

March 13, 2025

Recruitment for Assistant Professor Position

Institute of Fluid Science (IFS), Tohoku University invites applications for an Assistant Professor position. Preference will be given to highly motivated candidates, with an outstanding academic background.

Kaoru Maruta
Director
Institute of Fluid Science, Tohoku University

1. Division, Laboratory, Number of Positions and Job Title

Division	Laboratory	Number of Positions and Job Title
The Global Collaborative Research and Education Center for Integrated Flow Science (IFS-GCORE)	Reactive Flow Systems Laboratory	One position open for Assistant Professor

2. Job Description

We promote research and education for the clarification and modeling of flow phenomena involving chemical reactions in next-generation propulsion and energy systems, and also the application of models to system design and development.

3. Required Qualifications and Conditions

Candidates must have a doctoral degree upon arrival at the post and a distinguished achievement in the above-mentioned specialized field (See the notation of DEI attached).

4. Starting Date of Employment

As soon as possible after August 1, 2025

(Term: Eight years. Renewal of contract will be permitted for another 2 years at most.)

5. Application Deadline

Application documents must arrive by noon, Friday, May 23, 2025 (JST).

6. Requested Documents

I. Curriculum Vitae

Postal address and email address should be included.

II. List of research accomplishments*

- 1: Peer-reviewed journal papers (Specify the latest impact factor of the journals.)
- 2: Review papers (Specify the latest impact factor of the journals.)
- 3: Peer-reviewed full-length proceedings
- 4: Books, chapters
- 5: Invited lectures (only lectures presented by the applicant)
- 6: Presentations at international conferences other than Item 5
- 7: Experience in organizing conferences
- 8: Patent applications/registrations
- 9: Background and achievements in international research collaboration
- 10: Awards and honors
- 11: Research fundings
- 12: Others if applicable

* Lists should include twelve items shown above. All the coauthors for Items 1 through 6 and 8 in II should be specified. Underline the applicant for Items 1 through 6, and 8. In addition, the roles of the applicant for Items 1 through 8 in II should be described. Total number of citations and h-index should be indicated with the source of them. Summarize Items 1 through 12 in a single PDF file.

III. Electronic files in PDF format of five selected papers

IV. Summaries of the five selected papers around 300 words each

V. Future research and education plan at IFS. Include educational experiences in subjects related to mechanical engineering.

VI. Contact information of reference(s) up to three persons: name, affiliation, title, postal address, phone number and email address.

Documents should be prepared in A4 format. Put all the files into USB flash drive or equivalent and send it by the registered mail if postal service is used.

Submission by file transfer service or email attachment is also acceptable. Indicate “Application for Assistant Professor Position of Reactive Flow Systems Laboratory” in the subject of email. An acknowledgment of receipt will be sent to the applicant. If the applicant does not receive it within 48 hours from submission, contact again. The applicant may be requested to provide additional documents during the screening process. An online interview may be conducted.

7. Contact

Director Kaoru Maruta

Institute of Fluid Science, Tohoku University

2-1-1, Katahira, Aoba-ku, Sendai, 980-8577, Japan

Phone: +81-22-217-5300, Fax: +81-22-217-5311

email: ifs-director [at] grp.tohoku.ac.jp (replace [at] with @)

For more information on the Institute of Fluid Science, please visit:

<https://www.ifs.tohoku.ac.jp/>

Expected research areas and additional information

The Global Collaborative Research and Education Center for Integrated Flow Science (IFS-GCORE) will conduct research on the academic foundation of integrated flow science for its deployment in diverse application fields, including fuel ammonia and green nanotechnology. The center will promote international joint research and education with overseas centers in France, Singapore, Taiwan, Saudi Arabia, and the U.S., and aim to become an alliance-type international base that creates social impact. Also, as cooperative courses of the Mechanical Engineering course of the Graduate School of Engineering, Department of Mechanical and Aerospace Engineering of the School of Engineering at Tohoku University, faculty members are in charge of lectures related to mechanical engineering.

Through this recruitment, we are planning to promote the following research.

Division (Laboratory)	Research Contents
The Global Collaborative Research and Education Center for Integrated Flow Science (IFS-GCORE) * (Reactive Flow Systems Laboratory)	<p>We aim to clarify and model flow phenomena involving chemical reactions in next-generation propulsion and energy systems, and to study the application of models to system design and development.</p> <ol style="list-style-type: none">1. Clarification and modeling of chemical kinetics of carbon-free fuels such as ammonia2. Fire mitigation based on understanding of chemical kinetics of battery electrolyte, refrigerants, and flame retardants added to them3. Measurements using a synchrotron facility for intermediates in chemical reactions and materials heated with combustion

* Global Collaborative Research and Education Center for Integrated Flow Science (IFS-GCORE) consists of thirteen laboratories: Green Nanotechnology Laboratory, High Speed Reacting Flow Laboratory, Energy Resources Geomechanics, Laboratory, Energy Dynamics Laboratory, Multiphase Flow Energy Laboratory, Multi-Physics Design Laboratory, Reactive Flow Systems Laboratory, Mechanical Systems Evaluation Laboratory, Advanced Materials and Fluids Design Laboratory, Flow Dynamics Laboratory, Novel Battery Nanoscale Flow Concurrent Laboratory, Integrated Flow Science, and Technology Laboratory, Advanced Integrated Flow Science Laboratory.

Notice

This recruitment is an English translation of the Japanese version. The content of the recruitment is based on the Japanese version.

Diversity, Equity and Inclusion (DEI)

- Tohoku University promotes activities to increase Diversity, Equity and Inclusion (DEI) and encourages people of varied talents from all backgrounds to apply for positions at the university.

Tohoku University's website about the DEI Declaration is here:
<https://dei.tohoku.ac.jp/vision/about/>

- Pursuant to Article 8 of the Act on Securing, Etc. of Equal Opportunity and Treatment between Men and Women in Employment, Tohoku University shall, as a measure for increasing the presence of women among the academic staff, prioritize the hiring of women deemed qualified for each job opening, based on impartial evaluation.
- Tohoku University has published 'Tohoku University-Live as Who You Are-Guidelines for Gender and Sexual Diversity' to provide explanations and details of how those at the university should respond with respect to diverse sexuality. The purpose of the guidelines is to create an environment in which all students, faculty, and staff respect diverse sexuality in their academic, research, and professional activities.

Please see the Tohoku University Center for Gender Equality Promotion website:
https://dei.tohoku.ac.jp/wp-content/uploads/2023/10/EN_GuideLine.pdf

- Tohoku University has the largest on-campus childcare system of all Japanese national universities. This network comprises three nurseries: Kawauchi Keyaki Nursery school (capacity: 22) and Aobayama Midori Nursery school (116), both open to all university employees, as well as Hoshinoko Nursery school (120), which is open to employees working at Tohoku University Hospital. In addition, Tohoku University Hospital runs a childcare room for mildly ill and convalescent children which is available to all university employees
- See the following website for information on these and other programs that Tohoku University runs to assist work-life balance, to support researchers, and to advance gender equality, including measures to promote childcare leave among male employees.

Center for Diversity, Equity, and Inclusion, Tohoku University Website:
https://dei.tohoku.ac.jp/vision/consulting/for_family/

Human Resources and Planning Department website:
<https://c.bureau.tohoku.ac.jp/jinji-top/external/a-4-kosodate/>