



60th Anniversary Commemorative Projects The Institute of Industrial Science, the University of Tokyo

For those who are active in the business world

Of the Commemorative Projects introduced in the enclosed publication “Seiken 60,” we present below the projects that may be of most interest to those who are active in the business world and examples of activities to date. On the reverse side of this leaflet, we introduce major research fields undertaken by IIS. We hope you will find the information useful when considering whether to join the university-industry collaboration project.

Industry-University Research Collaboration Support System

The results of engineering research build upon each other and permeate every aspect of our lives, through products and systems, social infrastructure, welfare such as livelihood support and nursing care, pharmaceuticals and medical equipment, and access to safety and security. To promote research and development, we need human, material, and financial resources, which we must manage flexibly to extract the maximum benefits and synergies.

IIS is establishing an industry-university research collaboration support system and plans to work with a wide range of companies and organizations to secure these vital human, laboratory, and financial resources.

The research projects that are currently being carried out and research bases being used in collaboration with industry include ultra low power circuit/system technology development (Green IT Project), Collaborative Research Center for Bio Nano Hybrid Process, Collaborative Research Center for Nano Quantum Information Electronics, and practical application of electric-field pickup method surface rheology monitor.

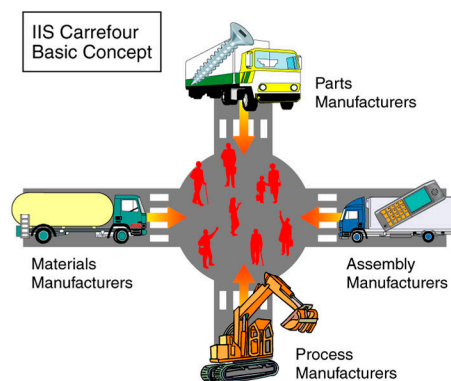
IIS Carrefour (Matchmaking Support for Companies)

When developing new technologies, development and integration of existing technologies provide one way toward achieving the breakthroughs that lead to the creation of new industries. IIS works with technology companies—both large and small—and offers a platform we call Carrefour, which consists of cross-disciplinary research and development teams including our own teaching staff. Through this new project, we are committed to strengthening the functions of IIS Carrefour and promoting the creation of new industries.

Currently, collaborative research projects with many companies within and across industries are underway in such research fields as vehicle systems, nano quantum information electronics, rare metals, and injection molding.

※ Carrefour is a French word meaning crossroads or open square. It also refers to a venue where people gather for discussions.

A new project is now being planned to re-create and experience work at the frontiers of industrial technologies through 3D virtual reality spaces using the most advanced technologies of IIS.



IIS Friendship Society

The IIS Friendship Society is being established with members who support the vision and goals of our activities. The Society will be an important forum for promoting dialogues with a broad spectrum of high-technology industries.

IIS Special Scholarship

The IIS Special Scholarship is being set up and offered to several PhD students every year to help develop and train talented researchers.

Enquiries

General Affairs Section

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Research Fields at the Institute of Industrial Science

Department of Fundamental Engineering

Vacuum Physics	Surface and Interface Physics
Quantum Optics	Soft Material Physics
Earthquake Structural Engineering	Fluid Physics
Physics of Soft Matter	Many-Body Physics
Applied Nonlinear Optics	Quantum Semiconductor Spintronics
Earthquake Engineering	Computational Materials Science and Mechanics

Department of Mechanical and Biofunctional Systems

Marine Hydrodynamics	Ocean Environmental Engineering
Thermal Management Engineering	Applied Electromechanical Systems
Fine Machining and Fabrication Systems	Phase Change Thermal Engineering
Computational Solid Mechanics	Smart Material Systems
Polymer Processing	Applied Micro Manufacturing
Hyper-Functional Forming	Advanced Underwater Sensor Engineering
Computational Fluid Dynamics	

Department of Informatics and Electronics

Electric Energy Engineering	Nano-electronics
Quantum Nanodevices	Earth Observation Data Engineering
System VLSI Design Engineering	Social Information System Engineering
Biological Information Systems	Versatile LSI Systems Design
Electrical Control System Engineering	Biomathematical Sciences
Quantum Semiconductor Electronics	Nanooptoelectronics
Integrated Device Engineering	Quantitative Biology
Multimedia Communication Systems	

Department of Materials and Environmental Science

Organic Materials Science	Organs and Biosystems Engineering
Environmental Analytical Chemistry	Management of Advanced Technology
Functional Organometallic Chemistry	Energy Conversion Materials
Environmental and Chemical Engineering	Polymeric and Environmentally Conscious Materials
Biomaterial Engineering	Environmental Catalyses and Materials Science
Optoelectronic Functional Thin Films	Mineral Resources Economics
Amorphous Materials Design	Functional Metal Complexes Chemistry
Inorganic Plasma Synthesis	Micro Analytical Systems
Synthetic Organic Chemistry	Molecular Integrated System Engineering
Advanced Electrochemical Devices	

