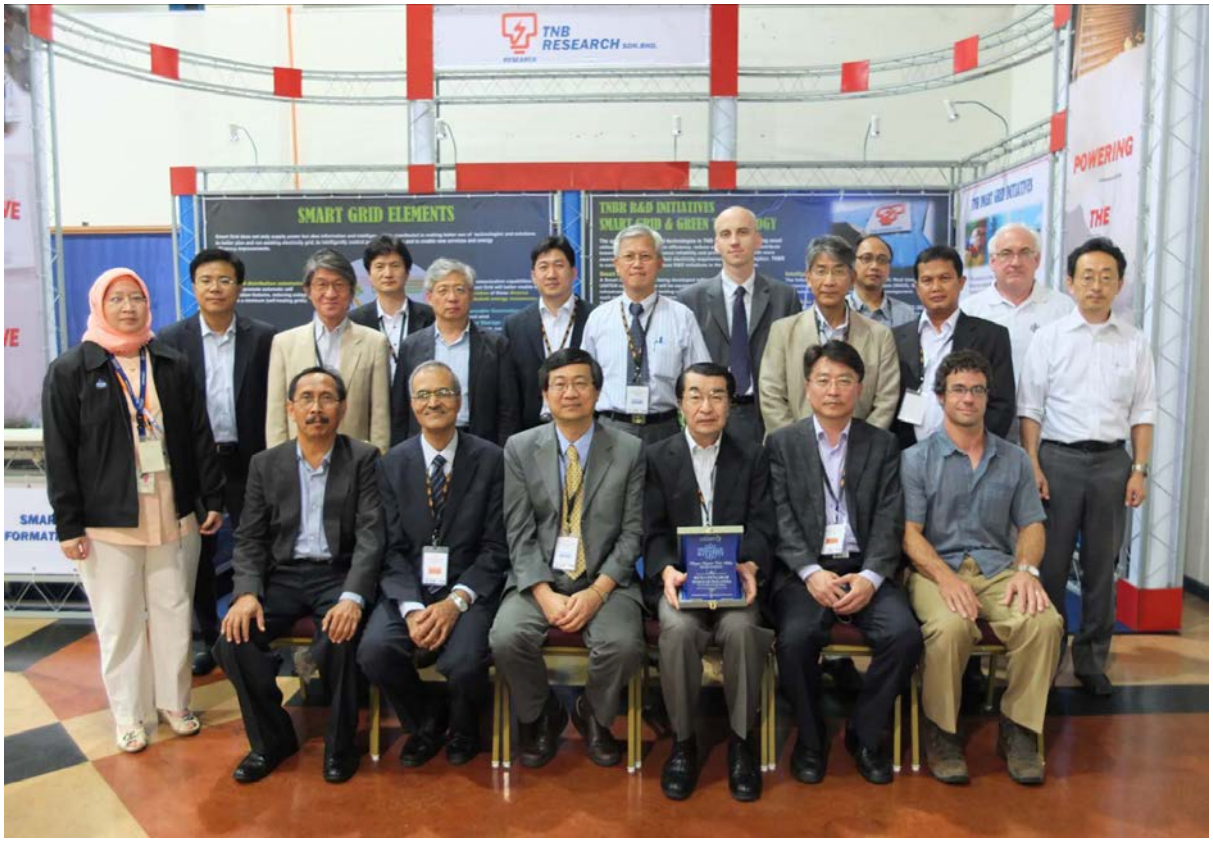
Minutes of the 8th AONSA Executive Committee Meeting

Tenaga National Bhd Research and Development (TNBR), Kajang, Selangor, Malaysia
May 22, 2012

Contents



(Photo taken after the 8th EC meeting)

The 8th AONSA Executive Committee Meeting

Date: 9:00-17:00, May 22 (Tuesday), 2012

Place: Tenaga National Bhd Research and Development (TNBR), Kajang, Selangor Malaysia

Participants: 18

[**Board Members**]

Yasuhiko Fujii (President, JSNS, CROSS)

Wen-Hsien Li (Vice-President, TWNSS, NCU)

Sung-Min Choi (Secretary, KNBUA, KAIST)

Samrath Chaplot (Treasurer, NSSI, BARC)

Chris Ling (Public Relation Officer, ANBUG, U. Sydney)

[**Members**]

Ki Bong Lee (KNBUA, POSTECH)

Toshiji Kanaya (JSNS, Kyoto U.)

Hideki Seto (JSNS, KEK)

Hsiung Chou (TWNSS, NSYSU)

[**Observers**]

Mitsuhiro Shibayama (JRR3/Tokyo U)

Kye Hong Lee (HANARO/KAERI)

Robert Robinson (ANSTO)

Dongfeng Chen (CARR/CIAE)

Sutiarso (on the behalf of Gunawan, BATAN)

Abdul Aziz Mohamed (Malaysian Nuclear Agency)

[**Special Observer,** for this EC Meeting]

Danas Ridikas (IAEA)

Supagorn Rugmai (SLRI, Thailand)

Edy Giri Rachman Putra (BATAN)

1. Opening Remarks by President Yasuhiko Fujii

The meeting was started with opening remarks by President Yasuhiko Fujii. The great efforts of Malaysian colleagues (Dr. Aziz and Dr. Faridah) for their excellent arrangement of the 8th AONSA EC meeting were highly appreciated by all the EC participants. This was followed by self-introduction of all participants. The participation of Dr. Danas Ridikas (IAEA) and Dr. Supagorn Rugmai (SLRI) were highly welcomed and appreciated by the EC.

2. Approval of Agenda

The agenda of the 8th AONSA EC meeting was approved by the EC.

3. Report of the Minutes of the 7th AONSA EC Meeting in Japan

The minutes of the 7th AONSA EC meeting in Japan, which was approved by the EC through email communications previously, were distributed to all the EC participants in hard copies.

4. Reports of the AONSA Office.

Recent activities of the AONSA office were reported to the meeting, which include (Appendix 1)

- AONSA Homepage updates by C. Ling (Public Relations Officer) and Junko Akutsu (Secretary of AONSA Office)
- Update of AONSA profile in the Yearbook of International Organizations, Union of International Associations

[Update of AONSA HP Design and Organization]: Public Relations Officer C. Ling proposed an update of AONSA homepage design and structure, which was highly welcomed by the EC. He will prepare a draft plan for this update and circulate it for comments. President Y. Fujii will check with J. Akutsu about J-PARC network system engineer's involvement for this update (AONSA homepage is within J-PARC network).

5. Discussions and Decisions

5.1 Formal matters

5.1.1 Duty Statements of the AONSA Board Members

The duty statements of the AONSA Board Members prepared by President Y. Fujii were reviewed and agreed by the EC with minor revision (Appendix 2). It was agreed by the EC that this will be attached to the AONSA Articles as Annex.

5.2 Process matters

There were no issues to be discussed.

5.3 Financial matters

5.3.1 Annual Fee and Budget report

The annual membership fee and budget plan including the support for the 5th AONSA Neutron School in 2012 ($3,000) were reported by Treasurer S. Chaplot and approved by the EC. (Appendix 3, removed in this minutes)

It is noted that the 2012 annual membership fee of KNBUA ($2,000) and NSSI ($2,000) have been paid. (This was not included in the report due to timing of the payments)

[Action] It was agreed that the budget report will have a summary for total income and expense for each year.

5.3.2 AONSA Prize Fund

The current status of AONSA Prize fund was reported by Treasurer S. Chaplot (Appendix 4, removed in this minutes). The new contributions from JSNS and NSRRC (TWNSS) to the AONSA Prize Fund were greatly appreciated by all the EC participants. It was noted that the total income so far is $20,000 and the current balance is $9,512 (including the ones ($3,000) which do not appear in the current report.) and JPY 141,468.

It was reminded that an open call for donation to the AONSA Prize is announced every two years, although the donation can be made anytime. There was an institution which would like to be reminded for the donation this year.

5.4 AONSA Prize

The schedule of AONSA Prize (2013) selection process and a proposal for the Selection Committee members were reported by Vice-President W.-H. Li (Chair of the Selection Committee) and approved by the EC (Appendix 5). It was noted that the members of the Selection Committee is well balanced with former (3) and new (2) members as well as their scientific expertise (3 hard condensed matter and 2 soft matter). The great efforts of Vice-President W.-H. Li were highly appreciated by all the EC participants.

[Action] The AONSA Prize Award Ceremony and the winner's Prize Lecture will be presented during the ICNS 2013. Therefore, Vice-President W.-H. Li will contact the organizers of ICNS 2013 for arrangements. It was pointed out that the arrangements for AONSA Prize should be made in the same way as ENSA does for their Walter Halg Prize.

It was agreed that AONSA have a regional meeting during the ICNS 2013.

5.5 AONSA Neutron School

5.5.1 Report from the organizer of the 5th AONSA Neutron School 2012 in China

A report from the organizer of the 5th AONSA Neutron School 2012 in China was presented by Dongfeng Chen (Appendix 6). The program of the school was discussed and rearranged based on experiences in previous schools. The great efforts of the organizers were highly appreciated by all the EC participants.

Although hands-on experiments will not be available in the 5th AONSA Neutron School, data analysis session will be prepared with data taken at other neutron facilities. Chris Ling will discuss with Rob Robinson and Dongfeng Chen for possible use of ANSTO data.

It was agreed that the applications for the school will be made through contact persons for each society or region. The contact persons are Presidents of societies, Abdul Aziz Mohamed (for Malaysian community), Edy Giri Rachman Putra (for Indonesian community) and Supagorn Rugmai (for Thailand community).

The 9th AONSA EC meeting will be held in conjunction with the School. There was a comment that the EC and the School do not have to be held together, if the EC may become a constraint for the arrangement of School.

5.5.2 Host of the 6th AONSA Neutron School in 2013

It was agreed that the 6th AONSA Neutron School in 2013 will be held at J-PARC and JRR-3. Considering the shutdown schedule of J-PARC (July - December, 2013), the School may be held between April and July, 2013.

Possibility of the 7th AONSA Neutron School in Indonesia (2014) was discussed. This will be discussed further at the 9th EC Meeting in Beijing.

5.6 Asia-Oceania Conference on Neutron Scattering (AOCNS)

5.6.1 Report from the Organizing Committee of the 1st AOCNS in Japan

T. Kanaya, Chair of the 1st AOCNS, gave a summary of the 1st AOCNS including sessions and related meetings, oral and poster presentations, registrations, and voluntary donations of participants for AONSA, financial supports, full refund of AONSA contribution, and settlement of account for the 1st AOCNS (Appendix 7). It was highly appreciated that the settlement of account for the 1st AOCNS (total expense of 24,227,493 Yen and a positive balance of 154,546 Yen) was excellently prepared, which should be very useful for future AOCNS. It was kindly offered by the organizers that the balance will be shared between JSNS and AONSA.

The great efforts of Japanese colleagues (especially T. Kanaya) to make the 1st AOCNS very successful were highly appreciated by all the EC participants.

5.6.2 Report from the Organizer of Instrument Scientists Workshop during 1st AOCNS

M. Shibayama, the organizer of the Instrument Scientist Workshop (ISW), gave a summary of the ISW (Appendix 8). The great efforts of M. Shibayama to make the 1st ISW very successful (with 8 parallel sessions and total 162 participants) were highly appreciated by all the EC participants.

It was pointed out that the next ISW (during AOCNS) should be a full day meeting to allow sufficient time for presentations and discussions.

5.6.3 Possible Dates and Venue of the 2nd AOCNS in Australia

Chris Ling (ANBUG) explained possible options for the dates and venue of the 2nd AOCNS to hear the preference of the participants (Appendix 9).

- Date: June/July or November/December
- Venue: Center of Sydney or slightly outside of the city center (Manly)

For the 2nd AOCNS, *July in Manly* was preferred by the EC participants. This will be delivered to the organizing committee of the 2nd AOCNS.

It was pointed out that since July is less popular for tour and Manly is slightly outside of the city center, the cost may be lower than the other options. The organizers will consider other major conferences in 2015 to avoid any conflict of schedule.

5.7 AONSA Newsletters

C. Ling (Public Relations Officer working as Editor of Newsletter) reported the publication of AONSA Newsletter Vol. 4, No. 1 (April 20, 2012) and Vol. 3, No. 2 (December 16, 2011).

C. Ling proposed that AONSA Newsletter may need a web-based format (email version) in addition to the current PDF format. This will be considered in the near future (possibly in the next issue). His great effort to improve the AONSA Newsletter was highly appreciated by all the EC participants.

5.8 Activities Related to SE Asia

President Y. Fujii gave a short presentation for the promotion of neutron science and technology in non-member countries with a review of neutron scattering societies and all neutron sources in the Asia-Oceania region (Appendix 10).

It was gladly noted that Thailand has a plan for a new research reactor (10 MW) and established a new nuclear research institute near Bangkok. The site of the research reactor still needs to be decided. It was also noted that the research reactor in Philippines is in an extended shutdown and its re-operation is rather uncertain at this point.

[Action] It was suggested and agreed to have a list of contact persons in non-member countries (for AONSA activities), including Thailand, Vietnam, Philippines, Bangladesh and Pakistan.
Danas Ridikas (IAEA) kindly agreed to help on this matter. Supargon Rugamai also kindly agreed to inform AONSA a top-ranked contact person for TINT (Thailand Institu te for Nuclear Technology).

5.9 Neutron Facility Directors' Meeting

The 3rd Facility Directors' meeting was held at the same venue as the present EC Me

eting in the afternoon of May 21, 2012. Directors discussed the "AONSA Visiting Fellows" which was proposed by AONSA EC previously (Appendix 11) and delivered their opinions on this matter to the EC.

Facility directors are willing to collaborate for the AONSA Visiting Fellowship. However, they need a framework to make this happen and the framework should be provided by AONSA.

It was suggested that

- AONSA prepares a list of candidates with preferred facilities (through application and selection process) and contributes financially as well (for example, travel expense).
- Hosting facilities support living cost of AONSA Visiting Fellows (as support for visitors, not as salary due to administrative difficulties).

[Action] Rob Robinson kindly volunteered to prepare a draft for "AONSA Visiting Fellows" from Directors' point of view, which will be circulated among directors first and then to the EC and the Board for comments and suggestions. This will be decided in the 9th EC meeting in Beijing.

It was noted that, with IAEA fund, AONSA cannot involve in the selection process of visiting fellows because all IAEA fellowship or scientific visits should be submitted by member governments.

5.10 Possible collaboration with IAEA, ICSU and IUCr

5.10.1 Collaboration with IAEA

A scoping document for the future AONSA-IAEA collaborations in Asia-Oceania region, which was excellently prepared by Former President J.W. White, was reported to the EC (Appendix 12). This reviewed the AONSA activities over the last few years, which strongly support the needs and preparedness for AONSA-IAEA collaboration for the next step of education, training and cooperation between neutron Associations and Facilities in the region.

According to Danas Ridikas, IAEA TC program for neutron collaboration in the Asia-Oceania region has been approved but without fund at this moment.

5.10.2 Collaboration with ICSU and IUCr

President of Y. Fujii reported his meeting with Prof. Nordin Hasan, Director of ICSU Regional Office for Asia and Pacific, during NuSTEC 2012 and the letter from former

President J.W. White to Prof. Hasan (sent on December 2, 2011).

According to Prof. Hasan, although AONSA cannot submit a proposal to ICSU directly because AONSA is not a member Association of ICSU, AONSA can still submit a proposal through IUCr (which is a member of ICSU) as a partner of IUCr. He is willing to help on this.

It was suggested that AONSA submit a proposal to ICSU through the Neutron Commission of IUCr. It was noted that the current members of IUCr Neutron Scattering Commission from Asia-Oceania region are Yukio Noda and Garry McIyntyre. The spirit and contents of this proposal would be similar to the one for IAEA.

It was suggested that AONSA member societies should nominate more members for IUCr Commissions so that future AONSA-IUCr collaborations can be further strengthened.

[Action] Rob Robinson volunteered to prepare a draft ICSU proposal by using the scoping document for AONSA-IAEA collaboration (Appendix 12) as a reference.

5.11 Cooperation with NSSA and ENSA

5.11.1 AONSA-ENSA-NSSA Three Presidents' Meeting

President Y. Fujii gave a report on the 2nd Three Presidents' Meeting during the 1st AOCNS (Appendix 13). This tri-polar cooperation would be an essential framework for the circulation of ICNS. The schedules of three societies for major events should be put into consideration each other so that any conflict of schedule can be avoided.

There will be the 3rd Three Presidents' Meeting during the American Conference on Neutron Scattering (ACNS, June 24-28, 2012) in Washington DC.

5.11.2 NSSA invited President Y. Fujii to the ACNS in Washington DC.

NSSA invited President Y. Fujii to the ACNS (June 24-28, 2012, Washington DC) as a plenary speaker (Appendix 14). He is scheduled to deliver a plenary talk on "The Asia-Oceania Neutron Scattering Association (AONSA) aiming at Global Cooperation".

5.12 Cooperation with AOFSRR

President Y. Fujii reported a summary of cooperation with AOFSRR (Appendix 15) including synchrotron sources in the Asia-Oceania region, AOFSRR Workshop, and

Cheiron Schools. The Synchrotron-light for Experimental Science and Applications in the Middle East (SESAME) Project was also briefed. It was noted that a synchrotron source from BESSY (Germany) was transferred to Jordan, which was supported by IAEA , UNESCO and IUPAP.

The organizer of AOFSRR Workshop (August 8-12, 2012, Bangkok) invited President Y. Fujii to give a plenary talk regarding AONSA activities, which was gladly accepted.

5.13 Cooperation with Association of Asia-Pacific Physical Societies (AAPPS)

M. Arai (by email) delivered that AAPPS would like to have a good linkage with AONSA which would be beneficial for enhancing scientific activities in the region. As a possible way of cooperation, AONSA's participation in the APPC (Asia-Pacific Physics Conference) was suggested (Appendix 16).

It was agreed by the EC that AONSA will participate in the APPC. However, the format or contents needs to be discussed further.

[**Action**] It was noted that the 12th APPC will be held in Makuhari, Chiba, Japan during July 14-19, 2013. Since this is too close to the ICNS 2013 (July 7-11, 2013, UK), an AONSA booth at the APPC would be a way of participation this time. However, the EC recognized that an AONSA session proposed by M. Arai will be a good idea to jointly promote neutron science in our region similarly to the NuSTEC 2012 linked to the present EC Meeting. This should be discussed among the organizers of APPC and then between AONSA and APPC.

5.14 WiKi Neutron Project

Public Relations Officer C. Ling reported a summary of the WiKi Neutron Project including its goals and current status. The goals are to make web-contents which are readily accessible to the general public with the aim of advertising the role of neutron science in daily life (Appendix 17). It was noted that, at this stage, it is not clear whether there will be an active role for AONSA, since the project will be led by the professional Public Relations departments of the facilities.

5.15 AONSA Supporting Letter for JRR-3

M. Shibayama proposed to write an AONSA Letter to the MEXT of Japanese government to support the prompt re-start of JRR-3 which is in shutdown after

Fukushima accidents.

[**Action**] It was fully agreed by the EC that AONSA should write a strong supporting letter signed by Vice-President W.-H. Li and co-signed by Presidents of AONSA member societies. It was noted that this letter needs to be submitted within one month. M. Shibayama will prepare a draft of the letter and circulate it to the ones to sign.

It was pointed out by Danas Ridikas that IAEA can help this issue with an external expert review.

6. Calendar of AONSA Activities (Appendix 18)

It was agreed that the 9th EC meeting will be held on October 27, 2012 in Beijing.

7. Reports from Neutron Associations

Reports from neutron facilities were made as following. All the reports are included as Appendix 19.

- ANBUG (C. Ling, briefed without a written report)
- JSNS (T. Kanaya)
- KNUBA (K.B. Lee)
- NSSI (S. Chaplot, briefed without a written report)
- TWNSS (H. Chou)
- CNSS (D. Chen)
- Malaysian Community (Abdul Aziz Mohamed, briefed without a written report)
- Indonesian Community (Edy Giri Rachman Putra)

18. Reports from Neutron Facilities

Reports from neutron facilities, which were not covered during the NuSTEC2012, were made as following. All the reports are included as Appendix 20.

- BATAN (Sutiarso)
- SLRI (Supargorn Rugmai)
- IAEA Collaboration Centers (Danas Ridikas)

After the presentation by S. Rugmai, it was suggested by R. Robinson that AESAN may form a neutron/x-ray community together.

19. Closing Remarks

The 8th EC meeting was ended with closing remarks by President Y. Fujii, acknowledging the great efforts of Malaysian colleagues (Dr. Aziz and Dr. Faridah) for nicely arranging the EC meeting, and all the EC participants for making this meeting very fruitful and successful.

Appendix 1
Report from AONSA Office

1. AONSA Homepage has been updated
   - New President's message
   - The 2nd AOCNS in Sydney 2015
   - SAS 2012 in Sydney, Australia (linked to conference homepage)
   - ICNS 2013 in Edinburgh, UK (linked to conference homepage)
   - AONSA Newsletter Vol.4 No.1 (published on April 20, 2012)
   - AONSA Activities Presentation File (PDF version)
   - Others

2. Profile of AONSA has been updated in the Yearbook of International Organizations, Union of International Associations

Appendix 2
Duty Statements of the AONSA Board Members

Approved by the 8th AONSA EC
(Blue colored: Items/issues in President Y. Fujii's mind.
This part will not be included in the Annex of the Articles although it will remain in this Minutes as records.)

1. Duties of the President

The President shall preside at all meetings of the Executive Committee and the Board. The President shall make public statements on behalf of the Executive Committee and shall represent the Association externally. The President shall perform such other duties as the Executive Committee or the Board may assign. (International Relations with ICSU, IAEA, IUCr, IUPAP, AAPPS) The President shall deliver an address at the AONSA Web site and the Newsletter in the year of presidential service.

2. Duties of the Vice President

The Vice President shall act in place of the President if the latter is unable to perform his or her duties. The Vice President shall chair the Selection Committee for the AONSA Prize and shall be responsible for related business of the Prize. The Vice President shall perform such other duties as the Executive Committee or the Board may assign. (International Relations with ENSA, NSSA, AOFSRR)

3. Duties of the Secretary

The Secretary shall serve as the principal administrator of the Association. The Secretary shall maintain the records of the Association, including minutes of the Executive Committee and the Board meetings, Association activities and membership lists. The Secretary shall be responsible for the arrangement of the meetings of the Executive Committee and the Board and shall oversee the arrangements of meetings pertinent to business of the Association. (AOCNS, Neutron School, Facility Directors Meeting) The Secretary shall perform such other duties as the Executive Committee or the Board may assign.

4. Duties of the Treasurer

The Treasurer shall be responsible for the conduct of the financial affairs of the Association and shall oversee the financial affairs of the business of the Association. (AOCNS, AONSA Prize, Neutron School, Facility Directors Meeting) The Treasurer shall provide regular reports to the Executive Committee and the Board on the financial status of the Association.

The Treasurer shall perform such other duties as the Executive Committee or the Board may assign.

5. Duties of the Public Relations Officer

The Public Relations Officer shall have editorial and operational responsibility for the AONSA Web and Newsletter. The Public Relations Officer shall implement business relating to outreach activities of the Association. (Neutron WiKi) The Public Relations Officer shall perform such other duties as the Executive Committee or the Boards may assign.

6. Duties of the Past-President and the Past-Secretary

The Past-President and the Past-Secretary shall advice the Board for the first one year immediately after their retirement. The Past-President and the Past-Secretary shall perform such other duties as the Executive Committee or the Board may assign. (International Relations with ICSU, IAEA)

Appendix 5
Report for the AONSA Prize 2013

From: 李文獻 [mailto:whli@phy.ncu.edu.tw]
Sent: Tuesday, March 27, 2012 6:14 PM
To: Y. Fujii@CROSS-Tokai
Cc: Sung-Min Choi; chaplot@barc.gov.in; Chris Ling; John White; Junko Akutsu
Subject: Re: The previous documents of the Selection Comm. for AONSA Prize 2011

Dear Yasuhiko and Board members:

Attached is the Working Timeline of the 2013 AONSA Prize. It appears that we shall finish the selection this year, since
(1) AONSA Prize Ceremony shall hold in July 8~12 during ICNS 2013.
(2) According to AONSA Rules, SC shall submit the Results to EC 5 months prior to the prize ceremony.
(3) Our EC meeting usually holds around May and October each year.
(4) To meet the Rules, SC must submit the Results to EC in Oct. 2012, unless we do hold another EC meeting in early 2013. This I believe is very unlikely.

Please comments on the timeline that I proposed. I expect that the Board can reach a final version in 2 weeks, so that I (or Sung-Min) can email to all EC members for approval. We need to trigger the Search for SC members.

Wishes,
Wen-Hsien

Preparation of Agenda, 8th EC in Malaysia

李文獻 <whli@phy.ncu.edu.tw> 2012年4月17日上午1:12
收件者： "Y. Fujii@CROSS-Tokai" <y_fujii@cross.or.jp>
副本：Sung-Min Choi <sungmin@kaist.ac.kr>, "Prof.Samrath L. Chaplot" <chaplot@magnum.barc.gov.in>, Chris Ling <c.ling@chem.usyd.edu.au>, John White <jww@rsc.anu.edu.au>, mwkim@kaist.ac.kr, masatoshi arai <masatoshi.arai@j-parc.jp>, "Prof.Ki Bong Lee" <kibong@postech.ac.kr>, 이 기홍 부장 <khlee@kaeri.re.kr>, E.Gray@griffith.edu.au, "Prof.Rob Robinson" <rro@ansto.gov.au>, 金谷 利治 <kanaya@scl.kyoto-u.ac.jp>, hideki seto <hideki.seto@kek.jp>, sibayama@issp.u-tokyo.ac.jp, chou@mail.phys.nsysu.edu.tw, "Dr.Dhananjai Pandey" <dpandey_bhu@yahoo.co.in>, "Prof.R. Mukhopadhyay" <mukhop@barc.gov.in>, gunbki@batan.go.id, Dr Abdul Aziz Mohamed <aziz_mohd@nuclearmalaysia.gov.my>, wklooster@hotmail.com, Edy Giri Rachman Putra <e.g.r.putra@gmail.com>, ytliu@ciae.ac.cn, "Prof.CHEN Dongfeng" <dongfeng@ciae.ac.cn>, "Prof.Chun Loong" <ckloong@gmail.com>, Junko Akutsu <akutsu.junko@jaea.go.jp>

Dear EC members:

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(4) To meet the Rules, SC must submit the Results to EC in Oct. 2012, unless we do hold another EC meeting in early 2013. This I believe is very unlikely.

The attached timeline has been circulating and discussed through the Board. Please comments on the timeline that I proposed. I expect that the EC can reach a final version in 2 weeks, so that I can start the Search for SC members.

Wishes,
Wen-Hsien

Y. Fujii@CROSS-Tokai <y_fujii@cross.or.jp> 於 2012年4月10日下午7:52 寫道：
[隱藏引用文字]

Working timeline of AONSA Prize 2013.doc
54K

Working timeline and current status of 2013 AONSA Prize

By Wen-Hsien Li

Date	Occasion	Work	Remarks	Status
March 28, 2012	E-mail	Propose the working timeline to the Board	Communication with Board members	Done
April 11, 2012	E-mail	Board approval of timeline	1. President Fujii suggests not to delay the publication of AONSA NewsLetter for the announcement of nominations. 2. Board has no objection on the suggestion.	Done
April 16, 2012	E-mail	Propose the working timeline to the EC	Communication with EC members	Done
April 30, 2012	E-mail	EC approval of timeline		Done
May 7, 2012	E-mail	Search for Selection Committee (SC)	Asking nomination from the Member Societies	Done
May 16, 2012	E-mail	Nomination of Selection Committee	Nomination received from 1. ANBUG nominates Prof. Brendan Kennedy (May 09) 2. NSSI nominates Dr. R. Mukhopadhyay (May 10) 3. KNBUA nominates Prof. Mahn-Won Kim (May 10) 4. JSNS nominates Prof. Hideki Seto from KEK (May 15)	Done
May 22, 2012	EC meeting, Malaysia	1. Propose the list of SC to EC members 2. Formation of SC by EC	1. Chair Wen-Hsien Li (NCU) 2. Prof. Brendan Kennedy (SU) 3. Dr. R. Mukhopadhyay 4. Prof. Mahn-Won Kim (KAIST) 5. Prof. Hideki Seto (KEK)	In progress
May 28, 2012	AONSA web page & e-mail	Announcement of nominations		

July 31, 2012		Nominations closed		
August & September, 2012	E-mail and/or face-to-face	SC meetings	Will be documented through the selection process	
October 2, 2012		Recommendation reached by SC		
Oct. 2012	EC meeting	1. Submit the name(s) of recipient(s) with a report of nomination process to EC. 2. EC approval	1. According to AONSA Rules, SC shall submit the Results to EC 5 months prior to the prize ceremony. 2. Our EC meeting usually holds around May and October. 3. To meet the Rules, the SC must submit the Results to EC in Oct. 2012 unless we do hold an EC meeting again in early 2013.	
Within 3 weeks after EC approval	President Y. Fujii	Notice and congratulation to the Prize Winner(s)		
July 8~12, 2013	ICNS 2013, Edinburgh, UK	AONSA Prize Ceremony		

Appendix 6

Report from the organizer of the 5th AONSA Neutron School 2012, China

2012-5-20

Dongfeng CHEN

1. Dates and Place

Dates: Oct. 23 (Tue), 2012 –Oct. 28 (Sun), 2012

Place: Peking University（PKU）and China Institute of Atomic Energy (CIAE)

2. Organizer

CIAE, PKU, CSNS, AONSA, IAEA, CCAST, NSFC

3. Accommodation

Zhongguanyuan Global Village, Peking University

4. Dining

Zhongguanyuan Global Village, Peking University

5. (a) International Advisory Board

ANBUG : The Australian Neutron Beam Users Group

Rob Robinson (ANSTO)

Chris Ling（The University of Sydney）

JSNS : The Japanese Society for Neutron sciecne

Yasuhiko Fujii (CROSS)

Masa Arai (JPARC)

Mitsuhiro Shibayama (Tokyo UNIVERSITY)

Hideki Seto (KEK)

Toshiji Kanaya (Kyoto University)

KNBUA: The Korean Neutron Beam Users Association

Kye Hong Lee (KAERI)

Sung-Min Choi (KAIST)

Ki Bong Lee (POSTECH)

INSS: The Indian Neutron Scattering Society

Samrath L. Chaplot (BARC)

TWNSS: The Taiwan Neutron Science Society

Wen-Hsien Li (NCU)

Hsiung Chou (NSYU)

CNSS: The Chinese Neutron Scattering Society

Dingsheng Wang (IOP of CAS)

Hesheng Chen (IHEP of CAS)

Jianhua LIN (Peking University)

(b) Executive Committee

Dongfeng Chen (CIAE), Kai Wu (PKU), Yuanbo Chen (IHEP), Fangwei Wang (IOP), Yuntao Liu (CIAE), Yingxia Wang (PKU), Songbai Han (CIAE), Shaoying Zhang (IOP), and Tianfu Li (CIAE)

(c) Students

20 foreign students from the member societies and 20 local Chinese students

6. Program

a. Lectures: material (science oriented)

General Introduction
Neutron sources and instrumentation
Neutron optics/polarization, neutron detection
Overview of material science
Overview of soft matter science
Industrial applications

b. Parallel courses (methodology)

Diffraction (powder)
Inelastic scattering (triple axis)
SANS & Reflectivity
Residual stress/radiography

c. Laboratory Course (tutorial)

Powder diffraction: CIAE-HRPD
Inelastic scattering: CIAE-TAS
Small-angle scattering: CIAE-SANS
Reflection: CIAE-NR
Residual stress and Texture: CIAE-RSD@NT

d. Presentation

Group presentation

e. Excursion

the Great Wall

7. Facility

Lecture rooms: Classroom A807, chemistry Building of Peking University

8. Information

Contact Email: Aonsa@yahoo.cn

From: Minutes of x-th AONSA EC Meeting-Singapore-Final-JWW

- AONSA allocated $3,000 to support travel expense of students from developing countries. The number of students that this budget can support may be 3-5 depending on airfare. (As it is stated in the Guidelines for AONSA Neutron School, it is desirable that the registration fee (around 300 USD) of the students supported by AONSA is waived by the School. This was not discussed in the EC meeting but is included as a possibility, so that AONSA can support more students. The process for selecting students supported by AONSA should be prepared.)
- AONSA USD3000, IAEA USD5000, CCAST Lodging 10 persons
- CNSS annual meeting has been cancelled

Oct.23 Tues.	Oct.24 Wed.	Oct.25 Thurs.	Oct.26 Fri.	Oct.27 Sat.	
9:00-17:00 Arrival	9:00-11:30 Lectures	8:30-11:30 Lectures	9:00-11:30 Lectures from EC member	9:00-11:30 Presentation for school	9:00-17:00 ANOSA EC meeting
	12:30 Lunch	11:30 Lunch	12:30 Lunch	12:30 Lunch	
	13:30-18:10 Data analysis	13:30-18:00 CARR tour	13:30-18:10 Data analysis 15:00-18:00 Director meeting	13:00 Culture Tour and farewell dinner	
18:30 Reception	18:30 Dinner	18:30 Dinner	18:30 Dinner		

Contact persons for each organization:
3 ANBUG: Chris Ling and Rob Robinson
3 JSNS: Toshiji Kanaya
3 KNBUA: Ki Bong Lee
3 NSSI: Samrath L. Chaplot
3 TWNSS: Hsuing Chou and Wen-Hsien Li
2 Edy Giri Rachman Putra (BATAN) for Indonesia region
2 Abdul Aziz Mohamed (Malaysia Nuclear Agency)
2 Supagorn Rugmal (Synchrotron Light Research Institute, MOST, Thailand)

Lecturers: 2 ANBUG, 2 JSNS, 2 KNBUA, and 2 HOST

Lodging: 15 double rooms, 20 single rooms. Big meeting room from 23-25, and morning or

5th AONSA Neutron School

23 – 28 October 2012

Tuesday 23 October *(Zhongguanyuan Global Village, Peking University)*

9:00-17:00 *Arrival of participants/lecturers – registration*

18:30 *Reception (in canteen) – welcome*

Wednesday 24 October *(Classroom A807, chemistry Building of Peking University)*

9:00 Welcome

9:10 General Introduction (0) Wen-Hsien Li

9:50 Neutron sources and Instrumentation (1) Rob Robinson

10:30 Break

10:50 New technology on neutron including optics, polarization, detection and so on (2) Masa Arai

11:30 Overview of material science and neutron (3) Chun Loong

12:10 Lunch

13:30 Overview of soft matter and neutron（4） Shibayama， Kanaya，Seto

14:10 Industrial applications and neutron (5) Kye Hong Lee

14:50 Diffraction (powder) (6) Jianhua Lin

15:30 Break

15:50 Inelastic scattering (triple axis) (7) Chaplot, Wei Bao

16:30 Inelastic scattering (TOF) (8) Pengcheng Dai

17:10 SANS & Reflectivity (9) Sung-Min Choi， Chris Ling

17:50 Residual stress/radiography (10) Yuntao Liu

18:30 *Dinner*

Thursday 25 October *(CIAE: CARR, guide hall)*

8:30 Departure to CIAE

9:30 CARR tour and report from CNSS (11-13)

11:30 Lunch (CIAE canteen)

12:30 *Leave with bus for tours (*Forbidden City or Summer Palace or Great Wall*)*

18:30 Dinner

Friday 26 October *(Classroom A807, chemistry Building of Peking University)*

9:00 Sample data analysis 1

12:30 Lunch

14:00 Sample data analysis 2

18:30 Dinner

Saturday 27 October *(Classroom A807, chemistry Building of Peking University)*

9:00 Presentation preparation

10:30 Student presentations

12:00 Lunch

13:00 *Farewell*

Appendix 7
Report from the Organizing Committee of 1st AOCNS

1st AOCNS was held in a period from November 20th to 24th in Tsukuba as scheduled. (http://j-parc.jp/MatLife/en/meetings/1stAOCNS/index.html).

