



Co-lead (2023-2025): Kobe University, Waseda University, University of Fukui

Mission and activities

The mission is to create an innovation platform for promoting decarbonization technologies and their social implementation among academia, industry and government through



- Identifying issues based on a back-casting approach
- Knowledge sharing
- Social implementation

Activity in WASEDA University is showcased in this presentation



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List of members:

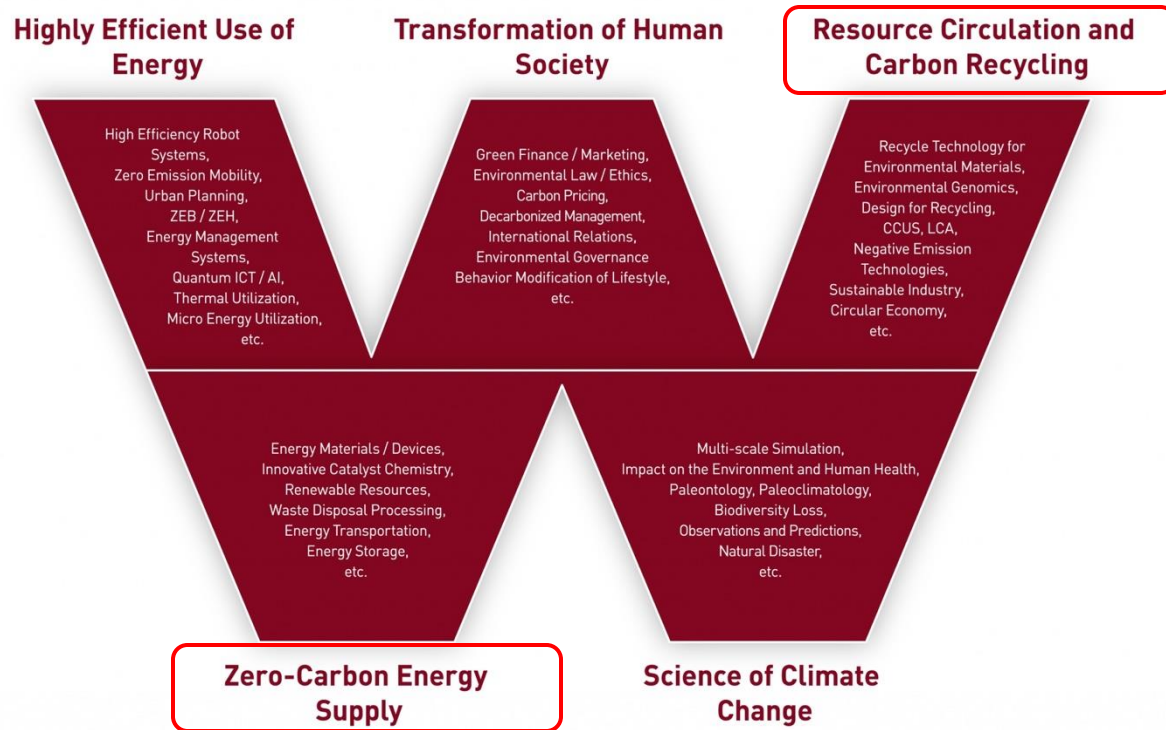
AICHI INSTITUTE OF TECHNOLOGY
AZABU UNIVERSITY
IWATE UNIVERSITY
OITA UNIVERSITY
OSAKA INSTITUTE OF TECHNOLOGY
OSAKA METROPOLITAN UNIVERSITY
OSAKA UNIVERSITY
GAKUSHUIN UNIVERSITY
KAGOSHIMA UNIVERSITY
KANAGAWA UNIVERSITY
KANAZAWA INSTITUTE OF TECHNOLOGY
KANAZAWA UNIVERSITY
ENVIRONMENTAL RESTORATION AND CONSERVATION AGENCY
KWANSEI GAKUIN UNIVERSITY
KYOTO UNIVERSITY OF ADVANCED SCIENCE
KYOTO UNIVERSITY
KYOTO PREFECTURAL UNIVERSITY
KUMAMOTO UNIVERSITY
GUNMA UNIVERSITY
KEIO UNIVERSITY
HIGH ENERGY ACCELERATOR RESEARCH ORGANIZATION
KOGAKUIN UNIVERSITY
KONAN UNIVERSITY
KOBE INTERNATIONAL UNIVERSITY
KOBE UNIVERSITY
TOTTORI UNIVERSITY OF ENVIRONMENTAL STUDIES
KOMAZAWA UNIVERSITY
SAITAMA INSTITUTE OF TECHNOLOGY

