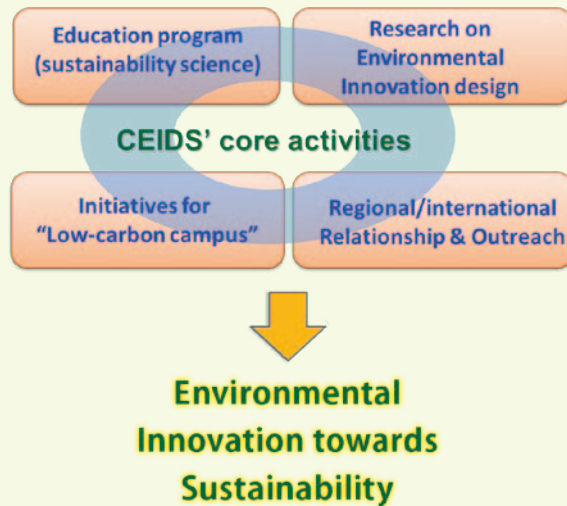


About CEIDS

The Osaka University Center for environmental Innovation for Sustainability (CEIDS) was established in October 2010 as an institution-wide Osaka University organization to provide sustainability science education and to carry out interdisciplinary research to deal with complex problems with an aim to pursue sustainable societies. CEIDS also actively promotes initiatives for “Low-carbon campus” and regional / international collaboration to foster the realization of sustainability.



Collaboration and Networking

CEIDS promotes regional and international networking in the field of environmental innovation studies and sustainability science as a part of outreach activity. The center makes efforts to expand domestic and international networks to enhance relevant research activities and education program. It also facilitates industry-university-government collaboration in relevant academic fields, with a special aim to enhance research activities and societal experiments involving various stakeholders and to nurture environmental leader in business and local governments



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Center for Environmental
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Sustainability,
Osaka University

CEIDS

Education program

The Osaka University Center for Environmental Innovation Design for Sustainability (CEIDS) started the interdisciplinary education program in sustainability, in October 2007 for graduate



program students from throughout Osaka University. The program began with two compulsory elective courses in sustainability science and by the 2012-13 academic year had grown to offer four compulsory elective courses and twenty-seven elective courses to provide students from across the university opportunities to study sustainability and environmental innovation design.

Today, ideas and practical approaches are needed not only for comprehensively solving the urgent problems, including climate change associated with global warming,

energy, population, and food supply, but also for achieving sustainable society, with societal visions and goals. Global problems arise from simultaneous failures of three systems: physical systems (e.g., resources, energy and ecology), social systems (e.g., economics, government, industrial structure and technological systems) and individual human behavior (e.g., lifestyle, health, security, values). Sustainability science together with environmental innovation design as research fields helps to maintain and enhance global society and meet its needs by studying these systems in order to rebuild them and repair the interrelationships among them.

Of course, a single field of research, to say nothing of a single researcher, cannot solve such complex problems; specialists from various disciplines must join forces to tackle these issues. Researchers must make full use of



their own specialized knowledge and experience and also be able to work with specialists in other fields. In our program, students gain a broad view and deep understanding of sustainability problems and learn to see their own fields of specialty in the context of sustainability. The program provides opportunities for site visits and discussions, and is set up to help students learn not just theory but practical skills. As specialists who also have an understanding of sustainability, students can expect to make an active contribution to society.

Research

CEIDS conducts interdisciplinary research with the objective of building a sustainable and low-carbon society. The center carries out research that brings together basic technologies to build sustainable societies with expanded, global views and societal visions, encouraging technological and environmental innovations towards sustainability. In particular, the center contributes to the following research fields.

1. “Environmental Innovation Design” by bridging basic technologies and visions

It is highly essential to connect promising basic technologies or technology systems, which could potentially contribute to building sustainable society, with societal visions and goals, such as sustainable and low-carbon societies. The center conducts theoretical and practical research to bridge top-level basic technologies such as, solar energy, fuel cells, thermoelectric conversion technology and green IT, and these societal visions, thereby effectively fostering environmental and societal innovations (i.e., Meso level research; Fig 1).

Taking an interdisciplinary approach, the center uses domestic and international networks to conduct innovative research. The center also utilizes research opportunities and outcomes for educational programs.

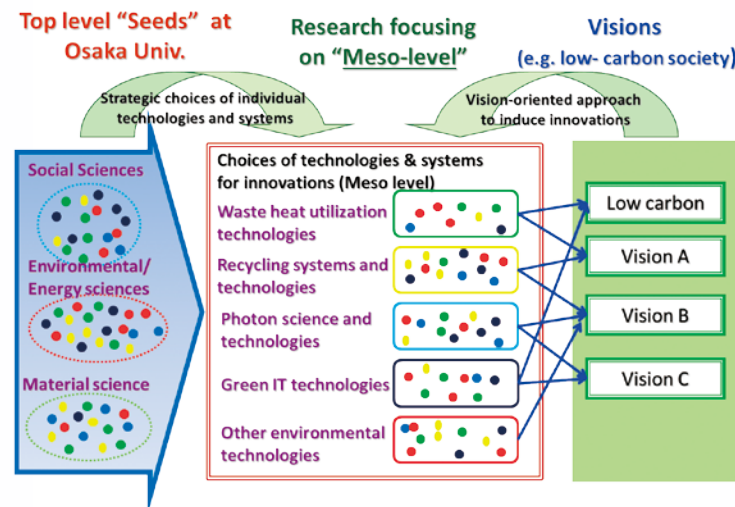


Fig1. Meso level research by bridging technology seeds and visions

2. Development of sustainability science

The center aims to advance sustainability science and develops various methods peculiar to sustainability science. These methods includes, but not limited to, future scenario design, transition management towards sustainable society, pluralistic valuation methods, technology roadmaps and knowledge structuring using ontological engineering. These methods are also applied to actual case studies to analyze sustainability status and to propose visions and possible measures for sustainable societies.

3. Analyses of sustainability status in Asian countries and proposal of future visions

Given the relative scale of population and economy, pursuing sustainable development in Asian countries is of vital importance for global sustainability. The center conducts various case studies in Asian countries, including China, with an aim to analyzing energy and resources consumption patterns as well as societal conditions and to proposal possible pathways towards sustainability in these nations on the basis of such analyses.