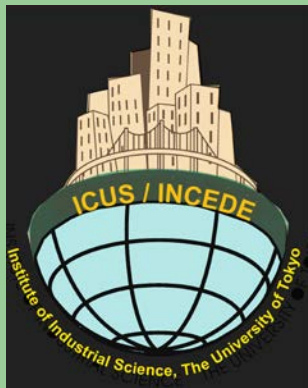
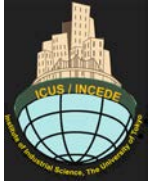


International Center for Urban Safety Engineering (ICUS/INCEDE)



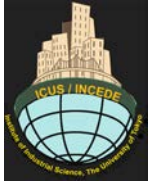
Annual Report -2001-



Staff Members

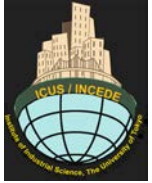
(2001)

- **Sustainable Engineering Division**
 - Prof. Taketo UOMOTO (Director and Professor)
 - Prof. Sudhir MISRA (Visiting Professor)
- **Urban Safety and Disaster Mitigation Division**
 - Mr. Takefumi TAKAHASHI (Visiting Professor)
 - Dr. Kimiro MEGURO (Associate Professor)
 - Dr. Dushmanta DUTTA (Research Associate)
- **Infrastructure Information Dynamics Division**
 - Prof. Yoshifumi YASUOKA (Professor)
 - Dr. Ooka RYOZO (Associate Professor)
 - Dr. Shiro OCHI (Research Associate)



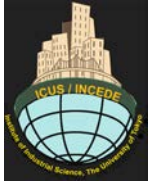
Staff Members (Group-photo) (2001)





Major Research Areas (2001)

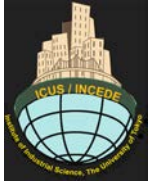
- **Sustainable Engineering Division**
 - Deterioration mechanism of existing structures
 - Nondestructive testing technology for evaluation of deterioration
 - Retrofitting and strengthening of structures based on mechanism of deterioration
 - Standard specification for design, construction and maintenance
- **Urban Safety and Disaster Mitigation Division**
 - Urban safety and disaster mitigation strategy
 - Development of a universal disaster environment simulator
 - Disaster countermeasures for urban lifeline systems
 - Use of earthquake-predicting information from an engineering viewpoint
- **Infrastructure Information Dynamics Division**
 - Remote sensing/geographic information system
 - Information network of urban infrastructure
 - Space data analysis
 - Urban warming/comprehensive environmental assessment



Research Topics (2001)

Sustainable Engineering Division

- Evaluation of the microstructure of concrete under different curing conditions
- Mechanism and prediction method for deterioration of concrete due to sulfuric acid attack
- Development of high quality shotcrete
- Evaluation of the durability performance in servicing RC bridge wall rail using NDT
- The modeling of chloride penetration in cracked concrete based on macro-approach
- Study of the influence of chemical admixture on the microstructure formation of hardened cement paste
- Study on the waterproof-layer asphalt concrete slab in highway bridge
- Research on the properties of surface-coating material for concrete structure



Research Topics (2001)

Urban Safety and Disaster Mitigation Division

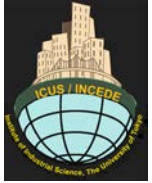
- Efficient support system for implementation of proper earthquake disaster measures
- New-generation disaster manual
- Quick evaluation of earthquake damage and real time monitoring of recovery and reconstruction process by electric power demand
- Optimum management plan of personnel in case of disaster
- New system for promotion of retrofit of existing low earthquake resistant structures
- Local available retrofit method for brick masonry structures
- Efficient use of earthquake prediction data with uncertainties
- Universal earthquake disaster environment simulator
- Simulation of dynamic failure behavior of structure
- Effects on the surface response due to earthquake fault displacement



Research Topics (2001)

