



Development of Advanced Measurement Technology for Nuclear Thermal Hydraulics and Revitalizics

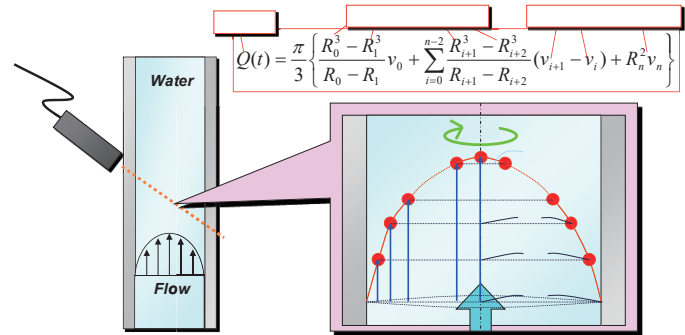
Laboratory for Zero-Carbon Energy,
Institute of Innovative Research

<http://www.zc.iir.titech.ac.jp/~kikura/?lang=en>

- Development of advanced measurement and diagnostic technology using ultrasound, laser, electric conduction, image processing, etc.,
- Development of robot transportation measurement system
- Revitalizics

Research on the improvement in safety and the advancements of nuclear reactors is done by the diagnostic techniques developed from the measurement techniques and process control strategies used in light-water reactors, future-type reactors and fast reactors.

Recently, especially, we are developing advanced measurement and diagnostic technology using ultrasound, laser, electric conduction, image processing, etc., and developing robot transportation measurement system related with Fukushima Daiichi nuclear power plant accident, and promoting Revitalizics project related with earthquake disaster.



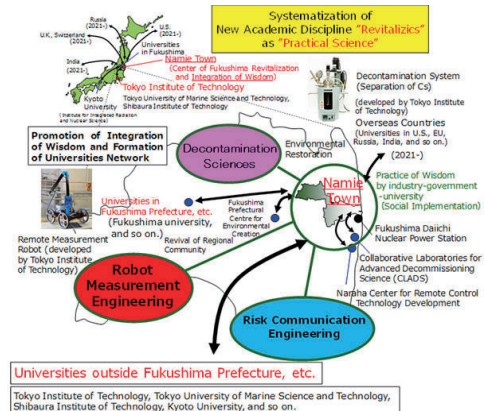
Velocity profile integral type flow rate calculation method using UVP method

- High precision feedwater flow rate measurement technology using UVP method (Ultrasonic Velocity Profiler)
- Since flow rate is calculated directly from velocity profile, flow correction factor is unnecessary and calibration is not required.



Robot transportation measurement system

- For the decommissioning of TEPCO HD Fukushima Daiichi nuclear power plant, we are developing a measuring technology inside the building using transportation robot instead of human beings to investigate and repair containment leakage spots and investigate and retrieve fuel debris.



Revitalizics

- Building a new academic field called "Revitalizics" as a practical science
- Human resource development through graduate student practice and elementary and junior high school ICT education support etc. and contribution to industry in cooperation with regional companies and local governments.