AONSA
Asia-Oceania Neutron Scattering Association

Newsletter From AONSA

The Asia-Oceania Neutron Scattering Association
Volume 5, No. 1 (August, 2013)

Co-chairs of ICNS2013, Profs. Keith McEwen (2nd from right) and Paul Attfield (left end), together with AONSA colleagues after the Closing Ceremony.

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President's message

By Prof. Yasuhiko FUJII

(JSNS, CROSS-Tokai)

The ICNS2017 at Daejeon in Korea !

The quadrennial International Conference on Neutron Scattering in 2013 (ICNS2013) was successfully held at Edinburgh in United Kingdom on July 8-12. About 800 researchers and students from 34 countries/regions attended and enjoyed the Conference excellently organized by Profs. Keith McEwen, Paul Attfield (Co-chairs of Organizing Committee) and their colleagues. In the scientific and social programs, they kindly paid special attention to the Asia-Oceania Region by allocating time slots for the Regional Meeting and the Award Ceremony/Lecture for AONSA Prize 2013 as well as by preparing conference rooms for our Executive Committee and Three President Meetings. Details of such events are reported separately in this issue.

The next venue of ICNS is traditionally decided by the International Facility Directors Meeting held during the present ICNS. This time Prof. Robert McGreevy (ISIS) has hosted and chaired it at the Edinburgh International Conference Centre (EICC; the Conference venue) on July 8 where the last agenda was on the next venue of ICNS2017. Since AONSA was established about 5 years ago, it has been our unanimous agreement to make our best effort to invite ICNS2017 in the Asia-Oceania Region and to nominate Korea once our Region would be selected by IFDM. Such a consensus is based on the fact that Korean neutron scattering community (KNBUA) and facility (HANARO/KEARI) have been powerful enough to host it, and previously Japan and Australia hosted it in 1985 (Hakone), 1994 (Sendai) and 2005 (Sydney).

At the present IFDM, therefore, Dr. Kye-Hong Lee (HANARO, a member of IFDM) made his excellently prepared presentation attractive enough for all members to support his proposal. Korean colleagues made their coherent effort domestically and regionally to attract participants by opening the Korean booth at the EICC lobby (photo) and by formally delivering his invitation by Prof. Kookheon Char (SNU) at the Closing Ceremony on July 12.

It is really a great sign that the European and American communities recognize that the Asia-Oceania plays an equally significant role in promoting neutron scattering science and technology worldwide. Let's all share Korea's joy in hosting ICNS2017.

The best-positioned booth jointly prepared by KAERI and KNBUA at ICNS2013 to appeal for scientific and social attractiveness of the City of Daejeon as an ideal venue for the next ICNS in 2017.

The 10th AONSA Executive Committee Meeting held in Edinburgh during ICNS2013

The 10th AONSA Executive Committee (EC) Meeting was held in Edinburgh International Conference Center, Edinburgh, UK, on July 9, 2013 during the ICNS2013. The meeting was attended by 20 participants and started with an opening remark by President Yasuhiko Fujii acknowledging the kind arrangement of the ICNS2013 organizers for the venue of this EC meeting which is held outside of the Asia-Oceania region for the first time. While the meeting schedule was very tight, all participants enjoyed the meeting very much, discussing various AONSA activities. The agenda included the recent survey of neutron users in the Asia-Oceania region (2,500 users), procedures for obtaining the official support of AONSA for an event, reports on the AONSA budget, the AONSA Prize, the 6th AONSA Neutron School at Tokai (which was cancelled due to an unfortunate accident at J-PARC), the AONSA Neutron School to be held in Serpong, Indonesia next year, the 2nd AOCNS to be held in Manly, Australia in 2015, the venue of ICNS2017 which it had just been officially announced will be held in Daejeon, Korea, and the upgrade of AONSA Webpage. The great efforts of all contributors to these AONSA activities were highly appreciated by all the EC participants. These were followed by very inspiring presentations and fruitful discussions on the “Next Step” of AONSA activities including the AONSA Visiting Fellows program. The supporting letters from ENSA and NSSA for the recovery of JRR3, and the great efforts to organize neutron scattering sessions in APPC12 in Chiba, Japan were highly appreciated. The EC meeting was followed by the AONSA Regional Meeting. The minutes of the meeting will be posted in the AONSA homepage once they have been finalized.

Sung-Min Choi
Secretary of AONSA

The 10th AONSA EC Meeting at the Edinburgh International Conference Center

Three AONSA Presidents Together (left: J.W. White, Y. Fujii and M.W. Kim) and AONSA Colleagues during dinner (right: R. Robinson, M. Arai, K.H. Lee, H. Seto, C. Ling and Y. Liu)

Report on the 6th AONSA Neutron School – Cancellation Notification

The 6th AONSA Neutron School was scheduled to be held from Monday 17 – Friday 21, 2013, at J-PARC/MLF, Tokai, Ibaraki, Japan. Unfortunately, it had to be cancelled for the following reason. On 23 May, 2013, a radioactive contamination accident occurred at the Hadron Experimental Facility of J-PARC. The Hadron Experimental Facility is located very near to and shares accelerator capabilities with J-PARC MLF, the planned venue for the 6th AONSA Neutron School. All the accelerators and experimental facilities at J-PARC have been shut down until further notice. J-PARC is currently working closely with other JAEA and KEK staff and stakeholder organizations to determine the cause or causes of this accident. It is unclear at this time when operations at J-PARC will resume. In addition to the severe limitations imposed by the facility shutdown, the staff of the MLF are now engaged in investigating the circumstances surrounding the accident and responding to the consequences. As a result, we have concluded that for these reasons, it would be impossible to hold the School as scheduled. We sincerely apologize for the inconvenience, disruption and disappointment that this decision will cause. Please note that we will make every effort to hold a School in the future. For future reference, the statistics of the school and the poster of the school are reported below.

