XIIIth International Conference on Small-Angle Scattering

Takeji Hashimoto, a Yoshiyuki Amemiya, b Kozo Osamura c and Mitsuhiro Shibayama d

a Chair of Organizing Committee, Japan, b Chair of Program Committee, Japan, c Chair of Local Committee, Japan, and d Chair of Editorial Committee, Japan

The XIIIth International Conference on Small-Angle Scattering (SAS2006 Kyoto) took place in Kyoto, Japan, on 9–13 July 2006, at the Kyoto International Conference Hall. The Organizing Committee is honoured to have hosted SAS2006 Kyoto. It goes without saying that the key to success of this conference lies with the participants, over 500 of whom came from over 30 countries, to report small-angle scattering-based research of extremely high quality. We, the organizers, very much enjoyed hearing the theme of ‘small-angle scattering’ being thundered across the conference rooms of the Kyoto International Conference Hall, like the beautiful, exciting reverberations from the roll of a Japanese ‘Wadaiko’ drum at the banquet. We were especially pleased to have had the opportunity to bring speakers and participants, from contrasting fields in the physical sciences, materials sciences and biological sciences, together in the same conference rooms to discuss their work, with small-angle scattering as the important, unifying key word. Hopefully we would like to share a common impression with you, that the small-angle scattering field is gaining greater significance in science and technology and in its contributions to the culture of this century.

As listed in Table 1, it is our great pleasure to report that 548 participants (see Fig. 1) from 33 countries and five continents attended this conference, including 262 participants from Japan and 60 participants from various countries in Asia and Australia excluding Japan. We had 538 presentations including 125 oral presentations and 413 poster presentations, the number of which exceeds that of the previous SAS2002 Venice meeting by about 150. We are happy to report that SAS2006 Kyoto could continue the trend of fast and persistent growth in the number of presentations during the last seven SAS conferences starting in 1984 (see Fig. 2), as pointed out by Professor A. Craievich in the Proceedings of the SAS2002 Venice meeting.

Since this is the first SAS conference held in the Asia and Oceania region, we encouraged 12 Asian researchers from seven countries to attend this conference, with financial support from the Japan Society for Promotion of Science. We supported 18 young researchers from 14 countries with grants from the International Union of Crystallography (IUCr) and the Kyoto University Foundation.

The scientific program of the conference contained seven plenary lectures on hot topics covering various scientific fields, 19 general sessions, five special sessions and posters. The general and special sessions were run in parallel throughout the event. The general sessions included the following topics: polymers; instrumentation and methods; biological solution scattering; colloids, surfactants and lipids; alloys and ceramics;

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of participants (in parentheses) from various countries at SAS2006 Kyoto.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country</th>
<th>Participants (in Parentheses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan (262)</td>
<td>USA (51)</td>
</tr>
<tr>
<td>Korea (28)</td>
<td>UK (22)</td>
</tr>
<tr>
<td>Russia (8)</td>
<td>Austria (6)</td>
</tr>
<tr>
<td>Italy (6)</td>
<td>Brazil (5)</td>
</tr>
<tr>
<td>Switzerland (4)</td>
<td>Netherlands (4)</td>
</tr>
<tr>
<td>Norway (3)</td>
<td>Poland (3)</td>
</tr>
<tr>
<td>Spain (2)</td>
<td>Sweden (2)</td>
</tr>
<tr>
<td>Indonesia (1)</td>
<td>Philippines (1)</td>
</tr>
<tr>
<td>Ukraine (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>France (36)</td>
</tr>
<tr>
<td></td>
<td>Australia (8)</td>
</tr>
<tr>
<td></td>
<td>Hungary (6)</td>
</tr>
<tr>
<td></td>
<td>P. R. China (4)</td>
</tr>
<tr>
<td></td>
<td>India (3)</td>
</tr>
<tr>
<td></td>
<td>Israel (2)</td>
</tr>
<tr>
<td></td>
<td>Slovenia (2)</td>
</tr>
<tr>
<td></td>
<td>South Africa (1)</td>
</tr>
</tbody>
</table>
magnetic materials and superconductors; noncrystalline materials; surfaces and interfaces; grazing-incidence small-angle scattering; theory and modeling; and fibre diffraction. The special sessions covered topical research of an interdisciplinary nature on (1) dynamics and kinetics, (2) hierarchical structures studied over a wide range of scattering vectors, (3) new methods concerning contrast variations etc., and (4) open-nonequilibrium systems under various external fields. In some special sessions we intended to emphasize an application of a combined small-angle scattering method, which utilizes various small-angle scattering methods in ‘concert’, e.g. small-angle scattering and ultra-small-angle scattering of X-ray and neutron and small-angle scattering of light, to given systems in order to systematically explore their mesoscopic scale structures and dynamics.