1) Meetings of Committees

The joint meeting of the organizing and local organizing committees was held on May 23rd, 2011.
The local program committee meeting was held on August 9th, 2011
The local organizing committee meeting was held on August 25th, 2011
The joint meeting of the organizing and local organizing committees was held on October 5th, 2011
(The abstract submission and early bird registration was closed on September 10th).
The local organizing committee was held on October 27th, 2011.

2) Sessions and related meetings in AOCNS (Program attached)

- **Scientific Sessions**: 24
- **Facility Reports:** 8
- **Opening and Closing Sessions**
- **Global Cooperation I**
  - ENSA: M. Steiner
  - AOFSRR: M. H. Ree
- **Global Cooperation II**
  - NSSA: B. Gaulin
  - Japanese Neutron History -Past, present and future-: Y. Endoh
  - ANOSA: Sung-Min Choi
- **AONSA Prize Ceremony and AONSA Prize Lecture**
  - Report from Selection Committee (Y. Fujii)
  - Award Ceremony (AONSA President, J. White)
  - Prize Lecture : **N. Watanabe**
- **Poster Awards for Young Students**
  - Selection Committee chairperson: T. J. Sato
  - 10 students selected out of 116 posters contributed by students
  - an award certificate with an extra prize (Japanese pottery) presented

- **Three President Meeting (ENSA, NSSA, AONSA)** on November 23rd
- **Instrument Scientist Workshop** (**ISW**) on November 20th, 2011 (Sun.)
- **Regional meetings** of Korea, Australia, Taiwan, China, India and Japan
- **Social Events**

- The reception party on November 20 (Sun)
- Three social events (1) Japanese flower arrangement (*Ikebana*), (2)Shopping at Akihabara and Asakusa, (3)Walking in Mt. Tsukuba on November 23(Wed)
- The conference banquet at Hotel Grand Shinonome on t November 23 (Wed)

- **Site tour to J-PARC / JRR-3 Guide Hall** on November 24

3) Summary of oral and poster presentations

- Plenary talks: 4
  - Jun Akimitsu (Aoyamagakuin U)
  - Yuntao Liu (China Institute of Atomic Energy)
  - John W. White (Australian National U)
  - Mahn Won Kim (KAIST)
- Keynote lectures: 24
- Invited talks: 35
- Oral presentations: 41
- Poster presentations: 386

4) Registration Summary

Total number: 586

AONSA countries (Japan: 375, Korea: 69, Australia and New Zealand: 52, India: 12, China: 12, Taiwan: 30, Indonesia: 10, Malaysia: 3)

Other countries (Europe: 14, North and South America: 8)

5) Total Voluntary AONSA fee: 321,000 (JY)

6) Financial Supports (especially for students and young scientists) :

Registration fee waived

Total number: 20

(Japan: 0, Korea:0, Australia:0, India: 11, China: 0, Taiwan: 1, Indonesia: 6, Malaysia: 2)

Travel expense supported

Total number: 19

(Japan: 0, Korea: 0, Australia: 0, India: 9, China: 0, Indonesia: 6, Malaysia: 2, Taiwan: 2)

7) Refund to AONSA

$10,000 (fully refunded)

8) Settlement of Account of 1st AOCNS (Attached)

The final balance of 154,546 JY will be shared between AONSA and JSNS.

The organizing committee appreciates the cooperation of AONSA member and observer countries.

Toshi Kanaya
Chair of the Organizing Committee
1st AOCNS

<1st AOCNS Report on Settlement of Account>

<Income>

(Table of Income Removed)

<Expense>

(Table of Expense Removed)

Program of AOCNS 2011 at Tsukuba

11/20 (Sunday)

09:00		AONSA Executive Committee Meeting 9:00 - 12:30	
10:00			
11:00			
12:00			
13:00			AONSA Instrument Scientist Workshop 13:00-16:00
14:00			
15:00	Registration 15:00-17:00		
16:00			
17:00		Welcome Reception 17:00-19:00	
18:00			
19:00			

Program of AOCNS 2011 at Tsukuba

11/23 (Wednesday)

	Main Convention Hall	Room 201	Room 101	Room 102	Multi Purpose Hall
09:00	**PL2** Yuntao Liu (China Institute of Atomic Energy) The current status and future plan of engineer instruments at CARR Chair(K. Yamada (Tohoku U))				
10:00	Coffee break				
10:20	S14 (Cat 19) **Residual stress. Texture. Precipitate. Glass. Imaging. Magnet. Prompt gamma** Chair(Y. Morii (Ibaraki Pref))	S15: (Cat 5) **High pressure. Earth sciences. Mineral** Chair(W. Utsumi (JAEA))	S16 (Cat 23) **Monochromator. Analyzer. Polarizer. Magnetic imaging. Accessories. Sample environments. Neutron radiography. Tomography** Chair(T. Shinohara (JAEA))	S17 (Cat 11) **Polymer structure and dynamics. Polymer solutions. Polymer solids. Polymer films** Chair(Sung-Min Choi (KAIST))	
10:20	**OS14-1(KN14)** Yoshiaki Fukushima (Toyota Central Res and Dev Labs, and CROSS, Japan) Analyses and Observations using Neutron in a development of Automobile Parts	**OS15-1(KN15)** Hiroyuki Kagi (U of Tokyo, Japan) Neutron diffraction studies on deep-earth and planetary materials	**OS16-1(KN16)** Toru Ishigaki (Ibaraki U, Japan) Sample environments for High-throughput diffractometer, IMATERIA	**OS17-1(KN17)** Mitsuhiro Shibayama (U of Tokyo, Japan) Rheo-SANS Studies on Structure Evolution in Polymer particle Aqueous Solutions	
10:50	**OS14-2 (IT14)** Valerie Linton (Energy Pipelines CRC, Wollongong, Australia) Modification of residual stress around welds through the propagation of cracks	**OS15-2(IT15)** Fang Xia (U of Adelaid, Australia) In situ neutron scattering under hydrothermal conditions - new ways studying ore deposit formation	**OS16-2 (IT16)** Wai Tung Lee (ANSTO, Australia) Enhancing polarised neutron research capabilities of ANSTO instruments with polarised 3He based neutron polarisers and analysers	**OS17-2(IT17)** Kookheon Char (Seoul National U, Korea) Neutron Studies on Complex Polymeric Nanostructures and Thin Films	Exhibition & Poster presentated
11:10	**OS14-3** Wu Gong (Ibaraki U, Japan) Ausforming on nano-bainite steel studied by in situ neutron diffraction	**OS15-3(IT)** Yongjae Lee (Yonsei U, Korea) The "soda-stone" Alchemists: Redefining Natrolite at PTX Space	**OS16-3** John W. Burgoyne (Oxford Instruments, UK) Cryogen-free high magnetic field and low temperature sample environments for neutron scattering	**OS17-3** Ghanshyam L. Jadav (Cent Salt & Marine Chem Res Inst, India) In-situ synthesis of PDMS-nanocomposite membranes and its characterization using small angle neutron scattering	
11:30	**OS14-4** Yoshiaki Kiyanagi (Hokkaido U, Japan) Recent Progress of Spectroscopic Pulsed Neutron Imaging	**OS15-4** Katsutoshi Aoki (JAEA, Japan) Pressure-induced Phase Separation with Intensite Hydrogen Transfer in Rare-earth Metal Hydrides	**OS16-4** Mariko Segawa (JAEA, Japan) Developments of Pulsed Neutron Imaging System with Camera-type Detectors at J-PARC	**OS17-4** Shigeru Okamoto (Nagoya Institute of Tech, Japan) SANS Study on Microdomain Structures in a Semi-Dilute Solution of an Ultra-High-Molecular-Weight Block Copolymer	
11:50	Lunch				
13:00	S18 (Cat 21) **Neutron sources. New spectrometers. Shielding** Chair(Shane Kennedy(ANSTO))	S19 (Cat 7) **High magnetic field. Molecular magnet. Films. Multilayers. Nano-magnetism** Chair(Ki Bong Lee(POSTECH))	S20 (Cat 22) **Detectors. Beam focusing. Data taking. Data analyses. Optics** Chair(M. Hino (KUR))	S21 (Cat 10) **Soft matter. Colloids. Gels. Emulsions. Inhomogeneity. Polymer solutions** Chair(R Mukhopadhyay (BARC))	
13:00	**OS18-1(KN18)** Masatoshi Futakawa (JAEA/ J-PARC, Japan) Present status on High Power Spallation Targets in the World	**OS19-1(KN19)** Frank Klose (ANSTO, Australia) Loose Spin and Chemical Order Induced Couplings in Magnetic Thin Films: A Neutron Scattering Study	**OS20-1(KN20)** Myoung-Kook Moon (KAERI, Korea) High performance neutron detectors for neutron science	**OS21-1(KN21)** Gregory G. Warr (U of Sydney, Australia) Self-Assembly Structure of Polymerizing Amphiphiles	
13:30	**OS18-2(IT18)** Chun K. Loong (Tsinghua U and Sun Yat-Sen U, China) Neutron-Source Development in China: A View from the Vantage Point of University Users	**OS19-2 (IT19)** Sungkyun Park (Pusan National U, Korea) Search for the magnetic profile information in the exchanged couple system using polarized neutron reflectometry	**OS20-2** Sang Jin Cho (KAERI, Korea) Current Status of the Neutron Guides at HANARO and their Application to Neutron Instruments	**OS21-2(IT21)** Michihiro Nagao (NIST and Indiana U, Japan) Membrane thickness fluctuations in pseudo surfactant bilayers	Exhibition & Poster presentated
13:50	**OS18-3** Young-Soo Han (KAERI, Korea) Current Status of 40 meter SANS Instrument at HANARO	**OS19-3** Karel Prokes (Helmholtz Zentrum Berlin, Germany) The High Field Magnet for Neutrons at Helmholtz Zentrum Berlin	**OS20-3** Norman Xiong (ANSTO, Australia) Sharing and Collaboration in Producing Neutron Scattering Software	**OS21-3** Nanchibatla V. Sastry (Sardar Patel U, India) Aggregation Behavior of Pyridinium Based Ionic Liquids in Water – Surface Tension and Small Angle Neutron Scattering (SANS) Measurements	
14:10	**OS18-4** Christine Rehm (ANSTO, Australia) Kookaburra - A State-of-the Art USANS Instrument	**OS19-4** Shunsuke Yoshii (Tohoku U, Japan) Pulsed Magnetic Field System for Neutron Diffraction	**OS20-4** Mikinori Nagano (Osaka U, Japan) Development of neutron focusing device using stacked millimeter-thick elliptical supermirror substrates	**OS21-4** Maiko Kofu (U of Tokyo, Japan) Microscopic dynamics in PMMA/EMITFSI ion gels	
14:30	Coffee break				
14:45					**PS3**: Posters core-time
16:45	Coffee break				
17:00	**Global Cooperation II** Chair (M. Shibayama (U Tokyo)) NSSA (15min) : S. Gaulin Japanese Neutron History -Past, present and furture- (20min): Y. Endoh ANOSA (20min) :Sung-Min Choi				
18:00	**AONSA Prize Ceremony** Chair(Y. Fuji (CROSS)) Report from Selection Committee (Y. Fuji, Chair of SC) Award Ceremony (AONSA President, J. White, giving the Prize) **AONSA Prize Lecture** Chair (Gunter Bauer) Prize Lecture (N. Watanabe)				
19:00					
19:30	**Banquet (at Hotel Grand Shinonome)**				

Program of AOCNS 2011 at Tsukuba

11/21 (Monday)

	Main Convention Hall	Room 201	Room 101	Room 102	Multi Purpose Hall
09:00	**Opening** Chair (T. Sato (U Tokyo)) AOCNS (5min): T. Kanaya AONSA (10min): J. White MEXT (5min) : K. Hara KEK (5min): Atsuto Suzuki J-PARC (5min): S. Nagamiya Ibaraki prefecture (5min): M. Hashimoto				
09:45	**Global Cooperation I** Chair (K. Kakurai (JAEA)) ENSA (15min): M. Steiner AOFSRR (15min) : M. H. Rhe				
10:30	**PL1**: Jun Akimitsu (Aoyama-gakuin U) Neutron, X-ray, Electron diffractions and MSR techniques -their combined uses for the new materials- Chair(Y. Fujii(CROSS))				
11:30	Lunch				
13:00	S01:(Cat 1) **Superconductivity I** Chair(Ranjan Mittal (BARC))	S02:(Cat 3) **Lattice dynamics, Ferroelectricity, Relaxor, Phase transition** Chair(Je-Geun Park (Seoul National U.))	S03:(Cat 6) **Liquids, Glasses, Disordered systems, Amorphous materials, Local structure, Quasi crystals** Chair(T. Fukunaga (Kyoto U))	S04:(Cat 12) **Soft matter, Surfaces, Interfaces, Thin films** Chair(Philip A. Reynolds (Australian National U))	
13:00	**OS01-1(KN01)** Wei Bao (Renmin U ,China) Neutron scattering study on the Fe-based high-Tc superconductors	**OS02-1(KN02)** Samrath Lal Chaplot (BARC, India) Inelastic Neutron Scattering and Anomalous Thermal Properties	**OS03-1(KN03)** Darrin J. Goossens (Australian National U, Australia) Diffuse Scattering from Molecular Crystals	**OS04-1(KN04)** Michael James (ANSTO, Australia) Morphological Studies of Thin-Film Optoelectronic Devices Using Neutron Reflectometry	
13:30	**OS01-2(IT01)** Dao-Xin Yao (Sun Yat-sen U & Optoelectronic Materials and Technologies, China) Magnetism and Multi-orbital Models in the Iron-based Superconductors	**OS02-2 (IT02)** Masato Matsuura (Tohoku U, Japan) A New Growth Mechanism of Polar Nano regions by Phonon-Relaxation Mode-Coupling in a Relaxor Ferroelectric	**OS03-2(IT03)** Evvy Kartini (National Nuclear Energy Agency, Indonesia) The structure and dynamics of supersonic conducting glasses by neutron scattering	**OS04-2 (IT04)** Tsang-Lang LIN (National Tsing Hua U, Taiwan) Neutron Reflectivity Studies on the Adsorption of DNA by Lipid Monolayer and Charged Diblockcopolymer Monolayers at the Air-water Interface	Exhibition & Poster presentated
13:50	**OS01-3(IT)** Chul-Ho Lee (AIST, Japan) Neutron Scattering Study of Spin Fluctuations in Hole-Overdoped KFe_2As_2	**OS02-3(IT)** Hirotake Shigematsu (Yamaguchi U, Japan) Correlation between Existence of the Soft mode and Crystal Structure in A_2BO_4-Type Ferroelectrics	**OS03-3** Toshio Yamaguchi (Fukuoka U, Japan) Thermal Behavior, Structure and Dynamics of Low-Temperature Water Confined in Mesoporous MCM-41 Materials	**OS04-3** Kwanwoo Shin (Sogang U, Korea) Incorporation of heparin into lipid monolayer and its enzymatic properties to HIV-1 Tat-derived peptides	
14:10	**OS01-4** Shinichi Shamoto (JAEA, Japan) Inelastic Neutron Scattering Study of Low-energy Spin Excitations on $LaFeAsO_{1-x}F_x$ System	**OS02-4** Hideaki Kitazawa (NIMS, Japan) The isostructural phase transition in $TbPd_{2-x}Ni_xAl$ and $TbNi_{1-x}Cu_xAl$ studied by high-resolution powder neutron diffraction	**OS03-4** T-Wen Huang (National Central U, Taiwan) Micromechanisms of a dendritic-Zr based bulk metallic glass composite subjected to plastic deformation	**OS04-4** Motoyasu Kobayashi (JST/ERATO, Japan) Characterization of Ion containing Polymer Brushes in Aqueous Solutions by Neutron Reflectivity Measurement	
14:30	Coffee break				
15:00	S05:(Cat 2) **Superconductivity II** Chair(Wei Bao (Renmin U))	S06:(Cat 26) **Batteries, Catalysis, Drug, Fine particles, Surfaces, Soft matter, Food science** Chair(Evvy Kartini (BATAN))	S07:(Cat 17) **Complementary use II (Soft matter, Theories, X-ray, Synchrotron, Muon)** Chair(Tsang-Lang Lin (National Tsing Hua U))	S08:(Cat 14) **Biological molecules, Structure and Dynamic** Chair(H. Endo (JAEA))	
15:00	**OS05-1(KN05)** Ranjan Mittal (BARC, India) Phonon Dynamics in Parent and Superconducting FeAs Compounds	**OS06-1(KN06)** Takashi Kamiyama (KEK, Japan) Structural Studies on Li-ion batteries using Neutron Diffraction	**OS07-1(KN07)** Tosio Kanaya (Kyoto U, Japan) Polymer Studies by Various Quantum Beams	**OS08-1(KN08)** Sung-Min Choi (KAIST, Korea) Thermal fluctuation and elasticity of lipid membranes interacting with peptides	
15:30	**OS05-2(IT05)** Koji Kaneko (JAEA, Japan) Novel antiferromagnetic ground state in non-centrosymmetric heavy-fermion superconductor $CePt_3Si$	**OS06-2 (IT06)** Neeraj Sharma(ANSTO, Australia) in situ neutron diffraction of Li-ion batteries: An insight into the real-time structural evolution of electrode materials	**OS07-2 (IT07)** Tamim A. Darwish (ANSTO, Australia) Molecular Deuteration for Enhancing SANS, Diffraction and Neutron Reflectometry Investigations	**OS08-2 (IT08)** Minoru Nakano (Kyoto U, Japan) In situ determination of interbilayer and transbilayer lipid transfers by neutron scattering	Exhibition & Poster presentated
15:50	**OS05-3** Hannu Mutka (ILL, France) Anharmonic lattice response in superconducting pyrochlore oxides	**OS06-3** Chih-Hao Lee (NSRRC & National Tsing Hua U. Taiwan) In situ neutron diffraction study of the structure change in a commercial graphite/LiFePO$_4$/VO$_x$ battery	**OS07-3(IT)** Moonhor Ree (POSTECH, Korea) Synchrotron X-ray and Neutron Scattering Studies of Nanostructures in Chemically Well-Defined Functional Polymers: Synthetic Polymers, Proteins, and DNAs	**OS08-3** Moeava Tehei (U of Wollongong, Australia) From powder to cell: Biological Relevance of Dynamics using Neutron Scattering	
16:10	**OS05-4** Masaki Fujita (Tohoku U, Japan) Spin Excitations in Electron-Doped Cuprate Oxide	**OS06-4** Hyungsub Kim (KAIST, Korea) Combined neutron and X-ray diffraction study of pyrophosphate-based $Li_2M^1M^2O_7$ (M^1=Fe, Co) for lithium rechargeable battery electrodes	**OS07-4** Michael James (ANSTO, Australia) Characterisation of Cross-linking and Dewetting in Bio-compatible Polymer Surfaces by Neutron and X-ray Reflectometry	**OS08-4** Marcus Hennig (ANSTO, Australia) Protein self-diffusion in crowded electrolyte solutions	
16:30	Coffee break				
17:00					**PS1**: Posters core-time
19:00					

Program of AOCNS 2011 at Tsukuba

11/22 (Tuesday)

	Main Convention Hall	Room 201	Room 101	Room 102	Multi Purpose Hall
09:00	S09: **Facility report** Chair(Y. Noda (Tohoku U), C-H. LEE (KAERI))				Exhibition & Poster presentated
09:00	**OS09-1(KN09)** J-PARC: Masatoshi Arai Status of J-PARC neutron facility on the Earthquake.				
09:40	**OS09-2(IT09-1)** Japan: Kazuhisa Kakurai Neutron Science Activities at Reactor Based Facilities in Japan				
10:05	**OS09-3(IT09-2)** Australia: Robert Alan Robinson First Five Years of OPAL, the new Australian Research Reactor				
10:30	**OS09-4(IT09-3)** Korea: Kye Hong LEE Significant Phase of HANARO Neutron Science				
10:55	**OS09-5(IT09-4)** China: Dongfeng CHEN Current status and future development of a Chinese National Neutron Facility - Science and user support at CARR				
11:20	**OS09-6(IT09-5)** India: Ramaprosad Mukhopadhyay National Facility for Neutron Beam Research in India				
11:45	**OS09-7(IT09-6)** Indonesia: Edy Giri Rachman PUTRA Neutron Scattering in Indonesia: The Facility and Activity				
12:00	**OS09-8(IT09-7)** Malaysia: Abdul Aziz Bin Mohamed (Malaysian Nuclear Agency, Komplek PUSPATI) Neutron Scattering and Imaging at Malaysia TRIGA Reactor and Related Techniques				
12:15	**Photo Session** (around entrance)				
12:30	Lunch				
13:30	S10:(Cat 4) **Multiferroic, Functional material, Magnetic semiconductors** Chair(Hsiung Chou (National Sun Yat-sen U))	S11:(Cat 6) **Magnetism, Metal insulator transition, Frustrated magnet, Multipole ordering, Heavy fermions** Chair(Jae-Ho Chung (Korea U))	S12:(Cat 24) **Fundamental physics and neutron properties, Capture cross section, Dipole moment, Interferometry** Chair(K. Yamada (Tohoku U))	S13:(Cat 13) **Membranes and biologically relevant materials. Lipid. Amphiphilic molecule. Peptide. Vesicle** Chair(Kwanwoo Shin (Sogang U))	
13:30	**OS10-1(KN10)** Je-Geun Park (Seoul National U. Korea) Neutron scattering studies of $BiFeO_3$	**OS11-1(KN11)** Seung-Han Lee (U of Virginia, Korea) Spin liquid and spin glass states in geometrically frustrated magnets	**OS12-1(KN12)** Hirohiko M. Shimizu (KEK, Japan) Fundamental Physics at J-PARC/MLF	**OS13-1(KN13)** Duncan J. McGillivray (U of Auckland, New Zealand) Anti-microbial protein membrane interactions	
14:00	**OS10-2(IT10)** Hiroyuki Kimura (Tohoku U, Japan) Spontaneous reversal of ferroelectric polarization induced by a memory effect of spin chirality	**OS11-2 (IT11)** Stewart J Campbell (U of New South Wales, Australian Defence Force Academy, Australia) Critical Magnetic Transitions and the Magnetocaloric Effect in Rare Earth Intermetallic Compounds	**OS12-2 (IT12)** Hideo Harada (JAEA, Japan) Neutron Capture Study using the ANNRI	**OS13-2 (IT13)** Masayuki Imai (Ochanomizu U., Japan) Slow dynamics of soft spheres	Exhibition & Poster presentated
14:20	**OS10-3** Chin-Wei Wang (National Central U , Taiwan) Complex magnetic ordering and ferroelectricity in Co_2TeO_6	**OS11-3** Robert J. Aldus (ANSTO, Australia) Coherence of the Topologically Constrained Magnetization in Stuffed Spin Ice	**OS12-3(IT)** Gunyun Kim (Kyungpook National U., Korea) Activities for Nuclear Data Measurements in Korea	**OS13-3** Subhankur Mitra (BARC, India) Dynamical Disorder in Solid Sodium Dodecyl Sulphate: QENS Study	
14:40	**OS10-4** Josie E. Auckett (U of Sydney, Australia) Superstructure ordering observed in the intermediate-temperature oxide ion conductor $Sr_2Fe_2O_5$ by single-crystal neutron diffraction	**OS11-4** Yusuke Namcu (U of Tokyo, Japan) Viscosity in spin dynamics behavior of the 2D magnet $NiCl_2$-$4SC(NH_2)_2$	**OS12-4** Masaaki Kitaguchi (Kyoto U, Japan) Development of UCN Transport System for EDM experiment at Pulsed Source	**OS13-4** Anton P. Le Brun (ANSTO, Australia) The Location of Antimicrobial Peptides from Australian Frogs in Model Biological Membranes	
15:00	Coffee break				
15:20			**business meeting** (Neutron News) 15:30-17:00		**PS2**: Posters core-time
17:20	Coffee break with snack				
17:40	**regional meeting 1** (JSNS)	**regional meeting 2** (ANBUG)	**regional meeting 3** (KNSUA)	**regional meeting 4** (TWNSS)	**regional meeting 5** (INSS: Room 2028) **regional meeting 6** (CANS, CARR & CPHS: 4F Salon Lee)
21:00					

Program of AOCNS 2011 at Tsukuba

11/23 (Wednesday)

	Main Convention Hall	Room 201	Room 101	Room 102	Multi Purpose Hall
09:00	**PL2**:Yuntao Liu (China Institute of Atomic Energy) The current status and future plan of engineer instruments at CARR Chair(K. Yamada (Tohoku U))				
10:00	Coffee break				
10:20	S14 (Cat 19) **Residual stress, Texture, Precipitate, Glass, Imaging, Magnet, Prompt gamma** Chair(Y. Morii (Ibaraki Pref))	S15. (Cat 5) **High pressure, Earth sciences, Mineral** Chair(W. Utsumi (JAEA))	S16.(Cat 23) **Monochromator, Analyzer, Polarizer, Magnetic imaging, Accessories, Sample environments, Neutron radiography, Tomography** Chair(T. Shinohara (JAEA))	S17.(Cat 11) **Polymer structure and dynamics, Polymer solutions, Polymer solids, Polymer films** Chair(Sung-Min Choi (KAIST))	
10:20	**OS14-1(KN14)** Yoshiaki Fukushima (Toyota Central Res and Dev Labs, and CROSS, Japan) Analyses and Observations using Neutron in a development of Automobile Parts	**OS15-1(KN15)** Hiroyuki Kagi (U of Tokyo, Japan) Neutron diffraction studies on deep-earth and planetary materials	**OS16-1(KN16)** Toru Ishiguki (Ibaraki U, Japan) Sample environments for High throughput diffractometer, iMATERIA	**OS17-1(KN17)** Mitsuhiro Shibayama (U of Tokyo, Japan) Rheo-SANS Studies on Structure Evolution in Polymer particle Aqueous Solutions	
10:50	**OS14-2 (IT14)** Valerie Linton (Energy Pipelines CRC, Wollongong, Australia) Modification of residual stress around welds through the propagation of cracks	**OS15-2(IT15)** Fang Xie (U of Adelaid, Australia) In situ neutron scattering under hydrothermal conditions - new ways studying ore deposit formation	**OS16-2 (IT16)** Wai Tung Lee (ANSTO, Australia) Enhancing polarised neutron research capabilities of ANSTO instruments with polarised 3-le based neutron polarisers and analysers	**OS17-2(IT17)** Kookheon Char (Seoul National U, Korea) Neutron Studies on Complex Polymeric Nanostructures and Thin Films	Exhibision & Poster presentated
11:10	**OS14-3** Wu Gong (Ibaraki U, Japan) Ausforming on nano-bainite steel studied by in situ neutron diffraction	**OS15-3(IT)** Yongjae Lee (Yonsei U, Korea) The "soda-stone" Alchemists: Redefining Natrolite at PTX Space	**OS16-3** John W. Burgoyne (Oxford Instruments, UK) Cryogen-free high magnetic field and low temperature sample environments for neutron scattering	**OS17-3** Chandrasim L. Jadav (Cent Salt & Marine Chem Res Inst, India) In-situ synthesis of PDMS-nanocomposite membranes and its characterization using small angle neutron scattering	
11:30	**OS14-4** Yoshiaki Kiyanagi (Hokkaido U, Japan) Recent Progress of Spectroscopic Pulsed Neutron Imaging	**OS15-4** Katsutoshi Aoki (JAEA, Japan) Pressure-Induced Phase Separation with Intersite Hydrogen Transfer in Rare-earth Metal Hydrides	**OS16-4** Mariko Segawa (JAEA, Japan) Developments of Pulsed Neutron Imaging System with Camera-type Detectors at J-PARC	**OS17-4** Shigeru Okamoto (Nagoya Institute of Tech, Japan) SANS Study on Microdomain Structures in a Semi-Dilute Solution of an Ultra-High-Molecular-Weight Block Copolymer	
11:50	Lunch				
13:00	S18 (Cat 21) **Neutron sources, New spectrometers, Shielding** Chair(Shane Kennedy(ANSTO))	S19.(Cat 7) **High magnetic field, Molecular magnet, Films, Multilayers, Nano-magnetism** Chair(Ki Bong Lee(POSTECH))	S20.(Cat 22) **Detectors, Beam focusing, Data taking, Data analyses, Optics** Chair(M. Hino (KURI))	S21.(Cat 10) **Soft matter, Colloids, Gels, Emulsions, Inhomogeneity, Polymer solutions** Chair(H.Mukhopadhyay (BARC))	
13:00	**OS18-1(KN18)** Masatoshi Futakawa (JAEA/ J-PARC, Japan) Present status on High Power Spallation Targets in the World	**OS19-1(KN19)** Frank Klose (ANSTO, Australia) Loner-Spin and Chemical Order Induced Couplings in Magnetic Thin Films: A Neutron Scattering Study	**OS20-1(KN20)** Myoung-Kook Moon (KAERI, Korea) High performance neutron detectors for neutron science	**OS21-1(KN21)** Gregory G. Warr (U of Sydney, Australia) Self-Assembly Structure of Polyelectrolyte Amphiphiles	
13:30	**OS18-2(IT18)** Chun K. Loong (Tsinghua U and Sun Yat Sen U, China) Neutron-Source Development in China: A View from the Vantage Point of University Users	**OS19-2 (IT19)** Sungkyun Park (Pusan National U, Korea) Search for the magnetic profile information in the exchanged couple system using polarized neutron reflectometry	**OS20-2** Sung Jin Cho (KAERI, Korea) Current Status of the Neutron Guides at HANARO and their Application to Neutron Instruments	**OS21-2(IT21)** Michihiro Nagao (NIST and Indiana U, Japan) Membrane thickness fluctuations in pseudo surfactant bilayers	Exhibision & Poster presentated
13:50	**OS18-3** Young-Soo Han (KAERI, Korea) Current Status of 40 meter SANS Instrument at HANARO	**OS19-3** Karel Prokes (Helmholtz Zentrum Berlin, Germany) The High Field Magnet for Neutrons at Helmholtz Zentrum Berlin	**OS20-3** Norman Xiong (ANSTO, Australia) Sharing and Collaboration in Producing Neutron Scattering Software	**OS21-3** Nandkishadta V. Sastry (Sardar Patel U, India) Aggregation Behavior of Pyridinium Based Ionic Liquids in Water – Surface Tension and Small Angle Neutron Scattering (SANS) Measurements	
14:10	**OS18-4** Christine Rehm (ANSTO, Australia) Kookaburra - A State-of-the Art USANS Instrument	**OS19-4** Shunsuke Yoshii (Tohoku U, Japan) Pulsed Magnetic Field System for Neutron Diffraction	**OS20-4** Mikinori Nagano (Osaka U, Japan) Development of neutron focusing device using stacked millimeter thick elliptical supermirror substrates	**OS21-4** Maiko Kofu (U of Tokyo, Japan) Microscopic dynamics in PMMA/EMITFSI ion gels	
14:30	Coffee break				
14:45					**PS3**: Posters core time
16:45	Coffee break				
17:00	**Global Cooperation II** Chair (M. Shibayama (U Tokyo)) NSSA (15min) : B. Gaulin Japanese Neutron History -Past, present and furture- (20min): Y. Endoh ANOSA (20min): Sung-Min Choi				
18:00	**AONSA Prize Ceremony** Chair(Y. Fujii (CROSS)) Report from Selection Committee (Y. Fujii, Chair of SC) Award Ceremony (AONSA President, J. White, giving the Prize) **AONSA Prize Lecture** Chair (Dunter Bauer) Prize Lecture (N. Watanabe)				
19:00					
19:30	**Banquet (at Hotel Grand Shinonome)**				

Program of AOCNS 2011 at Tsukuba

11/24 (Thursday)

	Main Convention Hall	Room 201	Room 101	Room 102	Multi Purpose Hall
09:00	**PL3**: John W. White (Australian National U) Institut Laue-Langevin Past, Present and Future - The Philosopher's Boat Chair(M. Shibayama (U Tokyo))				
10:00	Coffee break				
10:20	S22.(Cat 18) **Complementary use I (Hard matter, Theories, X-ray, Synchrotron, Muon, Photoemission)** Chair(xxxx)	S23.(Cat 9) **Hydrogen, Hydrogen bond, Hydrogen storage, Water, Solutions, Tunnelling systems, Guest-Host materials, Catalysis, Ionic conductor, Other chemical materials** Chair(T. Otomo(KEK))	S24.(Cat 15) **Structural biology, Protein crystallography** Chair(K. Kurihara (JAEA))		
10:20	**OS22-1(KN22)** Hanshiro Hiraka (Tohoku U, Japan) A perspective on complementary use of neutron and X-ray for the study on Mott physics	**OS23-1(KN23)** Chung-Yuan Mou (National Taiwan U, Taiwan) Density hysteresis of water and heavy water confined in mesoporous silica matrix	**OS24-1(KN24)** Nobuo Niimura (Ibaraki U, Japan) Hydrogen- and Hydration Sensitive Structural Biology. Neutron Protein Crystallography.		
10:50	**OS22-2 (IT22)** Hironori Nakao (KEK-PF/CMRC, Japan) Orbital and magnetic order in RVO_3 under high pressure	**OS23-2 (IT23)** Hideki Seto (KEK, Japan) Membrane formation by preferential solvation of ions in a ternary liquid	**OS24-2 (IT24)** Kyeong Kyu Kim (Sungkyunkwan U, Korea) A multidisciplinary approach to the structural studies of Z-DNA and Z-DNA binding proteins		
11:10	**OS22-3** Ki Bong Lee (POSTECH , Korea) Resonant Soft X-ray Scattering Study for Oxide Thin Films	**OS23-3** Alice Klapproth (ANSTO, Australia) Transformation Kinetics of Gas Hydrate near the Ice Point	**OS24-3** Hiroaki Kamikubo (Nara Institute of Science and Technology, Japan) Physicochemical properties of low barrier hydrogen bonds involved in Photoactive Yellow Protein		
11:30	**OS22-4** Wonsuk Cha (Sogang U, Korea) Inhomogeneous Deformation Field Distribution in Zeolite by Coherent X-ray Diffraction Imaging	**OS23-4** Osamu Yamamuro (U of Tokyo, Japan) Dynamics of a novel proton conductor $ZnADP\text{-}3H_2O$	**OS24-4** Katsuhiro Kusaka (Ibaraki U, Japan) Current Status of IBARAKI Biological Crystal Diffractometer iBIX		
11:50	Coffee break				
12:10	**PL4**: Mahn Won Kim (KAIST) Neutron Scattering Application on Soft Matters including Biomaterials Chair(T. Kanaya (Kyoto U))				
	Closing Chair(T. Kanaya (Kyoto U))				
13:10	**Summary** (Brendan Kennedy) **Poster prized award ceremony** **ISW Summary** (Shibayama) **Next AOCNS 2015**				
13:40	Lunch box for tour				
14:00 ~ 19:00	Tour J-PARC & JRR-3				

Appendix 8
Report from the Organizer of Instrument Scientists Workshop during 1st AOCNS

1st Instrument Scientist Workshops at AOCNS

Mitsuhiro Shibayama
Prof. Univ. Tokyo
Coordinator-in chief

The 1st Instrument Scientist Workshops (ISWs) of neutron scattering facilities in Asia-Oceania region were held on Nov. 20, 2011, as a satellite meeting of AOCNS 2011, Tsukuba, Japan. The ISWs were proposed by the Inaugural Asia-Oceania Neutron Facility Directors' Meeting, held on May 20, 2011, in Bandung, Indonesia. The purpose of ISWs is to get benefit from shared knowledge about instrumentation, complementary capabilities at other facilities in the region, etc.

