

# graph JAEA

“What we're doing now”

Female researchers working for JAEA


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# Investigate the inner structure of the earth



I'm engaged in a research project that investigates how minerals and water behave in a high temperature and pressure environment of the earth's interior, which we simulate in our laboratory. This photo shows myself preparing for a high-pressure experiment using the engineering materials diffractometer "TAKUMI" installed in the Materials and Life Science Experimental Facility (MLF) of the Japan Proton Accelerator Research Complex. A high-pressure neutron scattering apparatus (PLANET) was newly installed in MLF last FY, and it is expected that research on the deep internals of the earth will be facilitated by the use of neutron in the future.

<http://yagi.issp.u-tokyo.ac.jp/shingakujutsu/en/index.html>

[http://wwwapr.kansai.jaea.go.jp/srrc/en/High\\_Pressure\\_Science\\_Group.html](http://wwwapr.kansai.jaea.go.jp/srrc/en/High_Pressure_Science_Group.html)


**Asami Sano, High-Density Material Research Group, Japan Atomic Energy Agency  
Quantum Beam Science Directorate**



# Investigate the properties of the atomic nucleus

When a neutron collides with an atomic nucleus, the nucleus may at times take in the neutron and turn into a heavier atomic nucleus. This behavior is called neutron capture. At this instance gamma rays are generated. We are investigating the likelihood of neutron capture by measuring the gamma rays with high accuracy. This investigation provides us with the basic data important for the R&D for innovative nuclear reactors and nuclear waste disposal. This photo shows myself making preparations for an experiment by wiring the signal cables of the detector for measuring the energy of gamma rays, which is a part of the Accurate Neutron-Nucleus Reaction Measurement Instrument (ANNRI) in the Materials and Life Science Experimental Facility (MLF) of the Japan Proton Accelerator Research Complex. [http://nsec.jaea.go.jp/en\\_index.html](http://nsec.jaea.go.jp/en_index.html)  
<http://j-parc.jp/researcher/MatLife/en/instrumentation/images/ANNRI.jpg>  
**Kaoru Y. Hara, Research group for Applied Nuclear Physics, JAEA Nuclear Science and Engineering Directorate**





# Investigate the behavior of sodium

The fast breeder reactor “Monju” uses sodium as a coolant. At the Oarai Research & Development Center in Ibaraki Prefecture, a large-scale sodium test loop is utilized to investigate hydraulics and heat transfer behaviors in a sodium heat transport system. This photo shows myself adjusting the sodium flow rate of the boundary conditions before carrying out an experiment.

**Ayako Ono, Thermal-hydraulic Research Group, Advanced Nuclear System Research and Development Directorate**

# Investigate cesium in the forest



In order to investigate how (or whether or not) the radioactive cesium present in the forest moves, I have been measuring the radioactive cesium contained in the river water, fallen leaves, soil, water which seeps through soil etc. in the forest upstream of the river flowing through Kitaibaraki City. This photo shows myself fixing a column for collecting radioactive cesium contained in the river water.

<http://fukushima.jaea.go.jp/english/topics/pdf/topics-fukushima034e.pdf>

**Mariko Atarashi-Andoh, Research Group for Environmental Science, Nuclear Science and Engineering Directorate, JAEA**



# Investigate cesium




Lichens have a property to take in and retain radioactive cesium. For this reason, it can be expected that we will know how much cesium present in the surrounding environment has been reduced since the time of the accident by comparing the cesium content of lichens with cesium present in the surrounding environment. This photo shows myself looking for lichens that are suitable for such a comparison.

<http://fukushima.jaea.go.jp/english/topics/pdf/topics-fukushima014e.pdf>  
<http://fukushima.jaea.go.jp/english/topics/pdf/topics-fukushima016e.pdf>

Terumi Dohi, Environmental Dynamics Research Group, Fukushima Environmental Safety Center. Headquarters of Fukushima Partnership Operations





# Investigate radioactivity

In our section, we analyze the radioactivity in the environmental samples such as airborne dusts, agricultural and stockbreeding products, seawater, seabed sediments and marine products based on the environmental radiation monitoring around the Tokai Reprocessing Plant. In addition, we investigate the detailed distribution of radionuclides in seabed sediments off Ibaraki coast after the Fukushima Daiichi Nuclear Power Plant accident to know the influence on the contamination caused by the accident.

In this photo, I perform the plutonium analysis in the environmental samples.  
**Mika Nagaoka, Environmental Protection Section, Radiation Protection Department, JAEA Nuclear Fuel Cycle Engineering Laboratories**