Following the tradition of the SAS1999 and SAS2002 meetings, the SAS2006 Organizing Committee and the IUCr Commission on Small-Angle Scattering decided to present a prize, in honour of Professor A. Guinier, for outstanding contributions in the field of small-angle scattering. Furthermore, they also decided to present three prizes for younger scientists (namely those having obtained their PhD degrees within the past six years) attending SAS2006. The scientific impact of the research
on the field of small-angle scattering was considered to be
the important criterion for this SAS Young Scientist Prize.
H. Hasegawa, G. Kostorz, J. S. Pedersen, P. Thiyagarajan,
I. Torriani and N. Yagi were selected as members of the
jury for the A. Guinier Prize and the Young Scientist
Prize. Although the period of nomination was rather
short, the level of the candidates for the prizes was very
high, which made the selection a formidable task. The jury
finally decided to award the A. Guinier Prize to Professor
Heinrich B. Stuhrmann (GKSS Forschungszentrum Gees-
thacht, Germany). The SAS Young Scientist Prizes were
awarded to Dr Shuji Akiyama (JST/PRESTO, RIKEN
Harima Institute, Japan), Dr Byeongdu Lee (APS,
Argonne, USA) and Dr Maxim Petoukhov (EMBL
Hamburg, Germany). The Organizing Committee and the
IUCr Commission on Small-Angle Scattering sincerely
hope that these prizes will be continued to be bestowed at
future conferences.

The location of the next conference (SAS2009) was decided
by balloting in the business meeting. There were three
candidate cities, two in Europe and one in USA. Presenta-
tions were made for each city describing the scientific back-
ground and attractiveness of the city using beautiful pictures.
Since none of the three cities received an outright majority in
the first ballot, a second ballot was conducted between the top
two candidates. Finally, Oxford, which was represented by
Professor Anthony Ryan and Dr Nick Terrill, was chosen as
the location of the SAS2009 meeting.

The Organizing Committee established ‘Poster Awards’ as a
first attempt in the SAS Conferences to encourage excellent
students in the scientific field of small-angle scattering.
Candidates were limited to students who made the student
registration and presented posters by themselves. The
referees were selected from Organizing Committee members
and International Advisory Board members. Each of the 88
posters presented by students was evaluated by the judges.

Eleven students were awarded a certificate together with a
memorial shield.

Manuscripts of the papers contained in this proceedings
issue were submitted via the IUCr online manuscript
submission system during the conference and within one
month of the end of the conference. 170 manuscripts were
submitted and reviewed by more than 300 scientists from a
referee pool consisting of 430 researchers. The manuscripts
were edited by five Guest Co-editors, Dr Andrew Allen,
Professor Sow-Hsin Chen, Professor Gernot Kostorz,
Professor Mitsuhiro Shibayama and Professor Heinrich
Stuhrmann. The organizers thank the Guest Co-editors for
their tireless work in managing the review and in editing the
143 accepted contributions in this special online issue of the
Journal of Applied Crystallography. Special thanks go to G.
Kostorz, the Editor of the journal, and P. R. Strickland, the
Managing Editor, for their patience and dedication.

