

Overview of the NRS Programs at SPring-8

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There are multiple avenues for doing nuclear resonant scattering (NRS) at SPring-8, including proposals to the Japan Synchrotron Radiation Research Institute (JASRI) for one of several beamlines, proposals to the National Institutes for Quantum and Radiological Science and Technology (QST –formerly associated with JAEA/JAERI) for BL11XU and proposals to RIKEN and proposals to SACLA. The majority of work has been done through JASRI at BL09XU, which has been the main home for NRS experiments at SPring-8 over the past 2 decades (talk by Yoshitaka YODA). Additional programs have developed at BL11XU/QST (talk by Takaya MITSUI) and at BL19LXU (a RIKEN beamline accessible for NRS via proposals through JASRI). There is also a specific program using a synchrotron Mossbauer source (SMS) at BL10XU for high-pressure work with diamond anvil cells (talk by Naohisa HIRAO) accessible via proposals to JASRI. The JASRI program has been largely aided and driven by collaborations with external groups, including members of KEK, JAEA/QST, the lab of Makoto SETO at KURRI and, recently, by visiting scientists (Ryo MASUDA and Makina SAITO). Presently, the main JASRI NRS activity is being moved from BL09XU to BL35XU (see the next talk by Yoshitaka YODA). There is also the potential to do work at BL29XUL and at the SACLA Free-electron laser.

Beamline ^{Contact}	Accessibility	Comment
BL09XU ¹ (through 2020)	JASRI Proposals	Main JASRI NRS program through 2020 Program moving to BL35XU in 2021
BL11XU ²	QST Proposals	Mainly SMS and EDMS/Resonant Detector work
BL19LXU ^{1,3}	JASRI Proposals (RIKEN Proposals)	25m ID with high flux Biological samples and specific experiments (e.g. ²²⁹ Th)
BL35XU (early)	JASRI Proposals	Specific experiments (e.g. ¹⁸¹ Dy)
BL35XU ¹ (From 2021)	JASRI Proposals	Main JASRI NRS program from 2021. Strong source 14.4 - 27 keV & >43 keV
BL10XU ⁴	JASRI Proposals	High Pressure DAC Work – SMS only
BL29XUL ^{1,5}	JASRI Proposals (RIKEN Proposals)	General purpose beamline (1 km) <i>Possibly</i> for E<14. keV, 28<E<43 keV
SACLA ^{1,6}	Proposals to SACLA	Short Pulse Free Electron Laser

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