Mitsuhiro Shibayama
Principal, 6th AONSA Neutron School

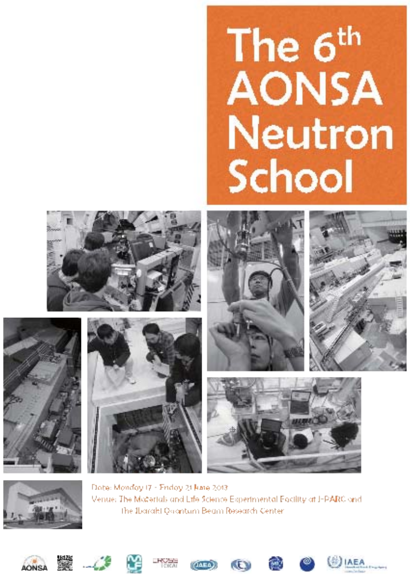
1. Participants

No. participants: 40

male	female	Japan	Australia/ New Zealand	Korea	Taiwan	China	India	Indonesia	Malaysia	Thailand	
32	8	11	7	5	7	2	3	2	2	1	40

Instrument assignment (as of 4 May, 2013)

	Total	Japan	Australia New Zealand	Korea	India	Malaysia	China	Thailand	Taiwan	Indonesia
BL01	4	1		2	1					
BL02	4	2	2							
BL03	3	1				1	1			
BL08	4		2		1				1	
BL14	3	2								1
BL15	6	2		1	1			1	1	
BL16+17	4	1	2						1	
BL18	3	1							2	
BL19	3			1		1			1	
BL20	3		1				1		1	
BL21	3	1		1						1



AONSA Prize 2013

158 delegates from the Asia-Oceania region attended the ICNS-2013 meeting in Edinburgh, UK, from 8–12 July, and were rewarded for their long journeys by Scotland's best weather in living memory. In addition to the excellent scientific and technical program, AONSA delegates participated in a number of regionally specific events. The undoubted highlight among these was the AONSA Prize ceremony, in which Prof BA Dasannacharya of India was presented with the AONSA Medal and $5000 prize, and then himself presented a fascinating talk on the history of neutron scattering in India, from the first criticality of the Apsa reactor in 1956 through close Indian involvement in the design and building of the first beryllium filter spectrometer IRIS at SNS (now ISIS) to the Dhruva reactor today. Prof Dasannacharya emphasized the importance of intra- and inter-regional cooperation to the future of neutron scattering, as embodied in the fact that the AONSA prize was being presented at ICNS, and way in which his own students have gone on to start neutron scattering programs in Indonesia, the Philippines, Thailand and other countries. ICNS was also the venue for the 2013 AONSA Regional Meeting, at which members were brought up-to-date on the work and achievements of AONSA and took the opportunity to question the Executive Committee and Board about governance, finances, relationships to its affiliating bodies and to ENSA/NSSA, and strategy in pursuing its mission to promote neutron scattering in our region and beyond. Finally, the closing ceremony of ICNS was a great occasion for AONSA with Korea being announced as the host for its next edition in 2017. We are all excited by the opportunity and are confident that this meeting held in our own region will be the best yet.

Chris Ling
Public Relations Officer of AONSA

Prof Yasuhiko Fujii (President of AONSA) presents the 2013 AONSA Prize to Prof BA Dasannacharya

Prof BA Dasannacharya is giving his Prize Lecture

Report on the AONSA Regional Meeting

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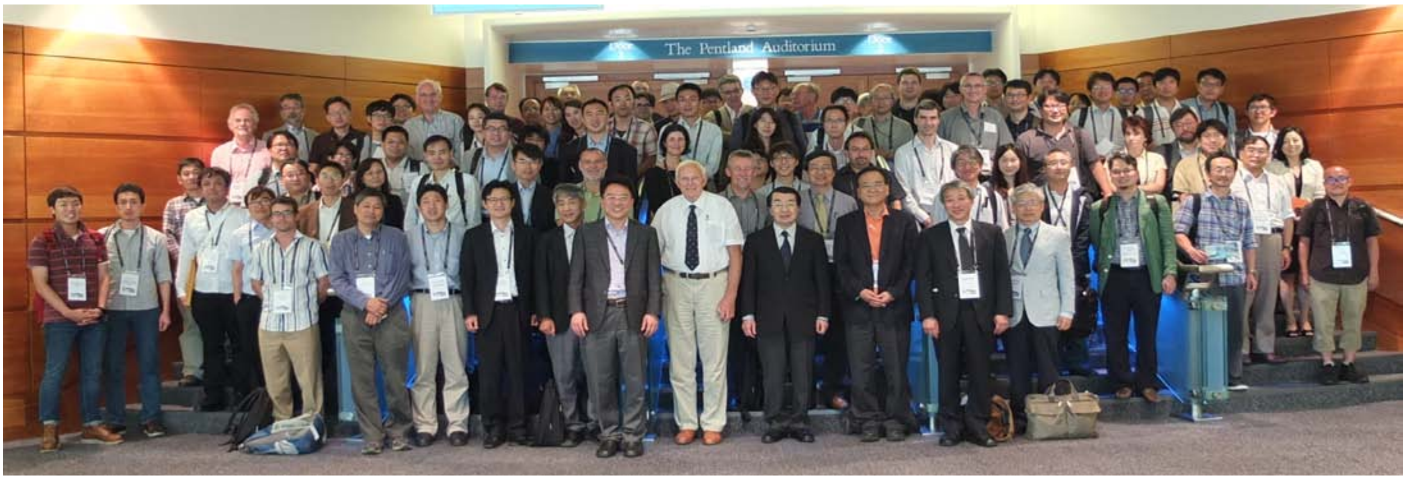
Chris Ling
Public Relations Officer of AONSA



AONSA delegates to ICNS-2013 after the AONSA Regional Meeting
(about 87 attendees)

Report on the 12th Korea-Japan Meeting on Neutron Science
February 3-6, 2013

The 12th Korea-Japan Meeting on Neutron Science, organized by J-PARC Center (JAEA/KEK) and CROSS Tokai in collaboration with KAERI, was held in Okinawa for the first time. The first Korea-Japan meeting was held in 2000 in Tsukuba, Japan, and since then 11 meetings have been held bilaterally. All the previous meetings were very successful and yielded fruitful discussions, which will help drive the construction of new neutron facilities and promote neutron sciences in both countries. On this occasion, 23 Korean and 36 Japanese participants attended, discussed future collaborations and developed their mutual friendship.