# Investigate the underground

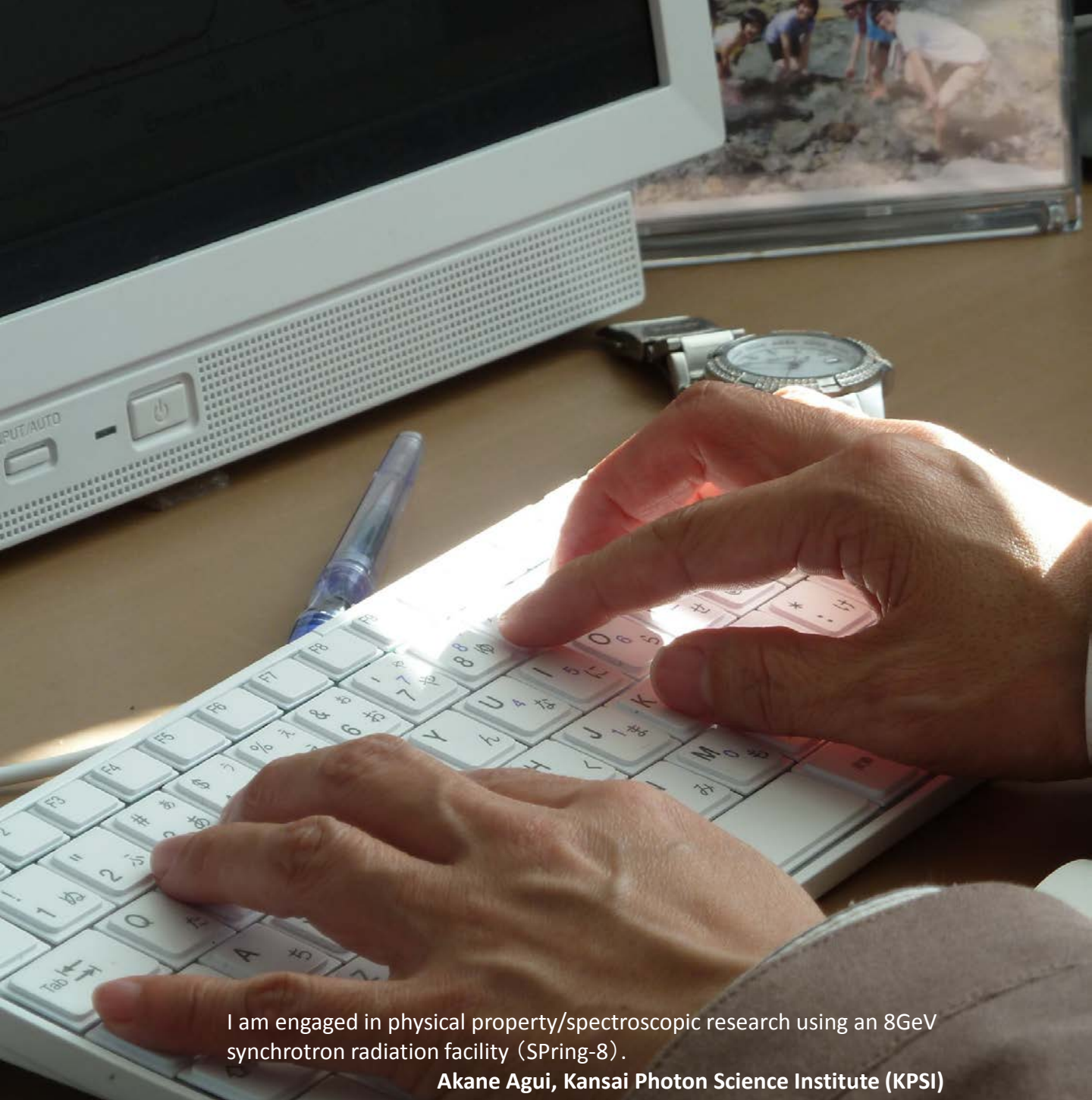


We have been investigated microbiology and organic substances in the subsurface environment to evaluate their effects on the disposal of high-level radioactive waste in geological formations. This photo shows myself collecting samples from the excavated surface of tunnel wall at 350 meters depth of the Horonobe Underground Research Center for analyzing what kind of organics and microorganisms are present in the rocks. The vertical surface behind me is an excavated surface called tunnel face.

<http://www.jaea.go.jp/english/04/horonobe/index.html>

**Yuki Amano, Radionuclide Migration Research Group, JAEA Geological Isolation Research and Development Directorate**





I am engaged in physical property/spectroscopic research using an 8GeV synchrotron radiation facility (SPring-8).

**Akane Agui, Kansai Photon Science Institute (KPSI)**



## Editorial note

The number of staff working for JAEA is currently about 3,900, and about 50 of these people are female researchers. In spite of the small number, they are working on research activities in a great variety of fields including radiation control, quantum engineering, nuclear fusion, fast reactor, condensed matter physics etc. What should we do to sensitively grasp and respond to the changes in the world? In order to answer this question, we hope to turn JAEA into an attractive organization for more female staff to play an active role in a wider variety of fields.

Public Relations Department



# graph JAEA

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## Investigate the structure of ice existing in the universe

JAEA participates in a joint research project using the research nuclear reactor HFIR at Oak Ridge National Laboratory of US Department of Energy. The blue object behind the people on the cover page and the one in the photo on the upper right of this page is the device called a Wide Angle Neutron Diffractometer (WAND), which is capable of acquiring information such as atomic position from the interaction between an atomic nucleus and neutrons. We aim to reveal the structure and properties of special ice in the planets etc. of the solar system and the universe by means of this device.

**Yurina Sekine, Condensed Matter Research Group, JAEA Quantum Beam Science Directorate**



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