in the field of systems and information technologies for more than 12 years, consequently promoting local industries. however, it is anticipated that ISIT use its experience more liberally to develop new innovations, and we have decided to add the field of advanced sciences & technologies including nanotechnology to its domains of research, development, and exchange activities. This has enabled us to form a research community consisting of scientists with different backgrounds. Furthermore, we have extended our assistance to new ventures in the region, making full use of our experiences in coordinating industry-academia-government collaboration over the years.

ISIT has become a public interest incorporated foundation in April, 2013.

We believe that ISIT will carry greater weight in its future role in promoting the local economy. We look forward to dedicating ourselves in making further contributions to the realization of a vigorous community in this region. We ask for your continued support and cooperation to this end.

Courtesy of Fukuoka City
PHOTO:Fumio Hashimoto

Key Concepts

ISIT aspires to contribute to the economic and social development of the Kyushu region, whilst promoting industries in the fields of system & information technology and other advanced science and technologies. It is essential that we improve technical capabilities and R&D capacity of local industries in these fields and create new cultures to realize this mission. To this end, ISIT will, under international collaboration among academia, industry, and government primarily in the Asia Pacific region, reinforce its research activities, interact and cooperate with similar organizations in Japan and abroad, provide consulting, gather and collect information, and develop human resources.

ISIT is located in the Fukuoka Soft Research Park (SRP), which was developed with the aim of creating a cluster of information-related businesses which Fukuoka City defines as the industry for the 21st century. Over the years, SRP has successfully attracted numerous businesses of all sizes.

ISIT was founded to serve as a research institute bridging these businesses in the SRP in terms of technological transfer and exchange.

Furthermore, in April 2008, ISIT created a new lab for nanotechnology at the "Fukuoka Industry-Academia Symphonicity (FIAS)" established in Ito, located in the western part of Fukuoka City, where the development of a new community has already commenced with the relocation of Kyushu University under the industry-academia-government partnership.

ISIT has become a public interest incorporated foundation in April, 2013. It will continue to undertake mid and long term projects with strategic themes, serve as a coordinator for collaborations between major and local companies as well as between universities and industries, encourage interaction among researchers, disseminate information, and provide support to new ventures.

ISIT's mission is to contribute to the extensive development of industries in the field of advanced science and technologies and the prosperity of the region.

Outline

Established: December 25, 1995, with approval of the Minister of Economy,Trade and Industry(the former Minister of International Trade and Industry)

Capital: JPY 300 million(of which Fukuoka City contributed JPY 250 million)

Supporting Membership: ISIT offers membership to parties who support our goals
Corporate members:48;individual members:24(as of March,2013)

History

June, 1993: Kyushu University's working group reported the result of their survey on desirable R&D to be conducted at Fukuoka SRP.

March, 1995: A committee to investigate the establishment of a core research institute at Fukuoka SRP was formed.

December, 1995: Institute for System Information Technologies/Kyushu was founded.

September, 1998: Laboratory 3 was created.

April, 2008: Laboratory for Nanotechnology was created, and the institute was reorganized under the name of "Institute of Systems, Information Technologies, and Nanotechnologies".

April, 2012: Innovative Organic Device Laboratory was created.

April, 2013: Became a public interest incorporated foundation (approved by The Prime Minister of Japan)

Nanotechnology Laboratory

Research and Development

ISIT conducts research and development according to its principal research themes. Results of this research conducted by ISIT or universities, are shared with local companies and the community through ISIT's Project Research and Contract Research.

■Principal Research

Principal Research refers to ISIT's constant research and consists of mid and long term projects with strategic themes. ISIT continually deals with five themes at five separate laboratories. They include:

| Developing essential technologies for System LSI and promoting their dissemination in society | Ensuring information security in social systems | Daily Life Support by Information and Robot Technologies | Development of new environmentally-friendly materials by the fusion of Nanotechnology and Biotechnology | Development of the next-generation organic semiconductor photo-electronics devices and innovative common fundamental technologies |

■Project Research & Contract Research

Utilizing respective research results together with local companies and universities, ISIT pursues projects including those proposed by the national government for public corporate participation. ISIT undertakes research and development that is both practical and viable with a view toward generating new business.

Contract research involves the consignment of comparatively short-term research, investigations, guidance, and so on. As a rule, ISIT takes on contract research themes similar to the institute's own principal themes; however, ISIT also makes a point to be open and facilitate projects within its capability.

ISIT attempts to make research findings open to the public through academic meetings, journals, report meetings as well as research exchange meetings, its website, and publicity papers. Some results may take time to be released depending on their themes and contents.

