

## **Guidelines for the application for LyC Collaborative Research Project 2021 Institute of Fluid Science, Tohoku University**

The Institute of Fluid Science (IFS), Tohoku University, which deals with all kinds of flow phenomena related to time and space that we encounter in our life, not only as the flow of material, but also as those of energy, information, etc., has been approved as a Joint Usage/Research Center “Fluid Science Research Center” by the Japanese Ministry of Education, Culture, Sports, Science and Technology, to begin in April 2010. Since then, we have implemented the collaborative research with domestic and overseas research institutions. Since April 2016, we have promoted the collaborative research as Joint Usage/Research Center “Fluid Science Global Research and Education Hub”. IFS aims to conduct research in fluid science related to fundamental scientific and engineering disciplines in order to contribute toward the establishment of a sustainable human society. Lyon Center (LyC) affiliated with IFS, Tohoku University, was established in 2018. Faculty member and graduate students stay at Université de Lyon (INSA Lyon, École Centrale de Lyon) and promote joint works. Especially, LyC explores interdisciplinary science based on materials science and fluid science to answer current social challenges in the fields of transportation, energy and engineering for health.

For this purpose, IFS is calling for a Collaborative Research Project that is to be carried out at LyC in France through cooperation between the researchers of other institutes and those of IFS.

### 1. Outline

#### (1) LyC Collaborative Research Project

This is a collaborative research project between IFS’s researcher(s) and other institute’s researcher(s) utilizing IFS’s research facilities (located in Katahira campus and Lyon campus).

#### (2) Subject Areas

Flow-related research in the following categories:

- 1) Environment and energy
- 2) Multi-scale mobility for humans and materials
- 3) Health, welfare and medical care
- 4) Fundamentals

### 2. Eligibility

- (1) An applicant (project leader) should be a researcher at a university: a professor, associate professor, or assistant professor; or an equivalent researcher at another institution or company.
- (2) The project should be organized so as to include both IFS members and non-IFS members. IFS members and non-IFS members should be researchers, technical staff members, and/or graduate students of IFS and other institutions.
- (3) The project must be organized so as to include an IFS responsible member and a non-IFS responsible member. The IFS responsible member and the non-IFS responsible

member must meet the qualification mentioned above in (1). Either the IFS responsible member or non-IFS responsible member shall become the project leader.

(4) Those who fall under the preceding items (1) or (2), and who have an obligation to give undivided attention to their duties other than the project are not able to join the IFS Collaborative Research Project.

(5) Please note that identification of the age and gender of project members in application will be necessary for the investigation report by the Japanese Ministry of Education, Culture, Sports, Science and Technology.

### 3. Application Procedure

(1) Non-IFS applicants should consult with the IFS responsible member about a project before applying for the project. The applicant planning to use IFS's integrated supercomputing system (supercomputer system), low turbulence wind tunnel facility and shock wave research facility should also apply to use those facilities through the IFS responsible member.

Note: Information on research divisions, staff members, facilities, and research of IFS can be found on the IFS web site below:

URL: <http://www.ifs.tohoku.ac.jp/eng/index.html>

(2) Applicants should apply via application web site of IFS Collaborative Research Project.

### 4. Period of Research

(1) The standard period is from April 1, 2021 to March 31, 2022.

(2) The project can be continued for a year. A new research project that progresses the present project can be applied as a new project.

### 5. Application Period

Applications for the project starting on April 1, 2021 will be accepted from December 21, 2020 to January 15, 2021 at noon (Japan Standard Time).

### 6. Correspondence

Collaborative Research Project, Institute of Fluid Science, Tohoku University  
2-1-1 Katahira, Aoba-ku, Sendai Miyagi, 980-8577, JAPAN  
E-mail: [ifs-kyodo@grp.tohoku.ac.jp](mailto:ifs-kyodo@grp.tohoku.ac.jp)

### 7. Application Screening

The Collaborative Research Committee including external advisory members will evaluate the application. The applicant will be notified as to acceptance of the project in the middle of March, 2021.

On acceptance of the project, non-IFS members will be qualified as IFS collaborative researchers and be allowed to use IFS facilities under almost the

same conditions as IFS members.

#### 8. Project Fund

IFS will provide the project with research expenses for travel expense mainly and/or expendable supplies, etc., up to 600,000 JPY for the research based on the proposal and the evaluation. In principle, the travel expenses are allowed only for the researcher visiting IFS (Katahira campus and Lyon campus) and taking part in seminar(s) at Lyon Center.

If there are any changes due to COVID-19, we will contact applicants again.

#### 9. Submission of the Project Report

The project leader will be requested to write a project report after completion of the project once a year. It should be submitted via application web site of IFS Collaborative Research Project, and also a reprinted article such as representative paper etc. should be submitted in PDF format. The submitted report will be printed for publication as an annual report and posted on the web site, and also will be materials for ex-post evaluation.

The deadline for submission is April 30, 2022. The form for the report can be downloaded from the web site below:

URL: <http://www.ifs.tohoku.ac.jp/eng/collabo/index.html>

#### 10. Ex-post Evaluation

Collaborative research committee will carry out an ex-post evaluation based on the study result report after completion of the project every year. The results of the evaluation will be shown on the web site.

#### 11. Presentation at the Conference

The project leader or a member of the project will be requested to make a presentation at the Collaborative Research Project session at the International Symposium which is scheduled to be held in Sendai in October 27 to 29, 2021. It is recommended that the applicant should include the travel expenses on the application.

#### 12. Others

##### (1) Handling intellectual property rights

Tohoku University collaborative research regulations apply for treatment of the intellectual property rights.

##### (2) Accommodations

The staff in the General Affairs Office will help with accommodations by providing information and making reservations, etc.

##### (3) Research results and acknowledgements

The result of the project should be published in a co-authored paper by members from both institutions. Please acknowledge the support from the project in the paper. Examples of acknowledgement are given below.

Part of the work was carried out under the Collaborative Research Project of the Institute of Fluid Science, Tohoku University.

This seminar was partially supported by the Collaborative Research Project of the Institute of Fluid Science, Tohoku University.

(4) Late application after April 1, 2021

In certain situations, it is possible to start after April 1, 2021. In such case, research expenses will not be provided by IFS. Consult with the General Affairs Office of IFS for a special application for a project starting after April 1, 2021.

(5) Additional call for the projects

IFS may call for additional projects.

(6) Accident insurance

All students who join the Collaborative Research Project have to purchase Personal Accident Insurance for Students Pursuing Education and Research (PAS) and Liability Insurance for Students Pursuing Education and Research (LSR) in the affiliated organization (or disaster, accident and liability insurance provided by another insurance company with the equivalent or broader coverage).