

## Topics Fukushima No.108 January 11, 2022



### Learning about present status of research and development activities towards the restoration of Fukushima

**Events with local residents and the Creative Robot Contest for Decommissioning were held.**

Since the whole Japan has long been in the COVID-19 crisis, the governmental and regional measures have been taken. Under such situation, large events where many people gather have been difficult to be held. In accordance with the governmental and regional measures against COVID-19, the Japan Atomic Energy Agency (JAEA) had also canceled to hold or participate in events, thereby there had been scarcely any chances to directly meet local residents.

Recently, the COVID-19 crisis had been a little relieved, so the state of emergency was canceled by the government in October 2021. Accordingly, many events began to be held all over Japan while taking sufficient measures against corona virus infection.

The Sector of Fukushima Research and Development, JAEA, has also held events while taking sufficient measures against corona virus infection. The followings are the introduction of the events that had been held from October to December, 2022.

◆ **Co-sponsored the 5th Anniversary Event of the Opening of the Fukushima Prefectural Centre for Environmental Creation (Miharu Town) (October 16 (Tue), 2021).**

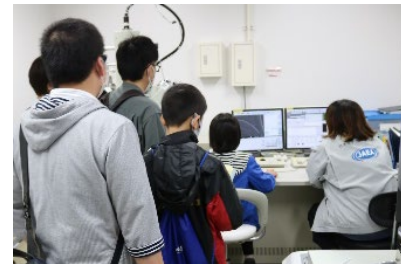
JAEA participated in the above event that was held by the Fukushima Prefectural Centre for Environmental Creation mainly in the Commutan Fukushima (Miharu Town). There, JAEA exhibited the following four booths for the participants to learn radiation measurements and environmental dynamics research.

- ★ Learning the characteristics of moss and lichen from the observation by digital microscope.
- ★ Observing radioactive materials in leaves using an imaging plate.



- ★ Searching radioactive materials in salt, fertilizer, etc. around us by survey meters (left photograph).
- ★ Investigating elements in 10-yen coin, pencil, etc. around us by the elemental analyzer (lower photograph).

In each booth, experiments and observations were conducted using the instruments that the researchers are actually using. Thereby, the participants were able to deeply understand the relation between plants and radioactivity, and elements constituting materials around us. In addition, through the above experiences, the participants learned the research/development activities that JAEA is conducting towards the environmental restoration of Fukushima.

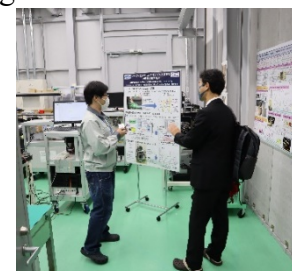


The event was crowded with about 100 people with families who have inquisitive mind.

◆ **Facilities of the Collaborative Laboratories for Advanced Decommissioning Science (CLADS: Tomioka Town) open to the public (December 11 (Sat), 2021)**



In CLADS, decommissioning research is being promoted as a core research and development base. In parallel with the FY2021 Briefing Session of the Sector of Fukushima Research and Development (Tomioka Town Art & Media Center MANABI NO MORI, Tomioka Town) that was held near the CLADS on the same day, the laboratories in the International Collaborative



Research Building of CLADS were open to the public. There, the researchers of CLADS explained their own research results using posters and research instruments. The number of audiences was 73, and they intently listened to the explanation and answers to questions by the researchers.

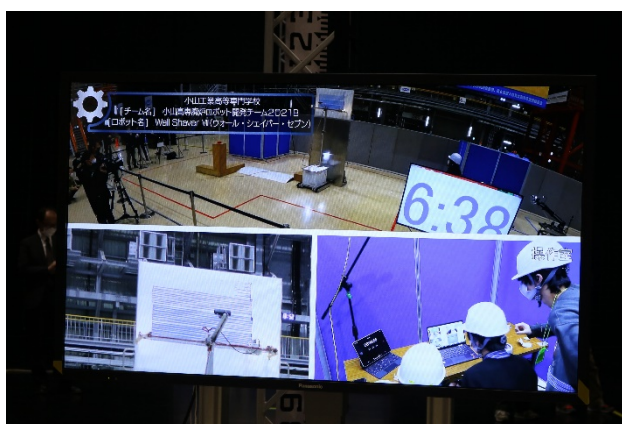
#### ◆ Creative Robot Contest for Decommissioning (NARREC, Naraha Town) (December 11 (Sat), 2021)

The Creative Robot Contest for Decommissioning is a contest for technical college students studying robot technology. In this contest, students compete on the theme that is supposed to be applied to the decommissioning of the Fukushima Daiichi Nuclear Power Station (hereafter referred to “1F”). The Contest, which was the 6th time this year, was held at the Test Building of the Naraha Center for Remote Control Technology Development (NARREC), Sector of Fukushima Research and Development, JAEA. In total, 13 teams from 12 national, public and private technical colleges in all over Japan participated in the Contest.