SAITAMA UNIVERSITY
THE UNIVERSITY OF SHIGA PREFECTURE
SHIZUOKA UNIVERSITY
SHIZUOKA INSTITUTE OF SCIENCE AND TECHNOLOGY
NATIONAL INSTITUTE FOR FUSION SCIENCE
NATIONAL GRADUATE INSTITUTE FOR POLICY STUDIES
SOJO UNIVERSITY
DAIICHI INSTITUTE OF TECHNOLOGY
CHIBA UNIVERSITY
CHUKYO UNIVERSITY
CHUBU UNIVERSITY
THE UNIVERSITY OF ELECTRO-COMMUNICATIONS
TOKAI NATIONAL HIGHER EDUCATION AND RESEARCH SYSTEM
TOKYO UNIVERSITY OF MARINE SCIENCE AND TECHNOLOGY
TOKYO UNIVERSITY OF TECHNOLOGY
TOKYO INSTITUTE OF TECHNOLOGY
TOKYO DENKI UNIVERSITY
ADVANCED INSTITUTE OF INDUSTRIAL TECHNOLOGY
TOKYO METROPOLITAN UNIVERSITY
TOKYO UNIVERSITY OF SCIENCE
DOSHISHA UNIVERSITY
TOHOKU INSTITUTE OF TECHNOLOGY
TOHOKU UNIVERSITY
TOYO UNIVERSITY
TOTTORI UNIVERSITY
TOYAMA PREFECTURAL UNIVERSITY
UNIVERSITY OF TOYAMA
TOYOHASHI UNIVERSITY OF TECHNOLOGY

NAGAOKA UNIVERSITY OF TECHNOLOGY
NAGASAKI INTERNATIONAL UNIVERSITY
NAGAHAMA INSTITUTE OF BIO – SCIENCE AND TECHNOLOGY
NAGOYA INSTITUTE OF TECHNOLOGY
NARA INSTITUTE OF SCIENCE AND TECHNOLOGY
NIIGATA UNIVERSITY
NIIGATA UNIVERSITY OF PHARMACY AND MEDICAL AND LIFE SCIENCES
JAPAN ATOMIC ENERGY AGENCY
NIHON UNIVERSITY
NIHON FUKUSHI UNIVERSITY
UNIVERSITY OF HYOGO
UNIVERSITY OF FUKUI
FUKUOKA INSTITUTE OF TECHNOLOGY
FUKUOKA UNIVERSITY
BUNKA GAKUEN UNIVERSITY
BUNKA FASHION GRADUATE UNIVERSITY
JAPAN ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY
HOKKAIDO UNIVERSITY
MURORAN INSTITUTE OF TECHNOLOGY
MEIJI UNIVERSITY
MIJO UNIVERSITY
YAMAGUCHI UNIVERSITY
UNIVERSITY OF YAMANASHI
RYUKOKU UNIVERSITY
WASEDA UNIVERSITY



Waseda Center for a Carbon Neutral Society



Producing **capable students** ;
 contribute to the future of humankind
 and society ;take on active roles in
 the real world ;give back their
 knowledge to Waseda University
**through education and industry-
 academia collaboration.**

