

MATERIALS SCIENCE STRUCTURE

Materials science concerning structural aspects of materials is one of very active fields at SPring-8. Reflecting this fact, many papers concerned with Materials Science have been selected for the present issue, i.e., twelve papers. Although nanoscience and nanotechnology remain keywords for describing the focus of materials science activities at SPring-8, the present issue does not include any work dealing with typical nanomaterials such as fullerene compounds or nanotubes. This probably means that nanoscience at SPring-8 has become a continuous focus of research rather than topic of special interest. Instead, the present issue includes quite a few works concerning the study of the fluid state. In a very early stage of its existence, SPring-8 was not well equipped to study liquid or fluid state; this, however, is no longer true. The number of research areas of materials science, which SPring-8 covers, still seems to be growing.

From among many other studies, the following twelve works have been chosen. 1) "Direct observation of intermolecular interaction for organic magnet by low-temperature X-ray diffraction" by Y. Wang & J. J. Lee, 2) "Disordered zinc in thermoelectric material Zn_4Sb_3 with phonon-glass and electron-crystal properties" by E. Nishibori, G. J. Snyder, P. Rabillat, M. Christensen & B. B. Iversen, 3) "Doping effect of Cu-O bond stretching phonon in $La_{2-x}Sr_xCuO_4$ studied by inelastic X-ray scattering" by J. Mizuki, T. Fukuda & K. Yamada, 4) "Crystal structure of superconducting sodium cobalt oxide" by K. Takada & I. Nakai, 5) "High-quality as-grown MgB_2 film fabrication at low temperature using in-plane-lattice near-matched epitaxial-buffer layer" by O. Sakata, S. Kimura & S. Kubo, 6) "X-ray diffraction study of charge-density-wave phase transition on $In/Cu(001)$ " by T. Aruga & S. Hatta, 7) "Strain field under the $SiO_2/Si(001)$ interface revealed by phase-sensitive X-ray diffraction technique" by W. Yashiro, 8) "Structural determination of topological crystal" by S. Tanda, Y. Nogami & N. Ikeda, 9) "Glass forming at limit: how glass forms when there is insufficient network former?" by S. Kohara, K. Suzuya & K. Takeuchi, 10) "Direct observation of macroscopic separation of dense fluid phase and liquid phase of phosphorus" by Y. Katayama, 11) "Observation of fast sound in expanded fluid mercury accompanying metal-nonmetal transition" by M. Inui, D. Ishikawa & K. Tamura, and 12) "Collective dynamics of supercritical water" by T. Yamaguchi, K. Yoshida & S. Hosokawa.

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