

International Conference on Science and Technology for Sustainability 2025

Concept paper

Theme:

Strengthening research capability and promoting international talent mobility and circulation: a focus on early career researchers who will lead the academia of the future

Objective:

Serious concerns are being expressed today about the decline in Japan's research capability and how it can be strengthened. It is essential to empower early career researchers because it is they that will serve as the driving force behind future academia. The International Conference on Science and Technology for Sustainability 2024, highlighted the fact that the environment surrounding early career researchers is increasingly challenging. The declining attractiveness of being a researcher as a career is a pressing issue that could directly lead to a decrease in their number. In order for Japan to demonstrate competitive research capability at an international level, the robust development of aspiring early career researchers is crucial. This can be effected by the sharing of knowledge acquired from prior engagement and proposals based on that knowledge to deepen discussions. It would also be beneficial for them to be involved in such discussions with leading researchers at world-class universities and institutions overseas as role model.

Conversely, from a global perspective, the world faces a mass of challenges such as climate change, and the opportunities for international exchange and international joint research have been increasing. As the term “international talent mobility and circulation” suggests, the field of activity of scientists is not been limited to one country, and the international competition for high-level researchers is intensifying. Therefore, in order to enhance Japan's research capability, it is necessary to take strategic measures such as the dispatch and acceptance of research personnel, taking into account Japan's circumstances and trends in international talent mobility and circulation.

Overview:

At the International Conference on Science and Technology for Sustainability 2025, keynote speeches and panel discussions will be held under the two central themes:

I . Strengthening the research capability of early career researchers who will lead the future of science

II . Promoting international talent mobility and circulation

These two themes are interrelated. The conference aims to consolidate the findings from discussions in an integrated session and to guide the discussion in a certain direction based up the results of this Conference.

I . Strengthening the research capability of early career researchers who will lead the future of science

We will invite Japanese and foreign researchers who are active as Principal Investigators (PIs) overseas to share their experience and engage in discussions. We will explore diverse support measures and programmes for undergraduates, graduate students and post-doctoral researchers to extend opportunities for gaining research experience and advance their research abroad.

Discussion will also focus on institutional reform. This is to encourage young Japanese researchers to devote themselves to research abroad. This involves incentives and evaluation systems that ensure that research results and networking abroad have a positive impact on their subsequent career paths. It involves also flexible employment systems that are not bound by conventional employment practices and systems of salary and promotion. In addition, discussion will explore measures to dispatch high quality human resources from Japan to educational centres around the world and to engage their research across Japan and other places in the world, with a view to building and strengthening Japanese research networks overseas.

II . Promoting international talent mobility and circulation

We will invite Japanese and foreign researchers from Europe, the US and other countries that are hubs for international talent mobility and circulation to present their views on trends in this sphere, including the receiving side's perspective.

Following from this, we will discuss the ideal form of international talent mobility and circulation and Japan's contribution to it, in light of global academic trends. The goal is to deepen the discussion on measures for Japan to attract excellent researchers from around the world.

The resolution of social issues and the creation of innovation require collaboration and initiatives that transcend fields and sectors. The relevant knowledge must be sought from universities, research institutions and a wide range of stakeholders, such as government-

related organisations and industry.