In the first session, Susumu Ikeda (KEK), who organized the first meeting 13 years ago, gave a plenary lecture entitled "Being and Non-being". After that, the present status of J-PARC, HANARO, KURRI and JRR-3 were shown by representatives of these facilities. The following sessions were grouped into 4 sessions; Instrumentation, Hard Matter, Soft Matter, and Nano/Industry. These sessions covered topics including structural analysis, inelastic scattering instruments, multiferroic materials, functional polymers, and new cathodes for lithium/sodium rechargeable batteries. Over lunch of the first day, core members from Japan and Korea held a business meeting to discuss the venue for the next meeting, which it was decided will be held in Baekje. Strategies to attract the next International Conference on Neutron Scattering (ICNS2017) to Korea were also discussed.

Although it was early in February, spring has already come to Okinawa. The participants saw cherry blossoms and enjoyed warm weather, as well as local cakes such as Chinsuko and Sata andagi. The organizing committee members appreciated the great efforts of the staff and students of the University of Ryukus to prepare such a comfortable venue and such fine refreshments.

Hideki Seto (IMSS, KEK),
Chair of the Organizing Committee

Participants of the 12th K-J meeting gathered in front of the venue

Susumu Ikeda gave a plenary lecture

Sata andagi, sweet deep fried buns of dough native to Okinawa prefectur

Report on the 5th Taiwan-Japan Joint Meeting on Neutron and X-ray Scattering February 24-27, 2013

The first Taiwan-Japan joint meeting was held in 2006 as the "Taiwan-Japan Workshop on Neutron Scattering of Biomaterials and Soft-Matters for Nanotechnology and Biotechnology". Since then, a series of meetings have been held bilaterally almost every year, and the 5th meeting was planned in Tsukuba from March 22, 2011. Unfortunately, the original plan had to be postponed due to the earthquake, and it took 2 years to find a suitable alternative date for the key participants. The organizing committee members were therefore very happy to eventually hold this meeting in Tokai, where the facilities were severely damaged by the earthquake. Over 30 participants attended the workshop. The main theme of the meeting was the complementary use of neutron and synchrotron X-ray scattering for the study of bio-materials, soft-materials and nano-materials, and 30 talks were given on this topic. The meeting was also a great opportunity to confirm friendships among the participants from both countries. It was particularly helpful that all the participants stayed in the same hotel and ate all meals together. The next meeting will be held in Taiwan early in 2014.

Hideki Seto (IMSS, KEK)
Chair of the Organizing Committee

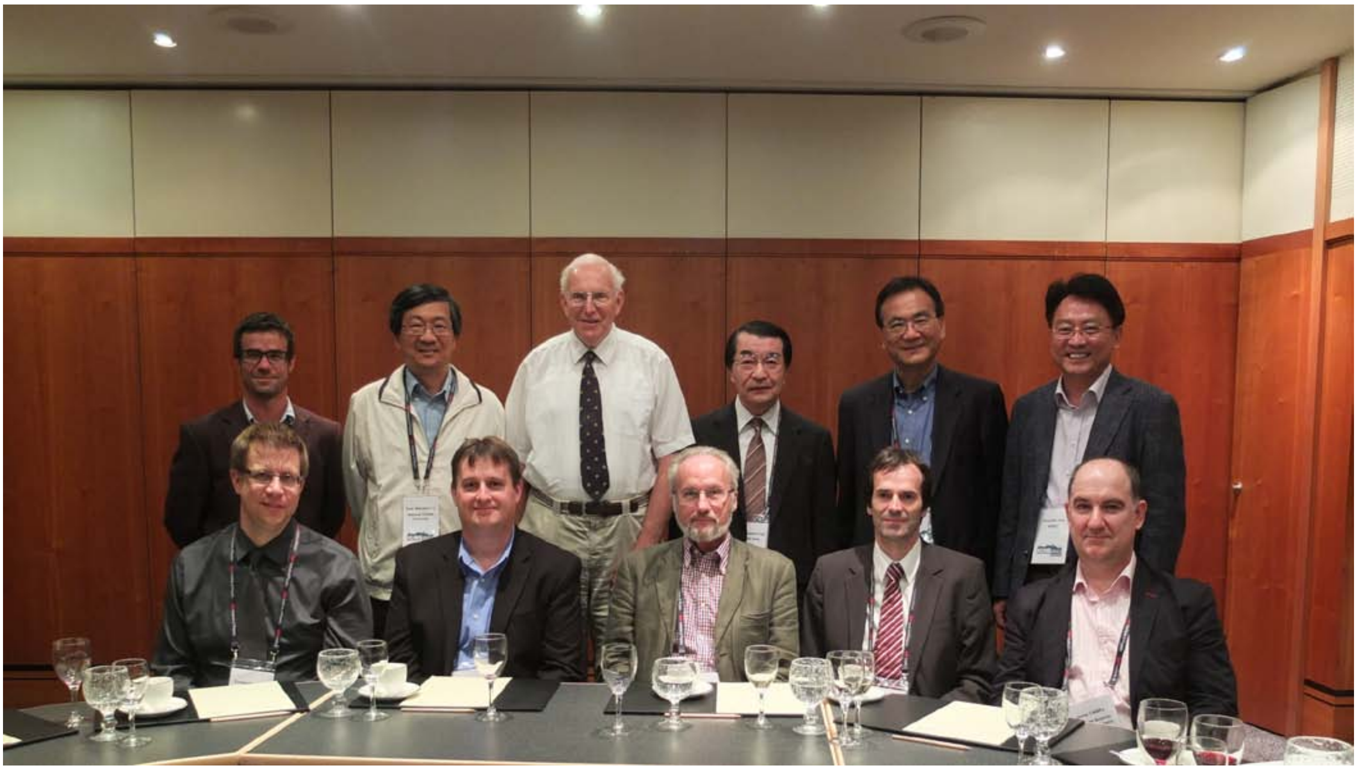
Participants at the 5th T-J meeting.