Originally, it was planned to hold a few workshops dealing with typical instruments, such as powder diffractometers and small-angle neutron scattering instruments. However, it turned out to hold eight ISWs covering powder diffraction, single crystal diffraction, small-angle scattering (SANS), reflectivity, triple axis, time-of-flight (TOF), engineering diffractometry, and neutron imaging.

Since these were the first workshops on instruments by instrument scientists, the main objective was to know each other. Each ISW started by self-introduction and address exchange, followed by description of instruments, discussion, etc. For example, the neutron powder diffraction (NPD)-ISW was organized as follows. Discussion time was coordinated for mutual understanding; proposal systems, number of users, topics (crystal, magnetism, batteries, energy-related, polymers, functional materials, etc.), sample environments, minimum sample size challenged, etc. They agreed to continue the NPD instrument scientist workshop and meet when AsCA'12 (the Asian Crystallographic Association, Dec.2-6, 2012) will be held in Adelaide, Australia as the Bragg centenary. Other ISWs proceeded similarly.

It was a great success to hold workshops on the occasion of AOCSN. Table 1 shows the statistics of 1st ISWs. The numbers of participants and instruments introduced were 162 and 82, respectively. The number of countries/areas is 5.75 in average out of 8 member/observer countries. These numbers are much larger than the expectation of the coordinators, indicating that instrument scientists wish to exchange information about instruments, such as sample environments and accessories, to learn knowhow of data reduction, user programs, etc. Those were really enthusiastic workshops. Most of ISWs agreed to launch mailing list or home page to keep close contact among instrument scientists. It is understood that equal partnership, i.e.,

equal relationship, equal contributions, and equal benefits is important for good and long standing collaborations. There was only one regrettable thing. The time allotted to the ISW, 3 hours, was too short. It was recommended to have next ISW with longer time.

The 1st ISWs can be summarized as follows: (1) It was the first face-to-face meeting on instruments by instrument scientists. (2) 15 - 27 scientists got together at each ISW and discussed their problems, including upgrades, budget, human resources, etc. (3) The workshop was very meaningful for our instrument scientists to share the knowledge and to have a continuous communication, especially for developing countries. (4) Instrument scientists will keep communication by making mailing list, home page, portal site, and/or uploading the presentation files.

Statistics of 1st ISWs

	Instrument workshop	Coordinator(s)	No. Participants	No. Countries/ Area	No. instruments reported
1	**Powder diffraction**	T. Kamiyama, K. Ohyama	23	6	17
2	**Single crystal**	T. Ohhara, Y. Noda	22	4	7
3	**SANS**	M. Shibayama, J. Suzuki	27	7	17
4	**Reflectometer**	H. Seto	23	5	8
5	**Triple axis**	T.J. Sato, K. Iwasa	18	7	17
6	**TOF**	K. Nakajima, O. Yamamuro	17	6	8
7	**Engineering diffractometer**	H. Suzuki	17	6	6
8	**Neutron imaging**	Y. Kawabata	15	5	2
total			162	Av. 5.75	82

Australia, China, India, Indonesia, Japan, Korea, Malaysia, Taiwan, (France)

Appendix 9
Possible Dates and Venue of the 2nd AOCNS in Australia

Chris Ling

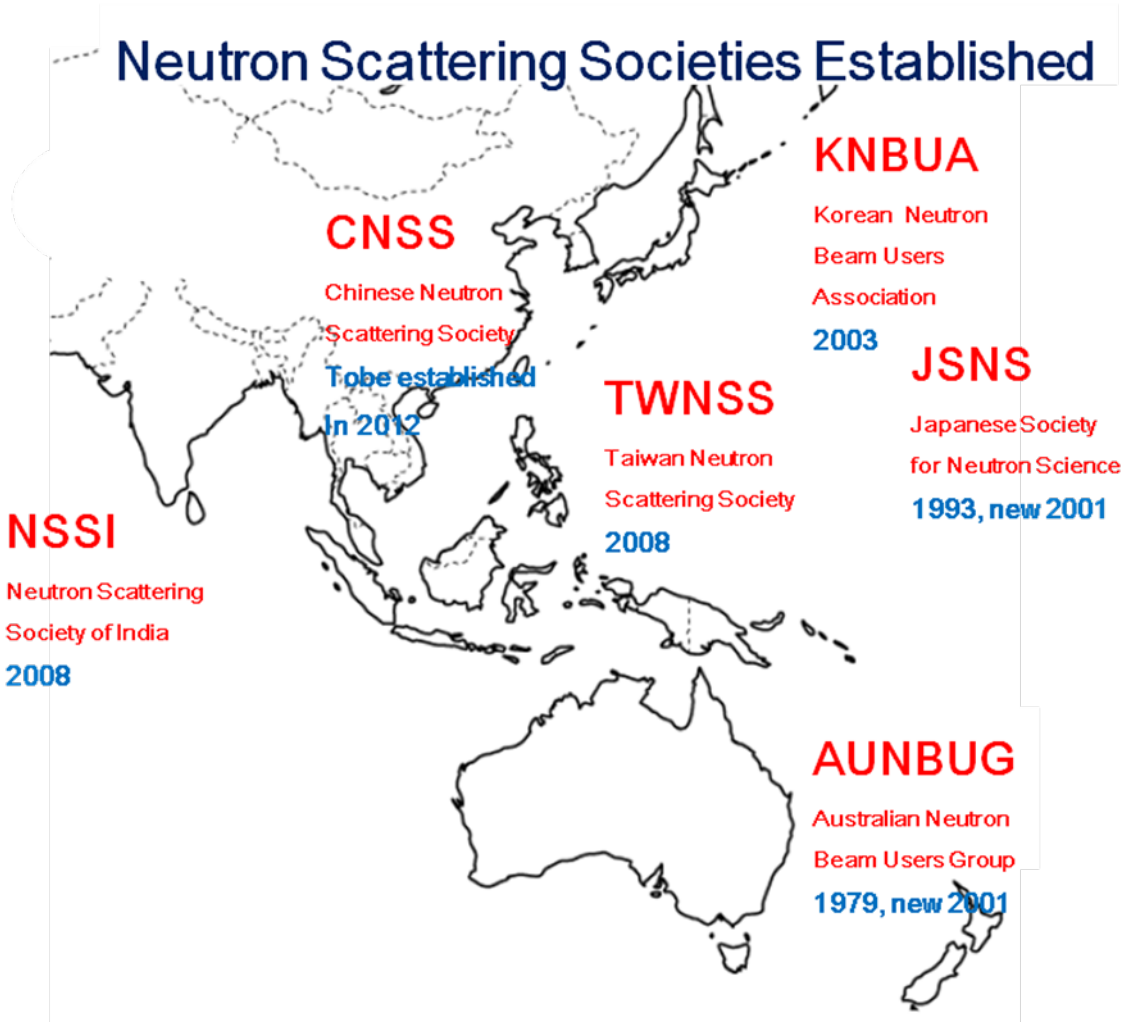
There is nothing to report at this stage concerning AOCNS 2015 preparations. I am still at the stage of requesting tenders from Professional Conference Organisers. However, I would like to leave this item in the agenda if possible, as there are some issues I would like to raise briefly with the EC. Specifically,

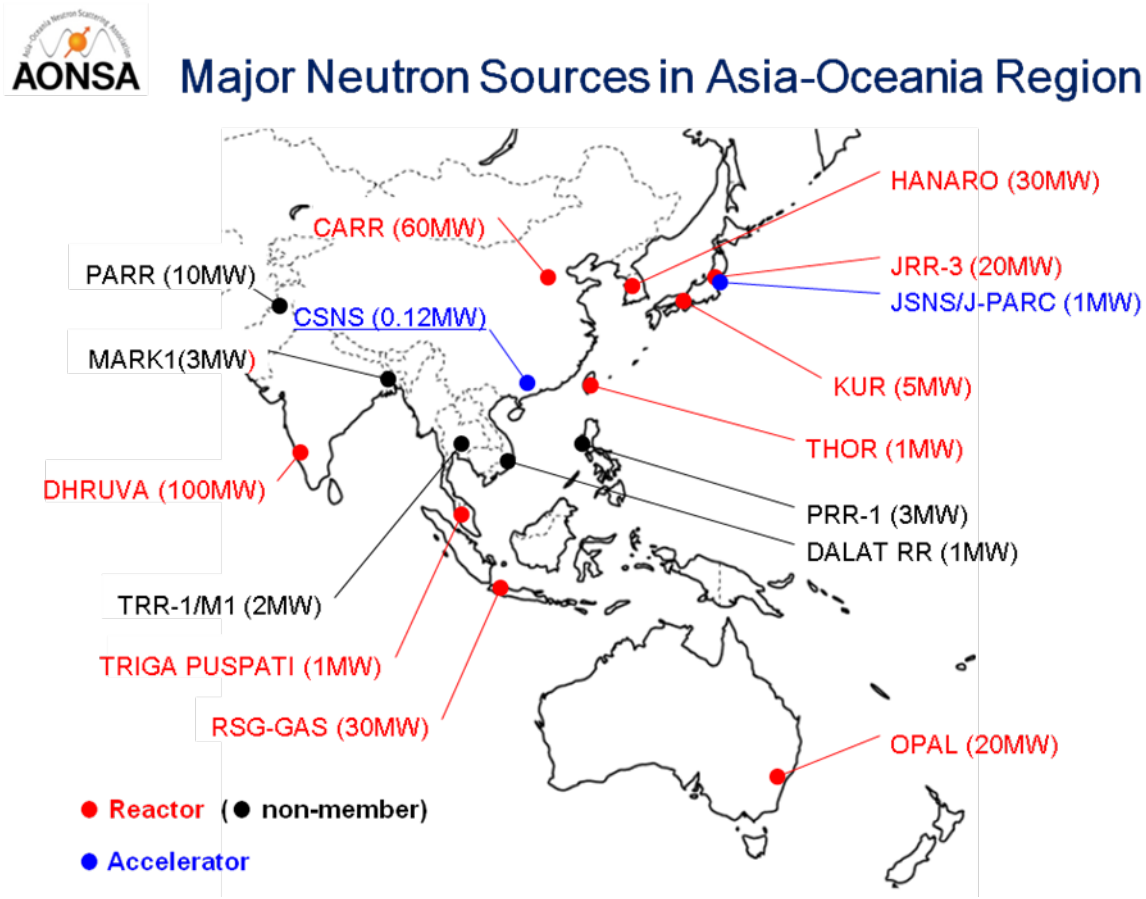
- what dates would be most acceptable (and preferable) to members from their countries, in both the Nov/Dec and Jun/Jul periods?

- do they feel that their members would strongly prefer the meeting to be held near the centre of Sydney (as was the case for ICNS 2005) or would they be interested in a venue slightly outside the city centre?

Appendix 10

Promotion of Neutron Science and Technology in non-member countries





President Y. Fujii's Letter to Director of TINT

From: Y. Fujii@CROSS-Tokai [mailto:y_fujii@cross.or.jp]
Sent: Thursday, March 22, 2012 4:08 PM
To: somporn@tint.or.th
Subject: Invitation to the AONSA Executive Committee Meeting in Malaysia (May 21-22, 2012)

Director of Thailand Institute of Nuclear Technology (TINT)
Dr. Somporn Chongkum
（Cc: Sirinart Laoharojanaphand, Siripone Chueinta and AONSA Board）

Dear Dr. Chongkum、

I'm Prof. Yasuhiko Fujii serving as the President of the Asia-Oceania Neutron Scattering Association (AONSA, Please visit http://www.aonsa.org/), which was established in August 2008 to provide a platform for discussion and a focus for action in neutron scattering (including imaging and doping etc.) and related topics in the Asia-Oceania Region.

We are working hard to stimulate/promote neutron science and technology and to support opportunities for young scientists/students by facilitating cooperation and networking among the neutron sources and communities in our Region.

We regularly hold an Executive Committee Meeting every half-year. The 8th EC Meeting is now planned in Malaysia on May 21-22, 2012 for the first half of this year which is linked to the "Nuclear Science, Technology and Engineering Conference 2012" as attached. On this occasion, we'd like to invite you or your colleagues to the EC Meeting where you are very welcome to give a presentation of your facility and community in Thailand. All of us are very eager to learn the current status of neutron sources and community in your country and to possibly start our communication/cooperation.

We look forward to hearing of your convenience and any information on these items.

Sincerely yours,

Yasuhiko Fujii
President of AONSA

P.S. This summer (July 29 – August 3) the Synchrotron Light Research Institute in Thailand is planning to host the 6th Workshop of the Asia-Oceania Forum for Synchrotron Research at Bangkok. I'm attending it on behalf of AONSA. By taking such an opportunity, I'd like to visit your institute if possible.

Appendix 11
Directors' Discussion on AONSA Visiting Fellows

In the 1st Directors' meeting (May 19, 2011, Bandung, Indonesia), the request from the AONSA Executive regarding "AONSA Visiting Fellows" was discussed.

<From the minutes of the 1st Directors' meeting>

6. Request from the AONSA Executive regarding "AONSA Visiting Fellows"

- The meeting welcomes the suggestion of such a scheme & could potentially provide support.
- Secondments of 6 month to 12 months, or even longer, are favoured.
- The aims of scheme should be clearly differentiated from those that are managed under bilateral agreements.
- The directors would like to encourage AONSA Executive to develop the concept further.

Appendix 12
Future AONSA-IAEA Collaborations in Asia-Oceania

Asia-Oceania Neutron Scattering Association

AONSA Office
c/o Neutron Science Section,
J-PARC Center, Japan Atomic Energy Agency
2-4 Shirakata-Shirane, Tokai, Ibaraki 319-1195, Japan
Phone: +81-29-284-3752, Fax: +81-29-284-3889

Future AONSA- IAEA Collaborations in Asia-Oceania
A Scoping Document 14-April 2012

1. This document is for the Executive Committee of AONSA and the Facilities Directors' meeting as a basis for extending existing collaboration with IAEA in training young scientists and technologists in the use of advanced neutron scattering methods and developing the broader remit of AONSA's Articles of Association.

2. AONSA's Articles of Association states express a high vision and goals for collaboration in our region. (Appendix 1) A recent expression of Article 1 says:

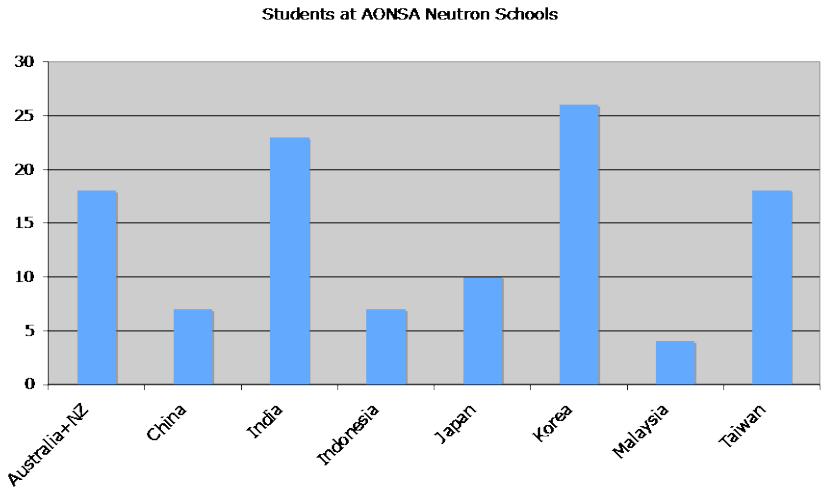
"The overriding purposes of the Association are to provide a platform for discussion and a focus for action in neutron scattering and related topics in the Asia-Oceania Region."

3. This general objective is close to IAEA statement at the IAEA Consultants Meeting in Daejeon , Korea , October 2010 to:

Promote networking, coalitions and regional collaboration to improve the efficient and sustainable utilization of research reactors (RR).

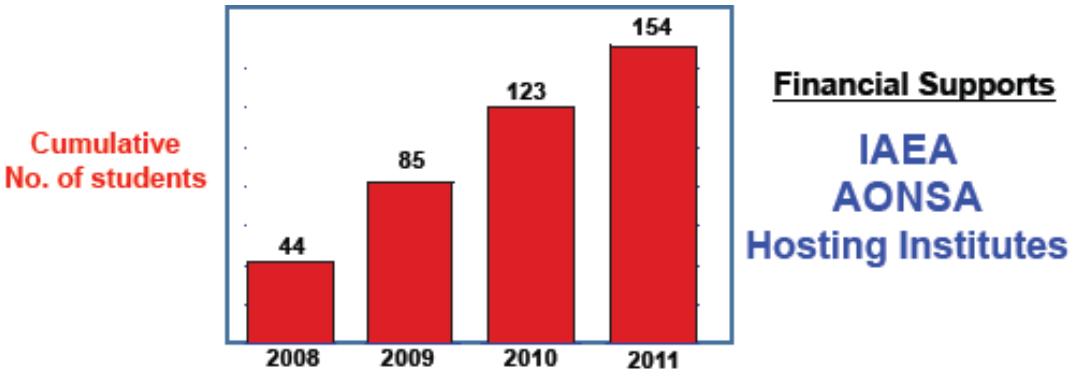
4. Founded in 2008, the Asia Oceania Neutron Scattering Association is an "Association of Associations" – not of National Institutes. The collaboration with the IAEA since its inception in 2008 – particularly in funding some student participation in the Neutron Schools,

has been greatly appreciated. It has allowed AONSA's prime program of Neutron scattering schools to grow across the region. Schools have now been held in Korea, Australia and India with participation of students and lecturers (at their own expense) drawn from Australia, China, India, Indonesis, Japan, Korea, Malaysia and Taiwan. The distribution is shown below.



5. The accumulated total of students who have learned theory, done practical experiments and enjoyed one another's company in the last four years is shown below.

"Train Young Generation and build Friendship among them"



6. AONSA wishes to continue its collaboration with IAEA in these Neutron schools but we ask **"what has happened to these students in this period"** and **"whether such an enrichment program could be extended beyond the aims of the Schools to sustain training for future leaders in cooperation with the Associations and Nuclear Centres across our region".**
7. Collaborations to promote such a "next step" for AONSA have been discussed in the Executive Committee in 2010 and 2011. Appropriate Minutes from these meetings

(Appendix 2). The organisations contemplated have been the International Atomic Energy Agency and the International Council for Science (ICSU) which now has a regional office in Malaysia.

8. In connection with the possible ICSU approach, discussions with the International Union of Crystallography – Neutron scattering Commission Chair, elicited their strong support (Appendix 3)
9. This proposal is to explore together such a question with IAEA. The opportunity is to build a new generation with closer scientific and technological contacts across the region, fostered by AONSA – within the wider terms set out in the Articles of Association in Appendix 1.
10. AONSA believes that the major investments in new facilities in our region could be used in a shared manner with existing laboratories to achieve in the next 10 to 20 years a lasting cooperation between the national associations, the nuclear centres and the international group of scientists and technologists using neutrons. As the developments at J-PARC and other centres have shown – there can be very serious and deep interest in nuclear methods for advanced technologies.)
11. AONSA has taken several steps in the last few years which demonstrate its robustness as a collaborator with IAEA in this new program:
    a. The establishment of Articles of Association and their interpretation by Bylaws, Regulations and Guidance statements accepted by all Associations through the operation of a Board preparing decisions to be made in the twice-yearly meetings of the full Executive representing all Associations as well as observers.
    b. The smooth rotation of the offices of President, Vice-President, Treasurer and Secretary along with the creation of a new role for “outreach” from AONSA for cooperation and information to cognate organizations in the region.
    c. Linking of AONSA’s interests with those of the regional nuclear centres by a facility directors meeting held in conjunction the twice-yearly international Executive Committee meetings. Though some Directors sit as observers at the EC, this separately located meeting chaired by an independently elected Chair, adds strength to our regional cooperation.
    d. Its commitment to the neutron school program – a commitment involving considerable subsidy to student and lecturer participation wherever the venue for the meeting.
    e. Consideration by nuclear centres to consider staggering the dates for the acceptance of proposals for experiments at their facilities.
    f. The fraternal help provided to our colleagues in Japan after the great earthquake and tsunami in 2011. Practical aspects of this were sharing facilities with the Japanese

colleagues and the displacement of the foreseen student neutron school from Japan to Sydney at short notice.

g. The great success of the First Asia Oceania Neutron Scattering Conference in Tsukuba Japan with more than 500 attendees over five days – with subsidised attendance of students. (One of the most popular events on the first day of this conference was presentation of new developments of scientific instruments at neutron sources across the region and sharing of technological insights.)

12. From this robust position, AONSA proposes collaboration with the IAEA to define a program of mutual interest to sustain the next step of education, training and cooperation between our Associations and the nuclear centres of the region.

13. One model might be to financially facilitate bilateral and multilateral exchange programs for travel and residence to achieve scientific outcomes unavailable in a student, postdoctoral fellow or engineers own university or organization.

14. Such a program should be quite modest with the potential to grow depending on the capacity of facilities and relying upon a peer review process to reward the most deserving cases from an intellectual point of view.

John W White 14-4-12

Note: this is part of Appendix 12

Appendix 1

AONSA Article 2: Aims

(i) To identify the needs of the neutron scattering community in Asia and Oceania.
(ii) To promote optimised use of present neutron sources in the region.
(iii) To stimulate and promote neutron scattering activities and training in the Region, and in particular to support the opportunities for young scientists.
(iv)To support long-term planning of future neutron sources.
(v) To assist with the co-ordination of the development and construction of instruments for neutron scattering.
(vi) To promote channels of communication with industry.
(vii) To disseminate to the wider community information which demonstrates the powerful capabilities of neutron scattering techniques and other neutron methods.
(viii) To assist, if appropriate, affiliated bodies in the pursuit of their own goals.
(ix) To facilitate cooperation and networking amongst the neutron sources in the region.

Note: this is part of Appendix 12

Appendix 2

Record of EC papers re IAEA/ICSU ideas for collaboration 12-4-12

Informal EC 3-10 Date: Mar. 24 16.30 to 18:30
Place: Conference Room #301, Tsukuba International Congress Center (where ASEPS being held)

(c) Exploring external links with AONSA

(i) In January 2010, the UNESCO's International Council for Science, ICSU, conducted a Roadmap exercise and AONSA submitted a paper setting out the AONSA organization, its aims and membership. This paper is now on the AONSA website.

(ii) The President noted that ICSU has established a regional office in Malaysia (Professor Nordin Hassan) to whom he has written about AONSA and indicated the possible usefulness of knowing the activities of each other's organization.

(iii) The President and Professor Fujii met with Professor Koroda current Vice President of ICSU for international affairs at the University of Tokyo on Friday 19 March to promote AONSA, its aims and activities.

EC #4 Singapore 5-10
6.8 Other Issues
6.8.1 Collaborations with International Council of Scientific Unions (ICSU)
Recent activities in relation to the International Council of Scientific Unions (ICS U) were reported by the President.
ICSU has established a regional office and is keen to intersect with scientific associations in our region to promote cooperation and international programs. The President has made contact with the regional office in Malaysia (Professor Mohammed Nordin Hasan) and its Australian representative from the Academy of Science, Professor Bruce McKellar. The vice President and President met Prof Reiko Kuroda, the ICSU Vice President in Tokyo, on 20 March,

6.8.2 Discussions with IAEA, IAEA Regional Meeting 2010
A communication regarding the recent IAEA CM meeting (August 12-14, 2009 at ANSTO, Sydney, Australia) and the follow-up IAEA CM meeting (October 27-29,

2010 at KAERI, Daejeon, Korea) was reported.
The IAEA CM meeting is focused on neutron beams in the Asia-Pacific Region. The results of the recent work by the technical working group of RCA indicate th at the Research Reactor Utilization with emphasis on education, science and applic ations with neutron beams is one of the recommended priorities.

EC #5 Mumbai 10-10

6.10 Possible Collaborations with ICSU, IUCr and IAEA

Recent activities to promote collaborations between AONSA and ICSU, IUCr and IAEA were reported by J. White, President. Following a positive discussion at the Executive Committee meeting in May 2010, that AONSA should co-operate with other international organizations wishing to develop training and scientific collaboration in the Asia Oceania region, a draft proposal to the International Council of Science (Asia Pacific region) is being developed in collaboration with the Neutron scattering Commission of the International Union of Crystallography. It is proposed to approach the nuclear centres in our region for their support to allow greater flexibility for young researchers to extend their work at complementary facilities in our region. At the EC meeting, Professor Yamada and Dr Arai suggested that we share the information about beam time application deadlines of facilities in the region and possibly arrange them to enhance the accessibility for neutron in the region. This idea will be further developed by the Board.

EC#6 Inter-University Center, Institute of Technology Bandung (ITB), Bandung, Indonesia May 19-20, 2011

8.1.3 AONSA Facility Director's meeting.

The origin and purpose of the facility directors' meeting was explained by President J. White. The discussion about having this meeting started during the 5th EC in India, followed by a series of discussions at the informal EC in Korea (October 2010), virtual Board meeting, and the Board meeting in Japan (February 2011).
The need of a Facility Directors meeting, associated with AONSA's EC meeting, has evolved in 2010-2011. The broad Aims of AONSA – Article 2 in the Articles of Association imply this wider and coherent cooperation. Practical ways to improve mutual cooperation and scientific access between centres (EC Mumbai) and the need for coordinated approaches in developing, for example, TC proposals to IAEA (Informal EC, Daejeon) are examples. At a different level, proposals to international bodies such as IAEA, ICSU and the IUCr could reinforce the efforts with funding (EC May 2010) if coordinated with the Asia-Oceania facilities. Some of the history of these features is

given in Appendix 5.
The letter from President J. White to neutron Facility Directors regarding possible AONSA Visiting Fellows was noted (Appendix 6). It was pointed out that the name AONSA fellow requires some financial support from AONSA (although it may be partial).

8.9 **Possible Collaborations with IAEA and ICSU**
Issues on IAEA TC and ICSU proposals
The Board discussion on this was reported to the EC (Appendix 16). Opinions from Directors' about future possibilities Shane Kennedy gave a brief report about Directors' meeting (verbal). The meeting was very fruitful and all participants of the meeting unanimously agreed to continue the meeting. The 2nd Directors' meeting is planned to be held during the 1st AOCNS. It was suggested that instrumentation workshop should be held at the end of AOCNS.

EC#7 9:30-12:30, November 20 (Sunday), 2011
Tsukuba International Congress Center, Tsukuba, Japan

10. Possible collaboration with IAEA, ICSU and IUCr
10.1 Issues on IAEA TC and ICSU proposals
It was noted that the facility directors' meeting will be a good starting point to work on a new IAEA TC proposal (which should be submitted in 2012 for its operation during 2014-2016). Considering the current top officers of ICSU, we may have a good support for our ICSU proposal as well. President J.W. White agreed to write to Professor Nordin Hasan (Director, Regional Office for Asia and the Pacific) reiterating AONSA's wish to participate in ICSU activities for Neutron Science Training -Asia-Oceania Region.
(*Note*: This letter was sent on December 2, 2011, Appendix 15)

J.W.White 12-4-12

Note: this is part of Appendix 12

Appendix 3

a. The Chair of the Neutron Scattering Commission, Dr Maria Teresa Fernandez-Diaz and the President (Professor White) met at the ILL in Grenoble in July 2010 and discussed a draft letter ("The Next Step", below) to Professor Nordin Hasan. This raised the possibility of AONSA making an application for an ICSU grant in 2010 or 2011. Dr Maria Teresa Fernandez-Diaz was fully supportive as were other members of the Neutron Scattering Commission who were consulted: Dr Shane Kennedy and Professor Andrew Harrison - Associate Director of ILL Grenoble.

b. The Neutron Scattering Commission is very conscious of the development of new sources and the potential of the neutron scattering community in the Asia Oceania region. The Commission would like to do more in the region.

Asia-Oceania Neutron Scattering Association

AONSA Office

c/o Neutron Science Section,

J-PARC Center, Japan Atomic Energy Agency

2-4 Shirakata-Shirane, Tokai, Ibaraki 319-1195, Japan

Phone: +81-29-284-3752, Fax: +81-29-284-3889, E-mail:

http://www.aonsa.org/

From the President

Professor John.W.White CMG, FAA, FRS

Email: jww@rsc.anu.edu.au , http://rsc.anu.edu.au/index.php

DRAFT

Neutron Science Training -Asia-Oceania Region -

the Next Step

This is an outline proposal for collaboration between AONSA and the Neutron Scattering Commission of the IUCr (International Union of Crystallography) towards a proposal for the "Next Step" in our training program. The proposal is intended for the current round (2011) of the International Council of Science (ICSU) Development Program.

AONSA, formed in 2009, of neutron scattering associations across the region, has as its principal objective the education and training of young scientists in the region for whom neutron scattering is likely to be of substantial use in their science and technology programs.

The intention of the "Next Step" is to build on teaching and experimental experience gained by students in their AONSA summer schools. Successful Schools have now been held in Korea and Australia. In 2010 the School will be held in India and in 2011 in Japan. We would like to discuss with our potential partners the most effective way of taking the next step.

There could be many possibilities.

- For example Shane Kennedy at OPAL has suggested that they could host some students interested in sustainable energy, human environmental hazards. We suppose that JPARC, Hanaro and other Centres could also offer some projects.
- Some previous neutron scattering experience, the training and science benefit might be criteria for choice.
- Competitively chosen student candidates might be funded in travel and subsistence for one to 3 months for collaborative experience at neutron facilities complementary to those in their home country.
- A principal objective of this scheme is for the students to return to their home country with the expertise that they gain to form a nucleus of activity with the engagement of their home laboratory.

On behalf of AONSA, I should be interested in a conversation to explore these ideas towards an eventual co-proposal to ICSU with whom AONSA has made contact at regional level and Council levels.

Yours sincerely,

John White

Additions by Marie-Teresa Fernandez-Diaz at ILL meeting 12-7-10

Appendix 13
Report for the Three Presidents' meeting during the 1st AOCNS.

Global Cooperation

Yasuhiko Fujii

On the occasion of AOCNS, we invited Prof. Michael Steiner (Chairman of ENSA), Prof. B. Gaulin (President of NSSA) and Prof. M. H. Ree (President of AOFSRR) to promote AONSA's international cooperation with other neutron association/society in Europe and America as well as synchrotron radiation community in our A-O region. All of them kindly accepted invitation and gave us their generous reports in the Sessions of Global Cooperation I and II during the Conference. Such an idea initiated in the AONSA Board Meeting a year ago took a specific form when the 1st Three President Meeting (ENSA-NSSA-AONSA) was held in Tokai, Japan last February (Neutron News 22, 4 (2011)).

This time the 2nd Three President Meeting was also held on Nov. 23 during the Conference with an emphasis on more exchange of their information and promotion of cooperation. One of the issues was on a host of the ICNS 2017 (quadrennial International Conference on Neutron Scattering) to be selected by bid at ICNS 2013 (Edinburgh). AONSA is very eager to hold it in 2017 in our A-O region which will follow such a natural sequence as last several ICNS's 1997 (Toronto, Canada), 2001 (Munich, Germany), 2005 (Sydney, Australia), 2009 (Knoxville, USA), and 2013 (Edinburgh, UK). We have agreed to support such a systematic rotation of a hosting region in which a hosting society (country/region) will be decided with regional Association's responsibility. Korean colleagues have a plan to host it and AONSA Executive Committee has already expressed its strong support to KNBUA.

The former and present AONSA Board members welcomed Prof. M. Steiner (Chairman of ENSA, third from left) and Prof. B. Gaulin (President of NSSA, second from right).

Appendix 14

NSSA invited President Y. Fujii to the ACNS (June 24-28, 2012) in Washington DC.

From: Y. Fujii@CROSS-Tokai [mailto:y_fujii@cross.or.jp]
Sent: Friday, February 03, 2012 7:15 AM
To: 'Bruce Gaulin'
Subject: RE: Invitation to attend ACNS 2012 in Washington DC and 3 President's Meeting

Dear Bruce,

Thank you very much indeed for your invitation to ACNS 2012. On behalf of AONSA, I'm delighted to accept your invitation and have an opportunity to give a talk.
I'd like to know the date when the Plenary Session is scheduled during the conference.

Looking forward to seeing you and your colleagues in June.

Best wishes,

Yasuhiko
President of AONSA

From: Bruce Gaulin [mailto:bruce.gaulin@gmail.com]
Sent: Friday, February 03, 2012 6:57 AM
To: Y. Fujii@CROSS
Cc: jww@rsc.anu.edu.au
Subject: Re: Invitation to attend ACNS 2012 in Washington DC and 3 President's Meeting

Dear Yasuhiko;

I'd like to invite you, as President of AONSA, to attend the upcoming American Conference on Neutron Scattering (ACNS 2012), to be held at Georgetown University, in Washington, DC. I have also extended this invitation to Michael Steiner, President of ENSA, and I feel this would be an opportunity for the three neutron society presidents to meet and discuss issues of mutual interest. It would also be an opportunity for us in the NSSA to repay in part the hospitality we received at AOCNS in Tsukuba.

We can cover the cost of your registration and banquet ticket, and if you able to attend, we

would ask you to briefly address one of the Plenary Sessions at ACNS 2012. The website for ACNS 2012 is www.mrs.org/acns-2012/ and it will be held June 24-28, 2012.

I look forward to hearing from you.

best regards, Bruce

--
Bruce D. Gaulin
President, NSSA
Director, Brockhouse Institute for Materials Research
Professor and Brockhouse Chair in the Physics of Materials
McMaster University
Hamilton, ON, L8S 4M1
Canada

Appendix 15
President Y. Fujii's communication with AOFSRR

From: Y. Fujii@CROSS-Tokai [mailto:y_fujii@cross.or.jp]
Sent: Wednesday, February 22, 2012 1:49 AM
To: 'Sukit Limpijumnong'
Subject: RE: Invitation to give a talk at AOFSRR2012 (Please kindly resubmit your talk)

Dear Prof. Sukit Limpijumnong,

First of all, the Asia-Oceania Neutron Scattering Association (AONSA) would like to congratulate you and your colleagues on the 6th AOFSRR Workshop successfully rescheduled after the floods disaster last fall.

Thank you very much indeed for your invitation to the Workshop at Bangkok in the upcoming August. I'm delighted to accept your invitation and to have an opportunity to introduce AONSA and our activities to be harmonized with your AOFSRR.

Looking forward to such an exciting meeting in Thailand.

Sincerely yours,

Yasuhiko Fujii
President
AONSA (http://www.aonsa.org/)

-----Original Message-----
From: Sukit Limpijumnong [mailto:konesarn@gmail.com]
Sent: Wednesday, February 22, 2012 12:47 AM
To: y_fujii@cross.or.jp
Subject: Invitation to give a talk at AOFSRR2012 (Please kindly resubmit your talk)

Dear plenary and invited speakers,

As you all knew, the 6th Asia-Oceania Forum for Synchrotron Radiation Research (AOFSRR) has been rescheduled to August 8-12, 2012 due to flooding last year. The

Conference is jointly organized with the 4th SLRI annual user meeting to be held at Imperial Queen's Park, Thailand.

I attached the updated tentative program schedule for your information. Please feel free to provide the new title of your talk.
Because the attached program is only a preliminary draft, please do not distribute it to avoid confusion.

Please kindly confirm your participation by replying to this email by March 15th and submit your abstract by March 31st. The most preferred method of abstract submission is by web submission at the conference site http://www.slri.or.th/AOFSRR2012/.
However, if it is inconvenience for you the abstract can be done by email to aofsrr2012@slri.or.th.

