

FY 2019 Application Guidelines on Collaborative Research
International Research Center for Nuclear Materials Science,
Institute for Materials Research (IMR), Tohoku University

The International Research Center for Nuclear Materials Science, Institute for Materials Research, Tohoku University (hereinafter referred to as the “IMR-Oarai”) is calling for collaborative research proposals on (i) fundamental studies and R&D on various materials for the present light water, next-generation, and fusion reactors, including neutron irradiations by research reactors and post-irradiation experiments (nano-structural analysis and mechanical property tests etc.) for radioactive samples, and (ii) studies using Actinide elements, including crystal growth of Actinide compounds with novel quantum phases and their physical property measurements, nuclear fuels and wastes, and (iii) various studies using equipments/facilities of the IMR-Oarai.

Please refer to the following guidelines and apply via the Collaborative Research Web Application System by [10 December 2018](#).

1. Applicant qualifications

- (1) Faculty members and researchers of national/public/private universities and national research institutes as well as full-time researchers belonging to incorporated administrative agencies, national research and development corporations, special corporations, and national public research institutions can apply as research representatives.
- (2) Graduate students and technical staff can be included in the collaborators. Undergraduate students may become collaborators, but please consult us for details.

2. Application procedure and application period

Apply via the Collaborative Research Web Application System of the Institute for Materials Research, Tohoku University (<https://imr-kyodo.imr.tohoku.ac.jp/?lang=en>).

A researcher may only submit one application as a representative.

3. Collaborative use equipment, irradiation program

- (1) The collaborative use equipment is listed at the end of this guideline. Please indicate the desired equipment in the application.
- (2) Neutron-irradiation program by using BR2 is planned. Possible irradiation conditions are described in (a)–(d) below. If you wish to be involved in those, indicate your desire in the “Background, purpose, and outline” and include the desired irradiation conditions (dose, irradiation temperature) and samples (composition, dimensions, and quantity) in the “Irradiation plan.”
 - (a) Pressurized water reactor environment irradiation (RECALL)
Irradiation temperature, 290 °C; irradiation dose ($E > 1$ MeV), 1×10^{24} n/m²; atmosphere: helium or vacuum; with temperature monitoring; with temperature control
 - (b) High-temperature, high-flux irradiation (High-temperature BAMI)
500 °C, $5 \times 10^{23} - 2 \times 10^{24}$ n/m²; helium or vacuum; no instrumentation
 - (c) Low-temperature, high-flux irradiation (BAMI)
100 °C, $5 \times 10^{23} - 2 \times 10^{24}$ n/m²; helium, vacuum, or water; no instrumentation

- (d) Low-temperature, low-flux irradiation (Low-flux BAMJ)
100 °C, $5 \times 10^{22} - 2 \times 10^{23}$ n/m⁵; helium, vacuum, or water; no instrumentation

Please note that irradiation conditions / schedules / and others may change due to various circumstances. Details will be announced to those who desire to be involved in irradiation programs.

5. Selection

The Selection Committee and the Collaborative Use / Collaborative Research Committee of IMR-Oarai select which applications are accepted. Applicants will be notified directly around the end of March 2019.

6. Collaborative Use Research Progress Report and Result Report

Submit (1) – (3) below.

(1) Collaborative Use Research Report

This is a report on the research contents and research achievements.

(2) Achievement registration

Using the Collaborative Research Web Application System, register publications and recognition, including journal articles; presentation at international conference, domestic meeting, and symposium; application and acquisition status of industrial property rights based on the research achievements; press release; Master's degree and doctor degree acquisition; and frequently quoted articles. Journal articles and the number of degrees acquired are particularly important.

(3) Presentation at "Oarai Meeting"

The achievement and future plan (if any) shall be given in "Oarai Meeting" in oral or poster presentation by the PI or collaborators. At least, the electrical data of presentation is necessary.

1), 2) shall be submitted by early April 2020, and 3) shall be submitted in Fall 2020.

7. Publication of achievements

When you publish research achievements obtained from collaborative research or when you submit your master's or doctoral thesis dissertations to the university, the acknowledgment shall clearly state that the results are from collaborative use research at IMR-Oarai.

The name of IMR-Oarai is the "International Research Center for Nuclear Materials Science, Institute for Materials Research, Tohoku University".

8. Handling of intellectual property rights

Intellectual property rights generated as a result of research shall conform to the Tohoku University Joint Research Regulations.

9. Notes about completing the application form

(1) Projects that were conducted in FY 2018 or similar projects that will continue should apply as "Continued." All other applications should apply as "New."

(2) For the expected number of visits and consumables/facilities that are necessary, enter details in the "Expected number of visits and necessary consumables/facilities" section.

For the number of visits, it is preferable to indicate person-days (number of visiting persons × number of visiting days) in order to estimate the travel expenses.

This is the information used to estimate the collaborative use expenses.

Example : (2 people for 5 days) × 2 times

(3) Research proposals related to large-scale projects such as the Japan-US Science and Technology Collaboration Program (nuclear fusion field) or research conducted collaboratively with private companies or private corporations shall be stated clearly.

10. Items to Note

- (1) Persons engaged in radiation work shall be registered as radiation worker both in the home organization and IMR-Oarai.
- (2) When graduate students use IMR-Oarai they must have accident insurance as recommended by the home university such as Personal Accident Insurance for Students Pursuing Education and Research.
- (3) We will pay travel expenses for the collaborative use based on the travel-fee regulations of Tohoku University. However, please understand that it may be impossible to cover all expenses, depending on the number of visits, due to the limited budget.

11. Contact

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