Prof. Toshiji Kanaya delivers welcoming remarks over dinner.

Report on the Three Presidents Meeting at ICNS-2013

Among other important meetings, both formal and informal, that took place during ICNS2013 in Edinburgh was the 3rd "three Presidents meeting" involving the leaders of ENSA, NSSA and AONSA. Although NSSA President Rosenkranz was unable to attend ICNS, he was ably represented by Mark Lumsden and Chris Wiebe of the NSSA Executive. The lunch meeting was hosted by AONSA in recognition of the support and encouragement of ENSA and NSSA for Korea's successful bid to host the next ICNS in 2017. The importance of mutual cooperation among societies was discussed at length, noting that this has yielded its first tangible results in the extraordinarily rapid repair and restart of J-PARC and (shortly) the JRR-3 reactor following the great Fukushima earthquake of 2011. The importance of letters written to the Japanese government by NSSA and ENSA cannot be underestimated and was greatly appreciated by AONSA. Similarly, AONSA and NSSA committed their full support to ENSA in the current critical stage of the ESS project as it seeks to confirm funding over the next 6 months. Another important issue discussed was the inclusion of the entire world's neutron user communities and their local user groups under the umbrella of the three Associations. In particular, ENSA undertook to engage more closely with African neutron users and NSSA to explore links with South American user groups, while AONSA is working to include more countries from its geographical region such as Mongolia. The meeting was highly productive on these and other issues, and is planned to be a regular event at all future ICNS and intermediate (ECNS, ACNS and AOCNS) meetings wherever possible.

Chris Ling
Public Relations Officer of AONSA



(L–R, front) Chris Wiebe (Executive Committee, NSSA), Mark Lumsden (Communications Secretary, NSSA), Michael Steiner (Chaiman, ENSA), Hartmut Abele (Secretary, ENSA), Javier Campo (Vice Chairman, ENSA); **(L–R, back)** Chris Ling (Public Relations Officer, AONSA), Wen-Hsien Li (Vice President, AONSA), John White (Past President, AONSA), Yasuhiko Fujii (President, AONSA), Mahn Won Kim (Chair of ICNS-2017), Sung-Min Choi (Secretary, AONSA)

Report from ANBUG

Approximately 100 delegates attended the AINSE-ANBUG Neutron Scattering Symposium (AANSS 2012) from November 7-9 2012, which represents an excellent turnout in the face of a very busy calendar of conferences in closely related/overlapping research fields in the last 3 months of the year. This was a testament to the strength of the community. At the meeting, the prestigious ANBUG Prize for 2012 was awarded to Prof Ian Gentle of the University of Queensland for his work on applied materials using neutron reflectometry. The results of elections for new members of the ANBUG Executive Committee and for the position of Vice President were also announced. The President is now Prof Evan Gray (2013-14) and the Vice President, who will become President in 2015 (the year of the 2nd AOCNS) will be Prof Erich Kisi.

Unfortunately ANBUG's efforts to renew international travel funding for its members have so far not been successful. A major grant application to the Australian Research Council seeking funding to replace the expired Access to Major Research Facilities Program (AMRFP) from 2014-2018, focused on access to spallation neutron sources (ISIS, SNS and J-PARC), could not be submitted due to a last-minute ruling on its eligibility. The need for such a program was reinforced by the fact that when the AMRFP received some funds to reopen applications in mid-2012, those funds were all committed within one week. AINSE generously provided interim travel funding exclusively for experiments approved at the ISIS facility, but this expired at the end of 2012. Efforts to find an alternative solution are ongoing.

The ANBUG website http://www.anbug.org has been completely redesigned and updated.

Chris Ling,
ANBUG Past President

Report of the Japanese Society for Neutron Science (JSNS).

We held an election for the new President as well as the council members of JSNS in December, 2012, and Prof. Kanaya (Institute for Chemical Research, Kyoto Univ.) was again elected as the President of JSNS for his second term, which has started from April, 2013. Under his presidency the following members of the new secretariat have already started their activities. General affairs: Prof. M. Sugiyama (Kyoto Univ.) and Prof. T. Sato (Tohoku Univ.), Treasurer: Dr. Hase (NIMS) and Dr. K. Kaneko (JAEA), Editor-in-chief: Prof. T. Masuda (Univ. Tokyo) and Dr. H. Kitazawa (NIMS), Public relations: Dr. Y. Otake (RIKEN) and Dr. K. Kino (Hokkaido Univ.), Exchange affairs: Dr. H. Nozaki (Toyota Central R&D Labs.) and Prof. K. Mori (Kyoto Univ.), Event affairs: Dr. Y. Kawakita (JAEA) and Prof. H. Hiraga (KEK).

The 12th Annual Meeting of JSNS was held in Kyoto University on 10-11 December, 2012. The chairman and vice-chairman were Prof. T. Kanaya (Kyoto Univ.) and Prof. H. Matsuoka (Kyoto Univ.) and the chairman of the program committee was Prof. M. Sugiyama (Kyoto Univ.). In the meeting "industrial application of neutrons" and "collaboration among quantum beams" were the highlighted topics and there were three opening talks given by Mr. K. Hara (MEXT), Prof. J. Mizuki (President of the Japanese Society of Synchrotron Radiation Research) and Mr. A. Sudo (Toshiba Co.). There was 1 plenary talk, 11 JSNS prize lectures (including 4 prize lectures in the last year), 10 invited talks, 12 contributed talks, and 160 posters. About 190 participants enjoyed these oral and poster presentations on new and exciting results from J-PARC/MLF, JRR-3 and many other facilities and universities, and the exchange of information. The banquet was held in Westin Miyako Hotel Kyoto in the evening on the first day of the meeting.