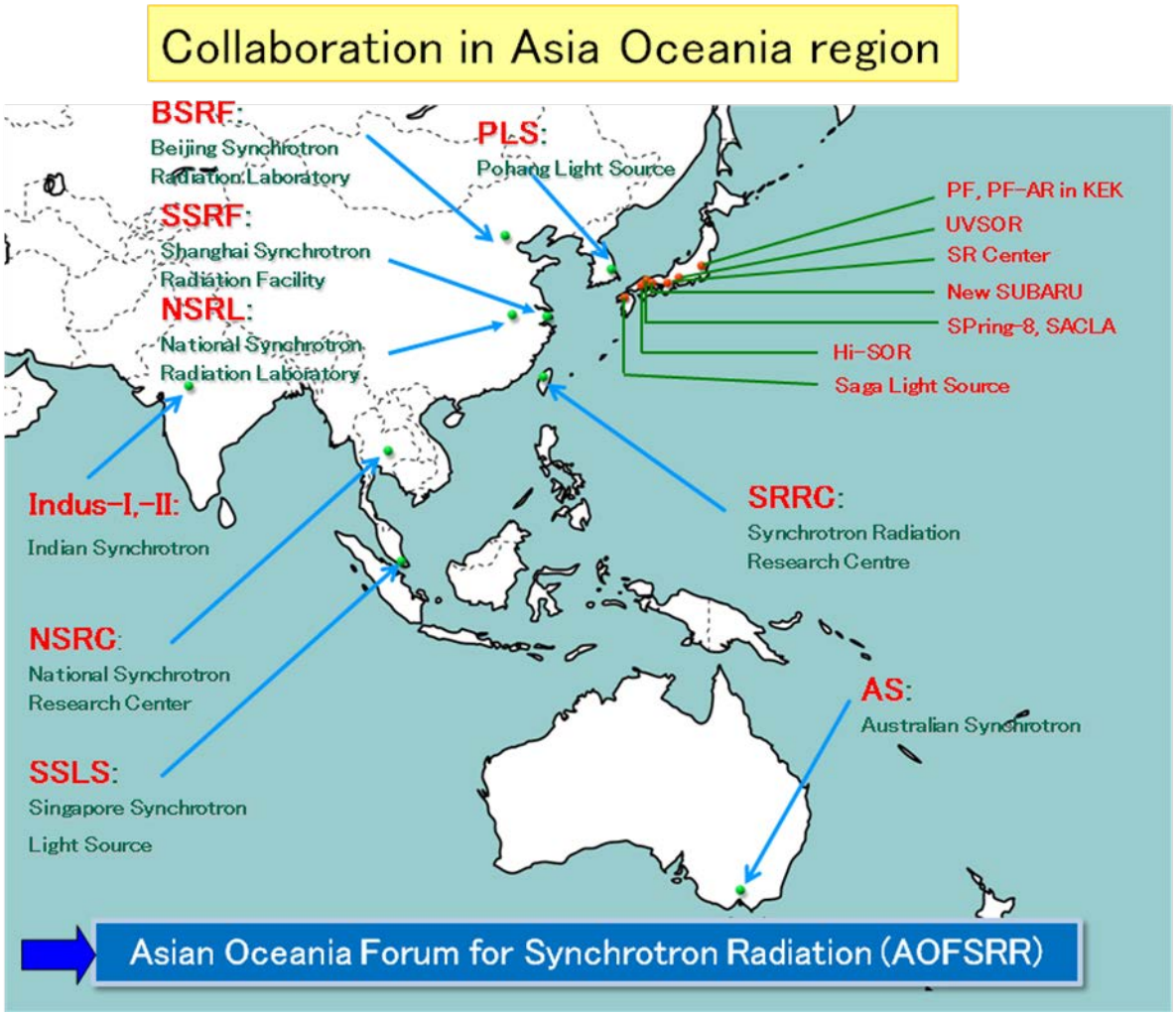
In addition, to reserve a hotel room for you at the Imperial Queen's Park Hotel as well as for us to pick you up from the airport (if you have another arrangement about airport pick-up please let us know), please provide us with the arrival and departure dates (and flights # if available). We will cover your accommodation during your stay in Thailand as well as waive your registration fee.

If you have any further queries about the conference, please contact us at aofsrr2012@slri.or.th.

Sincerely yours,

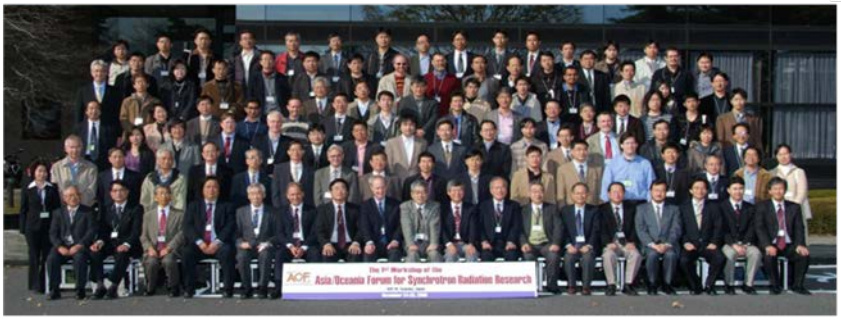
Prof. Sukit Limpijumnong, Chair
Program Committee
6th Asia-Oceania Forum for Synchrotron Radiation Research & 4th SLRI annual user meeting August 8-12, 2012 Imperial Queen's Park, Bangkok, Thailand
http://www.slri.or.th/AOFSRR2012/

The following information on AOFSRR is obtained by courtesy of Prof. Osamu Shimomura (the first President of AOFSRR, the former Director of IMSS/KEK).



1st Workshop of AOFSRR

November 24-25, 2006 at KEK, Japan



A group photo of the participants (127 from seven countries/region)

Membership

Member
- Australia
- China
- India
- Japan
- Korea
- Singapore
- Taiwan
- Thailand

Associate member
- Malaysia
- New Zealand
- Vietnam

Singapore, China, Korea, Japan, Australia, Taiwan, Thailand
(India is missing)

Organization

President	Moonhor Ree (Korea)
Vice president	Hongjie Xu (China)
Past president	Keng Liang (Taiwan)
Treasurer Richard	Garrett (Australia)
secretary-general :	Masaki Takata (Japan)
Special Advisor	Osamu Shimomura (Japan)

Report of AOFSRR Summer School Cheiron School 2008

The 2nd AOFSRR Summer School

- Cheiron School 2008 -

29th Sept. ~ 8th Oct. 2008

@ SPring-8

Students

Australia (10) Korea (9) Singapore (5) Taiwan (10)
Thailand (7) India (5) China (5)
New Zealand (3)
Japan (12*) *including international students
Total 66 (Last Year **48**)

Support to SESAME Project

SESAME

(Synchrotron-light for Experimental Science and Applications in the Middle East)

A 2.5 GeV synchrotron-light source under construction near Amman (Jordan), modeled on CERN and created under the auspices of UNESCO.
The first International Research Facility in Middle East

The Members of SESAME :

Bahrain, Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, the Palestinian Authority Turkey.

Observer countries :

*France, Germany, Greece, Italy, **Japan**, Kuwait, Portugal, Russian Sweden, UK, USA.*

SESAME will both:

***Foster excellent science and technology** in the Middle East and the Mediterranean region (and prevent or reverse the brain drain), by enabling world-class research in subjects ranging from biology and medical sciences through materials science and physics to archaeology; and*

***Build bridges between diverse societies**, and contribute to a culture of peace through international cooperation in science.*

Appendix 16

Cooperation with Association of Asia-Pacific Physical Societies (AAPPS)

From: arai (J-PARC) [mailto:masaarai@hotmail.co.jp]
Sent: Wednesday, May 02, 2012 10:56 AM
To: Sung-Min Choi; '新井Dv.長'
Cc: 'Y. Fujii@CROSS'
Subject: Re: Issues on AAPPS (Agenda of AONSA EC meeting)

Sung-Min

I have discussed with the president of AAPPS, Prof. Nagamiya, what is a possible way for AONSA to participate in AAPPS.
AONSA is a well established/organized independent association from AAPPS.
Hence, it is hard to think that AONSA will become a division of AAPPS.
AAPPS, however, wants to have a good linkage with AONSA. Such a linkage/integration of associations will make a big movement and enhance activities in science in the region.

Hence, we think it is a good start with the following idea.
One of ways can have a session related to AONSA in APPC. Although it is a discussion matter in APPC organizer, however, probably the AONSA session can be organized by AONSA on demand from AONSA. Probably there can be other better idea, though.
Please discuss in the AONSA EC what is your request and condition if AONSA will contribute to AAPPS/APPC.

(APPC is the Asia Pacific Physics Conference, which is held every three years. The next APPC will be held in July, 2013 in Japan)

With best regards, Masa

From: arai (J-PARC) [mailto:masaarai@hotmail.co.jp]

Sent: Tuesday, May 01, 2012 4:48 PM
To: Sung-Min Choi; '新井Dv.長'
Cc: Y. Fujii@CROSS
Subject: Re: Issues on AAPPS (Agenda of AONSA EC meeting)

Sung Min,

Here I have enclosed a call for division of AAPPS from the president of the AAPPS, Nagamiya.

AONSA is a well establised independent organization including not only physics but other many disciplines. Hence this call to AONSA is not a actual division formation of AONSA in AAPPS.
It is difficult even for me how/what kind of relation could be formed between AAPPS and AONSA. One of cooperation can be a satelite workshop of AONSA at APPC(AAPPS conference, one every three years) or holding one session of AONSA in APPC.

I will discuss some more details with Nagamiya and if it is possible I will add some other information to you.

Masa

September 15, 2011

Call for AAPPS Divisions

At AAPPS the creation of the Division structure is under consideration, similar to APS and EPS. At the previous AAPPS Council meeting the action to create Divisions was positively agreed on. However, in Asia-Pacific areas many subfields do not have any visible organizations, so that it may take time to create a full-scale Division structure in AAPPS. We, therefore, decided to create some Divisions (but not all) by starting to interact with organizations where prototype Asian unions already exist. Your organization is one of these examples. Please consider positively joining AAPPS as a founding member of one of the Divisions and take a lead in the establishment of that Division. Even if you join AAPPS as a Division, you may maintain the present style of organization as it is.

Also, I expect that there may be significant groups within national bodies, for example, Women in Physics Group and similarly an Education Group, although not an Asian regional group. If you know these groups, please let them know it to initiate to consider the

formation of the Division.

At the previous AAPPS meeting, the formation of two types of Divisions has been discussed, similar to the EPS as shown at the end of this document. They are a) "normal" Division that originates from one scientific field and b) "interdivisional" Division that originates from one issue or one type of facility while it can span over many sub-disciplines. Already existing (or about to be formed) candidate Divisions in Asia-Pacific areas are as follows:

Category #1 (based on a specific science field):
Plasma Physics, Astrophysics, Nuclear Physics (ANPhA), Applied Physics, High Energy Physics
Category #2 (based on a broader science and/or sociological need):
Synchrotron Radiation (AOFSRR), Neutron Science (AONSA), Women in Physics (WGWIP), Physics Education

Also it was proposed that Division-based APPC Topical Meeting must be encouraged under the endorsement of AAPPS.

The formation of a rigid Division structure shall be discussed and approved at the next AAPPS Council meeting at Singapore in June of 2012. Prior to this meeting we will have a Video AAPPS Council meeting in December/January. There, I would like to review the progress of the Division formation.

Please take a look at the questionnaire on the next page. I am looking forward to hearing back from you.

Shoji Nagamiya
AAPPS President

Preliminary Answers for AAPPS Divisions

1. Are you able to consider positively the formation of the Division and involvement in your area as a founding partner of a Division of AAPPS?

2. The next APPC (Asia Pacific Physics Conference) will be held in the summer of 2013. Your active participation in a Division starting from this APPC meeting is highly desired. Are you willing to contribute to this meeting?

3. What type of activities can you think of as a Division?

4. Any other comments on the formation of Divisions at AAPPS.

Example of EPS Divisions
(EPS = European Physical Society)

Appendix 17
WiKi Neutron Project

Chris Ling

At the recent inaugural meeting for NMI3-II, the Public Relation representatives of the facilities met to re-launch a project apparently discussed at a conference in 2009. A web site was started back then (see http://neutronsources.org) but did completed. However, the NMI3 board has now decided to restart this project with the PR representatives of the facilities. All European facilities are invovled, as well as SNS and ANSTO. There will be a meeting in May in London to launch the project. Facilities not already "in the loop" will be informed shortly.

Eddy Lelièvre-Berna (leader of the wiki-neutrons.org project) and Juliette Savin (NMI3 Information Manager) have discussed the content of this web site, which is very similar to what was intended for wiki-neutrons.org. NMI3 have agreed to refine their goals so that the content is truly accessible to the general public with the aim of advertising the role of neutron science in day-to-day life - i.e., to effectively incorporate the "wiki-neutron" initiative into the "neutronsources" project. Clearly, we should avoid duplication of work, so this seems to be a logical step, and Eddy is in favour of it.

At this stage, it is not clear whether there will be an active role for societies such as AONSA in this new manifestation of the project, as it will be led by the professional Public Relations departments of the facilities. I have sought clarification on this point and will report at the meeting.

Subject: Wiki-Neutrons.org - Update
From: Eddy Lelièvre-Berna <lelievre@ill.fr>
Date: Tue, 20 Dec 2011 18:45:17 +0100

Dear colleagues,

We would like to thank very much those of you who replied to our proposition. 14 facilities and associations have confirmed their willing to contribute (list below). Briefly, nearly all facilities and associations prefer to contribute in-kind whenever possible and 50% of the facilities would, in addition, contribute financially.

We have also received a number of comments and questions that we wish to share with you. With regards the goal of this project, there seems to be some misunderstanding but we believe that the above explanations bring enough clarifications.

We are almost ready on the technical side: the tools are free, the hosting is cheap and the web site can be filled in a collaborative way. Moreover, there is already some material available from several facilities and the project could start. We are now going to collect quotations for preparing the templates and the graphical chart. In-kind contributions are also very welcome.

Time has come to setup the management structure. Unless we receive propositions different from the idea of an association, we propose to prepare the statutes. With the delegates, a very preliminary draft is going to be discussed and refined directly on the wiki web site. The associations and facilities who have not appointed a delegate yet are invited to do so.

Best wishes,

Eddy
-------- Answers to the comments, suggestions and questions --------
Content

- Considering the already existing web sites of the facilities, associations, Wikipedia, etc., is this initiative really complementary and therefore necessary ?

☐ We believe that the Wiki-Neutrons will be truly complementary because it will be specifically addressed to journalists, industry, policy-making bodies, university teachers and general public. Today, the web sites of associations, facilities and initiatives like NMI3 are essentially addressed to scientists and experts. One can find pages of interest to the general public or the industry but they are not the most visible pages. Unless these websites are revamped, the Wiki-Neutrons will present newspapers-like articles and will become the portal for our customers.

- If for example industry should be one community to be attracted by this portal, the

structure of the web should be clearly different from the usual encyclopedia or facilities portals.

☐ Exact. This is one of the aims.

- Is the name "wiki-neutrons" appropriate ?

☐ By definition, a wiki is "a Web site that allows collaborative editing of its content and structure by its users". The authoring access can be controlled and the content is generally verified. So yes, we believe that the name is appropriate but alternative suggestions are still welcome.

- Would it be possible to publish the articles in other journals, like Neutron News ?

☐ Clearly yes since the content will be free from copyrights. We can also add that referring newspapers-like articles might certainly be better performed with the help of journalists and the role of communication groups of the facilities is mandatory.

Financial aspects

- Can the financial contribution depend on the size of the facility/association ?

☐ Yes.

- Can we adopt a model where each partner provides the material he is responsible for, i.e. in-kind contribution ?

☐ Yes but let us stress that some funding is mandatory for outsourcing the creation of the graphical chart, the templates that will be used to produce the pages and the animations introducing the principles.

☐ So if one means by in-kind contribution a work which is subcontracted or performed either by permanent or non-permanent staff, that should not be a problem.

Management

- Is this initiative driven by an individual facility interest or by a broad community ?

☐ We believe that this initiative must be broad and this is why we propose to set up an association. The main aim is to convince how necessary is neutron science to everyone. In case of success, this initiative may even help facilities to get some funding.

- How to manage this initiative on a long-term ? The management structure seems too loose.

☐ This is clearly one of our concern. We proposed that this initiative be managed like a world-wide association - with statutes, chairman, secretary and treasurer (say like AONSA, ENSA, NSSA, etc.). Any other proposition is very welcome.

- What is the expected workload for the editorial board ? Is there a need for one person in full-time ?

☐ The workload for will be significant at the beginning, i.e. for preparing the graphical chart and the templates (executive board) and for preparing the editorial chart (editorial board). We envisage to hire for a few months someone preparing the templates (may be considered as an "in-kind" contribution of a facility).

☐ The main structure of the web and some of the contents will be prepared with the help of some consultants (volunteer neutron scientists). This core content is compulsory to set the tone of the whole site and to define a framework for future contributions.

☐ Then, the workload will depend on the number and the quality of the articles collected by the delegates. The size of the editorial board might be adapted so that each scientist does not have more than e.g. 5 articles to refer per year.

List of facilities and associations who replied:
[TBC: To Be Confirmed officially - an email sent asap would be very appreciated]

- ANSTO - Robert Robinson [TBC] <rro@ansto.gov.au> - ~10 kEuros/year + in-kind contribution
- ENSA - Michael Steiner [TBC] <steiner@helmoltz-berlin.de> - in-kind contribution
- FRM II - Jürgen Neuhaus <Juergen.Neuhaus@frm2.tum.de> - mostly in-kind contribution
- HZB - Thomas Gutberlet <thomas.gutberlet@helmholtz-berlin.de> - mostly in-kind contribution
- IET - Gro Hørthe <Gro.Horthe@ife.no> - mostly in-kind contribution
- ILL - Eddy Lelièvre-berna <lelievre@ill.eu> - ~10 kEuros/year + in-kind contribution
- J-PARC/MLF - Masatoshi Arai <masatoshi.arai@j-parc.jp> - mostly in-kind contribution
- JSNS - Kenji Nakajima <kenji.nakajima@j-parc.jp> - probably in-kind contribution
- KFN - Karin Griewatsch [TBC] <karin@pclab.ifg.uni-kiel.de> - only in-kind contribution
- LLB - Françoise Bourrée - <bouree@llb.saclay.cea.fr> - ~10 kEuros/year for the first 3 years
- RI Delft - Jeroen Plomp <J.Plomp@tudelft.nl> - ~10 kEuros/year for the first 3 years
- AONSA - John W. White [TBC] <jww@rsc.anu.edu.au> - probably in-kind contribution
- SETN - Javier Campo [TBC] <javier.campo@csic.es> - only in-kind contribution
- SNS - Robert L. McGreevy [TBC] <mcgreevyrl@ornl.gov> - ~10 kEuros/year + in-kind contribution

---

Dr. Eddy LELIEVRE-BERNA - lelievre@ill.eu
Advanced Neutron Environment Team Leader - http://www.ill.eu/sane

Appendix 18
Calendar of AONSA Activities

Year 2012

Date	Events
4/20	AONSA Newsletters Vol. 4, No. 1
5/21-5/22	The 8th AONSA EC Meeting (Kajang, Malaysia)
6/24-6/28	American Conference on Neutron Scattering/ACNS 2012 (Washington DC, US)
7/29-8/2	M2S-X International Conf. on Mechanism and Materials of Superconductivity; (Washington DC, US)
7/30-8/3	Texture Analysis with MTEX (Lucas Height, Australia)
8/8-8/12	The 6th Asia-Oceania Forum for Synchrotron Radiation Research/AOFSRR 2012 (Bangkok, Thailand)
9/17-9/20	The 7th International Sample Environment Workshop (Sydney, Australia)
9/30-10/4	The 10th International Conference on Quasielastic Neutron Scattering/QENS (Nikko, Japan) The 5th Workshop on Inelastic Neutron Spectrometers/WINS (Nikko, Japan)
10/xx	AONSA Newsletters Vol. 4, No. 2
10/26	The 4th Facility Directors' Meeting (Beijing, China)
10/27	The 9th AONSA EC Meeting (Beijing, China)
10/8-10/10	Workshop on Exploring the Soft Matter at the Nanometer Scale by SANS (Serpong, Indonesia)
10/23-10/27	The 5th AONSA Neutron School (Beijing, China)
11/7-11/9	The 10th AINSE-ANBUG Neutron Science Symposium (Lucas Heights, Australia)
11/18-11/23	The 15th International Small-Angle Scattering Conference (Sydney, Australia)
11/25-11/27	Structure and Dynamics of Condensed Matter by Scattering Methods Workshop (Hunter Valley, Australia)
11/26-11/30	IAEA Technical Meeting on Regional Research Reactor Users Networks: Advances in Neutron Imaging (Serpong-Jakarta, Indonesia)
12/2-12/6	The 11th Conference of the Asian Crystallographic Association (Adelaide, Australia)

Year 2013

Date	Events
1/14-1/17	The 2nd International Symposium on Neutron Scattering/ISNS (Mumbai, India)
7/7-7/11	The 10th International Conference on Neutron Scattering (Edinburgh, UK)
7/7-7/11	AONSA Prize Award Ceremony (during ICNS, Edinburgh, UK)
7/14-7/19	The 12th Asia-Pacific Physics Conference/APPC (Chiba, Japan)

Appendix 19
Reports from Neutron Associations

ANBUG Australian Neutron Beam Users Group

The Australian and New Zealand neutron scattering communities have been benefiting over the last 6 months from what is almost certainly the most sustained period of reliability of our local neutron source, OPAL. This includes the previously problematic cold source (although users should note that this will be shut down for at least 6 weeks while a new cold neutron guide is installed in November 2012). Moreover, ANSTO is now actively pursuing the project to build a second guide hall, which (if funded) would be accompanied by an extensive suite of new instruments that will cover the full range of techniques. A workshop to discuss the first round of instruments for the second guide hall will be held in mid-April. We are wholeheartedly behind the project and look forward to the outcome.

However, ANBUG is concerned by the Australian Government's termination of the Access to Major Research Facilities Program, which Australian neutron users relied upon heavily for access to international sources, particularly spallation sources with their important complementarity to reactor sources such as OPAL. Lobbying to restore or replace the fund is continuing through all available channels. In the meantime, a bid for travel support to international neutron spallation sources (ISIS, JSNS, SNS, LANL *etc*) is being pursued through the Australian Research Council (under the LIEF scheme).

ANBUG is moving towards financial sustainability with the decision at the last AGM (held on 22/11/11 in Tsukuba, Japan, during AOCNS) to institute a small surcharge at our local meeting, the ANBUG-AINSE Neutron Science Symposium, which will support our participation in AONSA and provide seed funding for larger meetings such as AOCNS and ICNS when they are held under our auspices. At the same time, however, ANBUG has voted to retain our existing model of free membership.
ANBUG and ANSTO hosted the 4th AONSA School was held at ANSTO, due to the impossibility of holding this in Japan following the 2011 earthquake. The School was a great success, as reported elsewhere in this newsletter.

Finally, ANBUG is proud to have won the right to host the second Asia-Oceania Conference on Neutron Scattering (AOCNS) in 2015. We have already started preparations, knowing that we have a very high standard to match following first AOCNS organised by JSNS. We hope to see you all there.

Chris Ling (President, ANBUG)

Report from JSNS

May 22nd, 2012

AOCNS EC, Malaysia

JSNS Toshiji Kanaya

6th Board of JSNS (Apr., 2011 - Mar., 2013)

President: Toshiji Kanaya (Inst. for Chemical Res., Kyoto Univ.)

Members of Council (15)

Masayuki Imai (Ochanomizu Univ.)
Toshiya Otomo (KEK)
Kenji Ohyama (Tohoku Univ.)
Takashi Kamiyama (KEK)
Yoshiaki Kiyanagi (Hokkaido Univ.)
Mitsuhiro Shibayama (Univ. of Tokyo)
Junichi Suzuki (CROSS)
Hideki Seto (KEK)
Miwako Takahashi (Tsukuba Univ.)
Naoya Torikai (Mie Univ.)
Makoto Hayashi (Ibaraki Pref.)
Yasuhiko Fujii (CROSS)
Naoto Metoki (JAEA)
Kazuyoshi Yamada (Tohoku Univ.)
Osamu Yamamuro (Univ. of Tokyo)

Board of Administration

*Minor reshuffle has been done from Apr., 2012

Secretary
Kenji Nakajima (J-PARC)
Nobuaki Takahashi (J-PARC)

Treasurer
Shinichi Ito (KEK)
†Masashi Hase (NIMS)

Events Coordination
Hiroyuki Suzuki (NIMS)
† Masaaki Sugiyama (Kyoto Univ.)

Communication
Hiroyuki Kimura (Tohoku Univ.)
† Hiroshi Nozaki (Toyota Central R&D Labs.)

Public-Relations
Seiji Tasaki (Kyoto Univ.)
† Toshie Ohtake (RIKEN)

Publication
Shinichi Sakurai (Tokyo Denki Univ.)
† Masuda Takatsugu (Univ. of Tokyo)

†:Newly joined members

Current Status of JSNS

Membership (11 May, '12)

580 members (including 62 students), 35 supporting members
(cf. (Apr., '11) 575 members (including 70 students), 33 supporting members)

Budget status

Settlement for JFY 2011
Income: ~10M yen, Spending: ~12M yen (including support money for carrying out experiments abroad)

Budget for JFY 2012
Income: ~10M yen, Spending: 11M yen (*not yet confirmed)

Events in 2012

17 May, '12: Administration Board Meeting
- Batonpassing meeting from previous to new administration board members
- Plan for new fiscal year
- Discussing on budget

28 May, '12: 28th Regular Council Meeting

Summer : Selection of JSNS prize

Autumn: Election of president and council members.

10-11 Dec., '12: 10th Annual meeting of JSNS at Kyoto Univ.

Report on damage of neutron scattering facilities by the earthquake in Japan and thank AONSA members for kind supports.

A big earthquake with M=9.0 hit Japan on March 11th 2011, and the subsequent Tsunami destroyed many towns and cities. The nuclear reactor disaster in Fukushima also caused the serious problems.

Neutron scattering facilities such as J-PARC/MLF and JRR-3 reactor were also seriously damaged by the earthquake.

Japanese neutron scatterers, especially students and young scientists, were very much discouraged

Materials and Science Area (MLF) (2)

West side road from MLF. About 1.5 m sinking was observed.

Linac Tunnel as of March 24

On March 17 the water level was only 1 cm, whereas it was 10 cm on March 24. With motor driven electric generator a pumping started on March 25.

Warm messages and kind supports to Japanese neutron scatterers from all over the world

Transferred Proposals from J-PARC/MLF

	approved	SNS	LANSCE	ISIS	ILL	HANARO	SPring-8
BL01	13	3		1			
BL03	20	2					
BL05	1				1		
BL08	13	4				1	
BL10	14						
BL12	3	3					
BL14	12	3		1	1		
BL16	11	2	3	1			1
BL19	19	3					1
BL20	34	4	2				
BL21	2	1					
Total		24	5	3	2	1	2

Transferred Programs from JRR-3

Feb. 15, 2012

Facilities

Facility			JAEA		Universities	total	remarks
			In-house	users	users		
HFIR	ORNL	USA	4	0	13	17	
HANARO	KAERI	Korea	1	※4	2	7	※Industrial use 1
ANSTO	Bragg Institute	Australia	2	0	7	9	
ILL	ILL	France	3	3	10	16	
Total			**10**	**7**	**32**	**49**	

ISSP (University program): 246 proposals for FY2011 were cancelled.
JAEA: about a half number of proposals for FY2011a are also cancelled.

Domestic (Spring-8)

Facility			JAEA		Universities	total	remarks
			In-house	users	users		
SPring-8	RIKEN	Japan	0	2	3	5	

2011 AONSA Neutron School

2011 AONSA Neutron School was scheduled to be held in Japan, but it was impossible. Instead, ANSTO kindly accepted to hold the Neutron School.

4 Japanese students participated in the School, who were supported by "Australian Minister's Education Assistance Program for Japan"

J-PARC is now recovered and running at 200 kW power due to the great efforts of the director Nagamiya, MLF division head Masa Arai and colleagues

However, JRR-3 reactor is still shut down due to safety problem

In response to the Great East-Japan Earthquake

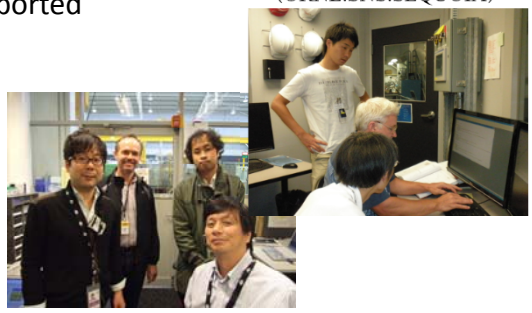
JSNS has prepared financial support program for carrying out experiments abroad.

14 JSNS members were supported (including 12 students).

- ANSTO: 6
- KAERI: 1
- ORNL (HFIR&SNS): 4
- ILL: 3

We have spent 1.8M yen.

データ観測室にて
(ORNL.SNS.SEQUOIA)



We express our deepest gratitude to your support to Japanese neutron scientists.

Special committee in JSNS on a future generation research reactor (2010, Sep. ~)

Chaired by Professor Yoshiaki Kiyanagi

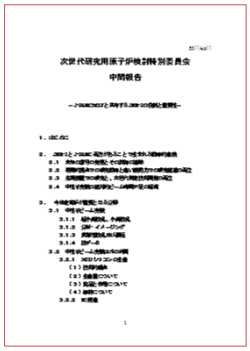
AIM: To discuss usefulness and to write a recommendation for a future generation research reactor to promote the neutron science.
The meeting was held 10 times.

We discussed the roles of both J-PARC/MLF and JRR-3, and the necessity of JRR-3 relating to J-PARC. Finally we reached a conclusion of the usefulness of the reactor source.

The Report is now on HP of JSNS, and we submitted the report to MEXT in August, 2011.

After then, we have started discussion on required function of a future reactor source, and now we are looking at situation of the reactors after the Fukushima accident. We start again the discussion on the the future reactor image under the present Japanese situation.

Repoet: Usefulness and its importance of the JRR-3 reactor source co-existing with J-PARC/MLF



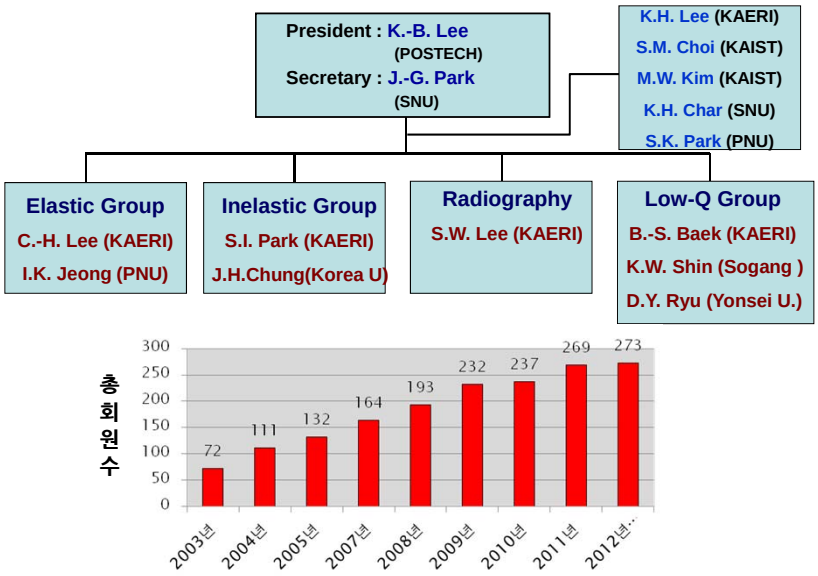
The Korean Neutron Beam Users Association

KNBUA
The Korean Neutron Beam Users Association

(http://www.neutron.or.kr)

Ki Bong Lee
Department of Physics
POSTECH

Korean Neutron Beam Users Association (KNBUA)



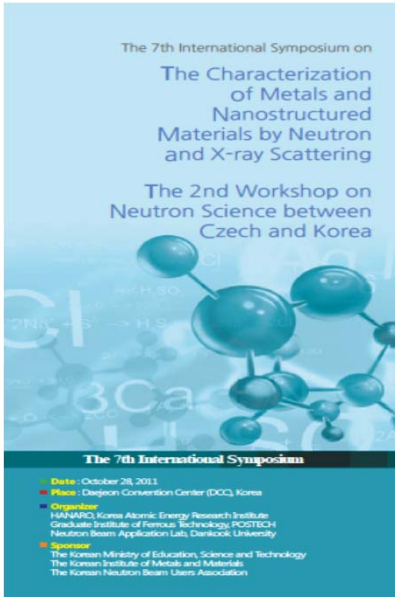
KNBUA Activities

- **KNBUA Annual General Assembly**
  (11 May, KBL reelected as a second-term president)

* The HANARO Symposium
  - Neutron Beam Applications (oral 22, poster 28)
  - Materials Irradiation Test
  - Radioisotopes
  - Activation Analysis
  - Research Reactor

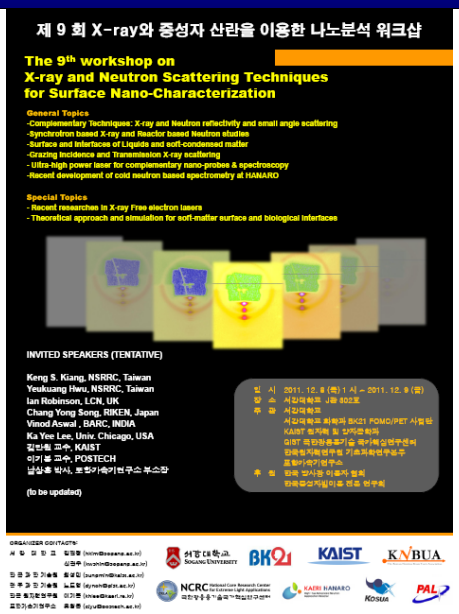
- **KNBUA Executive Committee Meetings (3-4 times/yr)**
- **Workshops and Schools**

KNBUA Activities



60 participants
Held at DCC October 28, 2011

KNBUA Activities



80 participants
Held at Sogang U.
December 8-9, 2011

Tutorials for Single Crystal Neutron Diffraction Analysis

December 19-22, 2011 at INTEC, Daejeon
Lecturer : Prof. Y. Noda (Tohoku U.)
30 participants

KNBUA Supports Students to attend 1st AOCNS.

Korean participants :
31 scientists, 38 students

Committee for ICNS2017

Kye Hong Lee and Sungil Park

S.M. Choi

K.H. Char
(Chair)

J.-G. Park

in collaboration with DIME

Conference Venue

Daejon Convention Center (DCC)

Hotel Lotte Daejon
(350 units)
just across the street
Grand Opening in 2014

行政院國家科學委員會 National Science Council

AONSA

台灣中子科學學會 Taiwan Neutron Science Society

Activity report of TWNSS

May 22, 2012

AONSA EC meeting

Hsiung Chou
Department of Physics
National Sun Yat-sen University
Taiwan

Wen-Hsien Li
Center for Neutron Beam Applications
National Central University
Taiwan

Brief History of Taiwan Neutron Science Society (TWNSS)

Originating 2008

Establishment 2009

Main Goal Promotion Neutron Science and Applications

Main Activities Workshops and Schools

Workshop on Neutron Scattering Science 2011

Time : 17/01/2011~19/01/2011

Place: Dong-shi forest garden,

Taichung, Taiwan

http://tsfa.emmm.tw

Attendant	Number
Researchers	30
Postdoctoral Fellow	15
Students and Research Assistants	116
Total	**161**

(Number of Registers:187)

Taiwan Neutron Science Society

Workshop on Neutron Scattering Science 2011

Taiwan Neutron Science Society

Workshop on Neutron Scattering Science 2012

Time : 12/02/2012~14/02/2012

Place: Jhushan township, Nantou county, ,Taiwan

http://www.goto307.com.tw/en/index.html

邀請演講共19位

Attendant	Number
Researchers	28
Postdoctoral Fellow	10
Students and Research Assistants	124
Total	**162**

(Number of Registers:186)


2012年中子散射研習課程暨研討會
2012年台灣中子科學學會年會

時間: 2012年2月12~14日

地點: 杉林溪森林生態渡假園區

(地址:南投縣竹山鎮大鞍里溪山路6號, 會場電話:049-261-1217)

費用: 一般會員 1,000元

學生會員 500元

食宿: 由大會提供, 無需另外付費

報名方式: 已截止!

