

## 60 Years of Kindai University Reactor (UTR-KINKI)

- Kindai University Reactor (UTR-KINKI) is a research reactor for education and training with a thermal power of 1 W.
- UTR-KINKI is a reactor specially designed for education at universities, with a simple and easy-to-understand configuration, and is extremely safe, allowing students to operate the reactor themselves.
- UTR-KINKI achieved its first criticality in 1961 and became the first private nuclear reactor and the first university nuclear reactor in Japan.
- Since its start of operation, the reactor has been used for education and training not only by Kindai University students, but also by nuclear engineering students from all over the country and abroad. Currently, we accept students from 11 universities and technical colleges in Japan, including Kindai University, not only in nuclear engineering but also in the medical field.
- UTR-KINKI is also open to researchers as a precious experimental facility in Japan, where many reactor physics experiments, detector tests, and biological irradiation have been conducted.
- UTR-KINKI has been used not only for professional education, but also to promote public awareness of nuclear science and technology. The most notable contribution has been the training of science teachers. Since 1987, many science teachers have participated in numerous workshops on reactor experiments.
- UTR-KINKI is also used for other purposes, such as experiment classes using the reactor for high school students and employee training for private companies, and many citizens participate in tours every year.
- In 2019, the IAEA's Regional Research Reactor School was held for the first time, in which 10 young researchers and engineers from 7 countries participated.
- At present, there are only three university reactors left in Japan, including UTR-KINKI. We hope to continue operating the reactor for as long as possible and contribute to nuclear education in Japan and abroad.



UTR-KINKI



Mr. 1W

UTR-KINKI's mascot

## Reference Information

Kindai University is a private university in Osaka, Japan, established in 1949.



## History of UTR-KINKI

In 1959, the U.S. Atomic Energy Commission exhibited the UTR, a research reactor for education and training, at the Tokyo International Trade Fair and operated it for 18 days. Mr. Koichi Seko, the first president of Kindai University, visited the UTR and decided to purchase the reactor in order to develop future nuclear engineers at Kindai University.

In 1961, UTR was relocated to the campus of Kindai University as UTR-KINKI and reached criticality for the first time at 20:53 on November 11. It became the first private nuclear reactor and the first university nuclear reactor in Japan to start operation.

The rated thermal power of the reactor was 0.1W at the start of operation, but it was increased to 1W in 1974. After the accident at Fukushima Daiichi Nuclear Power Plant in 2011, the regulations for research reactors were tightened. UTR-KINKI was shut down for three years starting in 2014 and underwent a safety review under the new regulations.

In 2017, UTR-KINKI resumed operations as the first reactor to operate under the new regulatory standards in Japan.



The emperor of Japan visited the UTR operated at the Tokyo International Trade Fair in 1959.



Koichi Seko  
The first president of Kindai University



**Workshop for nuclear engineering students:** Students perform various reactor physics experiments and neutron measurement experiments while operating the reactor themselves.



**Workshop for science teachers:** Science teachers learn scientifically correct knowledge by experiencing reactor operation and radiation measurement experiments. This workshop became especially important after the Fukushima Daiichi nuclear power plant accident.



**IAEA Regional Research Reactor School:** IAEA Regional Research Reactor School in Japan was held for the first time at Kindai University in 2019. Ten young professionals from seven countries participated in the school.