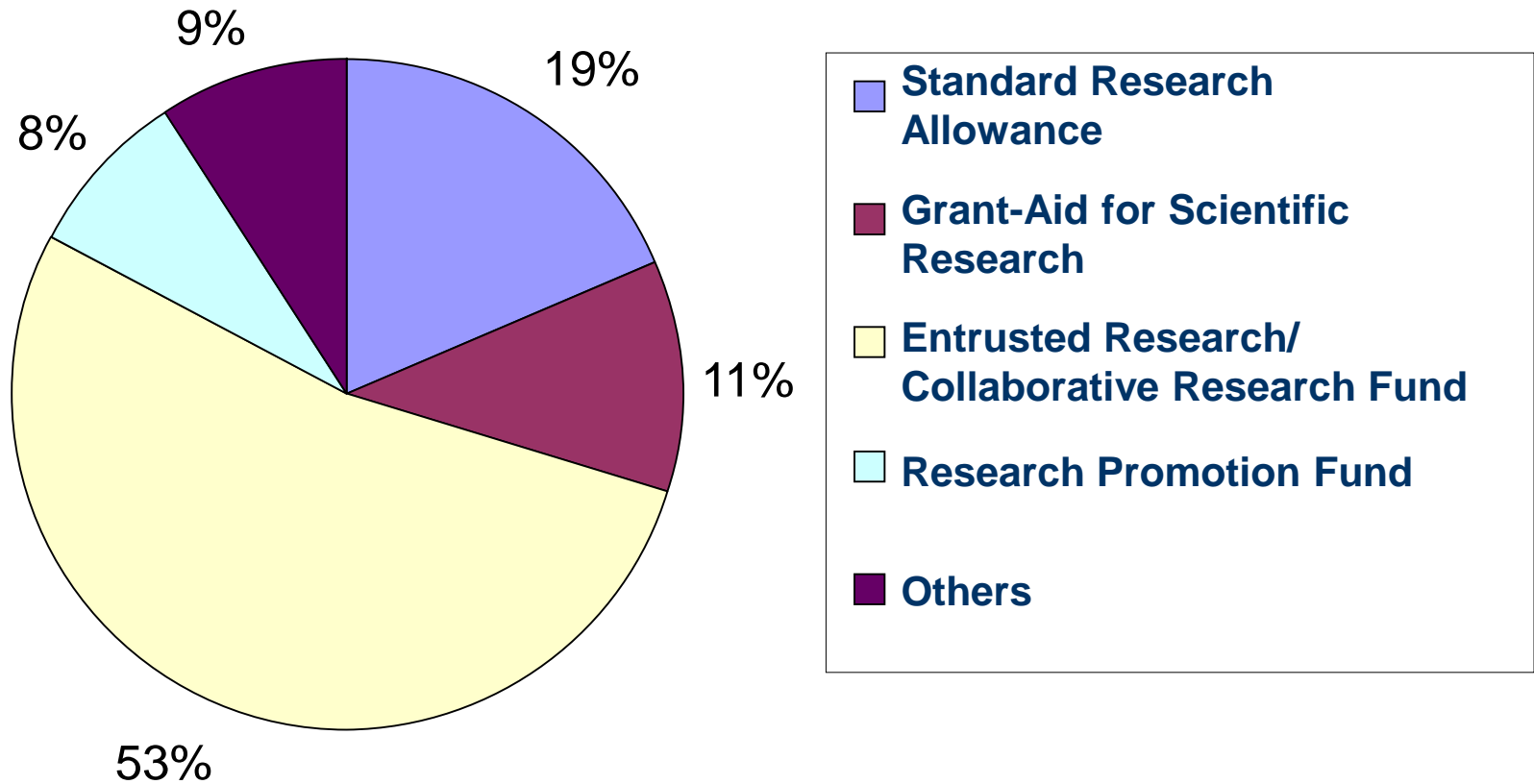
Infrastructure Information Dynamics Division

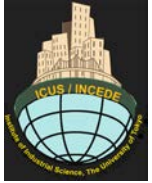
- **Hyperspectral Remote Sensing for assessment of degraded concrete structure**
- **Hyperspectral Remote Sensing for assessment of vegetation/plant parameters**
- **Environmental Monitoring of East Asia using TERRA/MODIS Satellite**
- **Establishment of Urban 3D model using Three Line Scanner (TLS)**
- **Development of decision support system for urban environmental management using GIS technology**



ICUS Budget Source

(2001)