與會資格通知: 個人與會需知查詢

洽詢專線: (03)422-7151 轉 65385 黃小姐

電子郵件: twnssweb@gmail.com

課程內容:

- 台灣中子束實驗時間管理說明與討論
- 原理與相關儀器簡介
- 應用實例介紹
- 實驗計畫申請撰寫
- 數據分析教導
- 實驗經驗分享

主辦單位: 中央大學中子束應用研究中心

協辦單位: 台灣中子科學學會

國家同步輻射研究中心

指導單位: 國家科學委員會

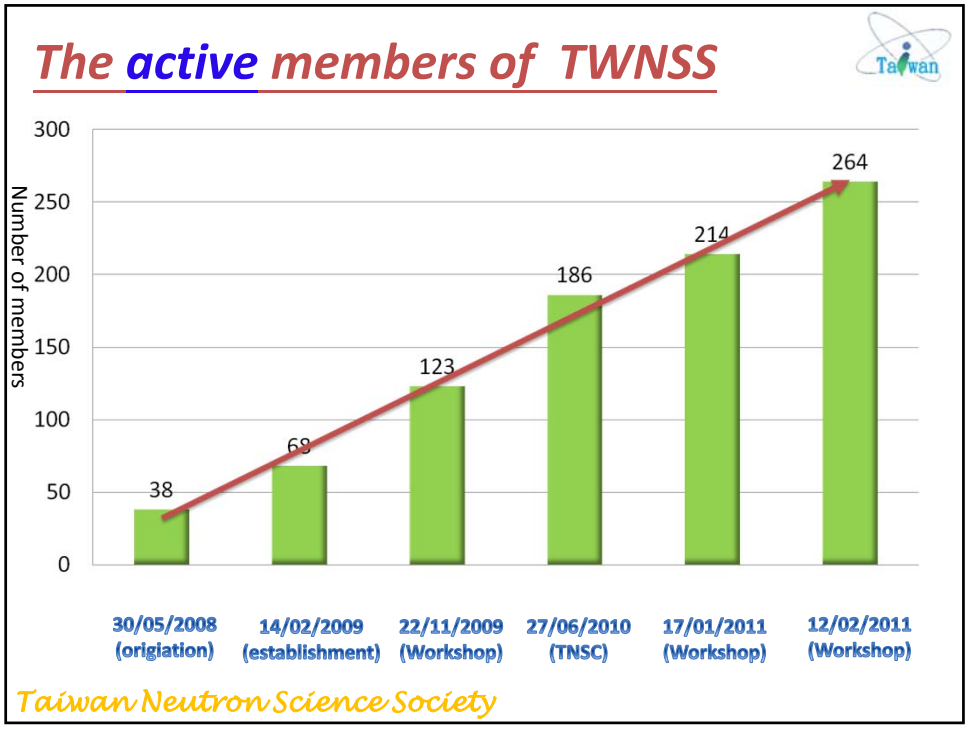
教育部

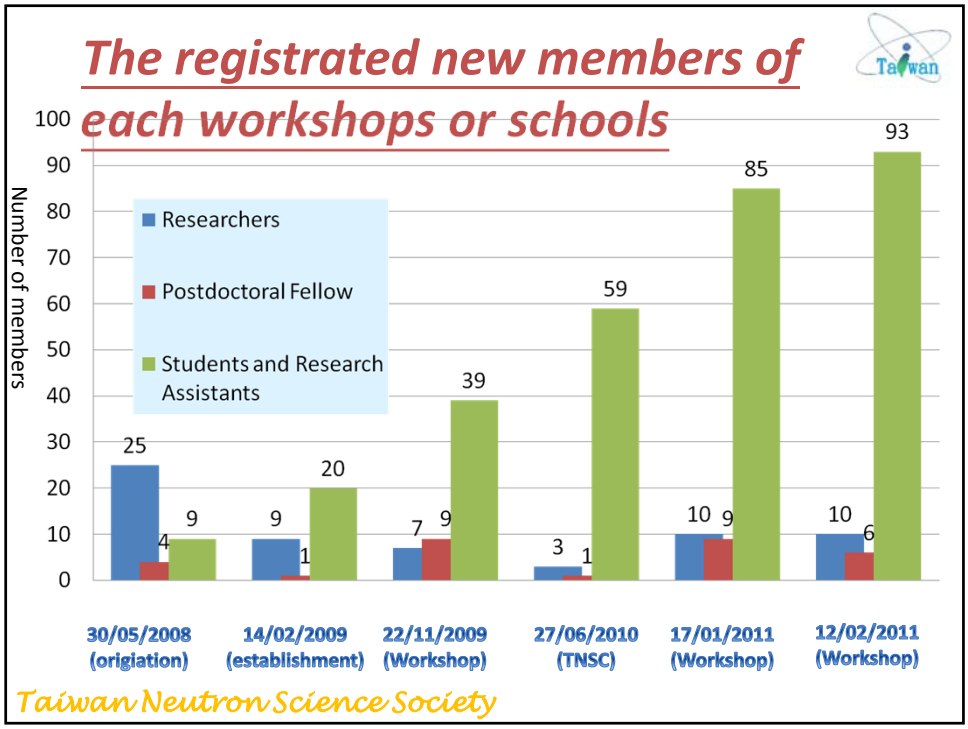
Taiwan Neutron Science Society

Workshop on Neutron Scattering Science 2012

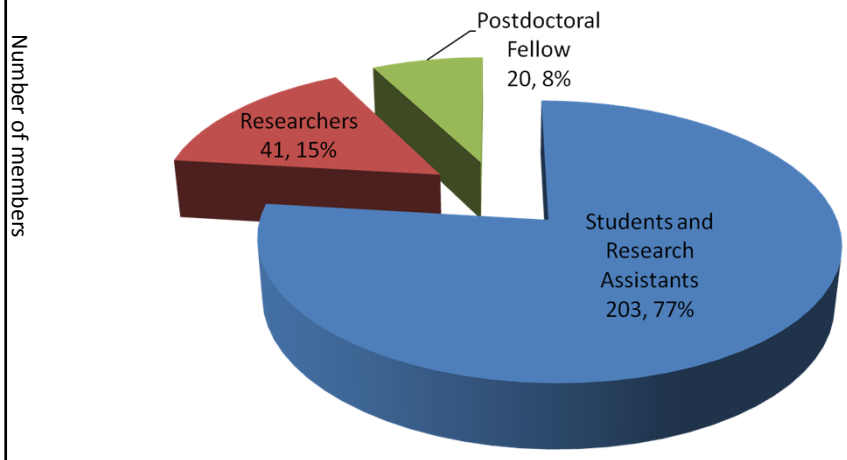
Workshop on Neutron Scattering Science 2012

Active Members


The active members of TWNSS
Number of members
300
250
200
150
100
50
0
38
68
123
186
214
264
30/05/2008 (origiation)
14/02/2009 (establishment)
22/11/2009 (Workshop)
27/06/2010 (TNSC)
17/01/2011 (Workshop)
12/02/2011 (Workshop)
Taiwan Neutron Science Society

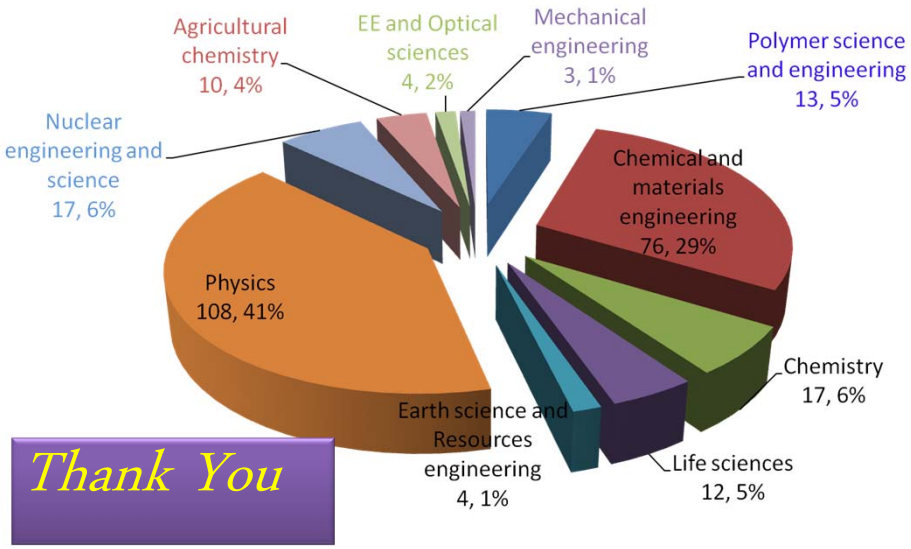

The registrated new members of each workshops or schools
Number of members
100
90
80
70
60
50
40
30
20
10
0
Researchers
Postdoctoral Fellow
Students and Research Assistants
25
4
9
9
1
20
7
9
39
3
1
59
10
9
85
10
6
93
30/05/2008 (origiation)
14/02/2009 (establishment)
22/11/2009 (Workshop)
27/06/2010 (TNSC)
17/01/2011 (Workshop)
12/02/2011 (Workshop)
Taiwan Neutron Science Society

The active members of TWNSS



Taiwan Neutron Science Society

The active members of TWNSS



Thank You

Taiwan Neutron Science Society

中国原子能科学研究院 CHINA INSTITUTE OF ATOMIC ENERGY

On behalf of CNSS

Users Program of CARR and CSNS

中国科学院物理研究所 INSTITUTE OF PHYSICS CHINESE ACADEMY OF SCIENCES

中国科学院 CHINESE ACADEMY OF SCIENCES

北京大学 PEKING UNIVERSITY

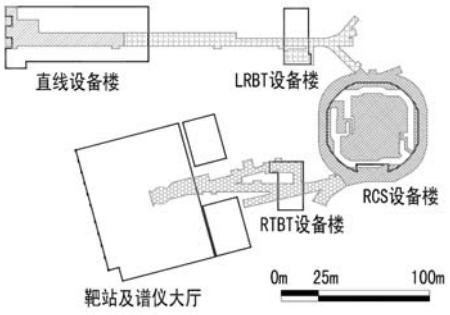
山东大学 SHANDONG UNIVERSITY

Dongfeng CHEN（陈东风）

China Institute of Atomic Energy (CIAE)

中国原子能科学研究院 CHINA INSTITUTE OF ATOMIC ENERGY

NEW timetable of CSNS



Main buildings

construction start	October 2011
civil construction	May 2012 – March 2017
component fabrication	September 2011 – September 2015
installation & tests	June 2013 – March 2017
first beam on target	March 2017
project complete/operation start	March 2018 (6.5 years from start)

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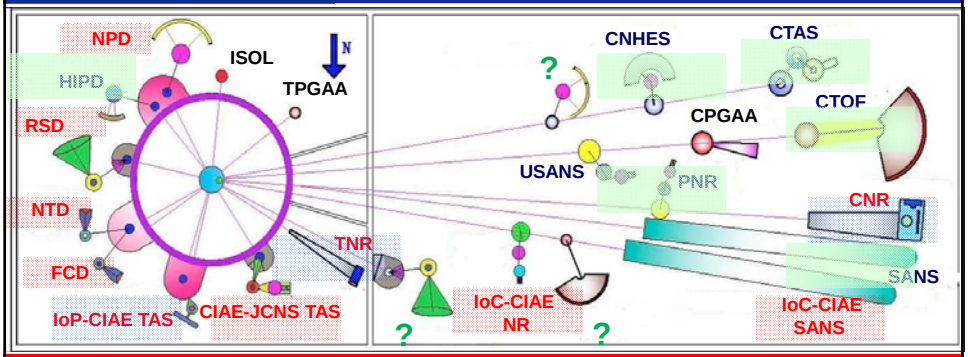
China Advanced Research Reactor



Completed （7）

Powder diffractometer, Residual Stress Diffractometer , Texture Diffractometer, Four circle Diffractometer , CIAE-JCNS Triple - axis spectrometer IOC-CIAE Small Angle, IOC_CIAE NR

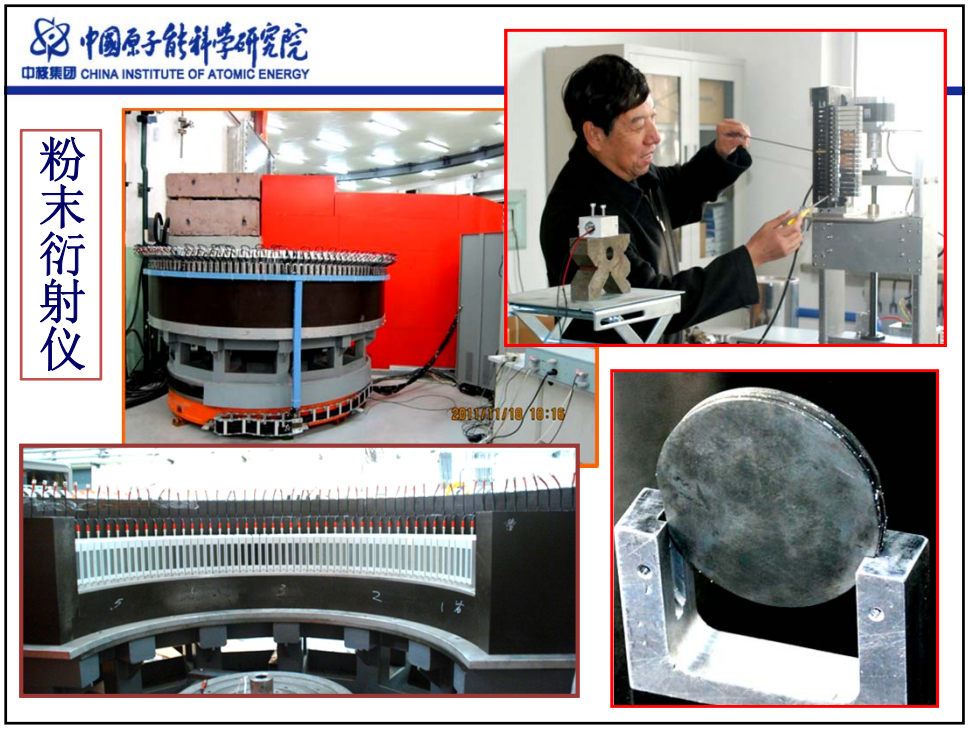
Constructing：（3）

Thermal neutron Imaging , Cold neutron Imaging , IOP-CIAE TAS

Planning：（5）

HIPD,CTAS，CNHES，PNR, Small Angle, TOF ,


物理大厅
导管大厅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粉末衍射仪

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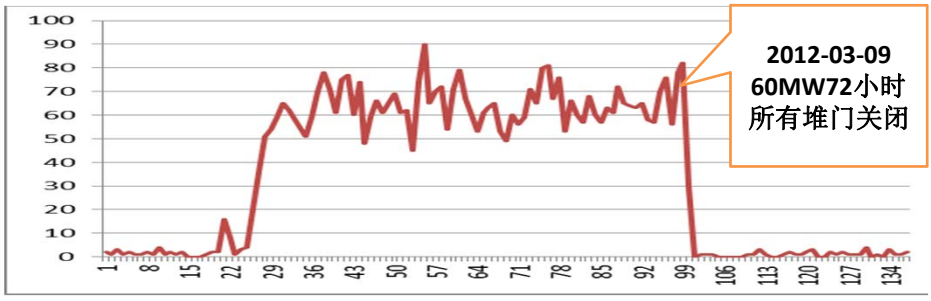
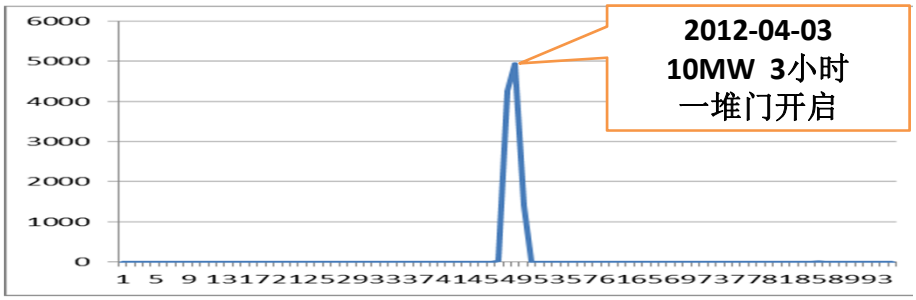
粉末衍射仪监测本底状况





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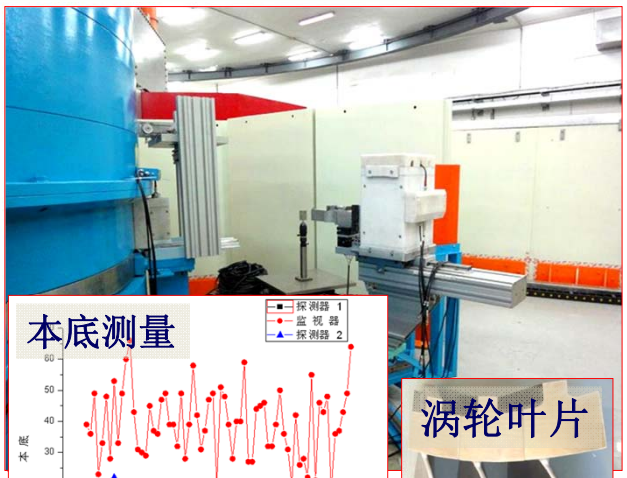
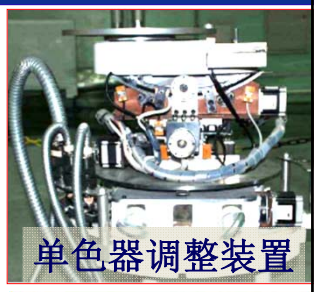
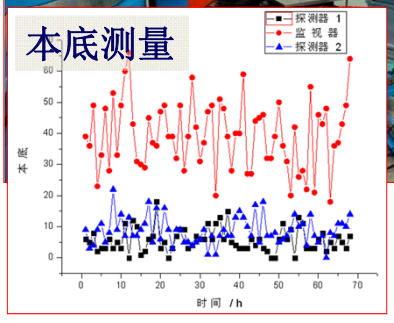
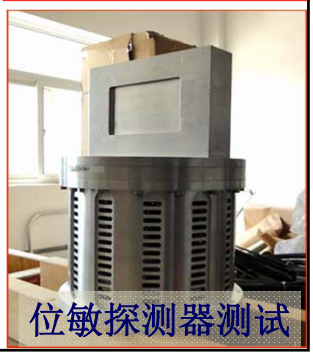
应力衍射仪









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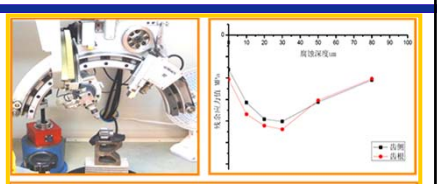
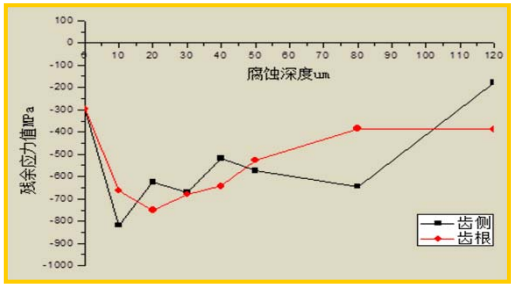
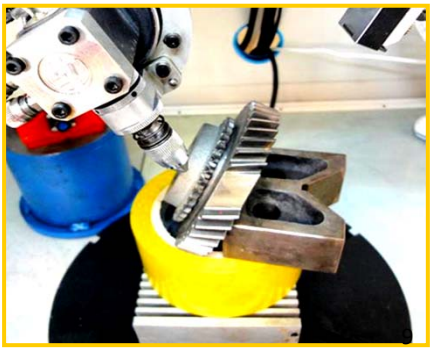
相关实验方法和技术







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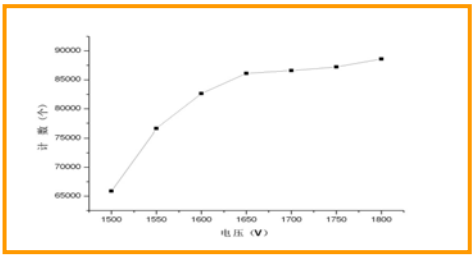
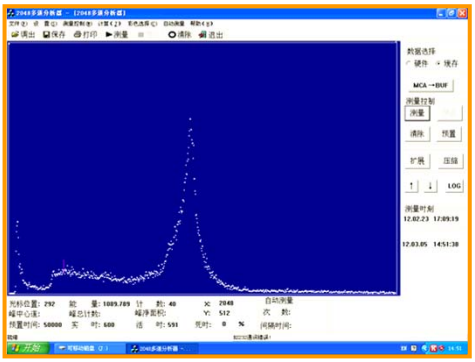
中子织构衍射仪

中国原子能科学研究院 中核集团 CHINA INSTITUTE OF ATOMIC ENERGY

探测器性能测试及电子学仪器安装联调



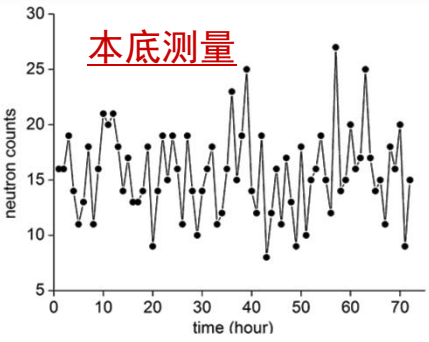


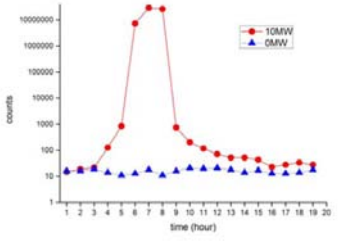
中国原子能科学研究院 中核集团 CHINA INSTITUTE OF ATOMIC ENERGY

2012年4月5日9点

我们立即跟新堆进行确认，确认后得知，新堆大约 1 点多开始提升功率，3:00-5:00 确实是功率最大时段，5 点后开始降功率直至停堆，且他们经过验证后认为此阶段我们的堆门一直处于关闭状态。如果堆门没有关闭的话，那么我们分析后觉得这个测量结果还是令人兴奋的，如果堆门按照新堆的说法一直处于关闭状态，我们不知道该如何解释这个测量结果。

本底测量





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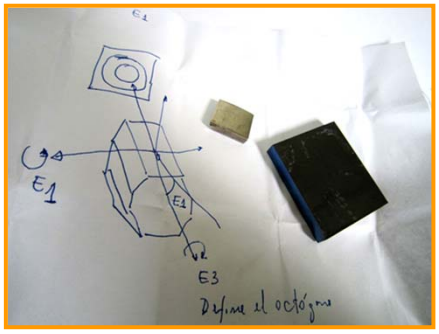
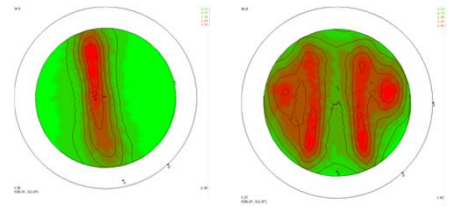
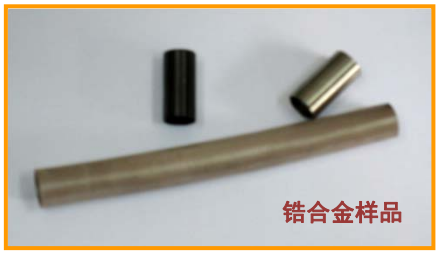
中核集团 CHINA INSTITUTE OF ATOMIC ENERGY

织构衍射实验测量样品







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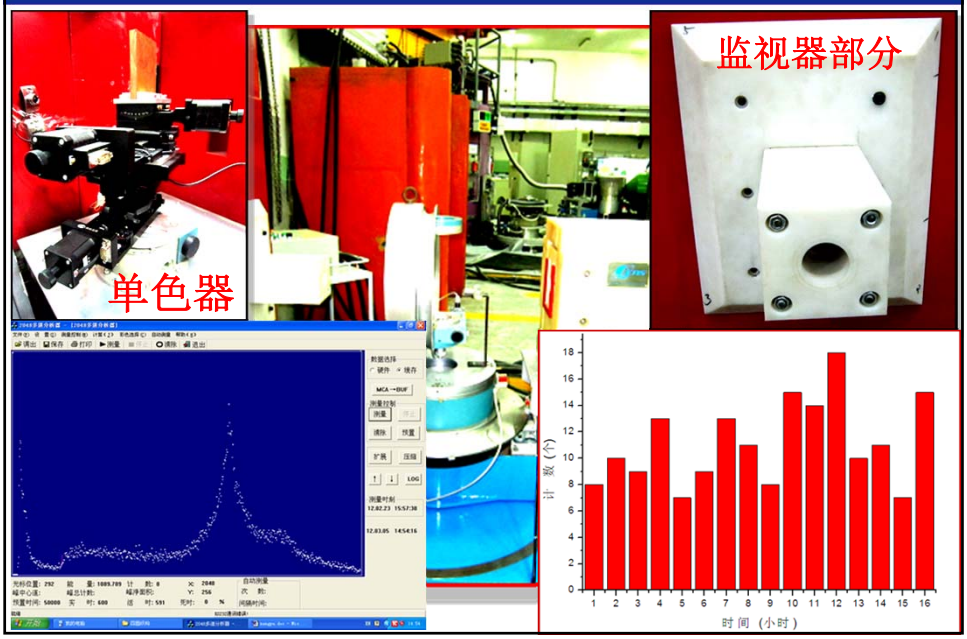
中核集团 CHINA INSTITUTE OF ATOMIC ENERGY

中子四圆衍射仪



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中子三轴谱仪

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水平样品几何中子反射仪

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小角中子散射谱仪

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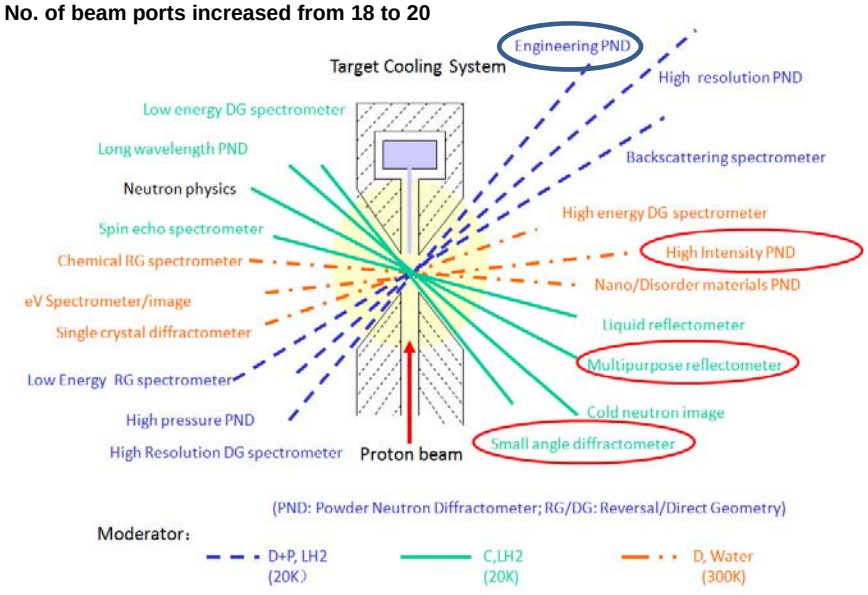
Instrument Layout of CSNS

No. of beam ports increased from 18 to 20



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CARR – MOST 973

国家重点基础研究发展计划

中国先进研究堆中子束应用关键技术及若干科学问题

重要科学前沿领域

基于国家重大科学工程开展的前沿科学研究

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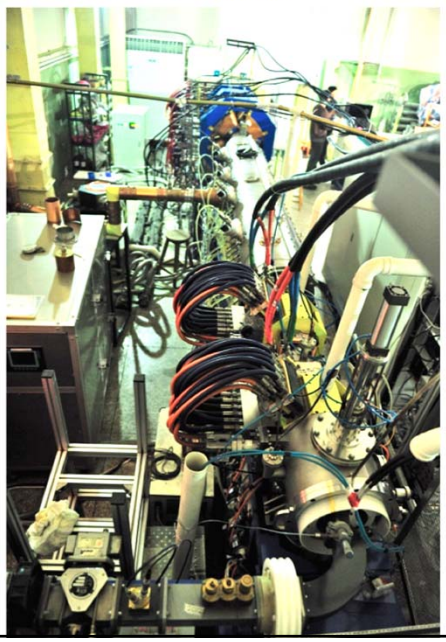
University NET

北京大学 PEKING UNIVERSITY



中国原子能科学研究院 中核集团 CHINA INSTITUTE OF ATOMIC ENERGY

配套项目和品配套谱仪

中国先进研究堆储氢材料测试分析技术与实验方法研究 H - storage

- 研究目的 **(CAEA / IAEA)**
  - 首个储氢材料的中子散射测试平台
  - 储氢材料中子散射实验方法和数据分析方法
- 意义 (Renewable and Clean Energy)
  - 解决氢能源瓶颈问题——储存和输运

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Additional budget for instruments

Project Name	Task	Budget (M $)
National 973 Project from MOST	Neutron Scattering Methodology study and its industrial application development	1.2
	Scientific research with Neutron scattering	2.4
The ability enhancement of the platform supported by CAEA	Strengthen the ability to do clean energy study at CARR	4.6
IAEA Technical Cooperation Program	Instrument Scientist training and some instrument hardware supporting	0.3

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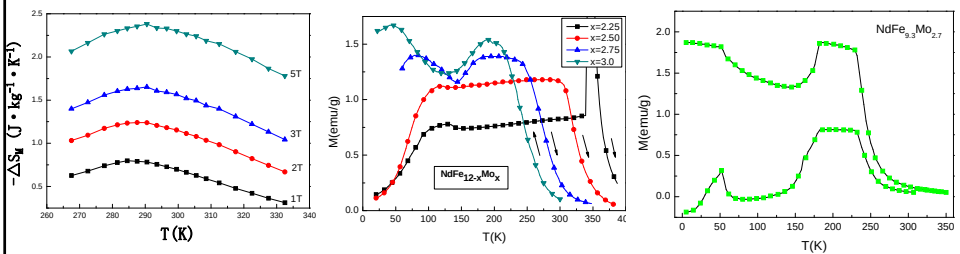
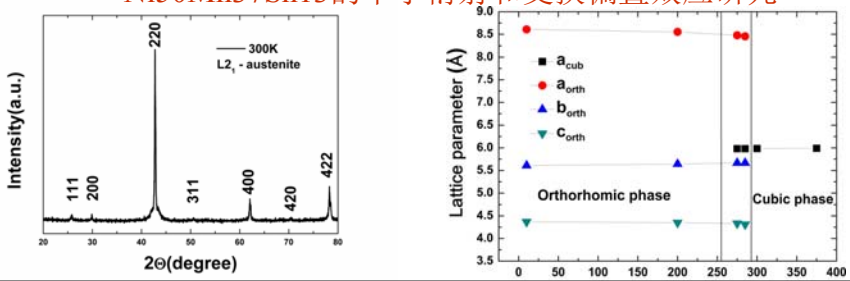
$R(Fe,Mo)_{12}$化合物的磁性



Ni50Mn37Sn13的中子衍射和交换偏置效应研究



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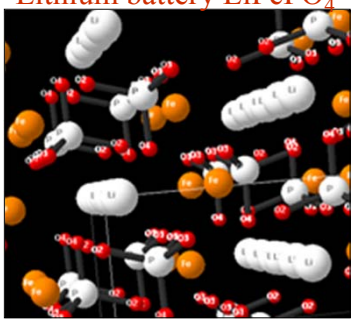
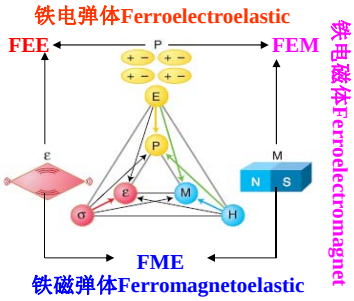
中国科学院物理研究所 INSTITUTE OF PHYSICS CHINESE ACADEMY OF SCIENCES

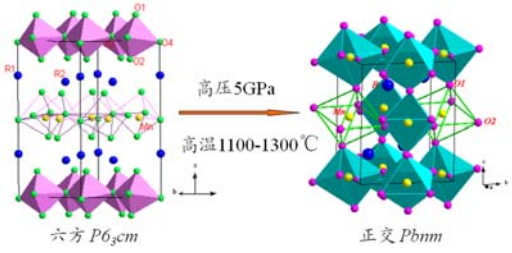
Lithium battery $LiFePO_4$





铁磁铁电材料：

- 锰氧化物$LuMnO_3$
  - 在温度为6 K，正交$LuMnO_3$的剩余极化$P_r \sim 0.17\ \mu C/cm^2$



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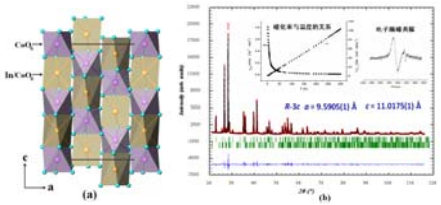
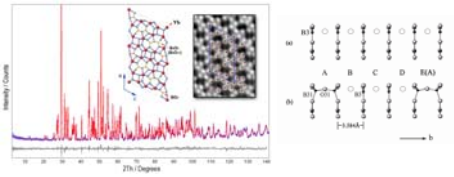
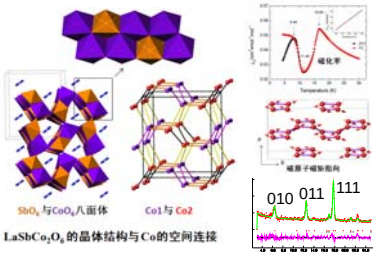
北京大学 PEKING UNIVERSITY



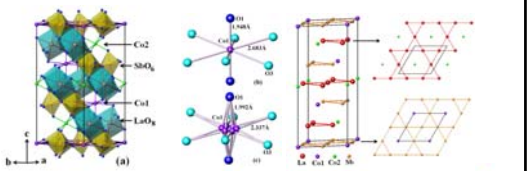
$Sr_3In_{0.9}Co_{1.1}O_6$: 中子衍射与Co(III)高自旋



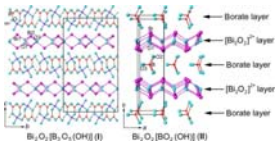
$Yb_{26}B_{12}O_{57}$：中子衍射：有序无序结构



$LaSbCo_2O_6$的结构、磁相变与磁结构



$La_3Sb_3Co_2O_{14}$: 从烧绿石到Kagome



$BaIn_{1-x}Co_xO_{6-\delta}$

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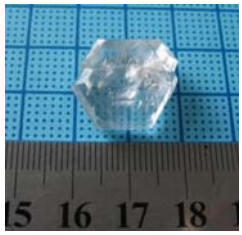
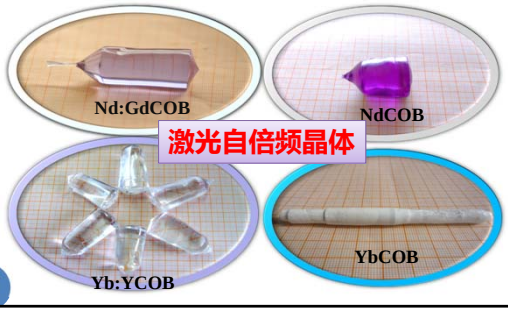
山东大学 SHANDONG UNIVERSITY

