Call for “Mission Research Fellows”, a post-doctoral researcher in Research Institute for Sustainable Humanosphere, Kyoto University for 2025FY

The Research Institute for Sustainable Humanosphere (RISH), Kyoto University is seeking applicants for Mission Research Fellow, as described below.

As a Joint Use/Research Center in the field of Humanosphere Sciences, RISH dedicated to the correct understanding and evaluation of the current state and future of the “Sustainable Humanosphere,” which we comprehensively defined as the area and space necessary for human existence, including the human sphere, the forest sphere, the atmosphere, and the cosmic sphere, as well as to the pursuit of advanced science and technology that can serve as the basis for a sustainable society in harmony with the environment based on its findings. To this end, we have established five “Research Missions” and are engaged in problem-solving research.

Because the research fields covered by Humanosphere Science span a wide range of disciplines, we place great importance on interdisciplinary research. Therefore, RISH assigns “Mission Research Fellows” to create a new field of Humanosphere Science through exploratory and interdisciplinary research projects related to the five Missions and to foster young researchers with broad perspectives.

Outlined below are the five Missions set by RISH.

Mission 1: Environmental Diagnosis and Regulation of Circulatory Function

To predict environmental changes, such as global warning and extreme weather events, Mission 1 diagnoses atmospheric conditions by highly sensitive radars and satellite measurements. This work elucidates material transport and ex-changes mechanisms between the atmosphere and the biosphere, including the pedosphere. To establish a fossil fuel-independent, biomass-based sustainable energy production and utilization system, this mission views the humanosphere from a material cycling perspective. Research projects include investigating the biological functions of plants and microbes in biomass production and sustainable and circular processes such as metabolic engineering.

Mission 2: Advanced Development of Science and Technology Towards a Solar Energy Society

Mission 2 aims to develop technology for advanced solar energy conversion by means of microwave technology, biotechnology, and chemical reactions. We study the direct

conversion of solar energy into electric and electromagnetic wave energies, as well as the indirect conversion of solar energy into highly functional materials via wood biomass, a carbon fixation product of photosynthesis. Mission 2 intensively focuses on the conversion of solar energy to highly functional materials, which includes not only the basic humanosphere science but also how total systems are implemented in the humanosphere.

Mission 3: Sustainable Space Environments for Humankind

The aim of Mission 3 is to advance research for the understanding of space and atmospheric environments and their interactions with the human living environment-sphere and the forest-sphere by using satellites, space stations, sounding rockets, ground-based radars, and computer simulations. This mission also aims to respond to the societal demand for the utilization of sustainable space environments by deepening our understanding of the fluctuations in radiation belts and geomagnetic storms due to solar flares and by proposing measures to tackle threats from space, including potentially hazardous space debris and asteroids. For example, we study an engineering approach to prevent asteroid impacts on the Earth, as these events cause severe damage. This mission not only deals with understanding and utilizing space environments, but it also emphasizes the maintenance and improvement of space environments for daily human life, as well as interactions with the atmosphere, the forest-sphere, and the human living environment-sphere.

Mission 4: Development and Utilization of Wood-based Sustainable Materials in Harmony with the Human Living Environment

Mission 4 aims to develop a sustainable, renewable and cooperative human living environment by constructing a novel social system based on wood-based resources. To create harmony between nature and human activities, this mission focuses on human habitation by examining biologically based and sustainable materials, the architectural function of structures and the human habitability of these structures. Technologies with low environmental impacts are possible if the structure and function of these bio-resources is well understood. Our research is directed towards the development of these technologies throughout the carbon life cycle, including the manufacturing, modification, use, disposal, and recycling of wood-based materials. The principle of this mission is to unify state of the art technologies in engineering, agriculture, biology and anthropology through wood and material sciences. This mission is designed with creativity in mind and will be conducted through the development of novel ideas and thinking. Nonetheless, ancient knowledge and techniques will still play an important role in this mission to uphold a safe and pleasant environment on earth.