Scene in a banquet

The JSNS Prize 2012 was awarded to Prof. Kenji Suzuki (Professor emeritus of Tohoku University) for “Structure study on amorphous materials by neutron scattering”. He started his scientific carrier at the pulse neutron source with 300 MeV electron linac after his stay in Toronto University, and developed his structure research on amorphous materials including liquid metals, molten salts, oxide glasses *etc*. He is a true pioneer in structural studies of amorphous materials in Japan. Prof. Kazuhisa Kakurai (JAEA) won the JSNS scientific Prize for “Studies on low dimensional and quantum spin magnetic materials and utilization of polarized neutron”. The JSNS young scientist Prize was awarded to Dr. K. Sadakane (KEK) for “Ordered structure of mixed solutions of water/organic solvent/salt system by neutron scattering” and to Dr. Y. Onodera for “Structure study on super ionic conductors by neutron scattering”. The Technical Prize was awarded to Dr. K. Hoshikawa (JAEA) and his group for the “Development of robot for automatic sample change in iMATERI” and to Dr. Y. Yasu (JAEA) and his group for the“Development of DAQ middleware and its installation to neutron experiments”. Professor Jun Akimitsu in Aoyama Gaukin Univ. won the JSNS Special Prize for his “Search for superconductors, research on magnetic materials by polarized neutron diffraction and contribution to neutron science”. His wide activities not only in neutron science but also in social contributions through education were highly regarded by various scientific societies and he has already received many prestigious awards.

During the annual meeting the seminar for industrial applications of neutron was held in the same venue and 4 talks were given from industrial side. In addition, a special room was prepared by JSNS for neutron experts to give advices to neutron novices, especially from industry, on scientific as well as technical issues. About 40 persons or groups visited this room to discuss their own issues.

Audience in the seminar for industrial application of neutron

On the day before the annual meeting, the 2nd open symposium on neutron science and applications for students and residents of the Kyoto area was held at the same place. About 80 people attended the meeting. Three lectures were given in the symposium. Prof. Kanaya in Kyoto Univ. talked about “Polymer fiber stronger than steel” and Dr. Suzuki from J-PARC gave an introduction of neutron science and its application using many interesting cartoons. Prof. Yamamoto in Tsukuba Univ. introduced recent developments on “Cancer Therapy by Neutron Radiation”.

T. Kanaya
President of JSNS
M. Sugiyama
General affair of JSNS

Neutron Scattering Society of India

The 2nd International Symposium on Neutron Scattering (ISNS 2013) was held at Bhabha Atomic Research Centre (BARC), Mumbai, India, during January 14-17, 2013. The first one had been held in January 2008. The ISNS 2013 was sponsored by Board of Research in Nuclear Sciences, India, and was organized by BARC Mumbai in association with Neutron Scattering Society of India. The symposium covered all aspects of neutron scattering including facilities, instruments, science and applications. Particular emphasis was on application of neutrons towards food, energy and biological science.

For ISNS 2013 there were more than 200 participants from 14 countries including several leading experts from laboratories in Australia, Bangladesh, Belgium, France, Germany, Japan, Korea, Poland, Russia, Spain, Switzerland, UK, USA, and others.

There were 50 invited talks, 18 oral presentations and 87 poster presentations. Within the invited talks 13 facility reports were in the plenary session. The facility reports covered almost all present day mega-facilities like, ILL, ISIS facility, J-PARC, ORNL, FRM II, PSI, LLB, JINR, ANSTO, JCNS, KAERI, and BARC. The upcoming facility ESS, was also presented. There were 37 invited talks in parallel sessions, covering the wide range of science being pursued all over the world which includes new experimental facilities, and studies involving diffraction, magnetism, biological systems, hydrogen and diffusion, dynamics, neutron optics, small angle scattering, reflectometry, and other applications, The choice of topics for invited talks were based on recommendations by the international advisory committee members.

Poster sessions were very intense with lots of discussion. The young researchers were very enthusiastic to present their work with well-made posters. There were 87 papers put up as posters, distributed on two days.

Researchers from various universities and other academic institutions utilize the National Facility for Neutron Beam Research at BARC regularly. This international symposium enabled very useful scientific discussions among the national and international researchers.

Lively discussions were pursued at the conference banquet organized at a hotel in Navi Mumbai. Participants also witnessed a spectacular dance performance based on Indian classical ballet. A visit was organized to the neutron scattering facility at the Dhruva reactor.

Overall it was a very successful symposium held after 2008 and people expressed their happiness for the well organized symposium both from the academic and social aspects.

Participants engrossed in discussion during the poster session

Group photograph of ISNS 2013

A pre-symposium school on "Neutron as Probes of Condensed Matter" was also organized for the researchers at the national level during January 4-12, 2013, which included hands-on experiments along with the theory classes. There was an overwhelming response for the school; out of 130 applicants about 60 were selected, of which 20 were faculty members and 40 were research students from universities and research institutions.

The school comprised three days of lectures/tutorials and two days of experiments at Dhruva reactor, BARC. Eleven lectures covering various aspects of neutron scattering were delivered by invited speakers on the first two days of the school. All participants were taken to BARC during the next two days for experimental sessions at Dhruva reactor. Participants were divided into 10 groups, and each group participated in two experiments over these two days. All the neutron scattering instruments available under the National Facility for Neutron Beam Research (NFNBR) were utilized for the experimental sessions. On the last day of the school, tutorials on neutron diffraction data analysis and small angle neutron scattering (SANS) data analysis were conducted.

Photograph of the participants at the school

Samrath Chaplot and
Ramaprosad Mukhopadhyay
BARC, Mumbai, India

News from Taiwan Neutron Science Society (TWNSS)

Promoting interests in Neutron by TWNSS

With the ongoing efforts to promote interest in neutron research in Taiwan, the number of our members reached 388 this year. Of TWNSS members, 78% are students and research assistants. Principal research investigators are about 16%. The other 4% are postdoctoral fellows. The joint efforts of TWNSS and NSRRC have provided the Taiwanese research community with the best neutron access and opportunities. Twenty-five international neutron research proposals in the last half of 2013 have been approved. Among these, ANSTO in Australia and NIST/ORNL in USA were the most popularly chosen research locations. With efforts to push international collaboration to a higher level and attract new user groups by introducing interesting topics in various workshops, we believe the neutron research in Taiwan now has a vibrant momentum.