$^7LiNbO_3$和Mg:NSLN

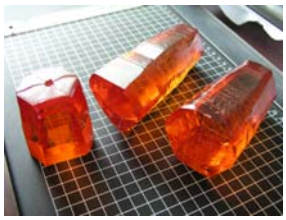
熔盐法生长KBBF



水热法生长KBBF



激光自倍频晶体



光学级硅酸镓镧晶体生长

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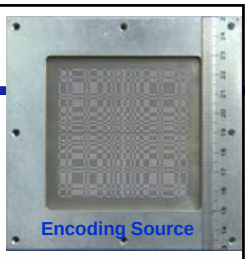
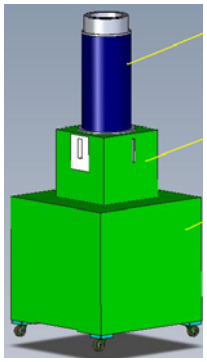
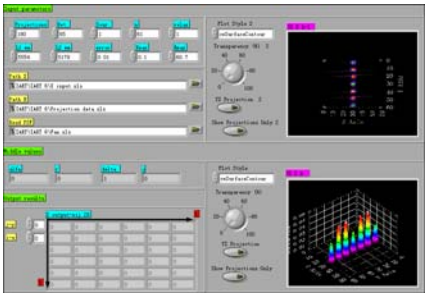
- Neutron imaging of radioactive elements（Neuclear fuel elements）
- Encoding Source
- Low L/D ratio CT Reconstruction



Encoding Source

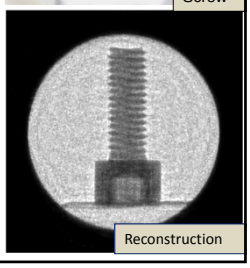


Nuclear fuel elements test station



Low L/D ratio CT Reconstruction

Screw



Reconstruction

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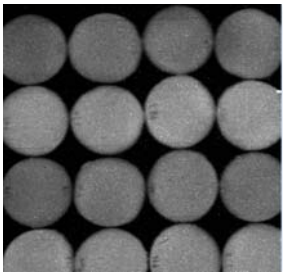
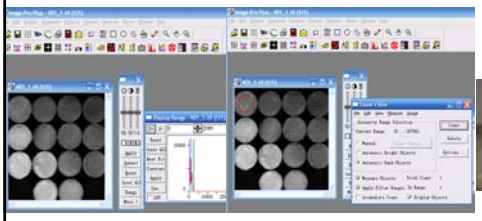
Scintillator development



Ingredient:Boracic Acid with Sulfureted Zinc



Process by Image-pro

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Internal users in CNNC…

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ITER

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Identifying the Specific Nanostructures Responsible for the High Thermoelectric Performance of (Bi,Sb)2Te3 Nanocomposites	Wuhan University of Technology	Wenjie Xie
Observation and quantification of water penetration into Strain Hardening Cement-based Composites (SHCC) with multiple cracks by means of neutron radiography	QingdaoTechnologicalUniversity,	Zhang P
Origin of cononsolvency, based on the structure of tetrahydrofuran-water mixture	Institute of Chemistry,	Jinkun Hao,
Micellization Activity of the Natural Lipopeptide [Glu(1), ASP(5)] Surfactin-C15 in Aqueous Solution	East China UniVersity of Science and Technology	Aihua Zou
Neutron diffraction study of the magnetic refrigerant Mn1.1Fe0.9P0.76Ge0.24	, Beijing University of Technology,	Liu LJ
Synthesis and properties of nanostructured dense LaB6 cathodes by arc plasma and reactive spark plasma sintering	Beijing University of Technology	Shenlin Zhou
Structural evidence for the nonmonotonic trend of T-C in tetragonal PbTiO3-BiScO3 solid solutions	University of Science and Technology Beijing	Jun Chen
Synthesis, Structure, and Characterization of the Series BaBi1-xTaxO3 (0 <= x <= 0.5)	Peking Univ, Beijing Natl Lab Mol Sci	Hui Wang
Frustrated and Unfrustrated Magnetic Orders in the 10H Perovskite Ba5Sb1-xMn4+xO15-delta	Peking Univ, Coll Chem & Mol Engn,	Yin CL
Low-temperature neutron diffraction study of the crystal and magnetic phase transitions in DyCrO4	Chinese Acad Sci, Inst Phys	Long YW
Interplay between the Crystalline and Magnetic Structures in Lightly Cr-Doped Bi0.37Ca0.63Mn0.96Cr0.04O2.99	Chinese Acad Sci, Inst Phys	Sun JR
Synthesis, structure, and magnetic property of hexagonal perovskite Ba5Sn1.1Mn3.9O15	Peking University	Peking Universit

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Since 2004, user meeting and neutron school were held every year

中国原子能科学研究院 CHINA INSTITUTE OF ATOMIC ENERGY

International Collaboration

2nd Research Coordinated Meeting (RCM) related to the IAEA CRP on
Development, Characterization and Testing of Materials of Relevance to Nuclear Energy Sector Using Neutron Beams
19 – 23 September 2011
CIAE, Beijing, China

17个国家25位专家出席会议并作报告,介绍本国利用中子科学平台开展核能领域科学研究的经验,拓展了该领域国际交流与合作空间

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ANOSA events in China

EC, Director & 5th School in Beijing?

8th ANOSA meeting Malaysia 2012.05.22

BEIJING, CHINA 2012.10.21-22

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ANOSA school Peking U

中國原子能科學研究院 中核集团 CHINA INSTITUTE OF ATOMIC ENERGY

5th choice for 5-day-plan

Oct.23 Tues.	Oct.24 Wed.	Oct.25 Thurs.	Oct.26 Fri.	Oct.27 Sat.	
9:00-17:00 Arrival	9:00-11:30 Lectures	8:30-11:30 Lectures	9:00-11:30 Lectures from EC member	9:00-11:30 Presentation for school	9:00-17:00 ANOSA EC meeting
	12:30 Lunch	11:30 Lunch	12:30 Lunch	12:30 Lunch	
	13:30-18:10 Data analysis	13:30-18:00 CARR tour	13:30-18:10 Data analysis 15:00-18:00 Director meeting	13:00 Culture Tour and farewell dinner	
18:30 Reception	18:30 Dinner	18:30 Dinner	18:30 Dinner		

中國原子能科學研究院
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Need to be clear now…

Contact persons for each organization:

- **3 ANBUG: Chris Ling and Rob Robinson**
- **3 JSNS: Toshiji Kanaya**
- **3 KNBUA: Li Bong Lee**
- **3 INSS: Samrath L. Chaplot**
- **3 TWNSS: Hsuing Chou and Wen-Hsien Li**
- **2 Edy Giri Rachman Putra (BATAN) for Indonesia region**
- **2 Abdul Aziz Mohamed (Malaysia Nuclear Agency)**
- **2 Supagorn Rugmal (Synchrotron Light Research Institute, MOST, Thailand)**

Lecturers: 2 ANBUG, 2 JSNS, 2 KNBUA, and 2 HOST

- **Lodging: 15 double rooms, 20 single rooms. Big meeting room from 23-25, and mor ning for 26.**

Funding raising:

CARR, PKU(Meeting and meal place),CSNS(courses) ,IAEA(US$5000), ANOSA(US3000) , CCAST(domestic lodging)

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中國原子能科學研究院
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5. (a) International Advisory Board

ANBUG : The Australian Neutron Beam Users Group
Rob Robinson (ANSTO)
Chris Ling（The University of Sydney）
JSNS : The Japanese Society for Neutron sciecne
Yasuhiko Fujii (CROSS)
Masa Arai (JPARC)
Mitsuhiro Shibayama (Tokyo UNIVERSITY)
Hideki Seto (KEK)
Toshiji Kanaya (Kyoto University)
KNBUA: The Korean Neutron Beam Users Association
Kye Hong Lee (KAERI)
Sung-Min Choi (KAIST)
Ki Bong Lee (POSTECH)
INSS: The Indian Neutron Scattering Society
Samrath L. Chaplot (BARC)
TWNSS: The Taiwan Neutron Science Society
Wen-Hsien Li (NCU)
Hsiung Chou (NSYU)
CNSS: The Chinese Neutron Scattering Society
Dingsheng Wang (IOP of CAS)
Hesheng Chen (IHEP of CAS)
Jianhua LIN (Peking University)
(b) Executive Committee （will coming soon）
Dongfeng Chen(CIAE), Kai Wu (PKU), Yuanbo Chen (IHEP),
Fangwei Wang(IOP/CAS), Yuntao Liu, Yingxia Wang,
Songbai Han, Shaoying Zhang, and Tianfu Li

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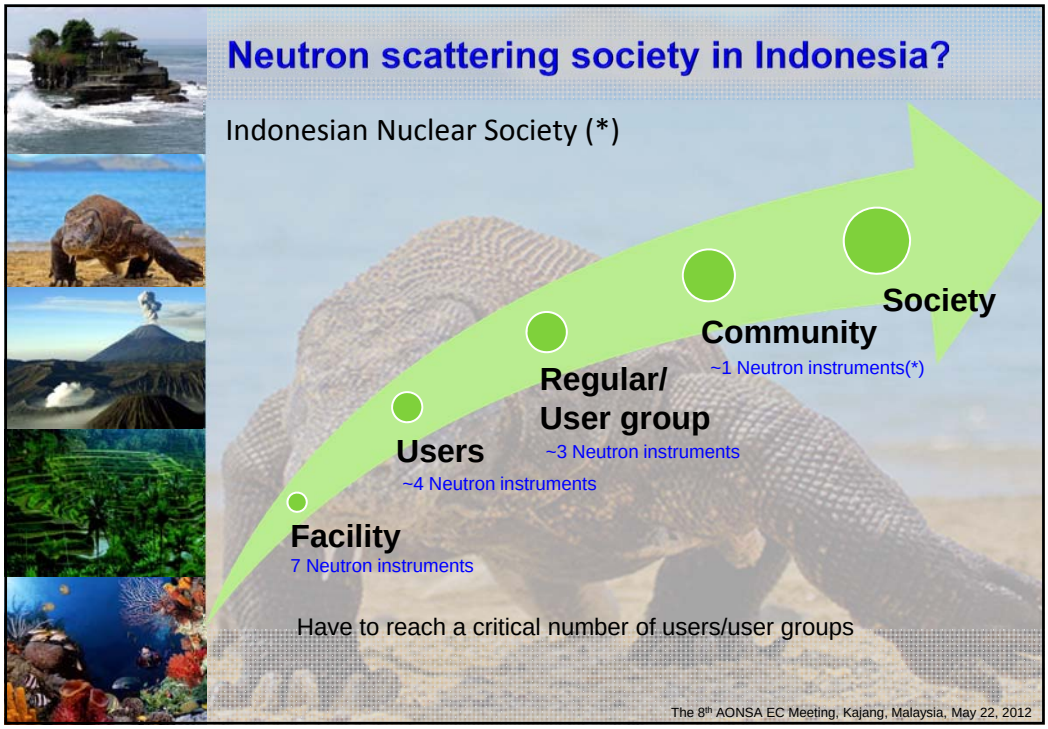
China Institute of Atomic Energy

CARR: 2012.03.13 full power for 72 hours


Neutron Scattering Community/
Activity in Indonesia
Edy Giri Rachman Putra
National Nuclear Energy Agency of Indonesia
The 8th AONSA EC Meeting, Kajang, Malaysia, May 22, 2012


Neutron scattering society in Indonesia?
Indonesian Nuclear Society (*)
Facility
7 Neutron instruments
Users
~4 Neutron instruments
Regular/
User group
~3 Neutron instruments
Community
~1 Neutron instruments(*)
Society
Have to reach a critical number of users/user groups
The 8th AONSA EC Meeting, Kajang, Malaysia, May 22, 2012

Involved at other scientific societies

Indonesian Physical Society
Indonesian Chemical Association
Indonesian Polymers Association (*)
Indonesian Nanotechnology Society
Indonesian of Microbiology Society
Indonesian of Biochemistry and Molecular Biology Society



Asia-Pacific Polymer Conference
Bali November 28 – December1, 2011

There are potential users/communities for BATAN's facility

Why not use neutron?

- Low flux
- Long exposure times
- Limited access to kinetic phenomena
- Large sample sizes

Solution: Intense sources

- Requires a reactor or spallation source
- Specific locations not home institutions

Solution: none

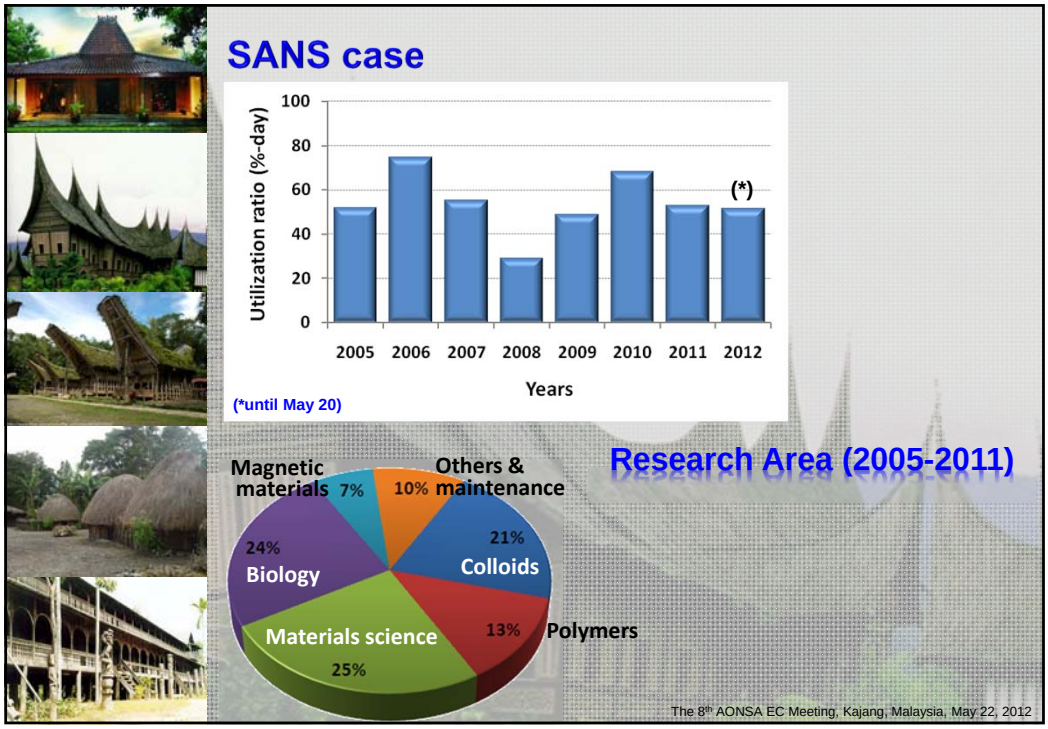
- Availability and reliability
- Wasted time, energy and effort

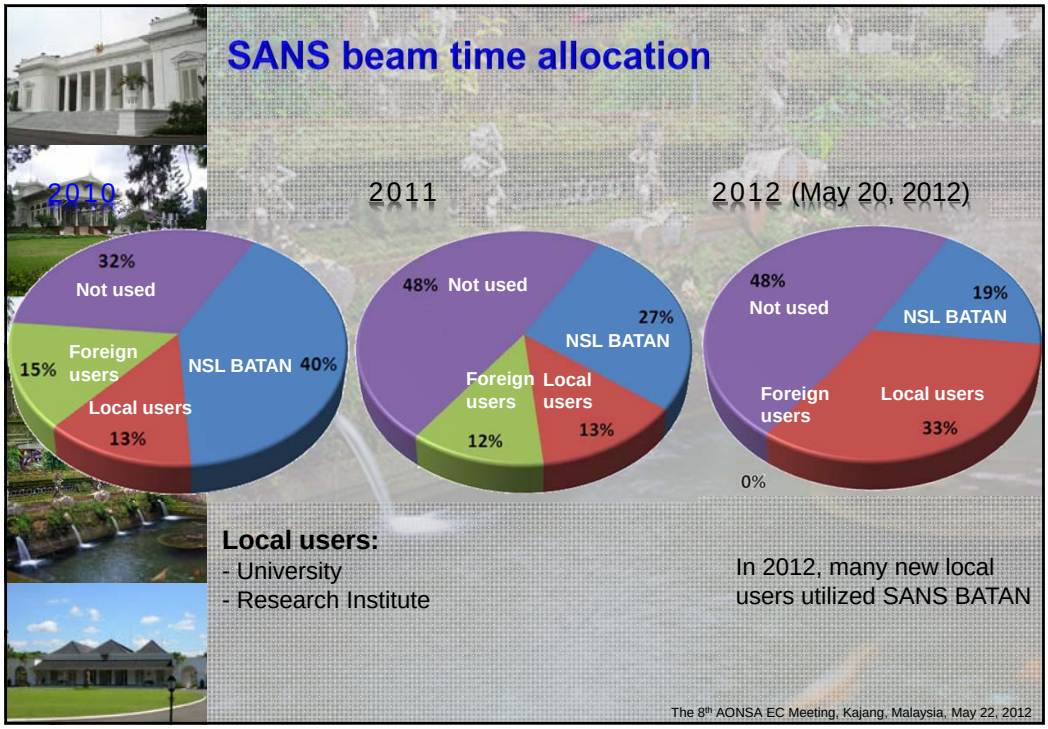
Solution: Improved, dedicated sources

- Not a core subject
- Unfamiliarity of technique

Solution: Education, Neutron School/workshop

Challenge!


SANS case
Utilization ratio (%-day)
100
80
60
40
20
0
2005
2006
2007
2008
2009
2010
2011
2012
(*)
Years
(*until May 20)
Research Area (2005-2011)
Magnetic materials 7%
Others & maintenance 10%
21%
Colloids
13%
Polymers
25%
Materials science
24%
Biology
The 8th AONSA EC Meeting, Kajang, Malaysia, May 22, 2012


SANS beam time allocation
2010
2011
2012 (May 20, 2012)
32%
Not used
Foreign users
15%
NSL BATAN 40%
Local users
13%
48% Not used
27%
NSL BATAN
Foreign users
12%
Local users
13%
48%
Not used
19%
NSL BATAN
Foreign users
Local users
33%
0%
Local users:
- University
- Research Institute
In 2012, many new local users utilized SANS BATAN
The 8th AONSA EC Meeting, Kajang, Malaysia, May 22, 2012


Promoting SANS for local & regional users
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Conference Feedback: IPST2011, the International Polymer Conference meets in Bali, Indonesia
23 Dec 2011
By Russell Johnson, Development Editor
The Innovation in Polymer Science and Technology 2011 (IPST2011) was held in Bali, Indonesia on November 28 – December 1, 2011. The event was organised by Indonesian Polymer Association (HPI) under the auspices of Asian Polymer Association (APA).
The format consisted of workshop and micro symposium on Polymer in Biomedical and Pharmacy Applications, Conference and Exhibition. IPST2011 was attended by more than 200 participants from 16 countries, presenting about 160 paper works consist of 80 oral and 80 poster presentations, including 10 plenary speakers, 30 keynote and invited speakers.
Plenary lectures were delivered by Jöns Hilborn (Sweden), Didier Letourneur (France) and Der Jang Liaw (Taiwan) at the first day, while Kell Mortensen (Denmark), Atsushi Suzuki (Japan) and Anil Kumar Bhowmick (India) in the second day. Suminar S. Achmadi (Indonesia) and William H. Starnes Jr. (USA) presented their lectures at the third day. Finally, Markus Meyer (Germany) and Asmuwahyu Saptorahardjo (Indonesia) delivered the plenary lectures on industrial applications of polymers.
The Asian Polymer Association presented a 2011 APA award to Prof. Atsushi Suzuki of Yokohama National University, Japan. Meanwhile, HPI award for the 2011 was presented to Ms. Nusyamsu Bahar from Research Center of Pulp and Paper, Ministry of Industry of Republic of Indonesia, Bandung, Indonesia for her lifetime contributions in polymer research as well as in the polymer society in Indonesia.
The best student posters were awarded to 5 students: Mohamad R. Ishak (Malaysia), Khairanissa Muchlis (Indonesia), Teenakrishna Sehgal (India), Geu Bim Lee (Korea) and Tomoki Yoshida (Japan). Tomoki Yoshida was also honored the Polymer Chemistry Best Poster Prize. Shuntaro Tsubaki (Japan) and Paula S. Rudati (Indonesia) were awarded the best oral presentation prize.
The IPST2011 was officially closed by Mr. Sudirman who elected on HPI Congress in Bali and succeeded Mr. Sunit Hendrana as the chairman of Indonesian Polymer Association.
Report by Edy Giri Rachman Putra
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Synthesis of Single-Walled Carbon Nanotube-Incorporated Polymer Hydrogels via Click Chemistry
RSC News
Lesley Yellowlees letter published in The Times
Royal Society of Chemistry continues to press EPSRC to ensure competitive British science community
Categories
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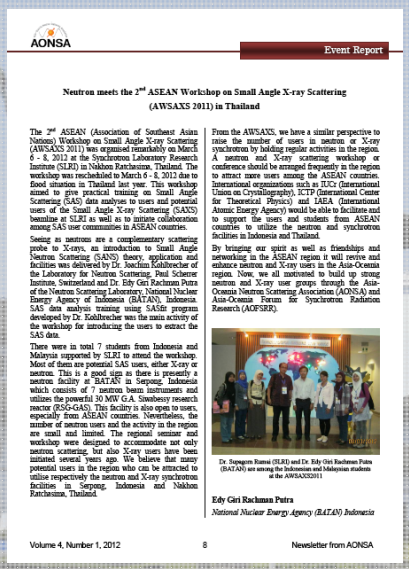
Author of the Week (63)
Conference (14)
Editorial Board (13)
Hot article (53)
News (39)
The 8th AONSA EC Meeting, Kajang, Malaysia, May 22, 2012


Promoting SANS for local & regional users
Seminar Teknologi 2012
Perhimpunan Polimer Indonesia (HPI)
Small-angle X-Ray and Neutron Scattering
A New Probe on Nanostructure Studies in Polymers, Materials Science & Biology
Speakers:
Dr. Yashveer Singh (Anton Paar, Austria)
Dr. Edy Giri Rachman Putra (BATAN, Indonesia)
Sentra Teknologi Polimer – BPPT
Gedung 460 Kawasan Puspiptek Serpong, Tangerang, Indonesia
Tuesday, 29 May 2012
Metrohm Indonesia PT
STP
Anton Paar
Further Information & Contact persons:
Workshop on
Exploring the soft matters at the nanomater scale by small-angle neutron scattering (SANS)
(Polymers, Colloids, Liquid Crystals, Proteins, Viruses, etc.)
October 8 – 10, 2012
Further Information & Contact person:
BRUKER
Rigaku
Anton Paar
The 8th AONSA EC Meeting, Kajang, Malaysia, May 22, 2012

Promoting SANS for local & regional users



AONSA

Event Report

Neutron meets the 2nd ASEAN Workshop on Small Angle X-ray Scattering (AWSAXS 2011) in Thailand

The 2nd ASEAN (Association of Southeast Asian Nations) Workshop on Small Angle X-ray Scattering (AWSAXS 2011) was organised remarkably on March 6 - 8, 2012 at the Synchrotron Laboratory Research Institute (SLRI) in Nakhon Ratchasima, Thailand. The workshop was rescheduled to March 6 - 8, 2012 due to flood situation in Thailand last year. This workshop aimed to give practical training on Small Angle Scattering (SAS) data analyses to users and potential users of the Small Angle X-ray Scattering (SAXS) beamline at SLRI as well as to initiate collaboration among SAS user communities in ASEAN countries.

Seeing as neutrons are a complementary scattering probe to X-rays, an introduction to Small Angle Neutron Scattering (SANS) theory, application and facilities was delivered by Dr. Joachim Kohlbrecher of the Laboratory for Neutron Scattering, Paul Scherrer Institute, Switzerland and Dr. Edy Giri Rachman Putra of the Neutron Scattering Laboratory, National Nuclear Energy Agency of Indonesia (BATAN), Indonesia. SAS data analysis training using SASfit program developed by Dr. Kohlbrecher was the main activity of the workshop for introducing the users to extract the SAS data.

There were in total 7 students from Indonesia and Malaysia supported by SLRI to attend the workshop. Most of them are potential SAS users, either X-ray or neutron. This is a good sign as there is presently a neutron facility at BATAN in Serpong, Indonesia which consists of 7 neutron beam instruments and utilizes the powerful 30 MW G.A. Siwabessy research reactor (RSG-GAS). This facility is also open to users, especially from ASEAN countries. Nevertheless, the number of neutron users and the activity in the region are small and limited. The regional seminar and workshop were designed to accommodate not only neutron scattering, but also X-ray users have been initiated several years ago. We believe that many potential users in the region who can be attracted to utilise respectively the neutron and X-ray synchrotron facilities in Serpong, Indonesia and Nakhon Ratchasima, Thailand.

From the AWSAXS, we have a similar perspective to raise the number of users in neutron or X-ray synchrotron by holding regular activities in the region. A neutron and X-ray scattering workshop or conference should be arranged frequently in the region to attract more users among the ASEAN countries. International organizations such as IUCr (International Union on Crystallography), ICTP (International Center for Theoretical Physics) and IAEA (International Atomic Energy Agency) would be able to facilitate and to support the users and students from ASEAN countries to utilize the neutron and synchrotron facilities in Indonesia and Thailand.

By bringing our spirit as well as friendships and networking in the ASEAN region it will revive and enhance neutron and X-ray users in the Asia-Oceania region. Now, we all motivated to build up strong neutron and X-ray user groups through the Asia-Oceania Neutron Scattering Association (AONSA) and Asia-Oceania Forum for Synchrotron Radiation Research (AOFSRR).

Dr. Sapagorn Rattai (SLRI) and Dr. Edy Giri Rachman Putra (BATAN) are among the Indonesian and Malaysian students at the AWSAXS2011

Edy Giri Rachman Putra

National Nuclear Energy Agency (BATAN) Indonesia

Volume 4, Number 1, 2012 8 Newsletter from AONSA

ASEAN SAS Workshop

NSL BATAN Indonesia & SLRI Thailand

(ICTP, IUCr, IAEA, others)

Neutron & X-ray Activities

The 8th AONSA EC Meeting, Kajang, Malaysia, May 22, 2012

Regional users

NUKLEAR MALAYSIA

USM Universiti Sains Malaysia

Universiti Kebangsaan Malaysia

National University of Malaysia

NIE National Institute of Education, Singapore

Veer Narmad South Gujarat University

Prince of Songkla University

To keep in exsistance

SAS2012

RECENT DEVELOP
FOR SIMULTANEO

Putra, E.G.R[1], Bharot

[1] Neutron Scattering La
(BATAN), Kawasan F

SUMMARY

Since 2006, the new co
(SANS) spectrometer i
replace the original sys
system. The ISA (Indu
control system, while
the data acquisition fro
computers (PCs). Seei
using SMARTer signif
conditions and perform
required. The existing
motor controller PCI (
motors, i.e. collimator,
development make all
consuming time of sett
Along with that develo
operating system is als
to read the equipment
acquire neutron counts
automatically 12 sampl
displayed in real time
format for further data
and performed for expe
scattering intensity me
initiated for the future

THE FLEXCIBILITY OF
PROCESS BY SANS TECH

Patriati, A[1,2], Putra, E.G.R[2]

[1] Departement of Chemistry,
[2] Neutron Scattering Laborat
(BATAN), Serpong, Indones

SUMMARY

A series of study of the confo
refolding process, of bovine s
been conducted by small angl
trough denaturation was obse
solution at neutral pH. The S
urea are fitted to triaxial ellip
that partially denaturation of
occurred in the addition of 6
fitted to Gaussian coil model.
acidity in SBA solution. The
11, 9, 7 and 5 are preserve its
shape. The unfolded-structure
into a cylinder-like structure
refold by addition of sorbitol.
progressive restoration of BS,
conformational change from
ellipsoid-like structure in the
sorbitol, the SANS scattering
in the present of 3M sorbitol,
confirmed with *ab initio* low-
and DAMMIN obtaining the

SYNTHESIS OF FERROFLUIDS $Fe_{3-x}Mn_xO_4$ BASED IRON SAND AT ROOM TEMPERATURE AND ITS CHARACTERIZATION BY MEANS OF SMALL ANGLE NEUTRON SCATTERING

Taufiq, A[1,2], Sunaryono, S[1,2], Putra, E.G.R[3], Pratapa, S[1], Darminto, D[1]

[1] *Departement of Physics, Faculty of Mathematics & Natural Sciences, Institute of Technology Sepuluh Nopember (ITS), Surabaya 60111, Indonesia*
[2] *Departement of Physics, Faculty of Mathematics & Natural Sciences, State University of Malang (UM), Malang 65145, Indonesia*
[3] *Neutron Scattering Laboratory, National Nuclear Energy Agency of Indonesia (BATAN), Kawasan Puspiptek Serpong Tangerang 15314, Indonesia*

SUMMARY

A series of ferrofluid $Fe_{3-x}Mn_xO_4$ ($0 \leq x \leq 1$) based iron sand has been successfully synthesized through coprecipitation method at room temperature for the first time. In this experiment, HCl, NH_4OH and TMOH were used as dissolving, precipitating and surfactant agents, respectively. The parameters such as pH of solution, stirring time, and rpm were carefully controlled for each sample. The characterizations were conducted by means of X-ray diffraction, electron microscopy (TEM) and small-angle neutron scattering (SANS) using SANS spectrometer at BATAN Serpong, Indonesia. The X-ray diffraction characterization shows that the Mn ions have been successfully inserted at the tetra/octahedral sites of Fe_3O_4 cubic spinel structure with the crystallite size is in the nanometer range for all samples. From the TEM images show that about 10 nm of Fe_3O_4 particles dispersed in spherical form. Meanwhile SANS experiments provided the information of the shape, size and its distribution of Fe_3O_4 ferrofluid. The scattering data SANS profiles were analyzed and fitted using a log-normal sphere model calculation. Mass fractal model calculation was also applied to fit the power law scattering at medium to low q range. From this analysis reveals that the ferrofluid Fe_3O_4 has a primary particle with the radius of 4 nm and tends to be aggregated with fractal dimension close to 1 (rod-like structure). However, the increasing of doping composition (Mn ions) in ferrofluids $Fe_{3-x}Mn_xO_4$ tends to be more aggregated with the fractal dimension is much higher than 1. Furthermore, external magnetic field up to 1 tesla was applied at the ferrofluid experiments and showing different scattering intensity patterns. The magnetic spins orientation and magnetic domain were obtained by further analysis from the scattering data.

