KYUSHU UNIVERSITY

INTERNATIONAL INSTITUTE FOR CARBON-NEUTRAL ENERGY RESEARCH

The International Institute for Carbon-Neutral Energy Research (I^2CNER) at Kyushu University, Japan is actively seeking outstanding candidates for tenured faculty positions.

OUTLINE

The International Institute for Carbon-Neutral Energy Research (I^2CNER) is one of the World Premier International Research Center Initiative (WPI) Institutes of Japan supported by the Ministry for Education, Culture, Sports, Science and Technology (MEXT). Faculty members and researchers associated with I^2CNER are dedicated to the Institute's mission to contribute to the advancement of low carbon emission and cost effective energy systems, and improvement of energy efficiency. The array of technologies that I^2CNER's research aims to enable includes Solid Oxide Fuel Cells, Polymer Membrane based fuel cells, biomimetic and other novel catalyst concepts, and production, storage, and utilization of hydrogen as a fuel. Our research also explores the underlying science of CO_2 capture and storage technology or the conversion of CO_2 to a useful product. Additionally, it is our mission to establish an international academic environment that fosters innovation through collaboration and interdisciplinary research (fusion). I^2CNER is located on the Ito Campus of Kyushu University, which houses extensive state-of-the-art experimental and computational facilities.

CURRENT OPENINGS & QUALIFICATIONS

I^2CNER is seeking internationally recognized scientists for tenured faculty positions in the areas of

1) **Computational and data driven science and engineering:** to expand our capabilities in
   - *Catalysis for Fuel and Energy Generation* – modeling of molecule/molecule interactions for charge transfer and chemical reaction dynamics to accelerate discovery of efficient catalysts.
   - *CO_2 carbon capture and storage* **-** development of high performance algorithms and simulation tools for modeling pore scale flow processes relevant to CO_2 capture and storage.
   - *Gas separation* - development of multiscale algorithms for identification of efficient and selective molecular mechanisms for gas separation for ultrathin membranes,
   - *Solid state ionics* - multiscale modeling spanning scales from atomistic to continuum, to achieve simultaneous optimization of surface exchange and bulk transport properties for solid state ionics with an emphasis on microstructural features,
   - *Heat transfer and wettability and control of thermal transport processes* at interfaces across multiple length and time scales

   The successful candidate is expected to expand and broaden the computational scope within I^2CNER into emerging areas including data driven science, algorithm development, high performance computing, structure/property relations, materials design, and multiscale/multiphysics modeling.

2) **Data analytics and materials informatics:** to exploit the avalanche of data generated in experimental and computational approaches in order to accelerate the design and discovery of materials for energy. The successful candidate is expected to advance research in fundamentals of mathematical and computational aspects of data analysis and to have strong interest in key areas of applications, such as machine learning algorithms and statistical modeling to design new materials, chemicals, or materials systems while optimizing several properties simultaneously, and development of data extraction and analytics tools for this purpose.

3) **Enhance efficiency in power generation:** to expand our capabilities in the areas of
   - *Computational studies of chemically reacting turbulent flows* aimed at increasing combustion efficiency in next generation power plants, including flame dynamics, stability, and molecular-level interactions.

- *Development of data-driven algorithms and statistical approaches for energy* use, production and distribution.

The successful candidates are expected to establish and maintain an active and independent research program that is relevant to the mission of the Institute, and provide service to the Institute, the university, and the profession. In particular, emphasis will be placed on candidates who have achieved national and international recognition for their scholarship, and have a proven record of interdisciplinary research.

REQUIRED APPLICATION MATERIALS*

1. Cover letter
2. Application form (located on website)
3. Curriculum vitae which details research experience and interests
4. Research proposal (please use the template from the website)
5. List of publications (please provide separate lists for refereed journals and conference proceedings)
6. Names and contact information of four references

All materials must be submitted in English.

SALARY

Salary will be commensurate with qualifications and experience.

STARTING DATE

The starting date will be as soon as possible after the closing date.

APPLICATION DEADLINE

- February 28, 17:00 (Japan)
- Interviews may take place prior to the closing date; however, no final decisions will be made until after the closing date.

APPLICATION SUBMISSION

Please attach your application materials to an email and send them to: wpi-office@i2cner.kyushu-u.ac.jp.

QUESTIONS?

For further information regarding application procedures, please address questions to: wpi-office@i2cner.kyushu-u.ac.jp

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FOR MORE INFORMATION

http://i2cner.kyushu-u.ac.jp/en/recruit/recruit.php

Kyushu University is an Equal Opportunity/Affirmative Action Employer. The administration, faculty and staff embrace diversity and are committed to attracting qualified candidates who also embrace and value diversity and inclusivity.