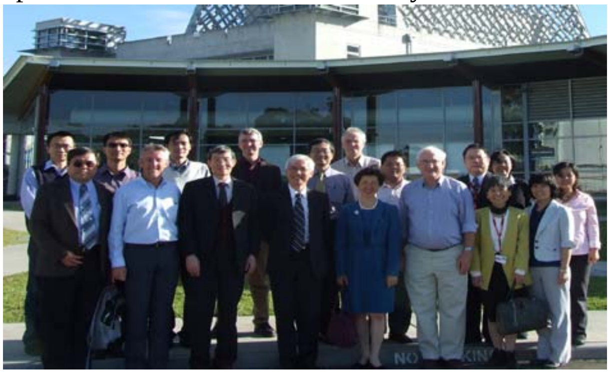
New delegate to AONSA elected

The current Vice-president of ANOSA, Prof. Wen-Hsien Li, will assume the presidency in 2014. This means a new delegate will be required from TWNSS to fill the vacancy. The 2nd TWNSS executive committee in July has elected our previous TWNSS president, Prof. His-Mei Lai, to be the new delegate to ANOSA. Therefore Prof. Lai and I will be the delegates to AONSA in 2014. Prof. Lai has attended quite a few AONSA meetings before and she is certainly a familiar face to many AONSA members.

New NSRRC Office at ANSTO Opened

The longstanding collaboration of neutron researchers between Taiwan and Australia has been raised to a new level by the opening of a new office of National Synchrotron Radiation Research Centre (NSRRC from Taiwan) at the Australian Nuclear Science and Technology Organisation (ANSTO) on May 2nd. The office is currently led by Dr. Jason Gardner who was previously responsible for the spin-echo spectrometer at the NIST Centre for Neutron Research, USA. Eventually, four instrument scientists will join the office, covering powder diffraction, reflectometry, small-angle scattering and triple-axis spectroscopy. Both directors, Dr. Robert Robinson from Bragg Institute and Dr. Shih-Lin Chang from NSRRC, signed a joint collaboration memorandum on the same day.

The operational responsibility of new SIKA cold-neutron 3-axis spectrometer at OPAL reactor of ANSTO was officially transferred to the new NSRRC office at ANSTO on May 2nd. SIKA has been constructed by the team from National Central University, under the leadership of Prof. Wen-Hsien Li, with funding from the National Science Council of Taiwan. The triple axis SIKA makes use of inelastic neutron scattering spectroscopy to measure excitations in materials. Final tests and the application for an operation license are well underway.



The VIPs joined the celebration of the opening of the NSRRC office at the OPAL Reactor at ANSTO.

1st issue of TWNSS Newsletters published

Under the guidance of Last TWNSS president His-Mei Lai and members of the executive committee, the first issue of TWNSS newsletter has been published in February. It provided information on both local and international activities related to neutron studies, educational material, and a status report on TWNSS. Like the AONSA newsletter, the TWNSS newsletter publishes two issues per year. The second issue is expected before September 2013.

TWNSS Annual Meeting in October planned

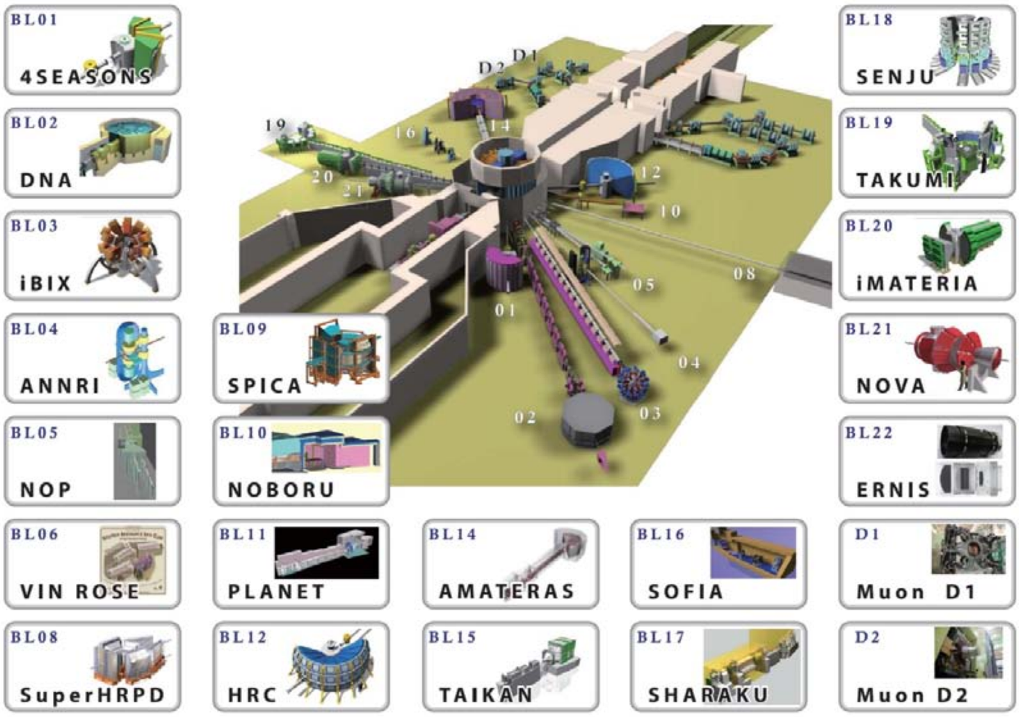
The TWNSS annual meeting is set to be held from October 10th to 13th. It will be held at National Museum of Marine Biology & Aquarium (NMMBA), Checheng, Pingtung, Taiwan. It is a combined NSRRC Neutron User Group Meeting, Taiwan Neutron Science Conference, TWNSS annual meeting and TWNSS Summer Training School. The participants will have the opportunity to visit the museum and attend scientific meetings and workshops in one trip.