Examples of Project Research and Contract Research

■Run time Communication Optimization using Packet Pacing

■Research and Development of Cyber Attack Prediction with International Cooperation

■Sensor Network System and Social Network Service for Advanced Agriculture

■Study on Next-Generation Supercomputer Architecture

■Challenge for Electroluminescence Super Device Through Innovation of Organic Materials

■Development of Ultrasonic-assisted Micro-bump Bonding Machine for 3D-LSI

Regular Exchange Meetings, Technical Seminars etc.

ISIT provides diversified exchange meetings on updated information technology as well as other advanced science and technologies. ISIT hosts various opportune events including seminars and research meetings with researchers invited from both home and abroad. ISIT is expanding a web of people and information.
Exchange meetings and seminars hosted by ISIT are open to the pubic.

Examples of past seminars

■Exchange Meetings & Seminars
Application, potentiality, and challenges of the biometric authentication technique
Fukuoka Front-line Science & Technology - ISIT research showcase -
Antigenase as an innovative nano-biomaterial

■Special Public lectures
How to reduce power consumption happily

■Research meetings
ISIT Car Electronics Research Seminar
Organic Electronics Research Laboratory Seminar
Fukuoka-Busan System LSI Workshop

Gathering and Providing Information

● PR brochure "What IS IT?" (published quarterly)
● Annual report
● Providing information through the website and email newsletters
● Collection of books, magazines, academic journals, and other materials regarding advanced sciences and technologies

Academia-Industry Collaboration Program

With a view of creating new businesses and technologies through collaborations among local companies, universities, and research institutes including ISIT, in the Kyushu region, ISIT is building a network among businesses, laboratories, and business support organizations. We also provide support to researchers who hope to participate in a bid for national research grants, and match the needs of the private sector with the research seeds at universities.

Consulting Services

With the recent rapid advancement of information technologies, it has become difficult to keep up with the latest developments or to determine technological trends. ISIT offers technical consulting services to companies and administrations regarding new developments in products and social systems. We also provide assistance to companies with superior technology to make their developments practically viable.
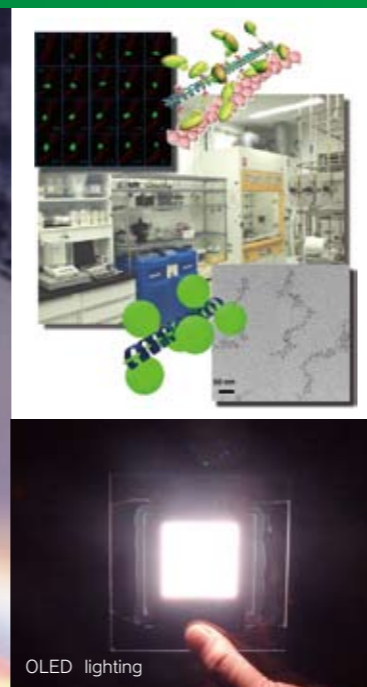
Receiving Researchers and Scholars

ISIT receives on-the-job trainees and exchange researchers from local companies who are involved in research projects in line with the principal themes of ISIT. ISIT also shares its research resources and facilities with special researchers and exchange researchers to respond to the needs of local companies.
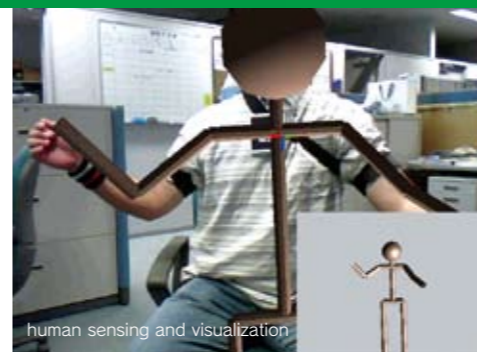
human sensing and visualization

flexible OLED

Organic Electronics comes Fukuoka!

Fifth Workshop among Asian Information Security Labs
WAIS'2012
January 12-13, 2012, Pohang University of Science and Technology, Pohang, Korea

"Processor ISIT-DLX for encryption/ decryption" A prototype produced using the efficient design methods of system LSI

OLED lighting

human monitoring wheelchair robot

System Architecture Laboratory

Research Director: Kazuaki Murakami, Ph.D.
(Professor, Kyushu University)

■Theme

Research on advanced computer system architecture to support the society.