Mission 5: Quality of the Future Humanosphere

Rapid expansion of human industrial exploitation has brought drastic changes to various aspects of the humanosphere, which threatens human health and the circumstances necessary for a safe and secure life. The purpose of Mission 5 is to take effective measures, based on the achievements of Missions 1 to 4, to harmonize human health and environmental issues, establish a society independent from fossil resources, maintain a space infrastructure that supports the human living environment, and contribute to society by creating a renewable wood-based civilization. In this way, Mission 5 aims to improve the quality of the humanosphere in the future. This mission is based on collaborative research activities carried out from 2011 to 2015 as "Frontier Research on the Sustainable Humanosphere", which is an institute-driven top-down project studying the five main themes for human life by means of humanosphere sciences.

For details, see the RISH website https://www.rish.kyoto-u.ac.jp/?lang=en

Application Guidelines for Mission Research Fellows, Research Institute for Sustainable Humanosphere, Kyoto University

- Positions available: Mission research fellows:

Number of positions: a few positions (employment will start on April 1st, 2025)

- Location: Uji Campus, Kyoto University, Gokasho, Uji City, Kyoto

(Home or other places when Kyoto University permitted/ordered telework)

- Application period: December 12th, 2024 to January 17th, 2025 (17:00 JST)

- Qualification: PhD holders or those who are definitely scheduled to obtain a doctoral degree by April 1st, 2025, and have no full-time job.

- Term of office: April 1st, 2025 to March 31st, 2026 (Although the contract ends on March 31st, 2026 in principal, it can be renewable if the post is secured based on evaluation of the research results. Up to 2 years since the initial date of hire.)

※We may retract the job offer, if the successful candidate, for whatever reason, is not able to start working at Kyoto University no later than three months after the start day stated in the offer letter.

• Probation period: none

• Application and required documents:

(a) CV (with your photo): applicant's name, date of birth, age, education, work experience, e-mail address etc.

(b) Subject for the research project, the research field, and the related Mission(s) from Mission 1 to 5

(c) Summary of the research activities in the past (in approx. 800 words)

(d) Research aims and aspirations (in approx. 400 words)

(e) Research plans (write specifically in approx. 1600 words)

(f) Names and contacts of references (2 persons) regarding the applicant's research and personality

(g) Name of the host faculty in RISH
Applicant must contact the host faculty in RISH about the proposal before the application

(h) List of research achievements (original papers, books, patents, and others) and a maximum of 3 reprints or copies of major papers

• How to apply

Submit all the application documents to a Google Form below:
https://forms.gle/tXAUYNhcL8PwmiTP6

If you do not use the Google Form above, please send the electronic files of the application documents in a storage device like a USB stick memory to:
Administrative Office, Research Institute for Sustainable Humanosphere, Kyoto University Gokasho, Uji City, Kyoto 611-0011, JAPAN
(Write "Application documents for mission research fellow enclosed" in red on the front of the envelope. If using postal mail, send it by simple registered mail.)

• Contact: Administrative Office, Research Institute for Sustainable Humanosphere
uji.rish-jimu@mail2.adm.kyoto-u.ac.jp

• Employment conditions:

(a) Status: Hourly staff (Research Staff)

(b) Payment: 1,900-3,900 yen per hour

(c) Work schedule: 20-30 hours per week, 3-5 days per week (excluding Saturdays,

Sundays, national holidays, year-end and New Year holidays, and Foundation Day). No overtime working. Work schedules are subject to negotiation.

(d) Social insurance: Health insurance, employee's pension insurance, employment insurance, industrial accident compensation insurance

(e) Allowance: Commuting allowance will be paid in accordance with the Kyoto University regulations.

(No other allowances are provided, such as bonuses or retirement benefits.)

- Other:

The application documents you submit will be used for recruitment and selection purposes only.

These documents will not be disclosed, transferred, or lent to any third parties without due reason.

Please note that the application documents will not be returned to you.

Smoking is prohibited in any indoor and outdoor areas of the Kyoto University campus, except for designated smoking areas.

Kyoto University promotes gender equality. As part of this effort, in accordance with the regulations stipulated in Article 8 of the Act on Securing, Etc. of Equal Opportunity and Treatment between Men and Women in Employment (Equal Employment Opportunity Law), women will be given priority in employment if their evaluation is deemed equal in the selection process. We expect many female researchers to actively apply.