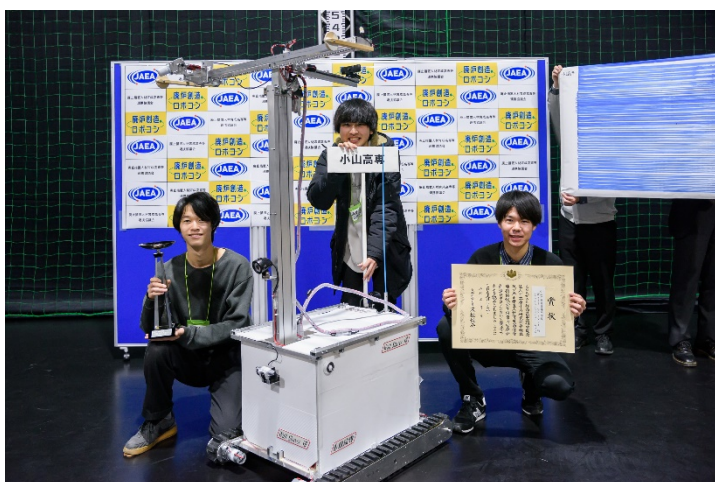
The content of the Contest was to decontaminate the parts of walls which were contaminated with radioactive materials, supposing the remote-control decontamination of high parts at high radiation dose area in the 1F reactor buildings. In actual decontamination, radioactive materials are eliminated by scraping off the surface of walls. On the other hand, in the competition, the accuracy of decontamination works was evaluated by painting over an imitation paper located at an upright wall (2.7 m height, 1 m width) using a specified pen.

The students in each college operated their own robots, which had been made by themselves while devising. So, in the competition, the characteristic of each college could be glimpsed.

The followings are the comments given by the students of the National Institute of Technology, Oyama College that won the Minister of Education, Culture, Sports, Science and Technology Award, and the students of the National Institute of Technology, Ibaraki College that won the President of JAEA Award.



**[Minister of Education, Culture, Sports, Science and Technology Award] National Institute of Technology, Oyama College (Tochigi Prefecture)**



“I participated in this contest as one of the studies of my graduation research, because I was interested in working on the practical subject like 1F decommissioning.

When I tried to attach the pen-tip to the wall, I could not draw correctly unless the force of the pen-tip on the wall was controlled. Then, I devised that a suspension was attached to the pen so that the force of the pen became even. After that, I became to be able to draw correctly. As to the remote control, we had to lift the arm up to 2.7 m height. So, it was hard for me to reduce the shaking. In this contest, the subjects to be done had been predetermined in advance. But in actual reactor buildings, dust and rubbles exist in addition to these subjects. We were able to enhance our ability to solve problems in this Robot Contest. So, we, 5<sup>th</sup> grade students, would like to utilize these experiences in respective future fields. I am very happy to win the Minister of Education, Culture, Sports, Science and Technology Award. On the whole, our robot worked better than the practice.”

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**[President of JAEA Award] National Institute of Technology, Ibaraki College (Ibaraki Prefecture)**

“My laboratory has been participating in the Robot Contest for Decommissioning from two years ago. This year, we also participated in this contest.

The rules of the contest have completely changed compared to those of last year. So, we had a hard time, because many times we had to consider how to correspond to the new contents. For example, we considered to make a robot that can go through even narrow roads. For this purpose, we devised to make special movement mechanism that is rarely used.



We are now in the 5<sup>th</sup> grade of the technical college. So, we will get a job or go on to

higher education. On such an occasion, we hope that the experiences obtained in this contest will be helpful to our future. (When receiving the President of JAEA Award), we thought that we had been making robots while considering what kinds of needs our robots will contribute to. I think that such continuous efforts have led to the award. We are happy that our efforts have been appreciated. Because we received such award, we will further proceed our research so that our technology will contribute to the real site.”

(note) The masks were taken off only when taking photographs.

(note) For the parts that colloquialism is difficult to be converted to literary language, the sentences were modified.

**Topics Fukushima No. 108**

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