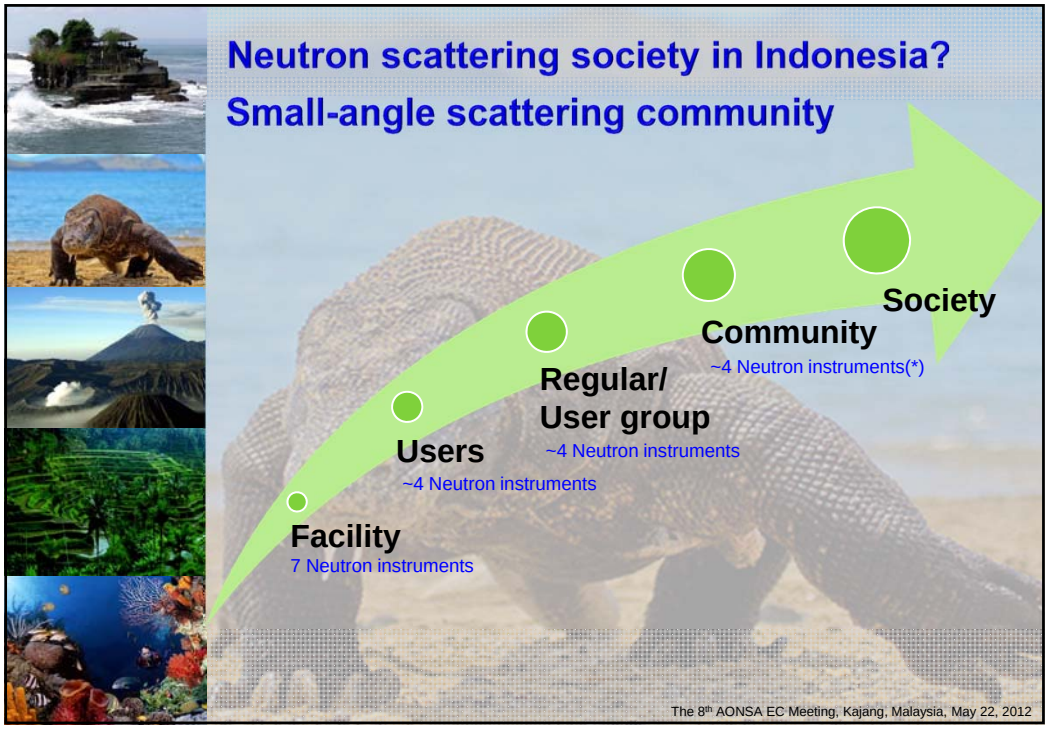
IAEA Technical Meeting

IAEA Technical Meeting on

Regional Research Reactor Users' Networks (RRUNs): Advances in Neutron Imaging

26 – 30 November 2012
Hotel Santika - Bumi Serpong Damai (BSD) City
Serpong - Jakarta, INDONESIA

The 8th AONSA EC Meeting, Kajang, Malaysia, May 22, 2012


Neutron scattering society in Indonesia?
Small-angle scattering community
Facility
7 Neutron instruments
Users
~4 Neutron instruments
Regular/
User group
~4 Neutron instruments
Community
~4 Neutron instruments(*)
Society
The 8th AONSA EC Meeting, Kajang, Malaysia, May 22, 2012

Appendix 20

Reports from Neutron Facilities

BATAN NEUTRON BEAM FACILITY

Overview

Sutiarso
National Atomic Energy Agency of Indonesia- BATAN
Kawasan Puspiptek Serpong - Tangerang Selatan, Banten

BATAN - SERPONG NUCLEAR AREA

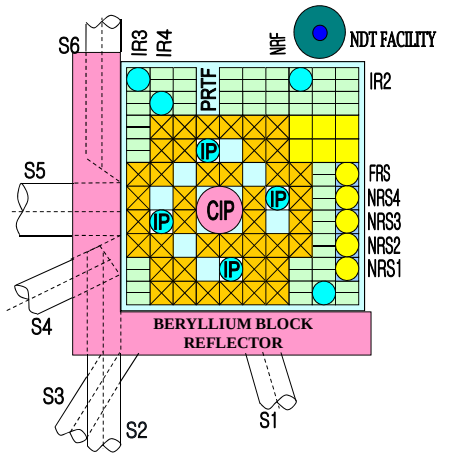
Reactor and neutron guide hall

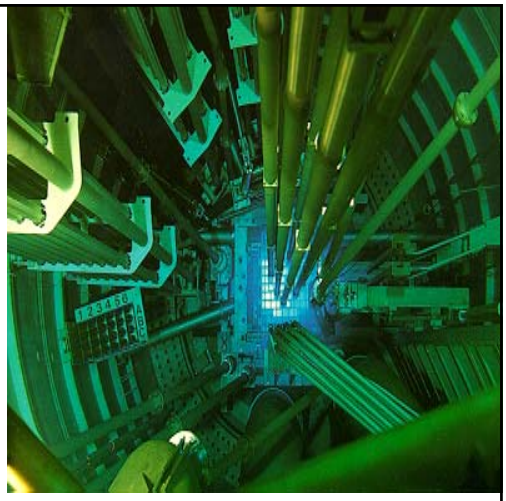
The Reactor

Descriptive parameters of RSG - GAS	
Power	**30 MW (Thermal)**
Peak Thermal Neutron Flux	**2.5×10^{14} $cm^{-2}sec^{-1}$**
Core	
• Active core volume (dm^3)	**180**
• Active core height (cm)	**60**
• Loading (Kg ^{235}U)	**8.675**
• Number of fuel elements in TWC	**40**
• Number of control elements in TWC	**8**
• Fuel type	**U_3Si_2Al MTR**
• ^{235}U enriched (%)	**19.75**
• ^{235}U density (gram cm^{-3})	**2.96**
• Moderator / coolant	**H_2O**

Operation Mode

- **11 days on – 9 days off**
  4 days on – 2 days off **about 235 days/yr**
- **15 MW in power** **mostly on the week end**

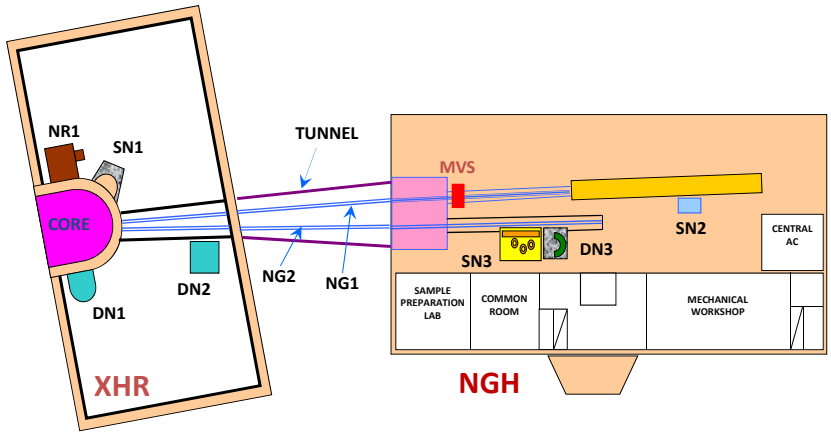




Fuel Assembly
Beryllium Reflection Element

IR = Irradiation Position (reflector)
NRS = Normal Rabbit System
S = Beam Tube
NRF = Neutron Radiography Facility (out of core)
PRTF = Power Ramp Test Facility
CIP = Central Irradiation Position
IP = Irradiation Position (core)
FRS = Fast Rabbit System

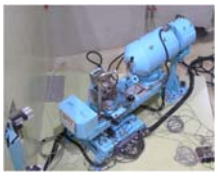
The layout of the Neutron Scattering Laboratory



XHR : eXperimental Hall of Reactor
NGH : Neutron Guide Hall
NG : Neutron Guide
NG1 : First Neutron Guide
NG2 : Second Neutron Guide
NR1 : Neutron Radiography Facility

DN1 : Neutron Diffractometer for Residual Stress Measurement
DN2 : Four-Circle Diffractometer/Texture Diffractometer
DN3 : High Resolution Powder Diffractometer
SN1 : Triple Axis Spectrometer
SN2 : Small Angle Neutron Scattering Spectrometer
SN3 : High Resolution Small Angle Neutron Scattering Spectrometer

INSTRUMENTS CAPABILITIES



Crystal strusture
(atomic scale: ~ Å)

Material characterizations from atomic scale
to macro scale

Molecular structure
(nano scale:~ nm)

Molecular structure
(micro scale:~ µm)

Defects
(macro scale:~ mm)

Sizes

Neutron Diffractometers → Neutron Spectrometers → Neutron Radiography

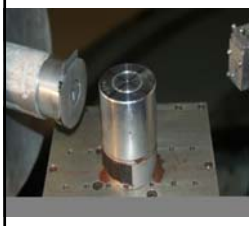
Neutron Diffractometer

DN1 NEUTRON DIFFRACTOMETER *for* RESIDUAL STRESS MEASUREMENT

The instrument

Instrument Characteristics

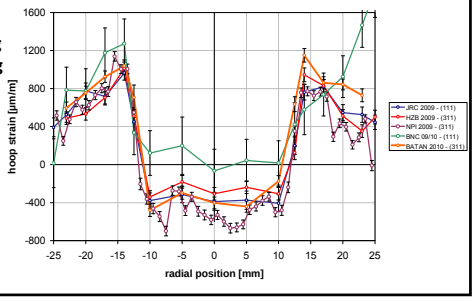
Beam Source	: Thermal neutron (Beam Tube S6)
Location	: Reactor Experimental Hall
Beam collimation	: Parallel Collimator 40'
Monochromato	: Doubly focused bent Si(311)
Monochromator Take-off-Angle	: 0-90 deg.
Diffraction angle range (2θ)	: -10 – 120 deg.
Detector	: BF_3 Point detector
Counting system	: Canberra
Control system	: Labo + PC Windows
Aquisition software	: RESA (JAEA)
X-Y-X Goniometer	: X=140 ± 0.025 mm, Y=140 ± 0.025 mm, Z=50 ±0.025mm
DeltaTheta/Theta	: $5x10e^{-5}$
Texture evaluation	: Full circle goniometer
Tensile Rig	: 1 kN + strain gage reader
Cryostat	: 15 K



The VAMAS sample

Round Robin experiment using VAMAS aluminium ring & plug sample (Under the CRP-IAEA Project 1575)

Result



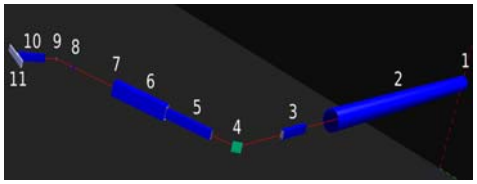
Some Research on Residual Stress using DN1- 2012

1. Tri-Crystal Aluminium Sample - Prof. Hanabusa (**Tokushima Univ**, **Japan).**
2. Aluminium samples welded using FSW method - M. Refai Muslih and Tri Hardi (**BATAN**).
3. Aluminium samples welded using TIG method - Nur Subeki and Dr. Nur Ilman (**Univ. of Gajah Mada**).
4. Residual stress measurement on tungsten reinforced titanium composite (**Dr. Nishida, Kobe Univ.**)

Instrument Development

- Implementation of a radial collimator and 1 D detector → reduce the background
- The Design & construction was carried out by ourself.
- Computer simulation SIMRES was used to design the radial collimator with the help of Dr. Saroun from the NPI of Chezh Republic

Photograph of the radial collimator made by BATAN



The configuration of components of neutron diffractometer, DN1
1 . Neutron source 2. Beam tube 3. 1st collimator 4. Monochromator 5. 2nd beam tube 6. 3rd beam tube 7. Slit #1 8. Slit #2 9. Sample 10. Radial collimator 11. Detector (1D)

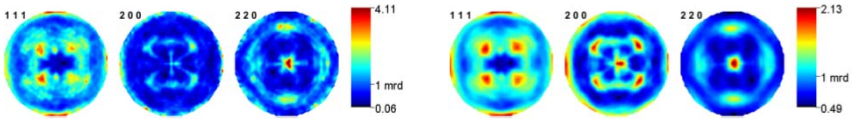
DN2 FOUR CIRCLE/ TEXTURE NEUTRON DIFFRACTOMETER (FCD/TD)

The instrument

Instrument Characteristics

Location	:	Beam tube S5
Take off angle	:	$2\theta_m = 46^o$
Monochromator	:	Bent Si (311)
Wavelengt	:	1,28 Angstrom
Flux at sample position	:	3,81 x 10^5 n/cm^2 det
Beam slit	:	Min. (5 x 5 mm), max. (30 x 30 mm)
Detector		
- Monitor	:	BF_3 (side windows)
- Main	:	BF_3 (end windows)
Soller collimator	:	20' atau 30'
2θ angle range	:	$0^o \leq 2\theta \leq 110^o$ and $0^o \leq \theta \leq 90^o$
Eulerian Craddle	:	$-90^o \leq \omega \leq 40^o$, $-180^o \leq \phi \leq 180^o$
$-100^o \leq \chi \leq 40^o$		
Sample environment	:	Room temperature
Acquisition and control system software	:	Visual Basics v 6

Some Examples



(a) (b)

Pole figure of aluminum sheet AA3104 (a) without and b) with defocusing effect correction

Research on Texture using DN2

The DN2 diffractometer are mostly used by researchers from local institutions and university students. Some samples such as ball bearing, brass, aluminum and its alloys (3104, 6061 and 7075 series), zirconium and its alloys have been investigated.

- .

DN3 HIGH RESOLUTION POWDER DIFFRACTOMETER (HRPD)

The instrument

Instrumental Parameters

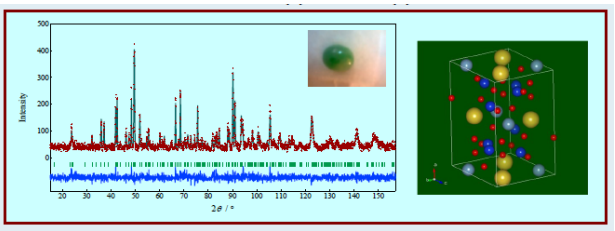
Beam port	: NG2-3
Take off angle	: 41.5°, 89° (now) and 130°
Monochromator	: hot-pressed Ge(331), (100mm x 45mm x 10mm) mosaicity FWHM β = 23.4' (0.39°)
Wavelength	: 2θM = 89°, λ = 1.8223 Å
Beam narrower	: Max. 40mm (horizontal) x 100 mm (vertical)
Collimators	: α1 (NG2) = ±16.2'
	α2 = 20', 40'
	α3 = 6', 10'
Scattering angle	: -170° < 2θs < +10°
Main detectors	: 32 units of ^{3}He detectors, XERAM 30NH15
Data acquisition	: PC compatible

Sample Environment

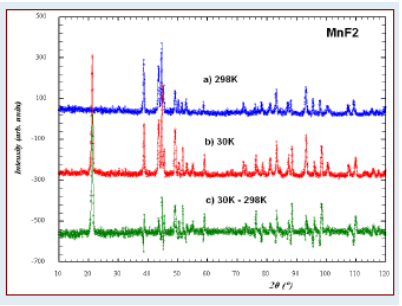
- High temperature furnace up to 850°C
- Low temperature cryostate down to 15K

Selected Examples

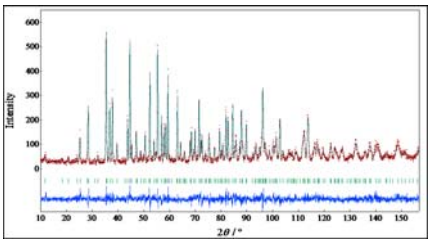
Neutron diffraction pattern of Jadeit ($NaAlSi_2O_6$)



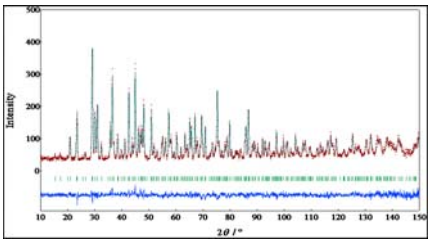
Neutron diffraction pattern of MnF2 sample within cryostat (a) at room temperature (b) at 30K



Comparison result of $La_8Sr_2GeO_4$ neutron diffraction patterns taken at BATAN's diffractometer and ANSTO's diffractometer.



BATAN



ANSTO

Neutron Spectrometers

SN1 TRIPLE AXIS SPECTROMETER (TAS)

Instrument Characteristics

Monochromator
Type : Roatating- shield type
Reflections: Pyrolytic graphite 002
Size : 75 mm (H) X 50 mm (V)
Scattering angle range : 15 < 2θm < 75 degree
Ki range: 5.99 < ki < 2.33 Ang^{-1}
Wave length range : 1.1 < λi < 2.7 Ang
Filter : PG filter (removable)
Sample Table
Goniometer Translational x, y, Tilt, Rx, Ry
Scattering angle range: -5<2θs< 110 derajat
Analyzer same as monohromator
Collimator #1, #2, #3, #4: (20', 40')
Control dan data acquisition software:
nsl ver.1.0 , bataco ver.1.0
(for elastic and inelastic experiment)

Applications

1. Crystal structure and magnetic structure determination (elastic scattering mode)
2. Investigation of lattice dynamics and spin dynamics of condensed matters (inelastic scattering mode)

Current Status

In process of upgrading hardware and softwrae

SN2 SMALL ANGLE NEUTRON SCATTERING SPECTROMETER (SANS)

The instrument

Sample environment:
- Automatic sample changer & refrigerated heating circulation
- External electromagnet up to 1T
- Stopped-flow cell(*)

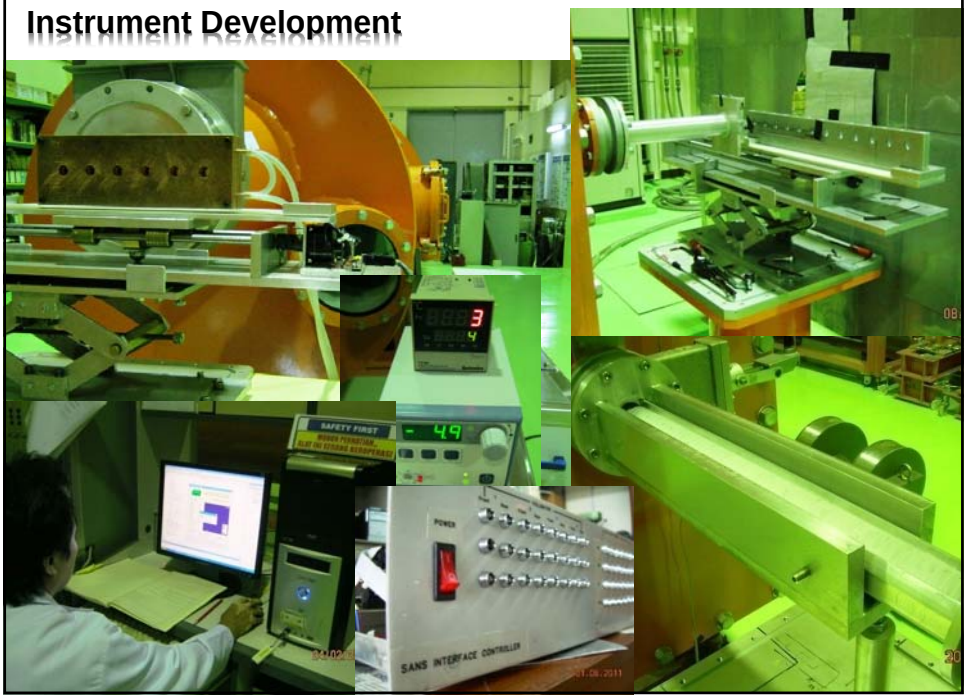
Utilization :
Soft and hard matters, i.e. colloids, polymers, ceramics, alloys, magnetic materials, micellar solutions, protein solutions & virus

Instrument Characteristics

Neutron source : Thermal Neutron S5 neutron guide
Monochromator : multidisk mechanical velocity selector
Incident wavelength : ~ 3 – 6 Å
Wavelength resolution : ~10% – 20%
Effective Q-range : $0.003 < Q < 0.3 Å^{-1}$
(relevant to size of ~ 1 – 250 nm)
Max. flux at sample position : $7 \times 10^6 cm^{-1} s^{-1}$
Beam size: min. 5 mm in diameter
Detector : 2D-PSD
Sample to detector distance L1 : 01. and 1.3 -18 m
Collimator length L2 : 1.5, 4, 8, 13, 18 m
Pinholes : 30, 20, 14, 10, 7, 5 mm (diameter)
Software for data processing: GRAPS, Igor NIST, SASfit, ATSAS

Instrument Development

Instrument Development



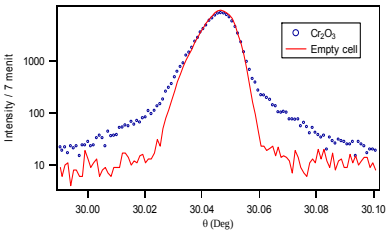
SN3 HIGH RESOLUTION SMALL ANGLE NEUTRON SCATTERING SPECTROMETER (HRSANS)

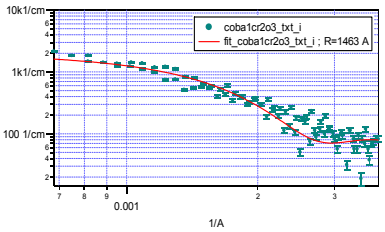
The instrument

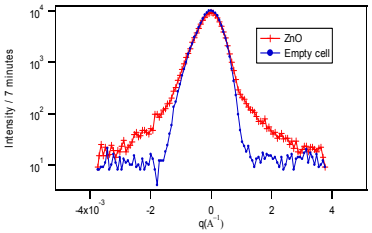
Instrument Characteristics

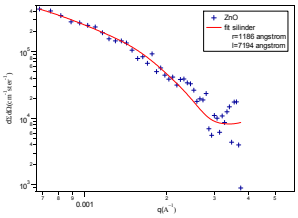
Preset time/count measurement
Monochromator PG (004)
Take-off angle 60°
λ = 1.6261 ± 0.2011 Å ; FWHM = 0.0611°
$\Delta\lambda/\lambda$=12.37%
Δq_h=4.75.10^{-4} Å^{-1}
Δq_v=0.4 Å^{-1}
Double perfect crystals Si(311)
Smallest step (0.0001°) > Q ~ 10^{-5} Å
Fluks neutron pada sampel: ~ 10^{3} cm^{-2} s^{-1}

Some Examples









Neutron Radiography & Tomography

RN1 NEUTRON RADIOGRAPHY FACILITY

Instrument Characteristics

Neutron source: RSG-GAS reactor beam port S-2

Neutron flux at sample position: 10^6 to 10^7 n/cm^2 sec

Beam size at sample position: 30 cm (dia)

Collimator L/D ratio : 83

Cadmium ratio : 6.4

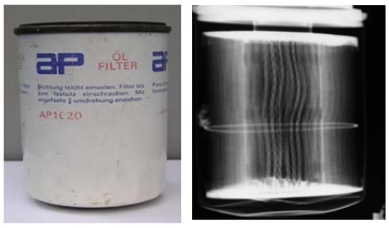
Neutron/Gamma ratio: >10^5 n/cm^2/mR

Radiography techniques: Gd converter and X-ray film, Li^6-ZnS scintillator screen, CCD based electronic imaging system.

Method

- Film method
- Real time method using CCD camera
- Neutron Tomography

Examples of Neutron Radiography using Film Method

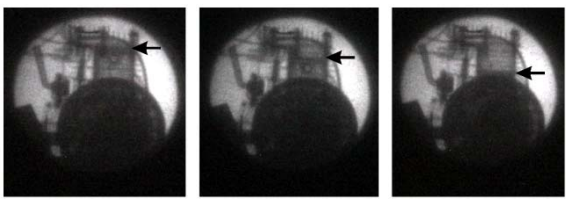


Lubricant oil

Hard disk

Examples of Neutron Radiography using Real time method

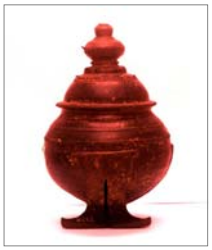
Motor bike engine



$t = t_1$ $t = t_2$ $t = t_3$

Examples of Neutron Tomography

Ignition coil



Archaeological object

Instrument Development

Modification has been made on the setup of instrument to improve the image by:

1. Shorten the sample to detector distance
2. Reducing the Field of View of camera using a lens with higher focal point
3. Replacing the scintilator screen with thinner one (1 mm) – higher resolution
4. Increasing the L/D ratio to reduce the unsharpness in the image*

* Will be done later

NEUTRON BEAM TIME SCHEDULE

SANS Experiment Schedule & Activity in 2012

2012	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
January						Optimization							Optimization							Optimization											Calibration
February	Calibration									Calibration															USERS (India)						
March			USERS (India)																						USERS (ITS)						
April	USERS (ITS)						USERS (ITS)							USERS (PTBIN)							USERS (LIPI)						USERS (STTN)			
May	USERS (STTN/UGM)																		Optimization						USERS (India)						
June	USERS (ITB)																								SANS - Ristek						
July	SANS Ristek						IAEA Expert							IAEA Expert							SANS - Protein						SANS - Ristek			
August	SANS - Ristek																														
September	MVS Maintenance						Optimization								Calibration																
October						USERS (Malaysia)																					SANS - Protein					
November			SANS - Ristek						SANS - Ristek											SANS - Protein											
December	USERS (ITS)							USERS (ITS)							USERS (ITS)																

Foreign users | Local users | Internal users | Training | Instr. works | Not used

International & National Collaboration

TWAS > 2009 - 2010

Small-angle Neutron Scattering Studies on Biological Macromolecules

IAEA – Coordinated Research Project > 2007 - 2010

SANS BATAN: Improvement the Neutron Intensity by Focusing Optics

IAEA – Coordinated Research Project 2010- 2013

Optimization of Neutron Beam Techniques for Characterization of Structural Materials

IAEA – National Technical Cooperation(*) > 2012 - 2015

Utilization of Research Reactor by Improved Performance of Neutron Irradiation Facility and Neutron Beam Instruments
(*Expert missions; Fellowship; Visiting scientists; Equipments*)

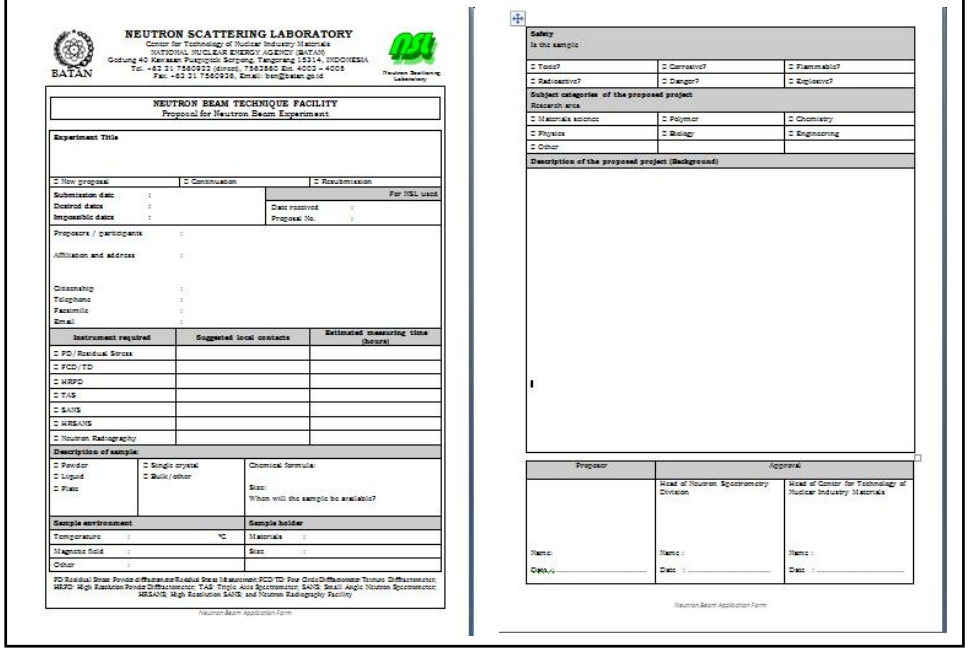
Indonesian Ministry of Research & Technology > 2011 – 2013(*)

1. Small-angle Neutron Scattering Application on Dengue Virus Ultrastructure and Self-assembly Mechanism for a Basic Targeted Drug and Vaccine Development
2. Neutron Radiography Application for rapid detection of rice plant against drought stress

Upcoming International Event

IAEA Technical Meeting on
Regional Research Reactor Users' Networks (RRUNs):
Advances in neutron imaging

26 – 30 November 2012
Serpong Jakarta, Indonesia



NEUTRON SCATTERING LABORATORY
Center for Technology of Nuclear Industry Materials
NATIONAL NUCLEAR ENERGY AGENCY (BATAN)
Gedung 40 Kawasan Puspiptek Serpong, Tangerang 15314, INDONESIA
Tel. +62 21 7560922 (direct), 7563560 Ext. 4002 – 4005
Fax. +62 21 7560936, Email: ben@batan.go.id

BATAN

NEUTRON BEAM TECHNIQUE FACILITY
Proposal for Neutron Beam Experiment

Experiment Title

☐ New proposal | ☐ Continuation | ☐ Resubmission

Submission date :
Desired dates :
Impossible dates :

For NSL used
Date received :
Proposal No. :

Proposers / participants :
Affiliation and address :
Citizenship :
Telephone :
Facsimile :
Email :

Instrument required	Suggested local contacts	Estimated measuring time (hours)
☐ PD / Residual Stress		
☐ PCD / TD		
☐ HRPD		
☐ TAS		
☐ SANS		
☐ HRSANS		
☐ Neutron Radiography		

Description of sample:

☐ Powder ☐ Liquid ☐ Plate	☐ Single crystal ☐ Bulk / other	Chemical formula: Size: When will the sample be available?

Sample environment		Sample holder	
Temperature	: °C	Materials	:
Magnetic field	:	Size	:
Other	:		

PD:Residual Stress Powder diffractometer;Residual Stress Measurement; PCD/TD: Four Circle Diffractometer/Texture Diffractometer; HRPD: High Resolution Powder Diffractometer; TAS: Triple Axis Spectrometer; SANS: Small Angle Neutron Spectrometer; HRSANS: High Resolution SANS; and Neutron Radiography Facility

Neutron Beam Application Form

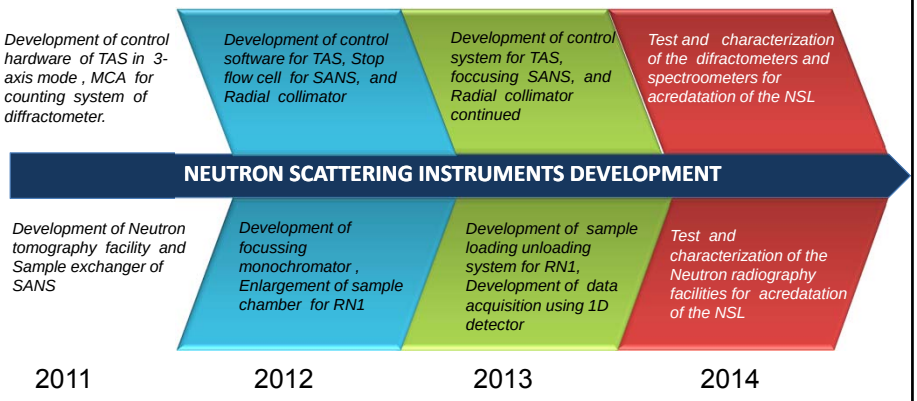
Safety Is the sample		
☐ Toxic?	☐ Corrosive?	☐ Flammable?
☐ Radioactive?	☐ Danger?	☐ Explosive?
Subject categories of the proposed project Research area		
☐ Materials science	☐ Polymer	☐ Chemistry
☐ Physics	☐ Biology	☐ Engineering
☐ Other		

Description of the proposed project (Background)

Proposer	Approval	
	Head of Neutron Spectrometry Division	Head of Center for Technology of Nuclear Industry Materials
Name: Date :	Name : Date :	Name : Date :

Neutron Beam Application Form

- **NEUTRON INSTR.** OPERATION AND MAINTENANCE
- NEUTRON INSTRUMENTS DEVELOPMENT
- NEUTRON INSTRUMENTS UTILIZATIONS



Thank you

Synchrotron Light Research Institute

Supagorn Rugmai

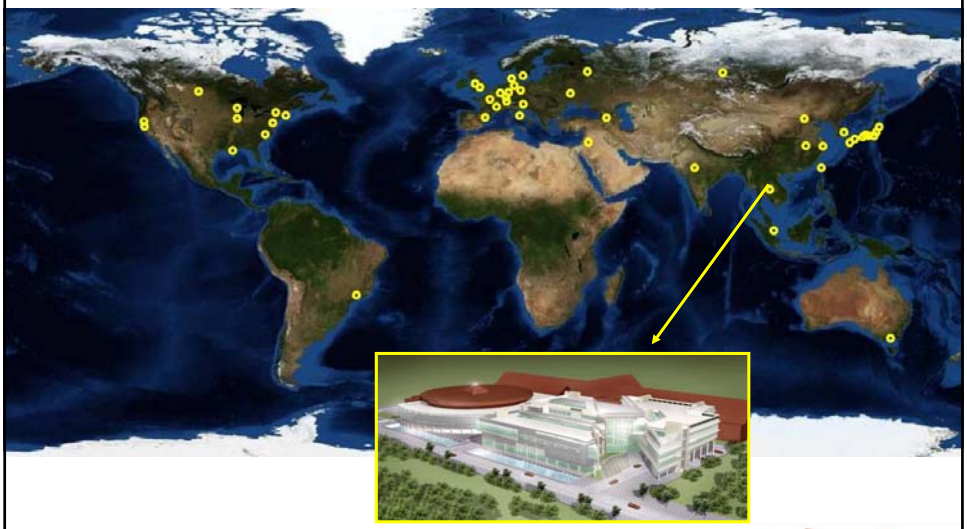
Siam Photon

SLRI is a Public Organization

Under supervision of the Ministry of Science and Technology

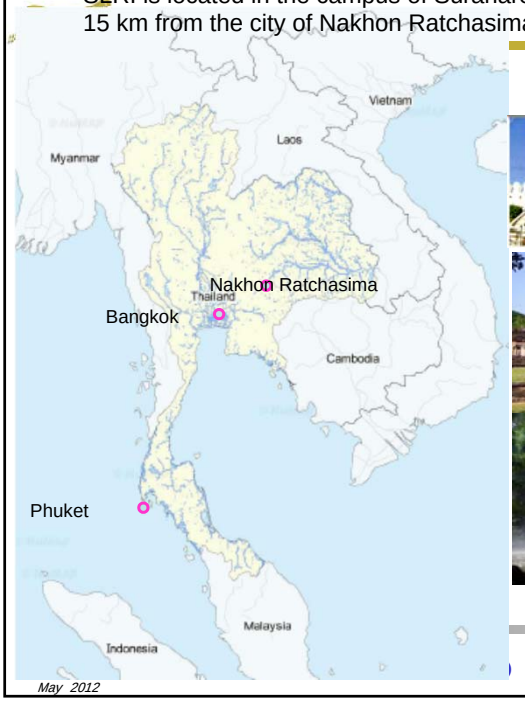
- *Budget: Central government*
- *Policy: Executive Board*
- *Scientific: International Advisory Committee*

Synchrotron light sources



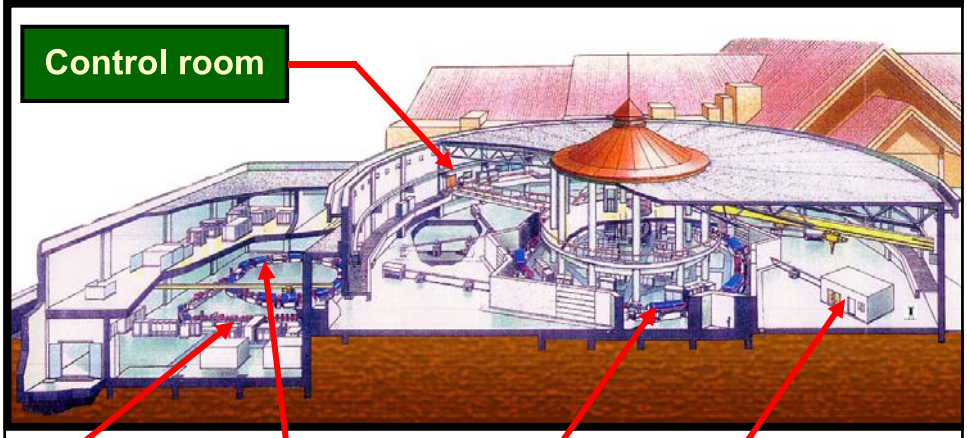
สถาบันวิจัยแสงซินโครตรอน (องค์การมหาชน)
Synchrotron Light Research Institute (Public Organization)
May 2012

SLRI is located in the campus of Suranaree University of Technology
15 km from the city of Nakhon Ratchasima, 250 km NE of Bangkok



May 2012

The Siam Photon Source



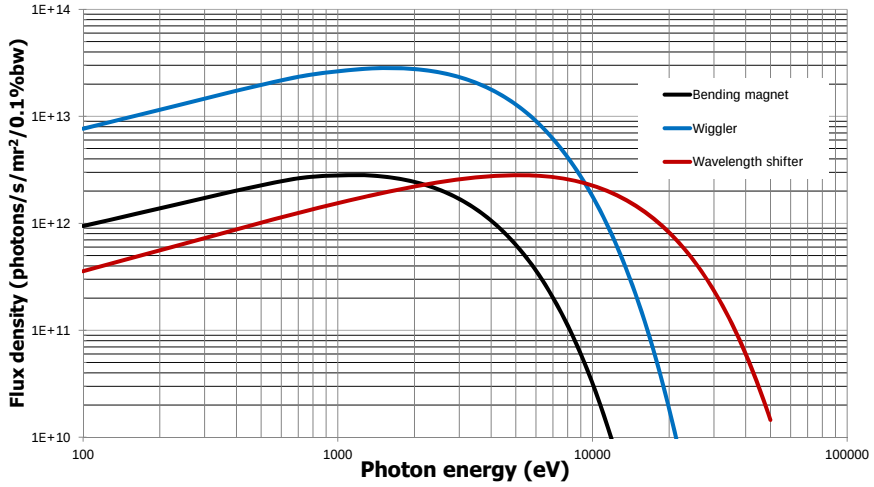
The Siam Photon laboratory

Beamline and Experimental stations

Accelerator complex

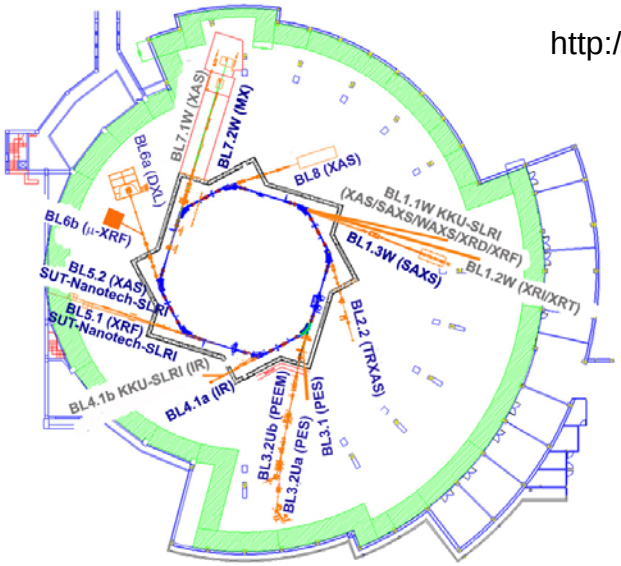
Component fabrication shop

Photon spectrum



Beamlines and experimental stations

http://www.slri.or.th



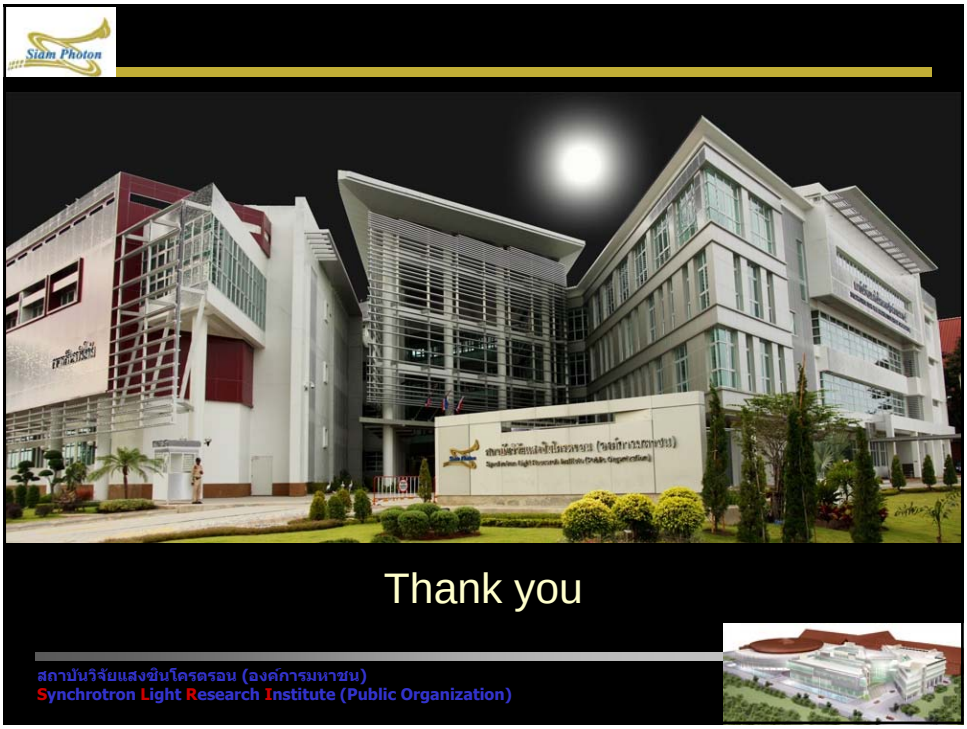
Asia Oceania Forum for Synchrotron Radiation Research