Department of Human and Social Systems

Urban Morphology	Concrete Engineering and Recycling Engineering
History of Cities and Architecture	Sustainable Urban Environmental Engineering
Spatial and Social Information	Hydro-climatic Analysis and Modeling
Environmental Control Engineering	Watershed Hydrology
Management of Production	Architectural Design
Geotechnical Engineering	Remote Sensing of Environmental and Disasters
Spatial Structure Engineering	Architectural Space System
Global Hydrological System	Urban Regeneration
Urban Heritage/Resource Development	Radio Hydrology
Design and Sustainability Engineering	Global Monitoring for Ecology and Environment

Guest Chair for Advanced Interdisciplinary Modeling

Computational Science of Ordered and Disordered Materials

Nikon Chair of Optical Engineering

Quantum Optics	Optical Engineering
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Endowed Chair of Color Science (Sony)

Applied Nonlinear Optics	Color Science
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Advanced Energy Conversion Engineering

Advanced Energy Conversion Engineering

Mobility and Field Science (TAKARA TOMY)

Dynamic Systems and Control	Quasi-Electrostatic Science (QES)
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Center for International Research on MicroMechatronics (CIRMM)

Micro/Nano Mechatronics	Micro Components and Systems
Applied Scientific Instruments	Micromechanisms
Applied Microfluidic Systems	Micromachine System Engineering
Applied Microsystem Engineering	Biomimetic Micro Systems
Fundamental Micro and Nano	Ultralow-damage Nanoprocess
Electromechanical Systems Engineering	

International Center for Urban Safety Engineering (ICUS)

Urban Disaster Risk Management and Safety Engineering	Construction Material Management
Applied Remote Sensing	Geotechnical and Geoenvironmental Engineering
Life Cycle Management of Urban Infrastructure	Integrated Disaster Management Engineering
Wood Engineering	Urban Environment and Safety Engineering
	Urban Traffic Management

Center for Information Fusion

Database Engineering	Applied Multimedia Information Processing
Multimedia Database	Web Engineering
Computer Engineering	Data Architecture Engineering
Visual Media Interface	

International Research Center for Sustainable Materials

Materials Production and Recycling Engineering	Mineral Strategic Security
Resource Recovery and Materials Process Engineering	Metal Resources Recycling System
Ecodesign and Ecomaterials	Resources Processing and Recycling Engineering
Sustainable Materials Chemistry	Extractive Metallurgy and Resource Recovery
Resource Recovery and Waste Treatment Technology	Mechanical Properties of Sustainable Materials
	Mineral Process Engineering

Center for Research on Innovative Simulation Software (CISS)

Fluid Flow and Thermal Systems Control	Sustainability Design
Environmental Control Engineering	Computational Biomolecular Science
Computational Hemodynamics and Microfluidics	Knowledge-based Engineering

Collaborative Research Center for Energy Engineering (CEE)

Energy Process Engineering	Energy System Integration
Advanced Energy Conversion Engineering	Local Energy Chemical Engineering
Global Warming Scenario Analysis	Sustainable Energy System

Underwater Technology Research Center

Underwater Robotics	Deep Ocean Engineering
Underwater Acoustic Systems Engineering	Marine Ecosystem Engineering
Subsea Technology	Applied Underwater Information and Acoustic Measurement Systems

Advanced Mobility Research Center (ITS Center)

Traffic Engineering	Science and Technology Policy
Computer Vision	Intelligent Control Systems
Dynamic Systems and Control	Applied Acoustic Engineering
Advanced Transport System	Robotics
Industrial Technology Policy	Mechanical and Biological Systems Control
Industry-Academia Cooperation	

Nanoelectronics Collaborative Research Center

Quantum Nanostructure Devices	Nano-electronics
Quantum Semiconductor Electronics	Nanooptoelectronics
Integrated Device Engineering	Nano-structure Spectroscopy/Single Quantum Device

Collaborative Research Center for Bio Nano Hybrid Process

Micromechanism	Applied Microfluidic Systems
Micro/Nano Mechatronics	Organs and Biosystems Engineering

LIMMS/CNRS-IIS (UMI 2820)

Applied Microfluidic Systems	Organs and Biosystems Engineering
Applied Microsystem Engineering	Micro Analytical Systems
Quantum Nanostructure Devices	Micro Components and Systems
Micro/Nano Mechatronics	Micromechanisms
Integrated Device Engineering	Micromachine System Engineering
Applied Scientific Instruments	Biomimetic Micro Systems