

# MATERIALS SCIENCE STRUCTURE

Materials Science researches at SPring-8 have been so far providing crucial information for structure-property relationship of various bulk materials and contributing to rational design of novel materials having specific properties. In addition, the number of research applications for the nanotechnology are now increasing more and more. Although the number of beamlines has not been increasing over the last few years, it does not mean the scientific activities in Materials Science at SPring-8 are saturated. The phase of utilization at each beamline has been shifting to advanced applications. Actually, the most of the planned scientific targets have been achieved successfully and new challenging research activities start at some beamlines. It has to be admitted that the scientific activities at SPring-8 on materials science have more and more varieties and have many important results. A part of the reasons to keep the activities on materials science at relatively high level could be a designation of priority research at SPring-8. For instance, recent increase of nanotechnology relating results may be the case in point. Thus, there are some arguments for the new beamline requirements from materials science and nanotechnology science community.

From structural studies in Materials Science, the following 8 topics are presented in this issue. The first five excellent articles are about the structure-property relationship, nanotechnology, and synthesis of novel materials. Especially, the work of T. Takenobu *et al.* gave the breakthrough for nanotube science. The high pressure work of W. Utsumi is the search of specific condition of GaN crystal synthesis under high pressure. And the imaging techniques are also presented, which are quite unique and promising. These researches may lead to new direction of the synchrotron radiation utilization for materials science.

The plenty of research subjects, for which the SPring-8 can cover and play key role, should be still remained and/or increase in Materials Science. In order to explore and open up the new research field, the corporation with the materials and nanotechnology scientists outside of the SPring-8 cannot be overemphasized.

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