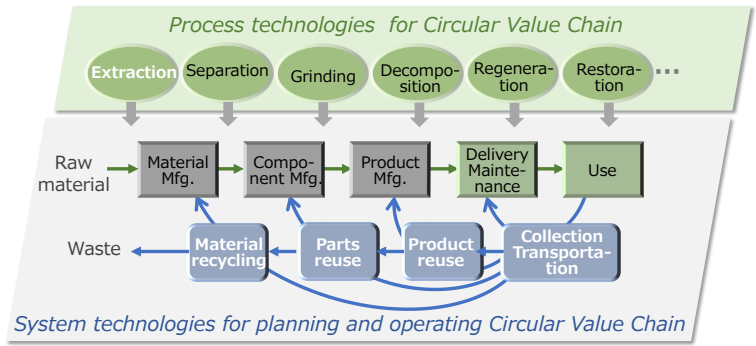
Waseda Carbon Net Zero Challenge (2021)



Collaborative activities for Circular Economy



Prof. Chiharu Tokoro



- The objective : **Resource circulation technologies** for well-being, reducing resource consumption and mitigating environmental impact.
- **60 Companies**, 9 Support Organization Incl. Ministries and Local Governments (as of Aug. 2025)

- **Integration of process technologies and system technologies**
- Process for effective regeneration, separation, and sorting.
- System implemented into a value chain.

Global Collaborations



Institute of Organic Chemistry and Biochemistry of the Czech Academy of Sciences

Recycling of rare-earth metals from motor magnets for electric vehicles



Critical Minerals, and Circular Economy



Norwegian University of Science and Technology

Circular Manufacturing business model, EV/LiB Resource circulation



한양대학교 HANYANG UNIVERSITY

Advanced Battery Technologies



Core of a 13-university academic network

<p>① Manufacturing professionals <New energy systems innovators></p> <p>Assemble game-changing material innovation and system integration innovations by through technology integration</p>	<p>② Value creation professionals <New energy business creation innovators></p> <p>Negotiate with governments and companies to create and implement renewable energy utilization systems.</p>	<p>③ Int'l standardization professionals <Global energy innovators></p> <p>Revolutionize Japan to become energy self-sufficient and lead the world by spreading internationally.</p>
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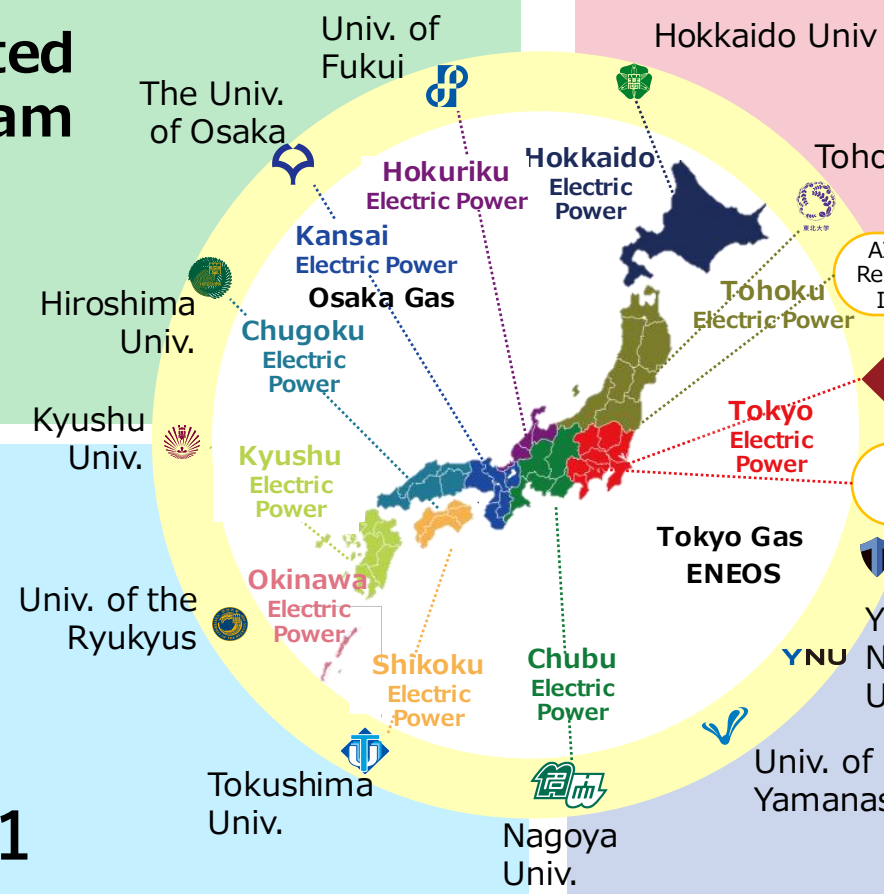


