

--Public Announcement--

The e-ASIA Joint Research Program (e-ASIA JRP)
The Review Results of the 13th Call for Proposals
In the Field of

Alternative Energy

It is our great pleasure to publicly announce the selected projects from the e-ASIA Joint Research Program (e-ASIA JRP*¹) 13th Call for Proposals in the field of Alternative Energy.

This call received a total of 29 proposals, reflecting significant interest and collaboration in this vital area. Following a thorough evaluation process, which included joint reviews conducted by five funding organizations from five participating countries*², the following three collaborative projects have been selected for support. These projects have been approved by the e-ASIA JRP Board and will receive funding for a duration of three years.

Project Title:

“Interface Materials Informatics: A Platform for Semiconductor Interface Design and Optimization in Organic Solar Cells”

to be conducted jointly by:

Japan

Daniel Packwood

Associate Professor, Kyoto University

New Zealand

Justin Hodgkiss

*Professor and Co-Director, Victoria University of Wellington,
The MacDiarmid Institute*

Thailand

Pichaya Pattanasattayavong

*Assistant Professor,
Vidyasirimedhi Institute of Science and Technology (VISTEC)*

While the efficiency of organic solar cells has dramatically improved in recent years, interfacial losses remain a serious issue. This research aims to develop a virtual optimization platform for semiconductor interfaces in organic solar cells. The platform will compute device properties from first principles and will identify optimal interface compositions using machine learning and evolutionary algorithms. Its reliability will be

extensively benchmarked against experimental data. The platform will be a step towards a new materials informatics paradigm: device level virtual screening.

Project Title:

“Improving the Sustainability of Resource Recovery from Wet Biomass Waste: Experimentally-validated GIS-based Integrated Biorefineries for Cleaner Mobility”

to be conducted jointly by:

Japan	Hiroshi Onoda <i>Professor/Dean of Graduate School of Environment and Energy Engineering, Waseda University</i>
Philippines	Rovick Tarife <i>Instructor, Mindanao State University – Iligan Institute of Technology</i>
Indonesia	Hanifrahmawan Sudibyo <i>Assistant Professor, Gadjah Mada University</i>
Thailand	Apanee Luengnaruemitchai <i>Professor, Chulalongkorn University</i>

We aim to improve wet biowaste biorefineries' economic and technical viability in Southeast Asia. Our approach includes developing an experimentally informed GIS-based decision-making tool to optimize biorefineries converting municipal solid waste and residues from agri-food and tourism sectors into biofuel and liquid fertilizer. We integrate spatial modeling, experiments, process simulations, and econometrics to evaluate and improve the socio-techno-economic performances. This project supports crafting strategies for sustainable waste management, fostering circular and cleaner mobility energy transitions.

Project Title:

“Integrated Biomass Upgrading: Advancing Hydrogen and Valuable Green Chemicals through Electroreforming”

to be conducted jointly by:

Thailand	Soorathep Kheawhom <i>Associate Professor, Chulalongkorn University</i>
New Zealand	Holger Fiedler <i>Energy Materials Scientist, GNS Science</i>
Japan	Katsuya Teshima <i>Professor, Shinshu University</i>

The Cooperative Research Project aims to revolutionize green hydrogen production through a novel biomass electrolysis technique, providing an economically feasible alternative to traditional water splitting methods. By significantly reducing costs and valorizing oxidized by-products, the project focuses on developing a scalable system for converting waste to fuel, tailored to the waste streams of partner countries. This approach promises a targeted, efficient solution for sustainable energy production.

***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 Five Participating Organizations**

In the 13th Joint Call for Proposals in the Field of Alternative Energy:

- Indonesia: National Research and Innovation Agency (BRIN)
<https://brin.go.id/>
- Japan: Japan Science and Technology Agency (JST)
<https://www.jst.go.jp/EN/>

- New Zealand: Ministry of Business, Innovation and Employment (MBIE)
<https://www.mbie.govt.nz/>
- Philippines: Department of Science and Technology (DOST-PCIEERD)
<https://pcieerd.dost.gov.ph/>
- Thailand: Program Management Unit for Human Resources & Institutional Development, Research, and Innovation (PMU-B)
<https://www.pmu-hr.or.th/en/home/>

Contact:



YUKIO KEMMOCHI, PhD (Mr.)

Address: e-ASIA JRP Secretariat/Japan Science and Technology Agency
Room 218 Innovation Cluster1 Building (INC1)
111 Thailand Science Park, Phahonyothin Road
Khlong Nueng, Khlong Luang, Pathum Thani 12120 THAILAND

Tel: +66-2-564-7713

E-mail: easia_secretariat@jst.go.jp