





Campus Locations

Yoshida Campus

Graduate School of Global Environmental Studies
Institute of Economic Research
Center for Southeast Asian Studies

Uji Campus

Institute for Chemical Research
Institute of Advanced Energy
Research Institute for Sustainable Humanosphere
Disaster Prevention Research Institute

京都大学
KYOTO UNIVERSITY

C-PIER

生存基盤科学
研究ユニット
Institute of Sustainability Science

Office of Planning & Strategy,
Institute of Sustainability Science,
KYOTO UNIVERSITY Uji Research Building, 5F
Gokasho, Uji, Kyoto 611-0011 JAPAN
Tel:+81-774-38-4936 Fax:+81-774-38-4546

Email: iss-office@iss.iae.kyoto-u.ac.jp
URL: http://iss.iae.kyoto-u.ac.jp/iss/jp/index.html

Uji Campus

Uji Research Building, 5F
502・503・504

It takes about 7 minutes from "JR Obaku" station "Keihan Obaku" station

Institute of Sustainability Science

Center for the Promotion of Interdisciplinary Education and Research, Kyoto University

Sustainability Science is:

A transdisciplinary science that addresses global environment crisis, and a next-generation integrated science that provides solutions to strength both built and natural environment systems for the pursuit of an integral society.

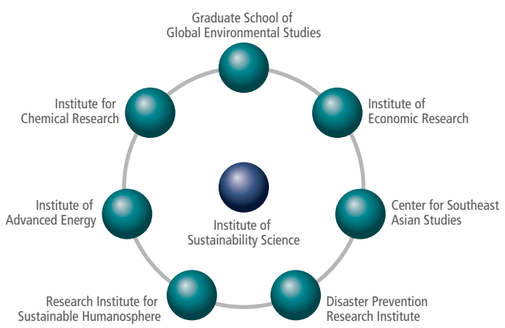
Institute of Sustainability Science

The Institute of Sustainable Science (ISS) was established in 2006 as an interdisciplinary research unit that targets, without being disturbed by the borders between traditional departments/research areas, problems related to survival of the human beings, society, and environment. ISS has been achieving integrated interdisciplinary studies on those problems through collaboration of researchers within and out of ISS (including those out of Kyoto University). As of 2011, ISS became a constituent member of newly organized Center for the Promotion of Interdisciplinary Education and Research (C-PIER) but has been keeping its research direction.

ISS is currently supported by seven member departments in Kyoto University, Institute for Chemical Research, Disaster Prevention Research Institute, Institute of Advanced Energy, Research Institute for Sustainable Hemisphere, Center for Southeast Asian Studies, Graduate School of Global Environmental Studies, and Institute of Economic Research. ISS has its bottom-up character of planning/conducting interdisciplinary and borderless collaboration of researchers working in various fields that are highly specialized and finely subdivided in the current academia. The organization of ISS serves as a platform supporting such researches, and this standing point of ISS has not changed since its establishment (even after the participation in C-PIER).

ISS, in its starting form, achieved three types of researches, "Exploratory Research", "Integrated Research", and "Comprehensive Research", with the aid of financial support from its member departments and of outside funds. As of 2009, ISS started a 4-years program with its own, allocated budget to conduct "Mobile Site Type Research" in addition to "Exploratory Research". The former type of research, combining the integrated studies at ISS and the mobile field studies at the research sites in Aomori and Shiga prefectures, led to a significant progress related to possible methods of achieving area-specific survival. In addition, this type of research was helpful for young researchers to acquire an interdisciplinary and comprehensive viewpoint through their field studies at those sites.

After the allocated budget expired in 2012, ISS returned to its starting form of operation (based on the support from the member departments) to further develop the "Exploratory Research" pursuing a newly settled theme, the "lifetime" of human beings, society, and environment. Researches succeeding the "Mobile Site Type Research" have been conducted as well. Needless to say, the human beings, society, and environment unavoidably have the lifetime. Perspective of sustainability science that includes the lifetime as a necessary and important ingredient fits well with the current situation in the world. ISS is now attempting to pioneer the research on the basis of this perspective.



