

JRR-3 Users Office

文部科学省「先端研究施設共用促進事業」
による支援事業



User Support

JRR-3 (Japan Research Reactor-3) is a light-water moderated and cooled pool type reactor with a thermal output of 20 MW utilized for various neutron beam experiments and neutron irradiation. For neutron beam experiments, 19 instruments owned by JAEA are in operation. These instruments are used for structural determination of crystals and proteins, dynamical studies of materials, radiography, residual stress measurements, prompt gamma-ray analysis, etc. Most instruments are open to general users through “the JAEA Common-Use Facility Program”.

Preliminary consulting, experimental supports in human resources, using visitors room during experimental time with internet connection are available. Please contact us in advance to receive these services .



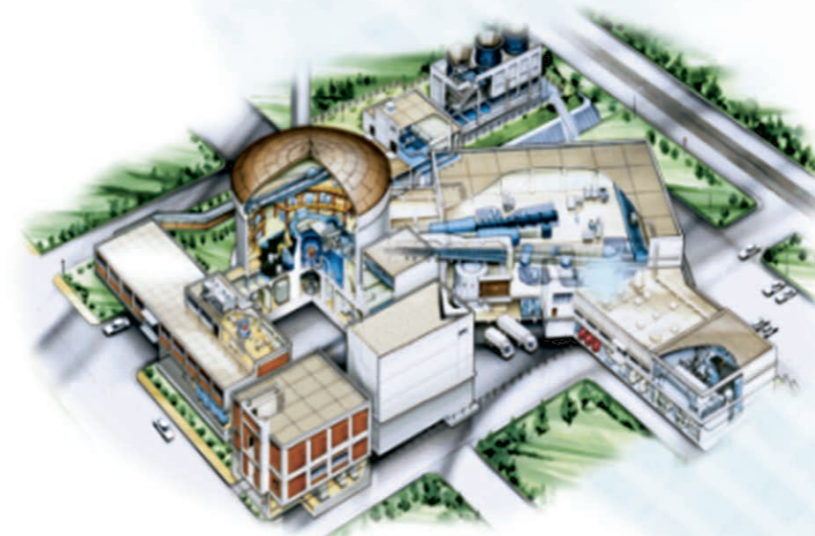
Visitors room



Counseling Office



Reactor room



JRR-3



Beam hall

Neutron application

- ▶ Materials evaluation
- ▶ Devise properties evaluation
- ▶ Safety evaluation

Contact

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E-Mail: jrr3-uoffice@jaea.go.jp URL: <http://jrr3uo.jaea.go.jp/>

MEXT Information for JRR-3: <http://kyoyonavi.mext.go.jp/facility/show/72>

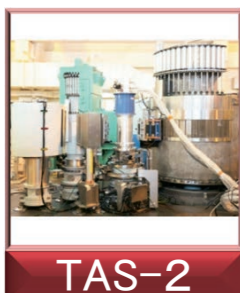
Promotion of neutron application as a cutting-edge research & analysis tool



JRR-3 Users Office
Japan Atomic Energy Agency



TAS-1 Triple-Axis-Spectrometer



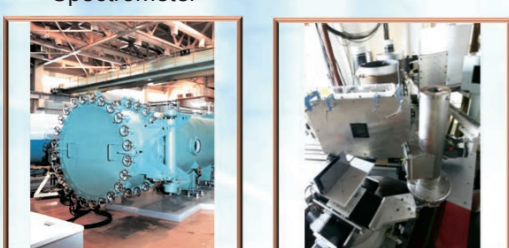
TAS-2 Triple-Axis-Spectrometer



LTAS Low Energy Triple-Axis Spectrometer



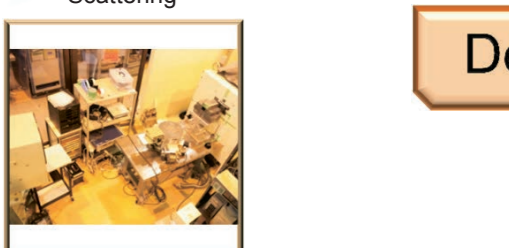
SUIREN Reflectometer



SANS-J-II Small-Angle Neutron Scattering



PNO Precise Neutron Optics



CHOP Pulsed Neutron Instrument with Disk Chopper



NOP Neutron Optics



MUSASI Multi-Purpose Thermal Neutron Application and Science

Materials evaluation

Detailed analyses of crystal structure, including hydrogen atomic positions, are available for chemical substances and proteins.

Crystal structural analyses are available for powder materials that contain light-mass elements, such as hydrogen and lithium, which are difficult to be detected by x-rays.

Biological molecular and structural analysis

Powder structural analysis

Residual stress analysis

Elementary analysis

Residual stress analyses are available by measuring the distortion deep inside the material, which is difficult to be measured by x-rays.

Multi-element analyses for products and materials are available in nondestructive manner. This is suitable for analyses of light-mass elements, such as hydrogen and boron.