The following three Satellite International Meetings were
organized before and after the Conference in order to rein-
force international scientific exchanges on small-angle scat-
tering studies:

1. Synchrotron Radiation in Polymer Science III, 5–8 July,
   SPring 8, Hyogo, Japan.

2. Recent Studies and Development of Neutron Spin Echo
   Spectroscopy, NSE2006, 14–15 July, Kyodai-Kaikan, Kyoto,
   Japan.

3. International Workshop of Yukawa Institute of Theor-
etical Physics, ‘Structures and Dynamics in Soft-Matters:
   Beyond Self-Organization and Hierarchical Structures’, 14–16
   July, Kyoto University, Kyoto, Japan.

Finally, we would like to thank all the participants for their
scientific contributions. Our heartfelt thanks are due to the
International Advisory Board members, the institutional
sponsors, and the industrial sponsors for helping us organize
this conference. We hope to see you again at SAS2009
in Oxford.
Preface

Proceedings Editors

Guest Editor: M. Shibayama (University of Tokyo). Guest Co-editors: A. Allen (NIST, USA), S.-H. Chen (MIT, USA), G. Kostorz (ETH, Switzerland), H. Stuhmann (IBS, France).

International Advisory Board

A. Allen (NIST, USA), M. Agamalian (ORNL, USA), H. Amenitsch (ELETTRA, Austria), J. Barnes (JDB Science LLC, USA), A. Benedetti (University of Foscarì Venezia, Italy), S. L. Chaplot (Atomic Research Center, India), S.-H. Chen (MIT, USA), A. Craievich (University of Sao Paulo, Brazil), B. Chu (SUNY, USA), P. Fratzl (Max Planck, Germany), O. Glatter (University of Graz, Austria), C. C. Han (China), T. Irving (APS, USA), M. W. Kim (KAIST, Korea), F. Klose (SNS/ORNL, USA), G. Kostorz (ETH, Switzerland), P. Laggner (Graz, Austria), T. L. Lin (Taiwan), C. K. Loong (ANL, USA), R. May (ILL, France), J. S. Pedersen (University of Aarhus, Denmark), J. Penfold (ISIS, UK), R. Pynn (Los Alamos, USA), M. Ree (Pohang, Korea), D. Richter (FZ-Juelich, Germany), C. Riekel (ESRF, France), F. Rustichelli (University of Ancona, Italy), A. Ryan (Sheffield, UK), D. Schneider (BNL, USA), T. M. Sabine (ANSTO, Australia), H. Stuhrmann (IBS, France), J. Squire (UK), D. Svergun (DESY, Germany), H. Tsuruta (SSRL, USA), P. Thiyagarajan (ANL, USA), I. Torriani (University of Campinas, Brazil), P. Vachette (LURE, France), G. Wignall (ORNL, USA).

Organizing Committee

Chair: T. Hashimoto (JAEA). Co-chair: N. Yagi (JASRI). Y. Amemiya (University of Tokyo), M. Furusaka (Hokkaido University), T. Fujisawa (RIKEN), H. Hasegawa (Kyoto University), M. Hirai (Gunma University), M. Imai (Ochanomizu University), Y. Inoko (Osaka University), T. Kanaya (Kyoto University), S. Koizumi (JAEA), H. Matsuoka (Kyoto University), T. Matsushita (KEK), Y. Matsushita (Nagoya University), N. Niimura (Ibaraki University), K. Nishikawa (Chiba University), S. Nojima (TIT), T. Ohta (Kyoto University), H. Okuda (Kyoto University), K. Osamura (Kyoto University), S. Sakurai (KIT), M. Sato (Yokohama City University), H. Seto (Kyoto University), M. Shibayama (University of Tokyo), H. Shimizu (KEK), M. Takenaka (Kyoto University), K. Tamura (Kyoto University), K. Tashiro (Toyota Technology Institute), T. Yamaguchi (Fukuoka University), K. Wakabayashi (Osaka University).

