

Job Opportunity: Postdoctoral Researcher on Ammonia Combustion for Furnaces

Description

A postdoctoral position is available in Energy Dynamics Laboratory, Institute of Fluid Science, Tohoku University. The project aims to investigate fundamentals of chemical kinetics of ammonia with hydrogen and/or hydrocarbons and thermal/chemical interactions between flames and wall materials, and to develop models of the interactions and detailed/reduced gas-phase chemical reactions.

Requirements

Essentials:

- A PhD degree in relevant to combustion;
- Significant experience and capability on constructing and operating combustion experiments apparatus;
- Strong fundamental knowledge on laminar flames and chemical kinetics;
- English communication skills; and
- Ability to work effectively in collaboration with other people.

It is very welcome if you have the following qualifications:

- Expertise in species measurements using gas analyzers (GC, GC/MS, FT-IR, etc.);
- Expertise in molecular beam sampling;
- Expertise in use of synchrotron facility for diagnostics of combustion and materials;
- Expertise in combustion simulations (using Chemkin, Cantera, Open FOAM, FLUENT, in-house code, etc.);
- Expertise in quantum chemical computations using Gaussian, Molpro, etc.;
- Expertise in development of gas-phase and/or surface chemical kinetic models;
- Expertise in mechanism reduction and/or dimension reduction;
- Expertise in analysis and modeling of flame-wall interactions;
- Expertise in material property simulations using Thermo-Calc, DICTRA, etc.; and
- Expertise in programming languages of Python, Matlab, Fortran, and/or C/C++.

Location

Institute of Fluid Science, Tohoku University,
2-1-1 Katahira, Aoba-ku, Sendai 980-8577, JAPAN

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

Fellowship

The gross salary is approximately 500,000 yen per month (depending of experiences). The position will start in Jan. 2024. The position will end in Mar. 2026 but will be extended when the project will pass the review. Depending on performance during the postdoctoral period, the position may be promoted to Research Assistant Professor.

Application instructions

Send your detailed CV in a single PDF file to hisashi.nakamura@tohoku.ac.jp

A list of refereed journal publications must be included in CV. Also describe your contribution to each refereed journal publication.

Set “POSTDOC APPLICATION” and your last name to the title of e-mail.

Application deadline: Oct. 15th, 2023 (JST)

The review process will be notified around Oct. 18, 2023 (JST).

Contact information

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Institute of Fluid Science, Tohoku University