(1)Advanced IT systems, directly applied to the society.
-CPSS (Cyber Physical Social Systems) :
 We aim at optimising the society as a whole, by binding together the real world, monitored by sensors, and the cyber world, which provides endless computing capabilities.
-wCloud (Workshop Cloud)
 With wCloud (Workshop Cloud), we aim at drastically changing the way industrial engineers work. wCloud makes all the tools they need available in the Cloud, thereby reducing ownership costs, simplifying usage, and allowing collaboration and sharing all around the world.
(2)High-performance computing systems opening up new science frontiers.
-Research on next-generation hardware to drive next-generation exa-scale supercomputers.
-Research on smart compilers toward more efficient programming of future supercomputers. By leveraging big data and machine learning, we want the compiler to improve itself without any human intervention in order to get the best of supercomputers, regardless of users's programming skills.

Information Security Laboratory

Research Director: Kouichi Sakurai, Ph.D.
(Professor, Kyushu University)

■Theme

Ensuring information security in social systems

We conduct R&D to ensure the security of computers and network systems supporting the social infrastructure. We also promote the spread of information technology for building reliable social systems in order to protect copyright of digital materials and privacy of personal information.

Daily-life Support Technology Laboratory

Research Director: Daisaku Arita,Ph.D.

■Theme

Daily Life Support by Information and Robot Technologies

We conduct researches on information and robot technologies to develop interface environments, which ensure a safe and healthy life for everyone including the aged and the disabled, with the concepts of "anybody", "anytime" and "anywhere".

Nanotechnology Laboratory

Research Director: Seiji Shinkai, Ph.D.
(President of ISIT)

■Theme

Development of new environmentally-friendly materials by the fusion of Nanotechnology and Biotechnology

We are developing novel functional nanowires. They form helical structures with cavities that can include functional materials such as carbon nanotubes and conductive polymers. Thereby, a new strategy is employed for the creation of self-assemblies with highly-ordered hierarchical structures using the wires. It will improve our life by providing fascinating nano-products for electrochemical devices and medical applications.
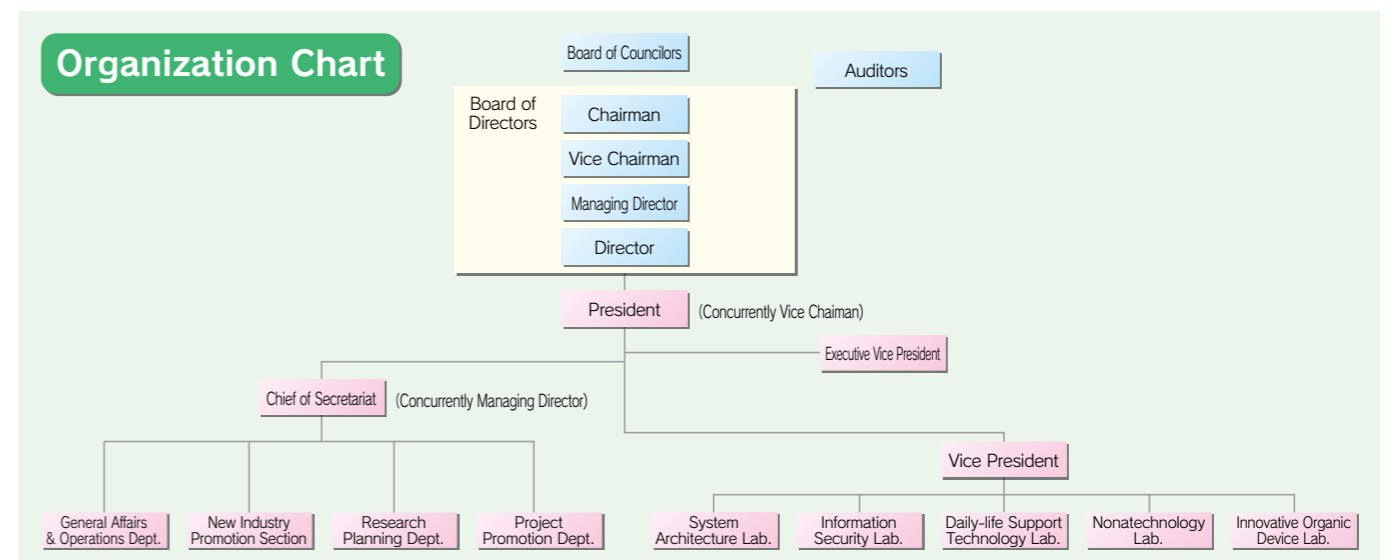
Innovative Organic Device Laboratory

Research Director: Adachi Chihaya, Ph.D.
(Professor, Kyushu University)

■Theme

Development of the next-generation organic semiconductor photo-electronics devices and innovative common fundamental technologies

We are developing highly efficient organic new devices based on a new mechanism or an organic single crystal. They serve as an element of a next-generation display and lighting. And we aim at formation of the global R&D center of organic photo-electronics at Fukuoka.

