

# **FY2025 Application Procedures for Joint Research Task of Institute of Ocean Energy, Saga University, Japan**

Institute of Ocean Energy, Saga University (IOES) studies and educates ocean energies and their multipurpose utilization. Now we offer the "Joint Research of Ocean Energy" opportunities as the project of Joint Usage/Research Center of ocean energies. We welcome your application.

## **I. Ocean Thermal Energy Department**

- Division of Ocean Thermal Energy Conversion
- Division of Innovation for thermal energy conversion
- Division of Utilization of Deep Ocean Water

## **II. Ocean Fluid Energy Department**

- Division of Wave Energy
- Division of Tidal & Ocean Current Energy
- Division of Offshore Wind Energy

## **III. Sea Water Resource Department**

- Division of Marine Biochemical Resource Creation
- Division of Information and Environment for Ocean Energy
- Division of Ocean Energy Social Science
- Division of Comprehensive Ocean Energy Utilization
- Division of Human Resource Cultivation for Ocean Energy

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# 1. Proposal

## 1.1 Categories

Please select one category from the table below, as well as with or without research funding.

Research Categories	Field
Specially Promoted Research A	Ocean Thermal Energy (OTEC).
Specially Promoted Research B	Wave Energy.
Specially Promoted Research C	Tidal Energy.
Specially Promoted Research D	Offshore Wind Energy.
Specially Promoted Research E	Marine Biochemical Resource Creation
General Joint Research	Fields different from A-E above.
Workshop	International symposium on ocean energy.

### (1) Specially Promoted Research

There are five categories for “Specially Promoted Research” related to the four divisions in IOES. These researches will be performed in collaboration with researcher(s) of IOES.

#### Specially Promoted Research A: Ocean Thermal Energy (OTEC)

IOES performs the technological advance of the ocean thermal energy conversion (OTEC) system and the substantial study using the organic mediums such as ammonia or an eco-friendly alternative Freon. An important research theme is a technological advance of the heat exchangers using the characteristics of the working fluids. We expect improvement of the overall thermal efficiency of the cycle of this research.

IOES offers joint research for fundamental or applied research on heat exchanger of OTEC, LTEC (Discharged energy, ORC cycle, etc.), and general research of OTEC.

#### Specially Promoted Research B: Wave Energy

In recent years, a new wave energy conversion device and tidal power generation device are proposed, and a study aiming at practical use is conducted at a fast pace, every part of the world. IOES also started the research aiming at practical use of wave energy conversion in FY2005. We are studying mainly about the float type wave energy conversion devices.

IOES offers joint research for technological advance of 1st and 2nd conversion devices as conventional type and new devices for wave energy conversion.

#### Specially Promoted Research C: Tidal Power

There are many kinds of tidal power generation devices such as horizontal-axis propeller type, vertical-axis Darius type and, etc. And there are some kinds of installation configuration such as float and bottom fixed types. Research and development about the tidal power generation are carried out energetically all over the world, now. In FY2014, IOES constructed new circulating water tank to perform the tidal power generation and started the development of tidal power generation devices.

IOES offers joint research for tidal power generation devices and model-testing using the circulating water tank.

#### Specially Promoted Research D: Offshore Wind Energy

Offshore wind energy is demanded worldwide in the future. In recent years, some demonstration equipment of the floating offshore wind power generation had been installed. And technical developments are also active for super large floating offshore wind turbines.

IOES offers joint research for development and evaluation of new design/analysis methods and element technologies of wind turbines and floating offshore wind turbines.

#### Specially Promoted Research E: Marine Biochemical Resource Creation

The Sea Water Resource Department was established in IOES in fiscal year 2023. IOES is particularly focusing on research and development into the complex use of deep seawater obtained through ocean thermal energy conversion (OTEC).

IOES offers joint research for a wide range of research themes related to cosmetics science and microalgae that utilize seawater, including deep seawater.

(2) General Joint Research

General Joint Research: Research of Ocean Energy which is not included in the five fields above.

(3) Workshop

Workshop: International symposium on ocean energy.

## 1.2 Eligibilities for the Application

Researchers from foreign universities, public research institutes, or other equivalent organizations, who are admitted by the Director of IOES as an appropriate one, exclusive for Japanese researchers and researchers work in Japanese organization. In cases undergraduate or graduate student applies as a representative, the supervisor must join as a co-researcher. In addition, as a rule, involve a researcher from IOES as a research partner.