Research Projects (2001)

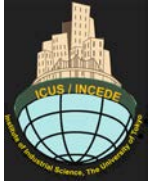
Sustainable Engineering Division

– Grant-Aid for Scientific Research

- Development of prediction method for deterioration of concrete structure and optimum repair system for concrete structure
- Study on seismic retrofitting method for RC

– Collaborative Research with Industry

- Development of high quality shotcrete
- Evaluation of the durability performance in servicing RC bridge wall rail using NDT
- Development of prediction method for deterioration of concrete structure
- Estimation of the compressive strength of RC
- Study on the evaluation of the repair materials for concrete structure



Research Projects (2001)

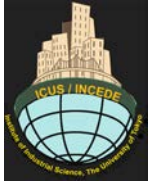
Urban Safety and Disaster Mitigation Division

Grant-Aid for Scientific Research

- US-Japan collaborative research project on earthquake disaster mitigation: “Multimedia simulation of disaster response activities”
- Control of structural failure behavior considering spatial distribution of ground deformation near the surface fault rupture

Collaborative Research with Industry

- Development of new design method of structures using Applied Element Method
- Study on risk quantification
- Earthquake resistance evaluation of total structural system of civil infrastructure
- Evaluation of social effects due to power outage

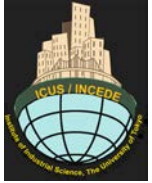


Research Projects (2001)

Urban Safety and Disaster Mitigation Division

Projects supported by Council for Science and Technology Policy, Cabinet Office

- Earthquake risk evaluation and disaster and crisis management for mega cities
- Study on proper survey method for earthquake and tsunami disaster in Asia-Pacific region, EQTAP Project (Development of Earthquake and Tsunami Disaster Mitigation Technologies and their Integration to the Asia-Pacific Region)
- US-Japan collaborative research, investigation of disaster propagation process and disaster response due to WTC attack in NY

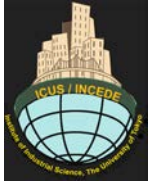


Research Projects (2001)

Urban Safety and Disaster Mitigation Division

-Others

- Development of Methodology for Deriving Detailed Urban Land Cover Information using High-resolution Satellite images for Flood Loss Estimation
- Investigative Research on Flood Forecasting in Mekong River Basin
- Modeling for Fresh Water Resources Assessment in Mekong River Basin (2001-2003)
- AP FRIEND Project on Rainfall-Runoff Modeling

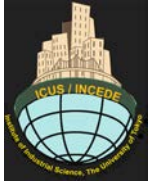


Research Projects (2001)

Infrastructure Information Dynamics Division

- **Researches funded by government sector**
 - Establishment of Satellite Observation Network for Environment and Disaster Monitoring in Asia
 - Development of decision support system for urban environment management using GIS
 - Development of assessment system for degraded concrete using Hyperspectral Remote Sensing
 - Development of comprehensive three dimensional tree model for urban environmental assessment

- **Research Collaboration with Private Sectors**
 - Urban 3D database construction using Tree Line Scanner (TLS)



Workshops and Open Lectures (2001)

– Domestic

- First Open Lecture (May 22, 2001) Venue: IIS
- Workshop on Civil Engineering (Dec. 11, 2001) Venue: IIS
- Second Open Lecture (Jan. 1, 2002) Venue: IIS

– International

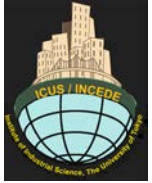
- ICUS/INCEDE and AIT Joint Workshop
'on Urban Safety Engineering' (Sept. 21-22, 2001) Venue: AIT



Workshop on Civil Engineering (Dec. 11, 2001)

Program:

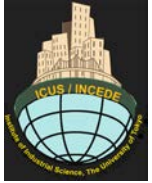
- 「Information Technology for evaluation of urban safety and amenity」
 - Prof. Yasuoka
- 「Urban climate simulation for urban design」
 - Prof. Ooka
- 「Towards coming Tokai Earthquake, Structural and non-structural measures to minimize its negative impact」
 - Prof. Meguro
- 「Urban Safety and security of Japan and its strategy for disaster reduction」
 - Prof. Takahashi (Visiting Prof., Director General for Disaster Management, Cabinet Office)
- 「The present condition and a future trend about NDT」
 - Prof. Uomoto