Organization Chart

- Board of Councilors
- Auditors
- Board of Directors
  - Chairman
  - Vice Chairman
  - Managing Director
  - Director
- President (Concurrently Vice Chaiman)
- Executive Vice President
- Chief of Secretariat (Concurrently Managing Director)
- Vice President
- General Affairs & Operations Dept.
- New Industry Promotion Section
- Research Planning Dept.
- Project Promotion Dept.
- System Architecture Lab.
- Information Security Lab.
- Daily-life Support Technology Lab.
- Nonatechnology Lab.
- Innovative Organic Device Lab.

ISIT

TAIPEI · HONGKONG
GUANGZHOU
FUKUOKA
SHANGHAI
TOKYO · OSAKA · PUSAN
JAPAN · SEOUL
BEIJING

Kyushu University Ito Campus

Nanotechnology Laboratory
(Fukuoka industry-academia Symphonicity (FiaS))

Innovative Organic Device Laboratory

Kyudai GakkenToshi St.

Shikanoshima Island
Nokonoshima Island
Hakata Bay

Susenji St. · Imajuku St.
Susenji Ramp · Imajuku IC.
Meinohama
Atago Ramp · Momochi Ramp
Muromi · Yokatopia-dori · Nishi-koen Ramp
Fujisaki · Nishijin
Tojin-machi · Ohori-koen · Syowa-dori
Befu · Roppommatsu · Meiji-dori
Jiromaru · Chayama · Kanayama · Akasaka · Tenjin-kita Ramp
Hashimoto · Kamo · Noke · Nanakuma · Keyaki-dori
Umebayashi · Fukudai-mae · Sakurazaka · Yakuin-odori · Kokutai-doro
Yakuin · Watanabe-dori · Sumiyoshi-dori
Fukuoka · Tenjin
Fukuoka City Hall · Nakasu Kawabata · Gofuku-machi Ramp
Tenjin-minami · Gion · Gofuku-machi · Chiyo Kencho-guchi
Yakuin · Hakata · Chiyo Ramp
Hirao · Hakata Station · Hakataeki-higashi Ramp
Takamiya · Higashi Hie · Enokida Ramp
Takeshita · Fukuoka Airport
Ohashi · Fukuoka International Airport
Tukiguma Ramp

Chikko Ramp · Higashi-hama Ramp · Kaizuka Ramp
Hakozaki Ramp · Hakozaki Kyudai-mae · Hakozaki Miya-mae
Maidashi Kyudai Byoin-mae · Hakozaki
Yoshizuka · Kuko-dori Ramp
To Fukuoka IC · To Dazaifu IC

Legend

- ───── Urban Expressway
- ───── Subway
- ───── Subway Nanakuma Line
- ───── Nishitetsu Tenjin Omuta Line
- ········· JR

■ Fukuoka SRP Center Building

■ Fukuoka industry-academia Symphonicity(FiaS)

Getting There

■ ISIT

From Fukuoka Airport:
Approx.25 minutes by taxi(via Urban Expressway)
Approx.40 minutes by subway and bus
· Take Subway to Tenjin station,
· Take Nishitetu Bus bounded for the Fukuoka Tower,
· Get off at Ishikaikan Mae(Soft Research Park Mae)
From Hakata station:
Approx.20 minutes by taxi
Approx.30 minutes by bus
· Take Nishitetu Bus bounded for the Fukuoka Tower,
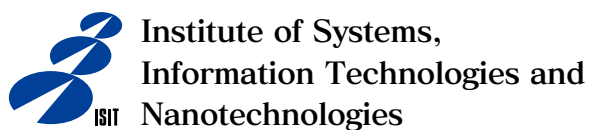· Get off at Ishikaikan Mae(Soft Research Park Mae)

■ ISIT－Nanotechnology・ Innovative Organic Device Laboratory

From Fukuoka Airport:
Approx.50 minutes by taxi(via Urban Expressway)
Approx.60 minutes by subway(JR Line), bus, and foot.
· Take Subway bounded for either Meinohama or Karatsu,
(Meinohama:Take the JR Line bounded for Karatsu)
· Get off at Kyudai Gakken Toshi Station,
· Take Showa Bus Kyudai Line
· Get off at Fukuoka industry-academia Symphonicity(FiaS)

Institute of Systems, Information Technologies and Nanotechnologies

ISIT

■ Nanotechnology Laboratory

■ Innovative Organic Device Laboratory

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