Address from the Director

This is Hiroshi Watanabe, a professor at Institute for Chemical Research, Kyoto University. Since April 1, 2013, I have been concurrently serving as the Director of Institute of Sustainability Science (ISS). I would like to keep the activity of ISS tactically developed by the former Director, Professor Satoshi Konishi, to the best of my poor ability/talent. I really appreciate you kind cooperation and encouragement.

My own research in the field of "rheology" focuses on the relationship(s) between macroscopic properties of softmatters and the molecular dynamics therein. I am also interested in the "lifetime", the central concept in the recent research at ISS, in relation to the slogan in rheology, "παντα ρει (everything flows)". Issues highlighted by the "unavoidable end" are the subjects to be investigated in the field of Sustainability Science.

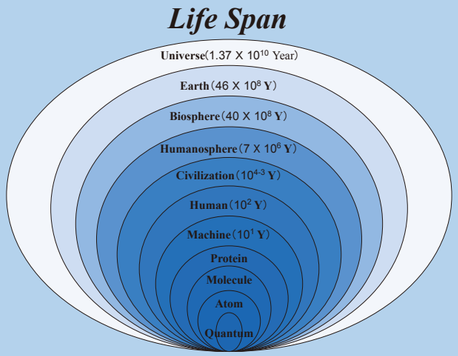
Director,
Institute of Sustainability Science
Hiroshi Watanabe

Results and development

Cycle and Span of Sustainability

Study on Cycle and Span of Life and Society -Evolutional and Cultural Standpoints of View

Kozo Matsubayashi, Professor, Center for Southeast Asian Studies



After humans are born, grow, and raise their offspring, they eventually grow old and come to the end of their lives. We know of "aging" and "lifespan" empirically as obvious, undeniable facts of reality. Yet, while we know that life is limited, we do not fully appreciate the full significance of the human lifespan, which varies widely between individuals. A basic principle of the evolution of life has been to live long enough to propagate. Humanity in the 21st century, however, faces challenges that cannot be resolved with this principle, due to the fact that people are living much longer than that required for propagation. The concept of "lifespan" is applicable not only to living things but also to the atoms, molecules, and proteins that make up life. This is also a challenge shared by the societal organizations, civilizations, species, planet, and universe that transcend the individual.

Exploratory Research

Challenging interdisciplinary collaborations

(Results of FY2013)

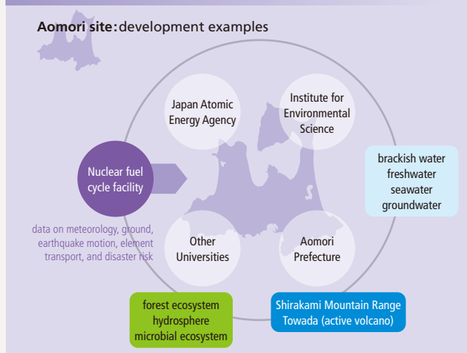
- Function of the Root System for Adapting to Severe Soil Conditions
- Physiological Role of Long-Chain Polyunsaturated Fatty Acids in the Function of Membrane Proteins
- ^{133}Cs NMR Study of Adsorption Behavior of Cesium on the Surfaces of Clay
- The Cycle and Span of Energy Generator in Sustainability Science
- Lifetime and Applicatibility of Biomedical Materials
  —Feasibility Check of Nano-Oxide Particles Dispersion Strengthened Steels as a Biomedical Material—
- Study on the Lifetime of Organic Photovoltaics
  —Structural Analysis and Evaluation of Carrier Mobility in Bulk Heterojunction Polymer:Fullerene Thin-Films—
- Continuous Efforts to Establish the Advanced Nuclear Safety
- Sustainable Production and Utilization of Tropical Biomass Plants
- Impact of Cyclone and Flood on the Human Activities in the Soutu Asia
  —Effect to the Agriculture and Public Health—
- Study on Coastal Sandy Mound in South East Asia
- Research on Snow Melting Properties in a Mountainous Area during Extreme Weather Events
- Evaluation of Changes in Water Quality and Discharge of Peatland Derived River
- Study on Cycle and Span of Life and Society
  – Evolutional and Cultural Standpoints of View –
- Study on Economic Incentives for Introduction of Energy Efficient Appliances and Renewable Investment to Build Low Carbon Society under the Constraints of Energy Supply

Mobile Site Type Research

Site-oriented studies on field and community

(Results of FY2010)

Aomori site: development examples



Shiga site: development examples