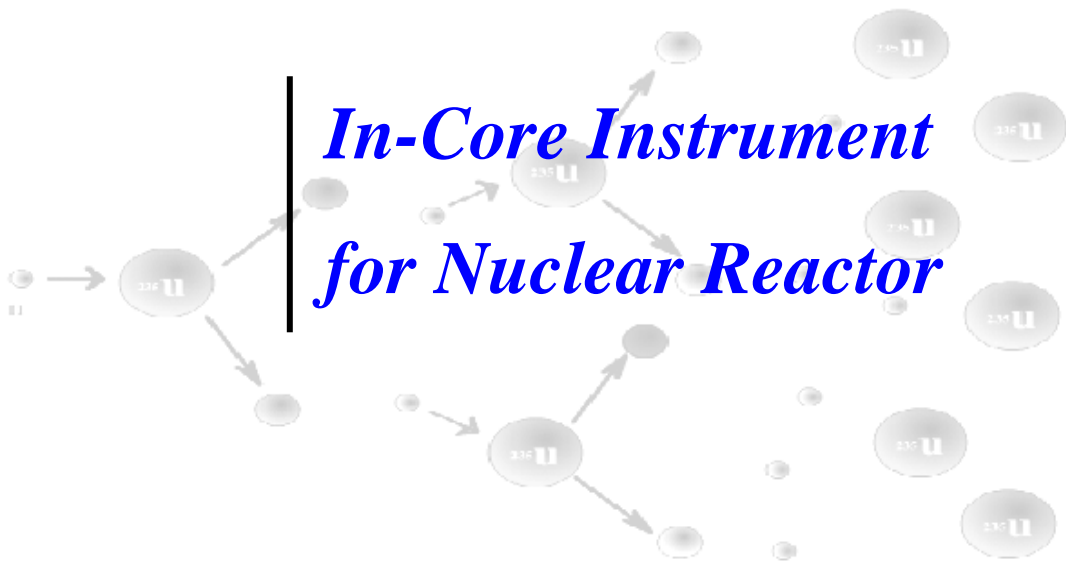
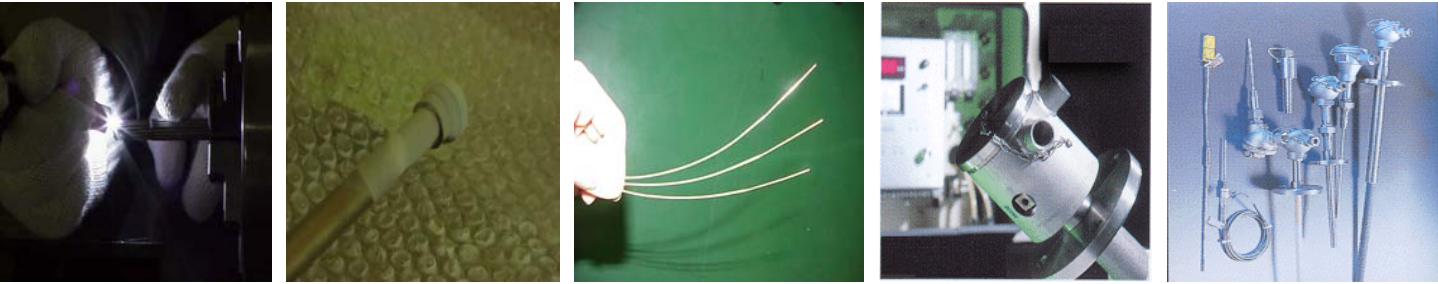


The Best Solution of Nuclear Control

The New Standard of Invisible World



 **WOOJIN INC**

We Lead You to The Technology of Nuclear Control

Woojin Controls Another Future

•Since foundation in 1980, Woojin has been concentrating on the precision sensor-based measurement technology. And now Woojin will invite you to the technology of nuclear control with accumulated experience and expertise.



•Woojin employs a multi-disciplined teams of chemists, physicists and engineers of all fields who can perform diverse manufacturing activities resulting in quality product with outstanding reliability and accuracy.

The Supplier of In-Core Instrument

Conquer the world of extreme technology

•Our customers around the world demand the most strict specification standards.

•Woojin offers the sensor & equipment of the highest quality with safety and reliability.

•Our range of products is connected with radioactive measurements for radiation control and monitoring.

•The most durable and radiation-resistant material is incorporated in the design with its state of the art manufacturing technology.

•Our products improve personal safety and reduce environmental impact.



The Highest Technology

Woojin Provides

Control Conditions for Nuclear-fission

- *Built to withstand the harsh reactor core environment*

All In-core Sensors are constructed of inorganic materials to withstand the extreme environments of the nuclear reactor core. Typical construction materials for the sensor and integral cable include stainless steel or inconel metallic sheaths with alumina or magnesia insulation.