Hsiung Chou

President, TWNSS

Report from J-PARC

The Japan Proton Accelerator Research Complex (J-PARC) is a multidisciplinary research facility that uses high-energy protons to produce a variety of secondary-particle beams. The Materials and Life Science Experimental Facility (MLF), one of the several facilities in J-PARC, is a research facility with state-of-the-art pulsed neutron and muon source with 25 Hz repetition ratio. The proton accelerator power is presently 300 kW, which will eventually be increased to 1 MW (3 GeV, 333 μA). There are 23 neutron beam extraction ports for the pulsed spallation neutron source, almost of which are occupied by operating neutron instruments or committed to planned new instruments. General research proposals are called twice a year in May and October; it is recommended that all applicants contact instrument scientists before submitting their proposals. For more information, please see the webpage (http://j-parc.jp/MatLife/en/index.html)



Neutron and muon instruments at MLF

The Accident at the J-PARC Hadron Experimental Facility

We would like to express all our deepest apologies for any disruptions and concerns that may have been caused by the leakage accident of radioactive material at the Hadron Experimental Facility of Japan Proton Accelerator Research Complex (J-PARC) in Japan.

On 23 May, due to a malfunction of the beam extraction system of the 50 GeV synchrotron, a proton beam was delivered to the gold target of the Hadron facility for a very short time. As a result, the gold target is considered to have momentarily reached an extremely high temperature and part of the target was damaged. Radioactive material then leaked into the hadron experimental hall and some workers were externally and/or internally exposed to radiation.

Operation of ventilation fans of the hall resulted in the leak of radioactive material out of the radiation controlled area of the Hadron Experimental Facility. The data logs of radiation dose rates at monitoring posts in the Nuclear Science Research Institute showed no signatures. However, at the three monitoring posts and stations of the neighboring JAEA facility, momentary increases of the radiation dose rate were observed. It is our assessment that the released radioactive material was diluted and attenuated as it dispersed in a narrow strip towards the west. The maximum integrated radiation dose has been estimated even at the site boundary closest to the Hadron Experimental Facility was 0.29 μSv (preliminary).

All J-PARC facilities have been shut down since the accident. A full investigation of the cause of the accident is now underway along with the complete review of safety practices and emergency procedures at all J-PARC facilities. Our first priority is to restore public trust in the facility by developing and implementing measures to prevent the reoccurrence of an accident and to provide a safe experimental environment for users and workers.

We deeply appreciate your understanding and continuous support.

31 May, 2013
Yujiro IKEDA
Director, J-PARC center

Please see the website http://www.j-parc.jp/HDAccident/HDAccident-e.html for the latest information.

Current status of MLF (July, 2013)

The 2013A period of beam-operation at MLF began on 1 April and 41 general experiments had already been carried out. However, all the facilities in J-PARC including MLF have been shut down since the accident of HD Facility. J-PARC is now surveying the cause of the accident, reviewing the security systems of all the facilities, and establishing new procedures and policies to prevent any similar accidents, under the guidance of the relevant government agencies and in close collaboration with JAEA and KEK. The date on which J-PARC will resume operations is not clear at present, but it will not be until after these investigations are completed and, more importantly, after we have re-established public confidence in J-PARC. Accordingly, J-PARC has announced the cancelation of assigned beam-time to the end of July 2013. MLF has also decided to cancel 116 general experiment proposals in the 2013A cycle. The shutdown of these facilities may last throughout 2013, because a half-year shutdown had already been scheduled from August. We apologise for the inconvenience to the science community caused by the current situation of J-PARC, but appreciate your understanding and collaboration, and hope to see you again in Tokai.

Achievement of the world's highest pulsed neutron beam intensity at J-PARC

At the Materials and Life Science Experimental Facility (MLF), high-energy high-intensity proton beams accelerated to near the speed of light are collided with a mercury target, and researchers use the high-intensity pulsed neutrons produced from the nuclear spallation reaction in which the atomic nuclei of mercury are fragmented. When the proton beam is injected, a powerful pressure wave is produced due to the heat expansion of mercury, and the resulting impact force is large enough to damage the hard metal surface of the target container (this damage is called "pitting"). In the future, the MLF aims to achieve operation with a proton beam power of 1 MW, and a major issue that needs to be addressed is how to lessen this impact force. In previous off-line studies, it has been shown that the force can be weakened by mixing helium-gas microbubbles into the target mercury, to achieve a cushioning effect. Since autumn of last year, the MLF has examined performance of the actual system with built-in bubbler for producing microbubbles in the mercury target, and since then continuous operation with 300 kW beam power has started. Recently, it was confirmed using the special neutron measurement instrument NOBORU (NeutrOn Beamline for Observation and Research Use) in BL10 that an intensity of about 65 trillion neutrons per pulse has been obtained, thereby confirming that this is the world's highest intensity pulsed neutron source.

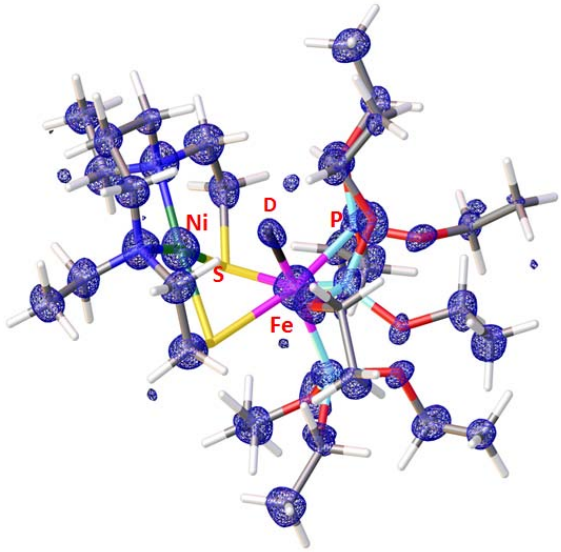
Table Intensity of pulsed neutron beam.