First Open Lecture (May 22, 2001)

Program:

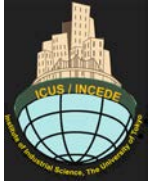
- 「Look back upon INCEDE activity, expect activity of ICUS/INCEDE」
 - Prof. SUDO (Former Director, INCEDE)
- 「Urban safety and disaster mitigation strategy」
 - Prof. MEGURO (ICUS/INCEDE)
- 「Measurement and assessment of urban infrastructure using Remote Sensing」
 - Prof. YASUOKA (ICUS/INCEDE)
- 「Urban climate analysis for sustainable urban design」
 - Prof. OOKA (ICUS/INCEDE)
- 「Mechanism and prediction method for deterioration of concrete structure」
 - Prof. UOMOTO (Director, ICUS/INCEDE)



Second Open Lecture (Jan. 24, 2002)

Program:

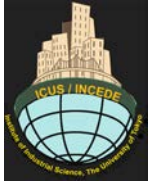
- **「Direction and issues of Japanese research activities for earthquake disaster reduction」**
 - Dr. T. Katayama (President, National Research Institute for Earth Science and Disaster Prevention)
- **「Evaluation of urban environment using Remote Sensing」**
 - Dr. M. Setojima (General Manager, Global Environmental Research Center, Kokusai Kogyo Co., LTD.)
- **「National policy and measures of Japan for disaster prevention」**
 - H.E. T. Takahashi (Director General for Disaster Management, Cabinet Office)
- **「Remote Sensing and GIS for assessment of urban disaster and environment」**
 - Prof. S. Murai (Professor, Keio University)



ICUS/INCEDE & AIT Joint Workshop (2001)

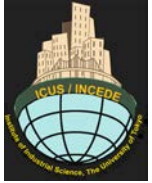
Participants of the ICUS/INCEDE and AIT Joint Workshop
on Urban Safety Engineering (Sept. 21-22, 2001) at AIT





ICUS/INCEDE & AIT Joint Workshop (2001)





Publications

(2001)

1) Newsletters

- Volume1 Number 1 (April – June)
- Volume1 Number 2 (July – September)
- Volume1 Number 3 (October – December)
- Volume1 Number 4 (January – March)

2) ICUS Report 1: Proceedings of Workshop on Urban Safety Engineering 2001 (2002.3)

3) Activity Report of ICUS/INCEDE 2001 (2002.3)