5-year integrated doctoral program

Current Students: **70**
Graduates: **77**



International Journal Publications **201**



Joint Research Projects



Domestic/Overseas Companies: **296**
Overseas Universities, etc.: **89**
Cumulative Total (2018-2024)

AIST Fukushima Renewable Energy Institute (FREIA)

Waseda Univ.

Central Research Institute of Electric Power Industry (CRIEPI)

Tokyo Metropolitan Univ.

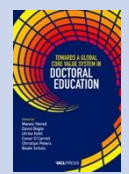
Yokohama National Univ.

YNU

Univ. of Yamanashi

International Recognition

UCL Press, 2022 as an advanced Japanese doctoral case study.





- ◆ Leverage the knowledge in the Coalition as a platform of innovation
 - By exchanging knowledge, experience of best practices
 - Aiming at joint projects, joint education program

- ◆ Share common targets and tools for a sustainable society

- ◆ Collaborate with global stakeholders incl. academia, industries and policy makers

Annex



A five-year integrated doctoral program

① Manufacturing professionals <New energy systems innovators> Assemble game-changing material innovation and system integration innovations by through technology integration	② Value creation professionals <New energy business creation innovators> Negotiate with governments and companies to create and implement renewable energy utilization systems.	③ Int'l standardization professionals <Global energy innovators> Revolutionize Japan to become energy self-sufficient and lead the world by spreading internationally.
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Creating a New Power Energy Industry (Decarbonization × Dispersion Energy × Digital)

Industry-academia collaboration Ability to carry out joint research Ability to create industries Ability to execute international collaboration **Practical research/education conducted abroad**
Excellent education by the collaboration of 13 national, public, and private universities

Profound expertise Strong fusing ability Comprehensive perspective



Power Resource Optimization

Grant dual enrollment

13-University Inter-University Graduate School Platform
 Waseda University, Hokkaido University, Tohoku University, University of Fukui, University of Yamanashi, Tokyo Metropolitan University, Yokohama National University, Nagoya University, Osaka University, Hiroshima University, Tokushima University, Kyushu University, University of the Ryukyus

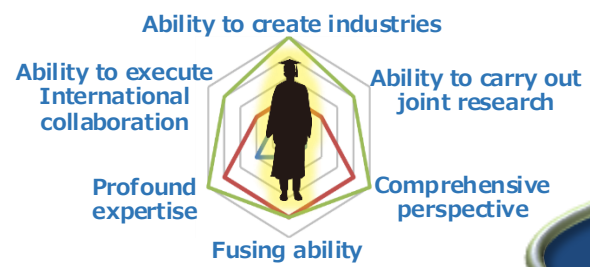
Solution

Five Challenges to Overcome in Doctoral Human Resource Development in the Electric Power and Energy Field

① Inter-University Collaboration	② Organizational Collaboration with a Consortium of Companies	③ Interdisciplinary Fusion Education	④ Education on International Standardization	⑤ Research and Education via External Funding
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PEP Rubric

Visualization of the strengths and appeal of doctoral human resources



Granting a shared/dual student registration status (Waseda University)