- *The highest technology available at WOOJIN INC.*

All self-powered detectors employ the most durable single-sheath construction design. In-Core detector are assembled using the latest [Automatic Tube Welding and Brazing Technology](#). Critical welds and brazes are non-destructively tested with state-of the art equipment. All detectors are calibrated for radiation sensitivity to ensure they meet or exceed acceptance criteria demanded by our customers.

Inspection and Testing for High Quality

Overcome the limit of errors

•Uncompromising standards for inspection and testing



Our in-house, quality assurance and control program is a continuous, all-encompassing effort from a computerized tracking system rating our materials' vendors, to our rigorous inspection.



•Certification and Qualification

- ASME Boiler and Pressure Vessel Code. Section IX, Welding and Brazing Qualification QW-153.*
- ASME Boiler and Pressure Vessel code. Section III, Nuclear Plant Component, Class 1, NB-3000.*
- Qualified by Test to The Current Standards of IEEE-323, IEEE-344*
- Quality Assurance Program meets the requirements of 10 CFR 50, Appendix B, ANSI/ASME NQA.*

Profile

of In-Core Instrument

Accurate reactor core monitoring

•**In-Core Instrument** continuously monitors the neutron flux in a nuclear reactor core, providing measurements of local core power density.

Woojin has manufactured In-Core combination assemblies for applications in pressurized water reactors.

In-Core assembly consists of concentric inner and outer thimbles, with several neutron and temperature sensors located in the space between them. This assembly is used to measure the reactor core neutron flux profile and the core exit coolant temperature.

Woojin has manufactured bottom mounted systems, These assembly configurations penetrate the reactor vessel through guide tubes and bottom nozzles to position the detectors within the reactor core.

Electric power supply is not required and with its reduced volume, the ICI allows accurate monitoring of thermal neutron flux.

Due to their very long life time and their resistance to high temperatures, the rhodium detectors are used to obtain a steady flux distribution inside the reactors.

•ICI Assembly

Detector
Connector

Flexible Hose

Backshell

Self-Powered
Detector
Elements

& Thermocouple
Assemblies

Bullet-Nose



Technical Cooperation with IST

IST as our cooperator



• *Imaging and Sensing Technology (IST) is a broad-based technology company that designs and manufactures advanced electronic and component systems.*

• *IST is the world's largest supplier of radiation sensors, providing the nuclear power industry with in-core and out-of-core detectors and electrical penetrations.*

• *The full line of nuclear products offered by IST includes:*

Electrical Penetrations

*IST Electrical Penetrations
IST-Conax Nuclear Electrical Penetrations
IST-Conax Nuclear Adapter Modules*

Local Power Range Monitors

In-Core Detectors

*Combination Fixed Assemblies
Local Power Range Monitors (LPRMs)
Movable Detectors
Thermocouples*

Out-of-Core Detectors

*Proportional Counters
Compensated Ionization Chambers
Uncompensated Ionization Chambers
Source and Intermediate Range Assemblies
Power Range Assemblies
Gamma Ionization Chambers Fission
Counters and Chambers*



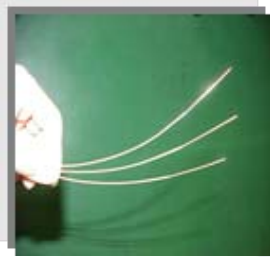
• *Imaging & Sensing Technology Corporation Corporate Headquarters
Horseheads, NY USA*



• *Imaging & Sensing Technology, Ltd.,
Alton, Hampshire, UK*

A Endless Challenge to New World

We trust ourselves

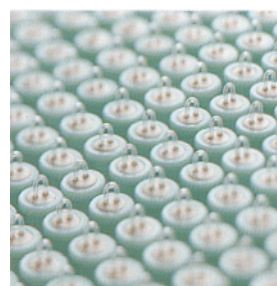


•Self-Powered Neutron Detector (SPND)

SPND is devices that produce a positive charge on an electrode by emitting electrons when exposed to radiation. When the neutron flux is captured by the emitter, the electrons flow up the wire attached to the electrode replacing escaping beta particles (beta decay). The term “self-powered” is derived from the induced current produced in the irradiation. The amount of the neutron flux measured depends on the choice of the sensitive material used for the emitter, its purity, mass and dimensions. SPND's are used for In-Core Instrument to map the neutron flux.

•Fast-Response R.T.D

This requires more faster response time than typical R.T.D's. We have manufactured this for nuclear power plant services. This also shall overcome the harsh ambient conditions (Radiation exposure, vibration etc.) in Nuclear Service System. Therefore, the R.T.D has unique design and materials to gain high stabilities and high precision. Also, close inspection and tests are needed, throughout all manufacturing and process.



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