Scientific Program Committee

Chair: Y. Amemiya (University of Tokyo), M. Furusaka (Hokkaido University), T. Fujisawa (RIKEN), H. Hasegawa (Kyoto University), T. Hashimoto (JAEA), M. Hirai (Gunma University), M. Imai (Ochanomizu University), Y. Inoko (Osaka University), T. Kanaya (Kyoto University), T. Kato (Tokyo Metropolitan University), S. Koizumi (JAEA), H. Matsuoka (Kyoto University), Y. Matsushita (Nagoya University), N. Niimura (Ibaraki University), K. Nishikawa (Chiba University), S. Nojima (TIT), T. Ohta (Kyoto University), H. Okuda (Kyoto University), K. Osamura (Kyoto University), S. Sakurai (KIT), M. Sato (Yokohama City University), H. Seto (Kyoto University), M. Shibayama (University of Tokyo), H. Shimizu (KEK), J. Suzuki (JAEA), M. Takenaka (Kyoto University), K. Tamura (Kyoto University), K. Tashiro (Toyota Technology Institute), N. Yagi (JASRI), T. Yamaguchi (Fukuoka University), K. Wakabayashi (Osaka University).

Local Committee

Chair: K. Osamura (Kyoto University). Treasurer: K. Tamura (Kyoto University). T. Fujisawa (RIKEN), H. Hasegawa (Kyoto University)/Vice-chair, T. Hashimoto (JAEA), H. Matsuoka (Kyoto University)/Secretary General, H. Okuda (Kyoto University)/Vice-chair, S. Sakurai (KIT), H. Seto (Kyoto University)/Webmaster, M. Takenaka (Kyoto University), N. Yagi (JASRI).

Sponsors (Foundations)


Sponsors (Companies)


Advertisers
PANalytical; Rigaku Corporation; Bruker AXS GmbH; Shimadzu Corporation/Kyoto Science; Avance, Inc.; Hecus XRS GmbH; Analysis and Simulation Center, Asahi Kasei Corporation; Neomax Co. Ltd; Kohzu Precision Co. Ltd; Tsuji Electronics Co. Ltd; Daicel Polymer Ltd; Polyplastics Co. Ltd; Toyobo Co. Ltd; Niki Glass Company Ltd; Matsushita Electric Industrial Co. Ltd; Matsushita Solution Technology Co. Ltd; Advanced Machine Factory Ltd; Laboratory Equipment Corporation; Lucir Co. Ltd; Meisyokiko Corporation; Mitsui Chemicals, Inc.; Seiko EG&G Co. Ltd; Nippon Steel Technology Corporation; Hamamatsu Photonics K.K.; Toshiba Electron Tubes and Devices Co. Ltd; TRY-SE Co. Ltd; JIEL Ltd; Tokai Chemix Co. Inc.; Dai-Ichi Kiden Co. Ltd; Dai-Ichi Dentsu Ltd; IDX Corporation.

Exhibitors
Companies, Institutes: Bruker AXS GmbH; European Molecular Biology Laboratory; Hamamatsu Photonics K.K.; HECUS XRS GmbH; Hyogo Science and Technology Association; ISS Advanced Materials Research and Applications Center; Japan High Tech Co. Ltd; Kyushu Synchrotron Light Research Center; Laboratory Equipment Corporation; Lucir Co. Ltd; Neomax Co. Ltd; Niki Glass Company Ltd; Nippon Light Metal; Ohyo Koken Kogyo Co. Ltd; PANalytical; Rigaku Corporation; Toshiba Electron Tubes and Devices Co. Ltd; TRY-SE Co. Ltd. Publishers, Booksellers: Digital Data Management Corporation; Taylor & Francis Group, LLC; Wiley-Japan; Science.

Supported by
International Union of Crystallography; The Crystallographic Society of Japan; The Chemical Society of Japan; The Japan Institute of Light Metals; The Japanese Society of Synchrotron Radiation Research; The Japan Institute of Metals; The Society of Rubber Industry, Japan; The Society of Polymer Science, Japan; The Japanese Society for Neutron Science; The Physical Society of Japan; The Society of Fiber Science and Technology, Japan; Japan National Tourist Organization; Kyoto Convention Bureau.