Neutron Facility	Number of Neutrons [/pulse]
J-PARC (300kW, 25Hz)	6.5 x 10^{13} (measured)
SNS (1MW, 60Hz)	5.3 x 10^{13} (simulated)
ISIS 2nd TS (48kW, 10Hz)	4.9 x 10^{13} (simulated)*

* H_2 side of the H_2-CH_4 composite moderator (not the grooved moderator).

Elucidation of the hydrogen activation mechanism of nickel-iron catalyst using the "iBIX" single crystal diffractometer

The hydrogen activity mechanism of a newly developed Ni-Fe catalyst has been elucidated in neutron-based experiments using the BL03 (Ibaraki Biological Crystal Diffractometer: iBIX) of MLF. The ability to use inexpensive iron as a catalyst for promoting (or inhibiting) chemical reactions is a revolutionary result that will open the way to future applications in areas such as fuel cell catalysts. This result was made possible by the superior performance of the iBIX, equipped with scintillators made from a new material. This research achievement has been published in the digital version of the American science journal, "Science" (Feb. 8, 2013). The joint research was conducted with Kyushu University, CROSS and Ibaraki University.



Nuclear density map of the Ni-Fe catalyst determined by using iBIX single crystal diffractometer. A deuterium atom between Ni and Fe, key of the hydrogen activity mechanism, was clearly observed.

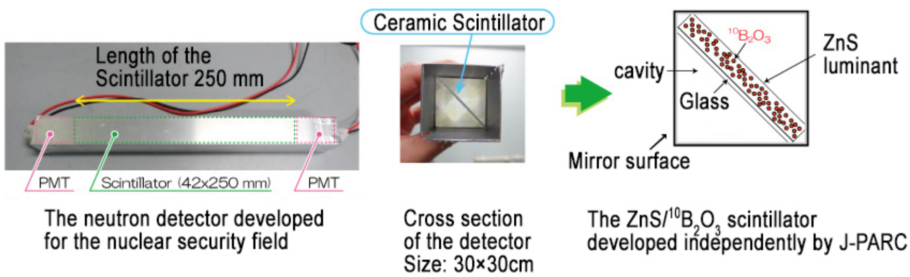
Scintillator detector developed by J-PARC : neutron measurements contributing to nuclear security (Safeguards)

Neutron detectors using ^{3}He are widely used at J-PARC and throughout the world in pulsed neutron source facilities, and in the field of nuclear security. However, in recent years, there has been a severe shortage in the supply of ^{3}He gas, and thus there is an urgent need to develop a substitute detector.

At J-PARC, we have been developing a two-dimensional detector using wavelength shifting fibers together with a scintillator based on a new material ($ZnS/^{10}B_2O_3$) for detection of high-intensity neutrons. We have also been developing measurement technologies for this system. The detector has already been installed, and is in use, in some beam-lines such as BL03 (Ibaraki Biological Crystal Diffractometer: iBIX) and BL18 (Extreme Environment Single Crystal Neutron Diffractometer: SENJU). We are applying this unique technology to meet the urgent need for an alternative to ^{3}He detectors. We expect that it will be put to practical use, and are currently conducting further R&D with international cooperation.

Recently, we completed a detector employing this J-PARC technology, as the detector in non-destructive measurement equipment for safeguard demonstration testing. The purpose of the detector is to measure neutrons from substances such as U and Pu contained in nuclear fuel. The plan calls for 60 or more of these detectors to be installed in equipment designed by the Nuclear Science and Engineering Directorate of the JAEA, so that neutron measurements can be carried out with high detection efficiency. In this way, neutron measurement technology previously developed by J-PARC is being applied to neutron measurement in the nuclear security field.

Takashi Ohhara
J-PARC



Test equipment for nuclear security/safeguard demonstration technology
New detector developed for nuclear security equipment

Report from AONSA Office

The number of neutron users in the Asia-Oceania region was surveyed during January 12-18, 2013. The total number of neutron users in the region is 2,500 (as of January, 2013), which is significantly higher than the estimate (1,500) made when AONSA was first established in 2008. This suggests a rapid and very healthy increase in the neutron community across the region. It will be historically important to continue to sample the user community in three-year intervals in order to measure the effects of new sources coming on line in the region. A summary of neutron users in each society is as following.

Australia + New Zealand (ANBUG Members): 370
India (Neutron Users): 200
Japan (Neutron Users): 1050
Korea (KNBUA Members): 280
Taiwan (Neutron Users): 75
China (Neutron Users): 450
Indonesia (Neutron Users): 15
Malaysia (Neutron Users): 15
Singapore (Neutron Users): 15
Mongolia (Neutron Users): 10

Depending on the response of each society, the exact meaning of the numbers may differ from each other; to clarify, the meanings of the numbers are stated in parentheses.

Sung-Min Choi

Secretary of AONSA

Calendar of AONSA Activities

(as of 2013/Aug.)

Year 2013

1/14-1/17	The 2nd International Symposium on Neutron Scattering/ISNS (Mumbai, India)
6/17-6/21	The 6th AONSA Neutron School (Tokai, Japan) (***Cancelled***)
7/8-7/12	The 10th International Conference on Neutron Scattering (Edinburgh, UK)
7/9	The 10th AONSA EC Meeting (Edinburgh, UK, during ICNS2013) (***Re-scheduled***)
7/9	AONSA Regional Meeting during ICNS2013 (Edinburgh, UK)
7/12	AONSA Prize Award Ceremony during ICNS2013 (Edinburgh, UK)
7/14-7/19	The 12th Asia-Pacific Physics Conference/APPC (Chiba, Japan)
11/17	The 11th AONSA EC Meeting
12/1-12/4	AsCA 2013 (Dhaka, Bangladesh)

Year 2014

TBD	The 7th AONSA Neutron School (Serpong, Indonesia)
8/5-8/12	The 23rd IUCr Congress and General Assembly (Montreal, Canada)

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