Safety evaluation

Observation of the inside of a product and materials is possible in nondestructive manner. This is particularly useful for observation of hydrogen and the water inside products. Taking animation and tomogram is also available.

Neutron application

Imaging

Dynamical behavior analysis

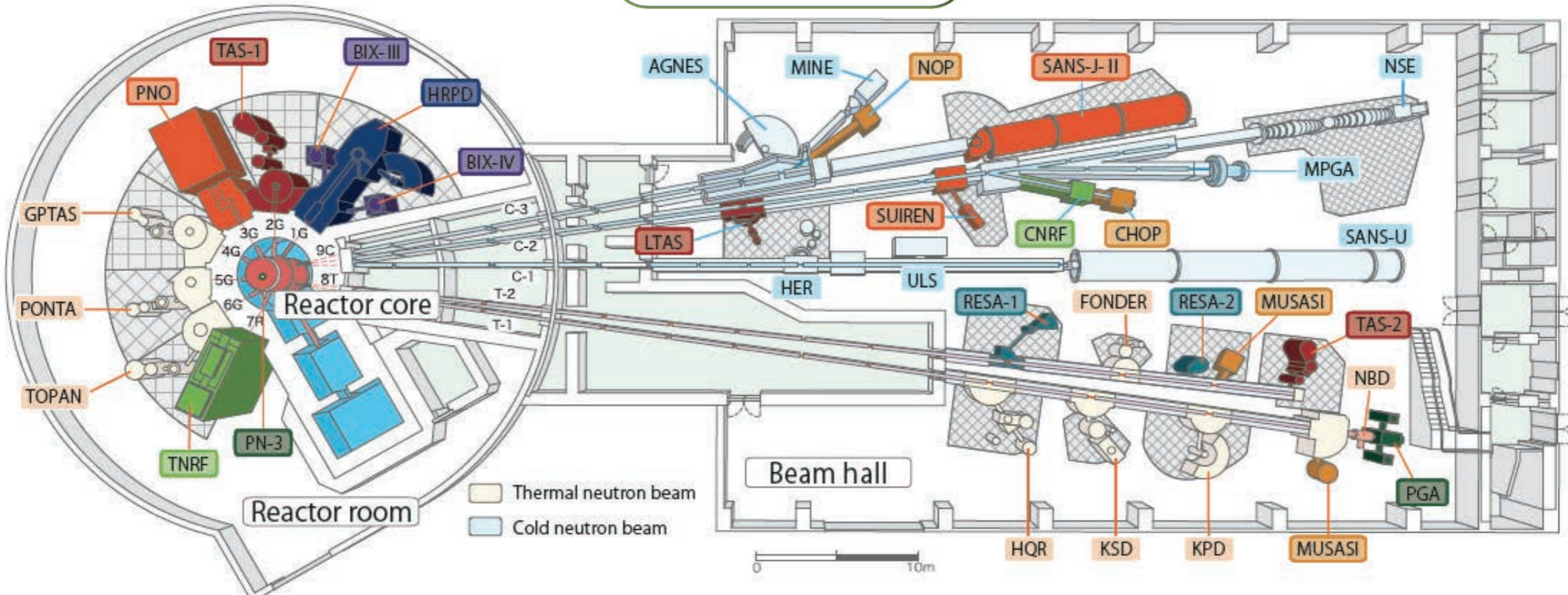
Laminated structure analysis

Characteristic examination of devices

Analyses of the surface of materials are available by reflectometer, and structural analyses of macromolecules and multilayer films are available by small-angle scattering measurements.

It is available to perform characteristic evaluation of neutron detectors and optical devices, as well as proof examination for development of beam experimental instruments.

Devises properties evaluation



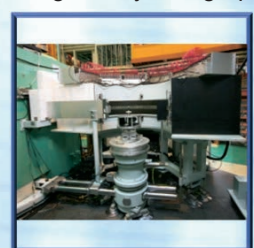
BIX-3 Diffractometer for Biological Crystallography



BIX-4 Diffractometer for Biological Crystallography



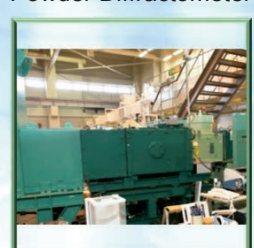
RESA-1 Engineering Diffractometer



HRPD High Resolution Powder Diffractometer



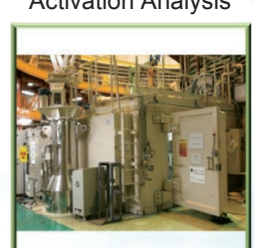
RESA-2 Engineering Diffractometer



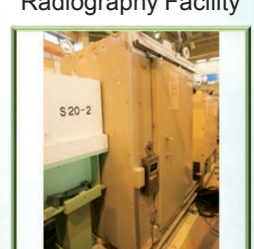
PGA Prompt-gamma Analysis



PN-3 Irradiation Facility for Activation Analysis



TNRF Thermal Neutron Radiography Facility



CNRF Cold Neutron Radiography Facility