

MATERIALS SCIENCE

Major efforts in Materials Science using the SPring-8 beamlines lead us to various activities in the field of X-ray diffraction, scattering and spectroscopy, which cover the scientific world of solids, liquids and gases, as well as materials of technological importance. New techniques combined with the brilliant photon sources are aggressively used in such experiments as high-resolution inelastic scattering, nuclear resonant scattering, surface diffraction, holography and structural analysis under photo-excitation. In this volume, scientific interest is focused on the physics and chemistry of magnetic materials, using the techniques of resonant magnetic scattering, magnetic Compton scattering and magnetic circular dichroism to obtain results.

The experiments related to Materials Science are performed on almost all beamlines at SPring-8. Above all, the following beamlines are commonly used: BL02B1 (Crystal Structure Analysis), BL02B2 (Powder Diffraction), BL04B1 (High Pressure and High Temperature), BL04B2 (High Energy X-ray Diffraction), BL08W (High Energy Inelastic Scattering), BL09XU (Nuclear Resonant Scattering), BL10XU (Extremely Dense State Research), BL13XU (Surface and Interface Structures), BL25SU (Soft X-ray Spectroscopy of Solid), BL28B2 (White Beam X-ray Diffraction), BL35XU (High Resolution Inelastic Scattering), BL47XU (R&D) and BL12B2 (Asia and Pacific Council for Science and Technology, Taiwan). Having the requisite number of photons with sufficient resolution in energy and space, each of the beamlines supports the pioneers of vast frontiers of natural science and technology at SPring-8.

Satoshi Sasaki