SRMS-2

Synchrotron radiation is widely accepted as the premier source for electronic and atomic structure determination. This can be recognized by putting material science and synchrotron radiation into a single framed conference. The synergism resulting from this multidisciplinary science can be used to exploit, develop, and create innovative techniques. For this purpose, the first International Conference on Synchrotron Radiation in Materials Science (SRMS-1) was held in August 1996 in Chicago, U. S. A. The aim of the conference was to bring researchers from wide fields in material science who use synchrotron radiation in noticeable ways and to discuss theoretically understood findings and experimental techniques. Following this, the second conference of SRMS (SRMS-2) was organized in Japan from October 31 through November 3, 1998, at the International Conference Center, Kobe, and was jointly sponsored by the Japan Atomic Energy Research Institute (JAERI), the Institute of Physical and Chemical Research (RIKEN), and the Japan Synchrotron Radiation Research Institute (JASRI).

The subjects covered in SRMS-2 included the application of synchrotron radiation to catalysts, ceramics, superconductors, glasses, polymers, materials for electronics, surfaces and interfaces, magnetic materials, metals and alloys, and semiconductors. Some 290 delegates from a total of 16 countries attended the conference; about 20 percent of the participants were from universities and laboratories outside Japan. After opening addresses from the President of JAERI, Dr. Masaji Yoshikawa, and the Chairman of the SRMS-2 Organizing Committee, Dr. Hiromichi Kamitsubo (JASRI, Japan), Dr. Sunil K. Sinha (APS, Argonne National Laboratory, U.S.A.) gave a keynote lecture on developments in the application of synchrotron radiation to material science. He emphasized in his lecture that experiments with the use of micro-beams have become very important in many fields.

SRMS-2 featured many contributions from the world's three third-generation synchrotron radiation facilities: ESRF (Grenoble, France), APS (Chicago, U.S.A.), and SPring-8 (Hyogo, Japan). The ultra-brilliant radiation generated by these facilities has made it possible to probe dilute materials, such as nanoclusters and hitherto undetectable thin and buried layers. In the imaging area, the use of X-ray beams, micro-focused down to submicron sizes and combined with various experimental techniques for mapping microstructures, has led to remarkable progress in microstructure mapping and the characterization of micro-electronic devices. In situ observations have been performed during the growth of nanoscale dots of semiconducting materials and phase transformations under various conditions.

Since the last few years, outstanding progress has also been evident in magnetism employing circularly-polarized X-ray and soft X-ray beams, which allow us to discuss electronic structures and magnetic states. Resonant and non-resonant inelastic X-ray scattering techniques have been available to probe electronic excitations, and are easily expected to become more popular at the third-generation SR facilities. The observation of charge and orbital orderings in strongly correlated electron systems by employing resonant X-ray scattering is of great importance for material science.

The conference program contained 236 presentations. Of these, six took place in plenary sessions, 67 were divided between parallel streams, and the remainder were poster sessions.

The success of SRMS-2 was primarily due to the various committees that made unceasing efforts to arrange and promote the event.

Finally I would like to announce that the International Advisory Committee has confirmed its acceptance of KFA Kahrusruhe's offer to host the 2000 conference in Kahrusruhe, Germany.

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