


DIFFRACTION & SCATTERING



The number of beamlines at SPring-8, which are basically used for Diffraction and Scattering experiments, is steadily increasing. The beamlines are BL02B1, BL02B2, BL04B1, BL04B2, BL08W, BL09XU, BL10XU, BL39XU and few others. Their classification here is casual and as a matter of convenience. The beamlines numbered BL**B2 are newly installed and tested in 1999-2000. Reflecting the increase in the number of beamlines, the scope of activities in diffraction and scattering experiments at SPring-8 is getting wider and more profound. In the field of diffraction and scattering, it has become increasingly difficult to select the scientific works to be published in *Research Frontiers* as examples of the remarkable scientific achievements accomplished at SPring-8. Among the outstanding studies undertaken here at SPring-8, seven scientific works have been selected for publication in this volume. Surprisingly enough, four out of seven are from BL**B2.

Moritomo et al. have discovered the phase separation of $\text{Nd}_{0.55}(\text{Sr}_{0.17}\text{Ca}_{0.83})_{0.45}\text{MnO}_3$ and discuss insulator-metal behavior of CMR manganites based on a novel scenario. Tanigaki et al. have synthesized germanium clathrate with d-electron system, $\text{Ba}_8\text{Mn}_2\text{Ge}_{44}$ and determined its structure. Takata et al. have succeeded in elucidating the structure of IPR (Isolated Pentagon Rule)-violated fullerene, $\text{Sc}_2@\text{C}_{66}$, where IPR has been considered as the essential rule in fullerene geometry. Ito et al. have observed the temperature variation of the spin- and orbital-magnetic moment of Holmium Iron Garnet. Seto et al. have measured the nuclear resonant scattering of 40 K using synchrotron radiation for the first time. Kohara et al. have identified obtained an accurate structure factor of vitreous B_2O_3 up to a high scattering Q ($\sim 35\text{\AA}^{-1}$). Funakoshi et al. have precisely measured the viscosity of albite melt under high pressure using an in situ observation of the falling sphere method.

There has been a steady increase in activity at SPring-8 in the field of Diffraction & Scattering along with the increases in the number of beamlines.

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