Research Papers

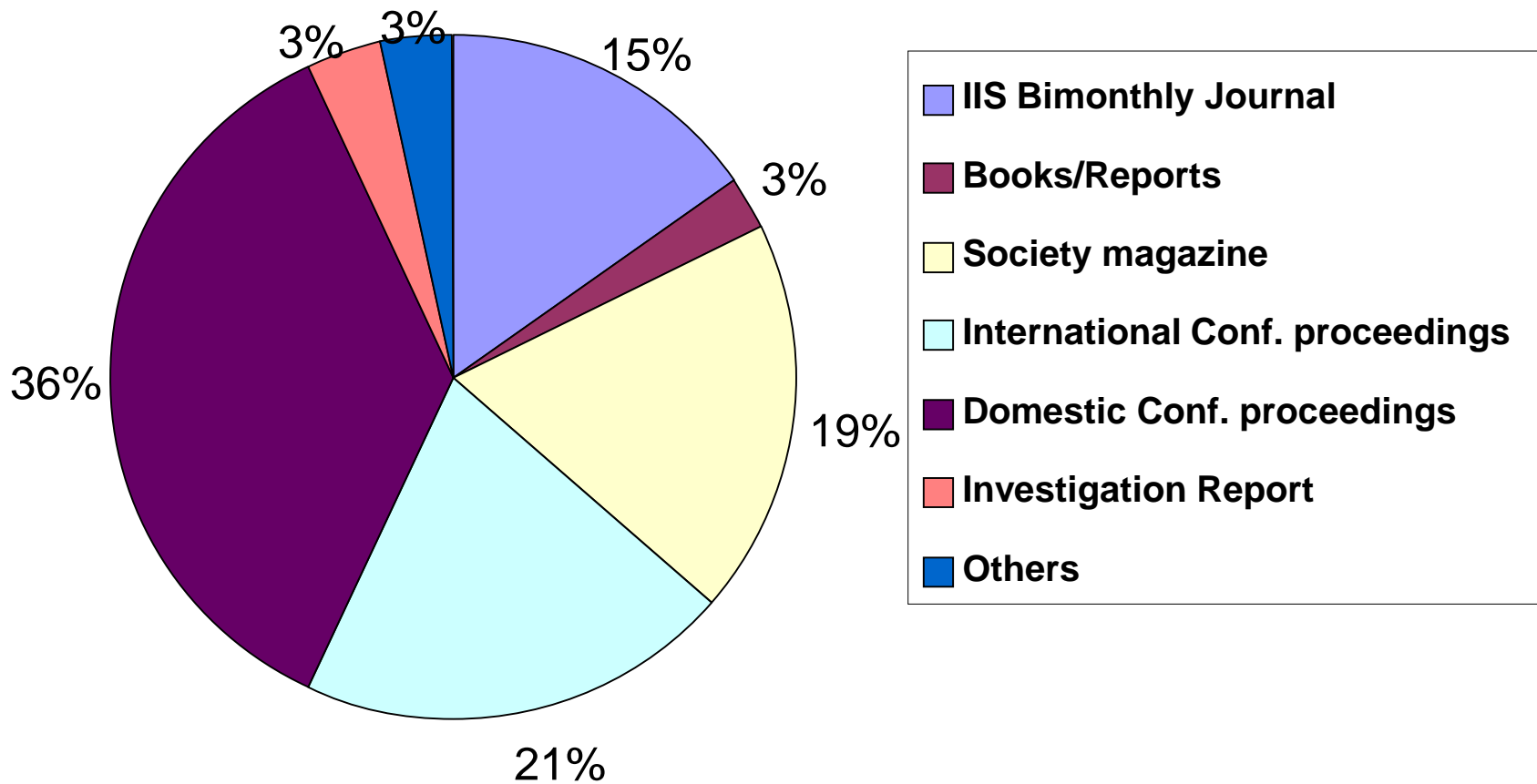
(2001)

Published in	Sustainable Engineering Division	Urban Safety and Disaster Mitigation Division	Infrastructure Information Dynamics Division
IIS Bimonthly Journal	28	8	4
Books/Reports	1	6	0
Technical Society Journal	33	5	11
Intl. Conference Proceedings	18	14	22
Domestic Conf. Proceedings	29	38	28
Investigation Report	0	8	1
Others	1	7	1
Total	110	86	67



Research Papers

(2001)





ICUS Activities Recognized (2001)

Name	Date	Prize Name	Organization	Supervisor
E. Tsukahara	May-01	Yoshida Encouragement	JSCE	Prof. Uomoto
E. Tsukahara	May-01	Encouragement	JCI	Prof. Uomoto
W. Takeuchi	Jun-01	Excellent paper	JAS	Prof. Yasuoka
E. Tsukahara	Jul-01	Excellent presentation	JCI	Prof. Uomoto
I. Kurasige	Jul-01	Excellent presentation	JCI	Prof. Uomoto
E. Tsukahara	Nov-01	Excellent presentation	JSCE	Prof. Uomoto
M. Numata	Nov-01	Excellent presentation	JSCE	Dr. Meguro
S. Fujita	Nov-01	Excellent presentation	JSCE	Dr. Meguro
M. Enomoto	Nov-01	Excellent presentation	JSCE	Dr. Meguro

**International Center
for Urban Safety Engineering (ICUS/INCEDE)
Institute of Industrial Science, The University of Tokyo**

4-6-1 Komaba, Meguro-ku

Tokyo 153-8505, Japan

Tel: (+81-3) 5452-6472

Fax: (+81-3) 5452-6476

E-mail: icus@iis.u-tokyo.ac.jp

<http://icus-incede.iis.u-tokyo.ac.jp/>