

**Position Open: Postdoctoral fellow at Hokkaido University
Institute for Chemical Reaction Design and Discovery (ICReDD)**

The Institute for Chemical Reaction Design and Discovery (ICReDD), Hokkaido University, as a global research center based on the "World Top Level Research Center Program (WPI), supported by Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT)," constructs an international research environment which gathers world-leading researchers and establishes a research environment that integrates computational, information and experimental sciences, in order to establish a new academic field "Chemical Reaction Design and Discovery", to provide substantial knowledge on chemical reactions that efficiently develop chemical reactions and materials for the future necessity, and to sustainably cultivate human resources engaged in the field of "Chemical Reaction Design and Discovery".

We are inviting applications for the position of Postdoctoral Fellow (Varnek group), Institute for Chemical Reaction Design and Discovery, Hokkaido University as follows.

1. Name of Recruiting Institution

National University Corporation Hokkaido University

2. Position and number of openings

Postdoctoral Fellow, one opening

3. Employment Term

From the earliest possible date after June 1st, 2024 (negotiable) to March 31st, 2025
(The contract could be renewed every year up to March 31, 2028.)

4. Department

(Just after hiring) Institute for Chemical Reaction Design and Discovery
(Scope of change) No change expected.

5. Location

Sapporo (Hokkaido University), JAPAN

6. Research Field

Chemoinformatics (Machine Learning Force Fields)

7. Job description

(Just after hiring) Understanding and discovering novel reactions through reactivity prediction is a key research area at ICReDD. Prof. Varnek's group deals with development of models based on Neural Network Potentials, which reproduce energy and gradients obtained at DFT level of theory. Such models can significantly accelerate reaction path searches compared to time consuming quantum calculations.

In this context, the candidate will have the opportunity to work on the following research topics:

- (1) Application of accelerated reaction path search to better understand key chemical reactions.
 - (2) In silico discovery of new reactions and/or design of experimental conditions, using fast reaction path searches.
 - (3) Exploiting reaction path data through machine learning algorithms for innovative applications.
 - (4) Further accelerating reaction path search, using advanced artificial intelligence techniques.
- (Scope of change) No change expected.

8. Qualifications

- (1) PhD at the time of appointment
- (2) Outstanding achievements and publications in the research field
- (3) Strong motivation for the research themes of ICReDD
- (4) Efficient communication skills in English for research activities
- (5) Ability to conduct research activities effectively in collaborations
- (6) Proficiency in both Machine Learning and Theoretical Chemistry is preferred
- (7) Familiarity with Linux environments and basic skills in software programming (Python, web-based interfaces) are welcomed

9. Probation Period

The probation period is one month.

10. Salary

Annual Salary System

* The salary will be determined in accordance with the regulations of Hokkaido University.

* No travel expenses will be provided for the assignment or resignation.

11. Working Form

Discretionary labor system for professional work(*) based on the employee's agreement or Fixed working hours system

* The standard working hours for a day is deemed as 7 hours and 45 minutes.

** The leaves will be granted in accordance with the University's rules and regulations.

12. Health Insurance and Pension

The Ministry of Education, Culture, Sports, Science and Technology Mutual Aid Association Services including Health Insurance, Employee Pension, Workers' Accident Compensation Insurance and Employment Insurance

13. Measures to Prevent Second-hand Smoke

Smoking in designated areas only

14. Application Materials

(1) Curriculum Vitae

*Free format with an attached profile photo of the applicant, the following information should be included: Name, current address, telephone number and Email address, Date of Birth, academic history, degree(s), license, career history, awards, membership of organizations etc.

*Applicant who has been employed by Hokkaido University from April 1, 2013 (any position, including Part-time Lecturer, Teaching Assistant, Teaching Fellow, Research Assistant and Short-term Support Assistant, etc.) should provide full details of your employment history.

(2) List of research activities, including original scientific papers, book chapters, other publications, presentations in scientific meetings, awards, and other relevant activities.

(3) List of major publications (at most three)

* the following information should be included: summary, role, number of citations

(4) Summary of past and current research (One A4 page or less)

(5) Statement of proposal for your future research (One A4 page or less)

(6) A list of two references (including the names, phone numbers and e-mail addresses)

15. Application Deadline

Recruitment ends as soon as the employee is decided.

16. Application Submission

Combine all the documents above into one PDF file and send to the following e-mail address:

E-mail: recruit AT icredd.hokudai.ac.jp

*Change AT into @ when sending an e-mail.

Please put "Application for postdoctoral fellow in ICRéDD (Varnek group)" in the subject box.

* Personal information will be exclusively used for the screening.

17. Inquiries

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*Change AT into @ when sending an e-mail.