If the research themes are different, you may submit up to two applications as a representative. There is no limit to the number of cases you can be a co-researcher.

## 1.3 Research Term

Adopted date ~ 2026/03/31

## 1.4 Research and Travel Budget

### (1) Research Budget

We will support grant as the upper limit for 400,000 JPY for each research project. The applicant who needs grant, please fill in the section VII- Statement of costs in the application form. Please write the costs for devices and consumable, don't include reward and travel expenses. IOES has the right of management of the devices. The travel expense will be supported within the range of budget.

The total funding of IEOS Joint Research in FY2023 was 2,249 kJPY.

### (2) Travel Budget

In principle, IOES will partially support the travel expenses for each project within the budget of IOES, with a maximum of 3 days (2 nights) \*person, 2 days (1 night) \*person, or 3 days\*person trips. In addition, IOSE asks applicants to follow the travel expenses regulations of IOES.

The total funding for the travel expenses in FY2023 was 2,341 kJPY.

## 1.5 Term for Public Offering

1) ~ 2025/02/14 (fri) for applications with research grant.

2) Anytime for applications with no research grant.

## 1.6 Application

Please select the organizer of IOES before your application. The organizer will support each proposed research project. If you cannot decide it, contact with someone most plausible candidate from the table below.

Organizer of research division

Division	Organizer	Phone +81-952-	E-mail
Ocean Thermal Energy (Ocean Thermal Energy Conversion)	Prof. Yasuyuki Ikegami	20-4744	ikegami@ioes.saga-u.ac.jp
Ocean Thermal Energy (Thermal Energy Conversion)	Associate Prof. Hirofumi Arima	28-8877	arima@ioes.saga-u.ac.jp
Wave Energy	Associate Prof. Yasutaka Imai	28-8879	imai@ioes.saga-u.ac.jp

Tidal Energy	Associate Prof. Wakana Tsuru	28-8826	tsuru@ioes.saga-u.ac.jp
Offshore Wind Energy	Prof. Shigeo Yoshida	28-8807	yoshidas@ioes.saga-u.ac.jp
Sea Water Resource	Prof. Yoshihiro Tokudome	28-8963	domedome@cc.saga-u.ac.jp
Sea Water Resource	Associate Prof. Mikihide Demura	37-6786	st8148@cc.saga-u.ac.jp
Sea Water Resource	Associate Prof. Yoshitaka Matsuda	28-8571	ymatsuda@cc.saga-u.ac.jp

Download the application form from IOES web site ([https://www.ioes.saga-u.ac.jp/en/collabo/collabo\\_apply](https://www.ioes.saga-u.ac.jp/en/collabo/collabo_apply)) and fill in the application form.

Apply from the online application site ([https://www.ioes.saga-u.ac.jp/en/collabo/collabo\\_apply](https://www.ioes.saga-u.ac.jp/en/collabo/collabo_apply)).

If you have any questions about the application form and procedure for application, please contact us.

[Postal address and contact us]

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E-mail: [collabo@ioes.saga-u.ac.jp](mailto:collabo@ioes.saga-u.ac.jp)  
\*Please write “Joint Research” in the subject of your e-mail.  
Phone: +81-952-28-8624  
Fax: +81-952-28-8595

### 1.7 Joint Usage Facilities at IOES

Refer the IOES's homepage ([https://www.ioes.saga-u.ac.jp/jp/collabo/collabo\\_facilities\\_list/](https://www.ioes.saga-u.ac.jp/jp/collabo/collabo_facilities_list/)) for the experimental equipment.

### 1.8 Others

It is possible to conduct research online, in cases the research can be carried out by proxy or remote control, for workshops, or it is difficult to visit due to unavoidable circumstances.

## 2. Selection and Notification of the Results

The screening of “Joint research” will be performed by the review board of IOES.

The selection results (whether an applicant is selected or not) will be announced until beginning of May/2024.

## 3. Reporting

The researchers who received a research grant need to submit a joint research report within two months after the end for your joint research period. And the report will be published on OTEC, the annals of IOES.

The following acknowledgement needs to be added to the publication of the adopted search research result;

“This study was performed under the Cooperative Research Program of IOES,  
Institute of Ocean Energy, Saga University. (Accept #)”

In addition, submit the copy of the article to IOES.

Some excellent research will be invited for the presentation at the annual symposium on Joint Usage/Research Center hosted by IOES.