

**e-ASIA Joint Research Program (e-ASIA JRP)**  
**The review results of the 12<sup>th</sup> Call for Proposals**  
**in the field of “Environment”**  
**on the topic of “Low Carbon Society”**

It is our great pleasure to announce the selected projects of the e-ASIA Joint Research Program (e-ASIA JRP\*1) 12<sup>th</sup> Call for Proposals in the field of “Environment” on the topic of “Low Carbon Society”.

A total of 34 proposals was submitted in response to the 12<sup>th</sup> joint call for proposals. After careful consideration based on the joint review results by the five funding organizations from four countries participating in the call\*2, the following five collaborative projects were selected for support with the approval of the e-ASIA JRP Board. Support to the projects will continue for three years.

**“Coastal ecosystems as nature climate solution in Asia”**

to be conducted jointly by:

Thailand: Anchana Prathep, Dean, Prince of Songkla University

Japan: Ken-ichi Hayashizaki, Associate Professor, Kitasato University

Indonesia: Nurjannah Nurdin, Professor, Hasanuddin University

This project aims to assess the carbon potential of coastal ecosystems, which can be utilized by countries for climate change mitigation strategies, and combine research, social aspects, and private stakeholders to develop the potential mechanisms to include these ecosystems in national policies for carbon dioxide offset. This research will provide each country with a strategy on how to manage these ecosystems with the goal of increasing carbon sequestration, which can be relayed to national policies as well as social security for the local communities.

**“Developing integrated agriculture wastes – carbon capture model for mitigation of greenhouse gas emissions in rice production in Asia (IAW-CCM Asia)”**

to be conducted jointly by:

Thailand: Jonaliza Siangliw, Senior Researcher, National Center for Genetic Engineering and Biotechnology (BIOTEC)

Japan: Kosuke Noborio, Full Professor, Meiji University

Indonesia: Chusnul Arif, Associate Professor, IPB University

Lao PDR: Phetmanyseng Xangsayasane, Senior rice scientist/Director, National Agriculture and Forestry Research Institute

Rice production is part of the culture in Asia and the staple food in the region. Linked with the production is the emission of carbon and other greenhouse gases. This cooperative research project aims to utilize agricultural (specifically rice) and food waste for composting and transformation to products that will enhance carbon capture and utilization and the reduction of carbon and GHGs through the application of azolla and alternate wet and dry systems of rice cultivation.

**“Closed-loop Recycle Process of Spent Primary and Secondary Batteries and the Reutilization for the Environmental Applications & Circular Economy (ReSPEC)”**

to be conducted jointly by:

Thailand: Rojana Pornprasertsuk, Associate Professor, Chulalongkorn University

Japan: Tomoaki Watanabe, Vice President/Professor, Meiji University

Indonesia: Lukman Noerochim, Associate Professor, Sepuluh Nopember Institute of Technology (ITS)

This research project aims to cooperatively closed-loop recycle Mn, Zn and C from spent alkaline and Zn-C batteries and Li, Mn, Co, Ni, C from spent Li-ion battery collected in Thailand, Japan and Indonesia to be reutilized for the environmental applications as follows: (i) Zn and Ni/Co/MnOx/C for rechargeable Zn-ion battery, (ii) Li/Ni/Mn/AlOx for high-performance LIB with fast-charging capability (iii) NaFeMnOx for Na-ion battery and (iv) Ni/Co/Mn/ZnOx composites as photocatalysts for the waste water treatment and hydrogen production.

**“Design of Innovative Sustainable Urban Mobility in Asia (DISUMA)”**

to be conducted jointly by:

Japan: Hironori Kato, Full Professor, The University of Tokyo

Thailand: Saksith Chalermpong, Associate Professor/Deputy Director, Chulalongkorn University

Indonesia: Muhammad Zudhy IRAWAN, Ph.D., Gadjah Mada University

This collaborative research aims to perform international case studies incorporating participatory processes of stakeholders for proposing guidelines towards the development of sustainable mobility system in Asia. The Japanese research team will design and lead the study process, supervising the entire research activities through organizing participatory workshops with international comparisons of case studies while Thai and Indonesian teams will perform case analyses on sustainable mobility strategies in each country, where local contexts and unique solutions against local challenges are investigated.

**“AI-supported tool development for decarbonized food system”**

to be conducted jointly by:

Japan: Eri Amasawa, Project Associate Professor, The University of Tokyo

Thailand: Santi Phithakkitnukoon, Associate Professor, Chiang Mai University

Indonesia: Zainal Arifin Hasibuan, Lead, University of Dian Nuswantoro

There is an urgent need to reduce greenhouse gas (GHG) emissions from food systems, which account for one-third of global anthropogenic emissions. This project aims to develop a decarbonization strategy using Artificial Intelligence (AI) at each life-cycle stage of the food system. We will use AI in farm management, calculate GHG emissions from menus using image recognition and machine learning, and build a matching platform to reduce food waste. This can propose advanced decarbonization initiatives from upstream to downstream of the food system.

On behalf of the e-ASIA JRP, we would like to offer our sincerest congratulations to the project teams and look forward to the significant impact their results will bring to our society in the future.

\*1 The e-ASIA Joint Research Program (e-ASIA JRP)

Through the acceleration of science and technology research exchange and collaboration in the East Asian region, the e-ASIA Joint Research Program (e-ASIA JRP) aims to strengthen research and development capabilities towards resolution of shared challenges across the region, including those associated with materials, alternative energy, agriculture, health research, disaster risk reduction and management, advanced interdisciplinary research towards innovation, and environment. As part of that objective, the e-ASIA JRP intends to support the multilateral collaborative research projects, which must consist of three or more countries.

e-ASIA JRP's homepage: <http://www.the-easia.org/jrp/>

\*2 The list of organizations participating in the 12<sup>th</sup> joint call for proposals in the field of "Environment" on the topic of "Low Carbon Society":

- Ministry of Education, Culture, Research and Technology (DIKBUDRISTEK), Indonesia  
URL: <https://sinta.kemdikbud.go.id/>
- Japan Science and Technology Agency (JST), Japan  
URL: <https://www.jst.go.jp/EN/>
- Ministry of Education and Sports (MOES), Lao PDR
- National Research Council of Thailand (NRCT)  
URL: <https://www.nrct.go.th/en>
- Program Management Unit for Human Resources & Institutional Development, Research and Innovation (PMU-B)  
URL: <https://www.pmu-hr.or.th/>

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