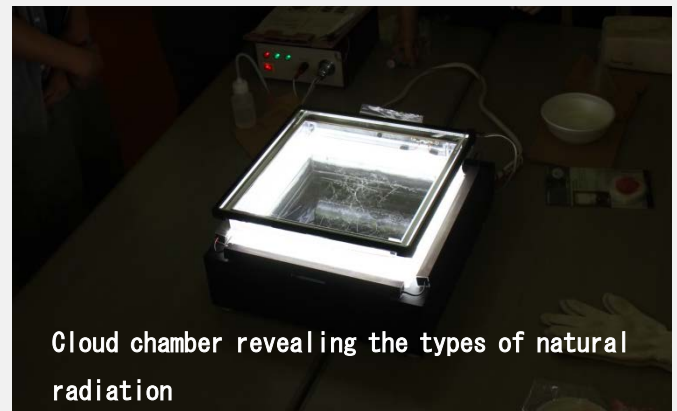




## College of Technology Students from Fukushima Prefecture Participate in Practical Course on Radiation Handling at Oarai

In August, the JAEA's Oarai Research and Development Center held a practical course on radiation handling. The object of the course is to develop a correct understanding of radioactive materials and radiation among young educators and students aiming to be educators. The course started in FY 2011 subsidized by the Ministry of Education, Culture, Sports, Science and Technology. In addition to the students and educational staff of Iwaki Meisei University in Fukushima Prefecture who had participated in the course since FY 2012, in this fiscal year the course was participated by eight students from the Fukushima National College of Technology and the Tsuyama National College of Technology.



Cloud chamber revealing the types of natural radiation



Hydrogen detonating gas experiment

Basic training on radiation using a cloud chamber was conducted at the start of the first day of the course. Natural radiation is all around us, and the college of technology students observed the tracks of radiation with a cloud chamber. The photo at the top of the front page shows that scene. Students also learned the mechanism of hydrogen explosion through a simple hydrogen detonating gas experiment.

After that, participants received practical training with radiation detectors using familiar items containing natural radioactive materials such as chemical fertilizer, kelp, and the mantles used as lighting elements in camping lanterns. Also, they learned the difference between radiation and radioactivity, the difference between becquerels (Bq) and sieverts (Sv), the characteristic features of radiation, the principles of radiation detection, and precautions during measurement.

On the second day, participants received field work training outdoors. They learned precautions when using radiation detectors, and measured the radiation dose in the outdoor environment using radiation detectors. In addition, they ascertained that multiple radioactive materials were present around themselves by conducting radionuclide analysis\*.

Radionuclide analysis\*: The energy of radiation emitted from radioactive materials differs depending on the types of radioactive materials (radionuclides). Using this principle to measure the energy and amount of radiation emitted from a material, and thereby investigating the types and amounts of radioactive materials contained in a sample is called



Using measurement equipment



Experiencing work with a glove box

radionuclide analysis.

On the third day, the participants experienced simulated work using a glove box (collecting colored water from a beaker using a dropper, and putting it into a plastic container), simulated decontamination work using fluorescent paint, putting on and taking off a Tyvek suit worn when carrying out work, and remote handling using a manipulators. Regarding R&D facilities handling radioactive materials, they received explanations of facility features and safety management, necessary equipment, the need for skilled researchers and technicians, and other related topics.

Follow-up training was provided on the final fourth day. In this training, the participants themselves considered how best to communicate (in an easy to understand way) the knowledge of radiation which they learned through this course to people who have little understanding of radiation such as elementary school students. To achieve this, the participants discussed the best approaches among themselves, divided into a "teachers" group and "students" group and conducted a simulated class on radiation measurement using survey meters, and putting on/taking off a Tyvek suit.

The students made reports on the four-day practical course and follow-up training, and gave presentations on them. These students eagerly participated in the course, actively taking the leadership role and making suggestions on how to proceed with the course. They said that they were able to learn about radiation and radioactive materials easily through the course which was focused on experiments and training, and it provided valuable experience for them. There were also frank remarks such as that it was important for many people to master the correct knowledge and that



Playing the role of teacher, and teaching how to put on and take off a Tyvek suit



Simulated decontamination work using fluorescent paint

teaching it was difficult. Some said they would like to communicate what they learned to the people around themselves.



The teachers group instructed the students group on how to use radiation measurement equipment, and answered questions from the students group