Financial supports for participants from ASEAN countries.

http://www.slri.or.th/AOFSRR2012

ASEAN activities

- ASEAN Synchrotron Science Camp
- ASEAN Workshop on Small Angle X-ray Scattering
- ASEAN Workshop on X-Ray Absorption Spectroscopy
- ASEAN Workshop on Infra Red Spectroscopy and Imaging
- ASEAN Workshop on Photoemission Spectroscopy



Thank you

สถาบันวิจัยแสงซินโครตรอน (องค์การมหาชน)
Synchrotron Light Research Institute (Public Organization)

Appendix 21

IAEA Collaboration Centers

IAEA Activities on Enhanced Utilization and Applications of Research Reactors

Danas Ridikas

Department of Nuclear Sciences and Applications (NA)

International Atomic Energy Agency (IAEA)
Wagramer strasse 5, PO Box 100, 1400 Vienna, Austria

IAEA
International Atomic Energy Agency

Outline

- **RR issues and challenges**
- **Examples of efforts related to enhanced RR utilization**
  - ✓ **RR networks and coalitions**
  - ✓ **Role of RR in NPP programmes**
  - ✓ **Plans for new RRs and TC projects**
  - ✓ **Active/new CRPs**
  - ✓ **Conferences and Technical Meetings**
  - ✓ **…**
- **Conclusions**

IAEA

Contact: D.Ridikas@iaea.org

Best regards and warm greetings from DDG-NA Dr Daud Bin Mohamad

IAEA

3

Contact: D.Ridikas@iaea.org

Major Activities within Physics Section

Assistance and support of Member States in the field of

1. **Accelerators**
2. **Research Reactors**
3. **Controlled Fusion**
4. **Nuclear Instrumentation**
5. **Cross-cutting Material Research**

Based on Member States needs, requests & recommendations

Planning & implementation of P&B activities

Proposal and implementation of CRPs

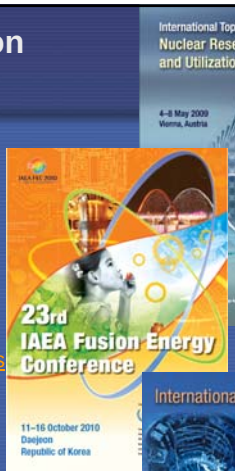
Management of Data Bases

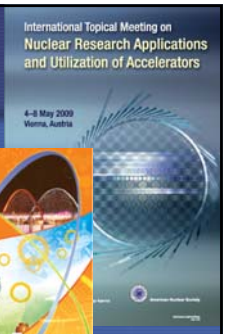
Organization of Conferences, Technical & Consultancy Meetings

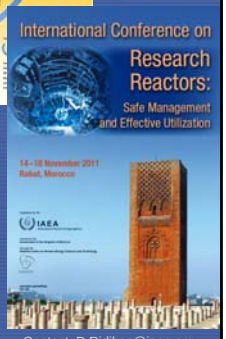
Organization of ICTP workshops, training schools and courses

Support of TC projects

Promotion of Nuclear Sciences, Applications and Technologies







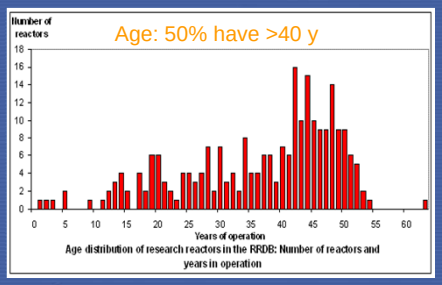
IAEA

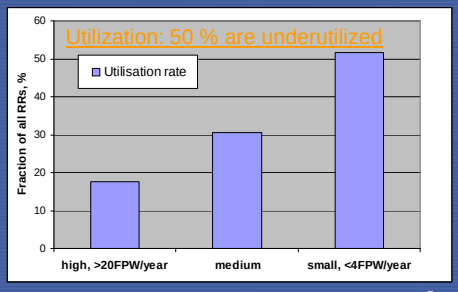
Contact: D.Ridikas@iaea.org

Key issues and challenges

Source: IAEA RRDB, March 2012

RR underutilization
Ageing & needs for refurbishment
Fuel cycle issues
Requests for new RRs
Safety & security
…

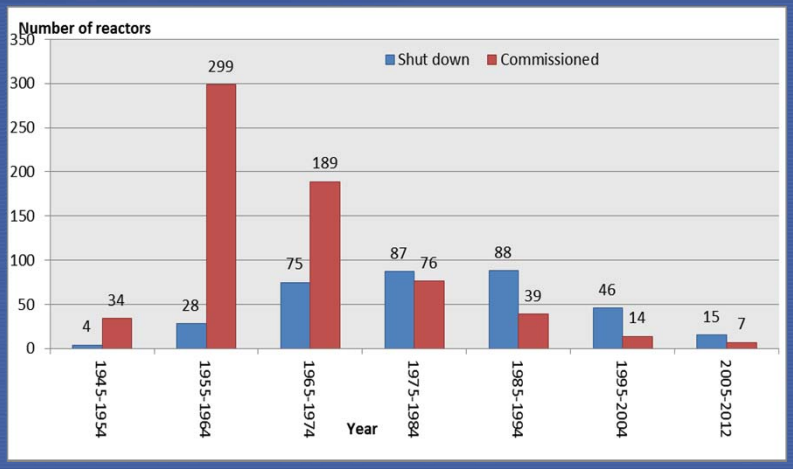




IAEA

Contact: D.Ridikas@iaea.org

Trend for decreasing number of RRs



-1 RR per year since 2005
-2 RR per year since 1995

IAEA

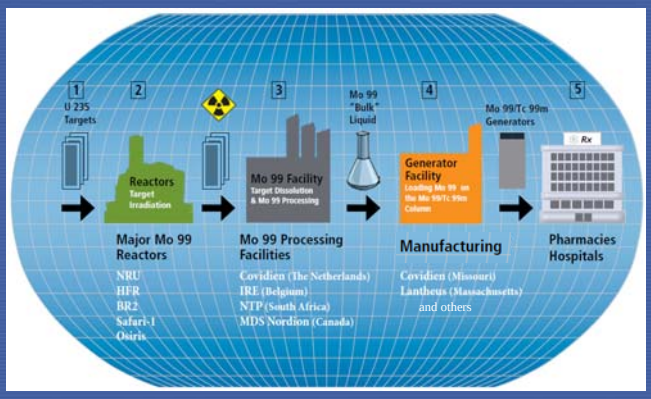
Contact: D.Ridikas@iaea.org

Key issues and challenges: supply of Mo-99

Over 80% of diagnostic nuclear medical imaging uses radiopharmaceuticals containing ^{99m}Tc, entailing over 30 million investigations per year

Over 95% of the ^{99}Mo required for ^{99m}Tc generators is produced by the fission of ^{235}U targets in RRs

Source: IAEA NTR 2010, Annex

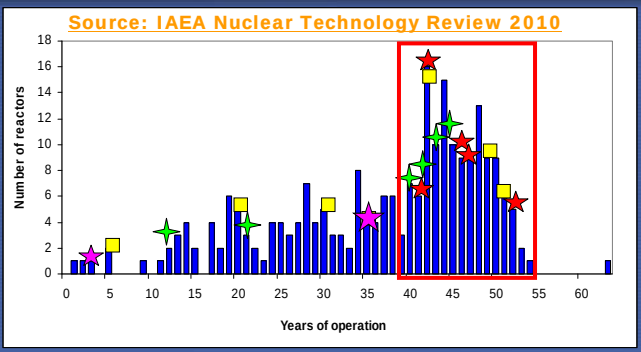


IAEA

Contact: D.Ridikas@iaea.org

Key issues and challenges: supply of Mo-99

Source: IAEA Nuclear Technology Review 2010



- **The five major RR currently producing more than 95 % of ^{99}Mo**
- **The OPAL (Australia) and Maria (Poland)**
- **Existing RR that are already used by regional ^{99}Mo producers or for which commissioning is underway**
- **Existing RR which are now studying the feasibility of providing irradiation services.**

Present status:

NRU (Canada) and HFR (Netherlands) are back to operation!

Maria (Poland) & LVR-15 (Czech) have entered as new important players!

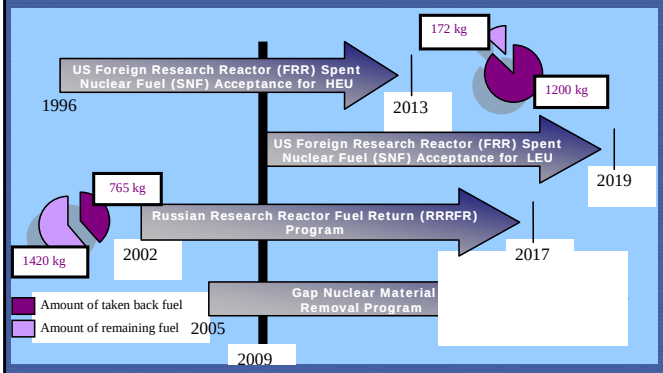
IAEA

Contact: D.Ridikas@iaea.org

Key issues and challenges: reduction of HEU

Reduction of HEU through the Global Threat Reduction Initiative (GTRI)

- → 76 RR cores converted to LEU, ~20 RR are expected/on-going
- → Spent and fresh fuel take back programmes



Latest news:

→2500 kg of Russian-origin HEU spent fuel has been removed from Serbia

→SAFARI-1 is entirely LEU!

Other countries, where HEU is being removed:
Bulgaria, the Czech Republic, Germany, Hungary, Kazakhstan, Latvia, Libya, Poland, Romania, Serbia, Uzbekistan, Vietnam, …

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Contact: D.Ridikas@iaea.org

Major reasons for RR Underutilization

- **Lack of purpose** (and strategy); objectives formulated long time ago; no new/clear strategy available
- **Lack of budget** (and staff); prefer operate on "survival" level rather than shut-down and decommission; no plan/funds for decommissioning
- **Lack of pro-activity** (and motivation); no action to search for new users/clients; no action to analyse/penetrate the market for potential commercial products and services
- **Lack of QA/QC** (and Integrated Management System); decreased confidence from major stakeholders (funding and regulatory authorities); decreased chance to go commercial; no courage for re-organization

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Contact: D.Ridikas@iaea.org

In-house strategy for enhanced RR utilization

Today existing or planned RR facilities should concentrate on three major issues:

Strategic Planning & Performance Monitoring

International Cooperation & Networking

Sustainability through Provision of Products & Services

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Contact: D.Ridikas@iaea.org

RR related efforts within the IAEA programmes

→ Cross cutting activities on RRs: NA, NE, NS, TC, …

Programme D: Nuclear Science

Sub-programme D2:
Research Reactors (RR)

Project D2.01:	Project D2.02:	Project D2.03:	Project D2.04:
Enhancement of utilization & applications of RRs	RR infrastructure, planning & innovation	Addressing RR fuel cycle issues	Research Reactor operation

- Activity 1
- Activity 2
- Activity 3
- …

Programme J: Safety of Nuclear Installations

Sub-programme J6:
Safety of RRs and Fuel Cycle Facilities

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Contact: D.Ridikas@iaea.org

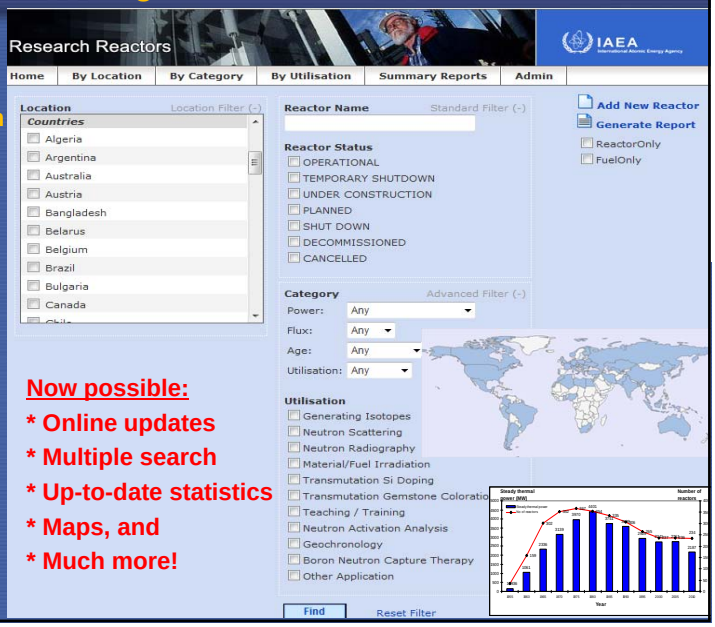
IAEA Research Reactor DataBase (RRDB)

http://nucleus.iaea.org/RRDB/

Includes:

* Detailed information of 680 facilities
* Operational status
* Reactor data
* Fuel data
* Utilization records
*…

Jointly coordinated and managed by NAPC & NEFW.



Now possible:

* Online updates
* Multiple search
* Up-to-date statistics
* Maps, and
* Much more!

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RR application-oriented functions of RRDB

Application	Number of RR involved	Involved / Operational, %	Number of countries
Education & Training	161	67	51
Neutron Activation Analysis	122	51	54
Radioisotope production	90	37	44
Neutron radiography	68	28	40
Material/fuel testing/irradiations	60	25	25
Neutron scattering	48	21	32
Nuclear Data Measurements	42	18	20
Gem coloration	36	15	22
Si doping	35	15	22
Geochronology	26	11	21
Neutron Therapy	20	8	13
Other	95	40	29

IAEA Indispensable to define priorities and plan our activities! 14

Activity: RR strategic & business plans

Preparation/revision of
→ Justification and Demonstrated Needs
→ Strategic & Business Plans

Facility Status
Capabilities
What can I do?

Current Stakeholder
Requirements/Needs
What should I do?

Production of a strategic plan supports an increase in utilization by increasing capabilities and creating new requirements

Support/assistance from the IAEA is dependent on having a demonstrated need, i.e. … a strategic plan

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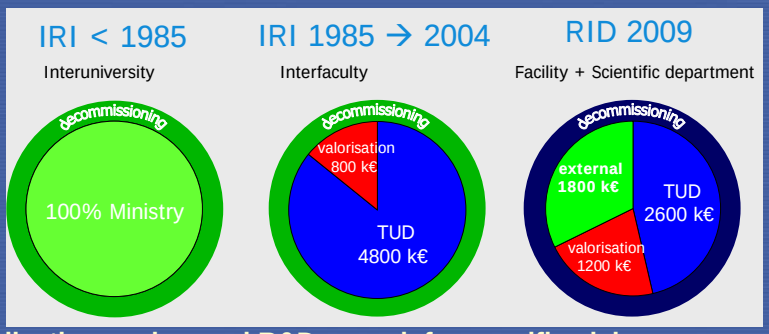
Contact: D.Ridikas@iaea.org

Example: 2MW RR, HOR of TU Delft

Today:
It is a partially self sustained RR (operational costs ~6M USD)
Multipurpose RR
NAA, neutron beams, positron source, E&T, isotope production
Special efforts on QA/QM, accreditation, recognition, etc.



Future:
New applications, advanced R&D, search for specific niche…

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Source: TU Delft, The Netherlands

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Contact: D.Ridikas@iaea.org

Activity: RR Networks and Coalitions

Objectives:

- → increase utilization & sustainability
- → promote regional/international cooperation
- → access to RRs from Member States without RRs

Role of the IAEA

- → Catalyst and facilitator towards self-reliance
- → Preparation of strategic and business plans
- → Initial support via regional TC projects

Performance indicators:

- Number of RR facilities forming networks
- Number of non-RR countries forming networks
- Number of RRs with new/updated strategic plans
- Number of RRs with increased utilization/revenues

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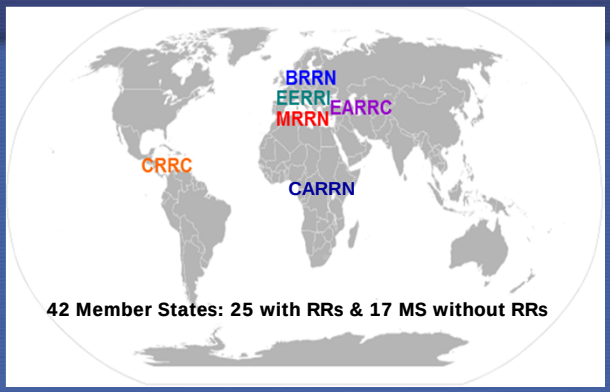
Contact: D.Ridikas@iaea.org

Activity: RR Networks and Coalitions, status



1. BRRN – Baltic Research Reactor Network, multipurpose, 10MS
2. EARRC – Eurasian RR Coalition, isotope production, 5MS
3. EERRI – Eastern European RR Initiative, multipurpose, 6MS
4. CRRC – Caribbean RR Coalition, mainly NAA, 3 MS
5. MRRN – Mediterranean RR Network, multipurpose, 12 MS
6. CARRN – Central Africa RR Network, multipurpose, 9 MS

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→ Neutron beams is a joint activity within 2 networks!

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Contact: D.Ridikas@iaea.org

Activity: RR Networks and Coalitions, highlight

RR Group Fellowship Training Course (6 weeks):

- **EERRI:** organized by partners in Austria, Czech Republic, Hungary, & Slovenia
- **IAEA:** implementation and financial support through TC projects
- **Contents:** theoretical courses, hands on training, IAEA lectures, evaluations
- **Participants:** ~40 fellows trained during 5 courses
- **Future:** 1 course will take place in 2012; **similar initiatives in other regions**

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Contact: D.Ridikas@iaea.org

Internet Reactor Lab (IRL)

PULSTAR Reactor NCSU/ U.S

Reactor Parameters

Audio/ Video data

NE Department JUST/Jordan

Projects on-going in other regions!

IAEA

Source: JUST, Jordan

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Contact: D.Ridikas@iaea.org

Activity: TC projects and new RRs
Planned RRs as of today

More than 30 ongoing IAEA TC projects related to RR utilization, safety, fuel cycle, refurbishment and modernization, etc.

4 ongoing projects to start the 1st RR in the country

1) Azerbaijan: Conducting a Feasibility Study for Planning and Establishing a RR
2) Jordan: Establishing a RR
3) Sudan: Sudan Nuclear RR Project
4) GCC: Developing a Regional Nuclear Training Centre for Capacity Building and Research

9 new projects related to the 1st RR in the country

Jordan, Kuwait, Lebanon, Philippines, Saudi Arabia, Sudan, Tunisia, Tanzania, & Vietnam

→ **Other countries planning new RRs:**

Argentina, Brazil, India, The Netherlands, Russia, South Korea, South Africa,...

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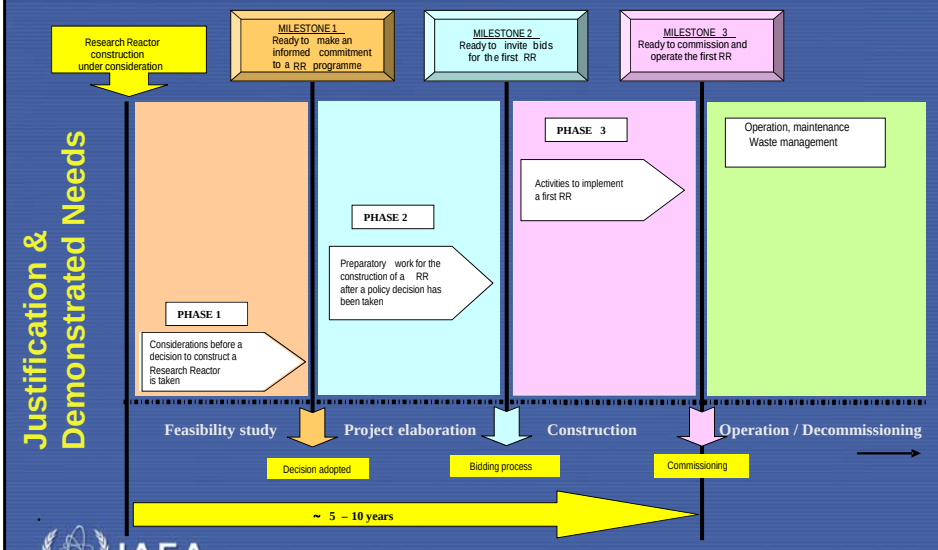
Contact: D.Ridikas@iaea.org

Activity: Newcomer Member States
Planning, Building and Operation of RR: phases/milestones



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Contact: D.Ridikas@iaea.org

→ Role of RR in the context of national NPP programme

RRs in E&T: ~164 RRs involved world-wide

Public tours and visits

Teaching physical and biological science students

Teaching radiation protection and radiological engineering students

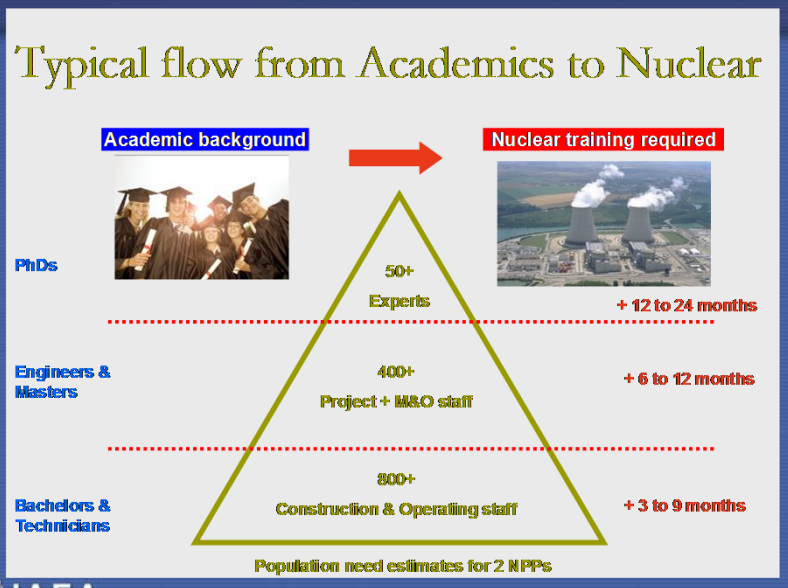
Nuclear engineering students

NPP operator training

IAEA

Contact: D.Ridikas@iaea.org

→ Role of RR in the context of national NPP programme



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Source: AREVA, France

Contact: D.Ridikas@iaea.org

→ Role of RRs in the context of national NPP programme

Example of Nuclear Research Centre in Morocco

Issues (from Milestones Document)	Potential role of RR
1. National position	X
2. Nuclear safety	X
3. Management	
4. Funding and financing	
5. Legislative framework	X
6. Safeguards	X
7. Regulatory framework	X
8. Radiation protection	X
9. Electrical grid	
10. Human resource development	X
11. Stakeholder involvement	X
12. Site and supporting activities	X
13. Environmental Protection	X
14. Emergency planning	X
15. Security and physical protection	X
16. Nuclear fuel cycle	X
17. Radioactive waste	X
18. Industrial involvement	
19. Procurement	

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Source: CNESTEN, Morocco

Contact: D.Ridikas@iaea.org

→ Role of RRs in the context of national NPP programme

Number of staff trained at research reactors for nuclear power utilities, nuclear industry, and nuclear safety authorities.

Country – Research Reactor	Number of staff trained		
	2009	2010	2011
Austria, TRIGA Mark II, 250 kW	15	15	15
Czech Republic, LV-0, 5 kW	31	51	33
Germany, AKR-2	50	44	25
Italy, TRIGA Mark II, 250 kW	47	47	24
Slovenia, TRIGA Mark II, 250 kW	41	32	70

However, "A research reactor constructed mainly or solely to support the introduction of nuclear power may lose its principal value after the first NPPs are commissioned because a nuclear power programme can be sustained without national research reactors."

Source: IAEA NTR 2012 (Annex) "The role of RRs in Introducing Nuclear Power?"

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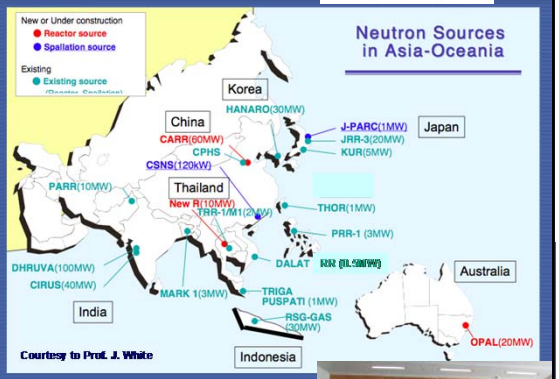
Activity: Cooperation with AONSA

Status:

- Meeting in August 2009, ANSTO
- Meeting in October 2010, KAERI
- Annual AONSA neutron schools (Australia, India, Japan→Australia, China, …)



Activities:

- **ANSTO as an IAEA CC**
- Exchange of information
- Joint meetings & conferences (Korea 2010; Japan 2011, Malaysia 2012)

Future:

- New regional IAEA TC project approved: awaiting for funding

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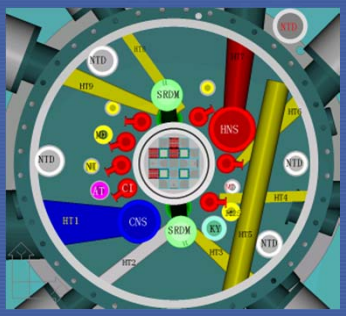
Activity: New RRs

CARR, China

1st criticality in May 2010; 72 hours at full power in 2012

- **60 MW, in core flux ~1*10^{15} n/(s cm^2)**
- **Fuel: 19% U-235, Moderator: H_2O, Reflector: D_2O**
- **Replacement for 10MW HWRR (2007)**
- **Multipurpose RR with the main objectives in basic research**
- **Open to users from universities, governmental laboratories, industry**



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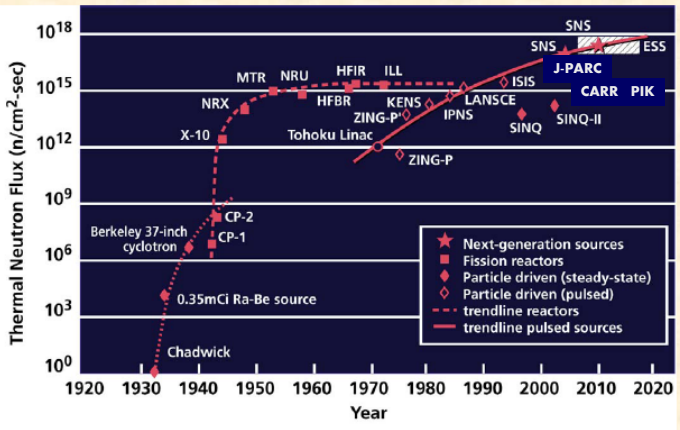
Higher neutron fluxes?

Reactors have reached the limit at which heat can be removed from the core
Pulsed sources have not yet reached that limit and hold out the promise of higher intensities



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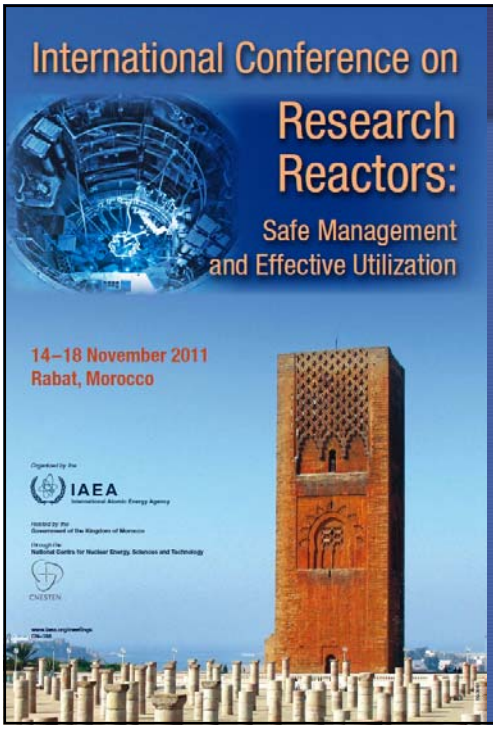

Major International Event in the area of RRs, organized every 4 years

2011 Topics included:

1. Utilization & Applications of RRs
2. Operation & Maintenance
3. New RR Projects
4. Safety of RRs
5. Spent Fuel Management, Waste & Decommissioning
6. RR designers/providers

+ Final panel discussion, including lessons learned after the Fukushima Daiichi NPP accident for the RR community

~220 participants
~120 papers presented
~42 countries represented

Jointly organized by NA, NE, NS and TC (this time lead by Physics Section)

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Thanks for your attention & I wish you a successful Meeting!

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Activity: IAEA Collaborating Centres

"Designation as a CC is a public recognition of the work that the institution is doing for the IAEA. It can be regarded as an acknowledgement of being an internationally recognised player in the specified field, and as an expression of thanks by the IAEA."

ANSTO: Neutron Scattering Applications (since 2007)

TU Delft: NAA Based Methodologies (since 2009)

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New CRP on automation of NAA (2012-2015)

Need for automation:

- **Irradiation stage:** there are no automated irradiation facilities with sample changers commercially available.
- **Measurement stage:** only one company currently offers a sample changer specifically for NAA.
- **Analysis stage:** there are no commercially available automated solutions for data processing and management after gamma-ray spectrum analysis

Objectives:

•Carry joint activities through the modular structure in developing and implementing automated

- data processing and analysis reporting
- interaction with and control of sample changers
- QA/QC procedures as a cross-cutting component.

•Strengthen optimization and competitiveness of NAA process by harmonized automation hardware and software

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Kick meeting: later this year, 19 partners pre-selected to participate

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Proficiency tests of multi-elemental analysis (1)

Since 2009, started in Africa

- Choice of WEPAL (Wageningen Evaluating Programs for Analytical Laboratories) as accredited proficiency test provider
- Hiring of supporting expert-consultant
- Identification of competent national counterparts
- Preparation guidelines and set of deadlines
- Choice of samples and selection of test cycles

Sample	ISE 2010-3	ISE 2010-4	IPE 2010-3	IPE 2010-4
1	861: Calcareous Clay	858: Braunerde-Pseudoclay	198: Banana/ Musea paradisciana	133: Maize / Zea mays
2	961: Clay	998: Organic Ferrasol	175: Tulip (tuber)/ Tulipa l.	172: Cherry Laurel/Prunus laurocerasus
3	874: Sandy Soil	872: Braunerde Clay	100: Grass (gr94)/ Poaceae	180: Oil Palm (leaf)/ Elaeis guineensis
4	872: Braunerde Clay	918: Sandy Soil	172: Cherry Laurel/Prunus laurocerasus	173: Virginia Creeper / Partenocissus quinquefolia

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Proficiency tests of multi-elemental analysis (2)

Scheduled follow up

Initiative includes ~30 NAA laboratories world-wide

- After experience with Africa, similar proficiency tests were extended to the NAA laboratories in **Europe and Latin America**
- **3rd round results (Dec. 2011) look promising:**
  - **In Africa, clear improvement** is observed
  - In general, **satisfying results by European laboratories**
  - **In Latin America, no major problems** reported
- **4th round results (Mar. 2012) confirm the 1st round performance**
- **Complete analysis** will be available after follow up workshops in May-June 2012

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Active CRP 1575 (2009-2013):

Development, Characterization and Testing of Materials of Relevance to Nuclear Energy Sector Using Neutron Beams (SANS, diffraction and neutron radiography)

Objectives:

- investigation and characterization of materials relevant to nuclear energy applications
- optimization and validation of experimental and modelling methods
- creation of a database of reference data for nuclear materials research
- enhancement of the capacity of research reactors for nuclear materials research

10 Research Contracts + 9 Research Agreements

Expected output:

- Creation of multilateral network in the field of advanced nuclear materials research
- Creation of an experimental reference database for models and calculations
- Final project publication

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New CRP 1782 (2011-2014):
Application of neutron imaging with focus on cultural heritage research

- **Initiated/discussed during IAEA Satellite meeting of WCNR in October 2010**
- **Designed/drafted during CM in September 2011 in Vienna**
- **Objectives:**
  - Promote NI technology in order to enhance its utilisation in cultural heritage
  - Establish the necessary standardization procedures and methodology to achieve synergy among participating laboratories / facilities.
  - Strengthen collaboration between the NI community involved in cultural heritage research
  - Develop a database of standard NI-services for cultural heritage needs
  - Evaluate available software for data-analysis and simulation.
- **19 Research Contracts and Agreements approved (out of 30 proposals)**
- **Kick of meeting took place on 7-11 May in Vienna**

Responsible officer: A.Zeman@iaea.org, Physics-NAPC, IAEA

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Round Robin related to neutron imaging (1)

- Need of standard approach for facility characterization
- Need of accepted procedures for standardisation
- CM in Vienna in 2009
- Discussions via e-mail and phone conferences
- Round table discussion at WCNR 2010 in South Africa
- Targeted meeting during RCM in China in 2011

→ PSI designed and fabricated samples, developed measurement protocol and data analysis procedure

→ Presently: Brazil, Hungary, Portugal and South Africa
→ Next: Poland, Malaysia, Argentina, Algeria
→ After: Indonesia, Germany, Slovenia, South Korea

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Round Robin related to neutron imaging (2)

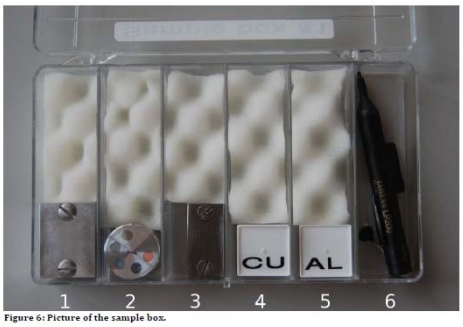

Figure 6: Picture of the sample box.

A.1 Item list

1. Resolution sample of aluminum to be combined with Cu foils.
2. Contrast sample
3. Resolution sample of iron to be combined with Al foils.
4. Box with 20 µm thick Cu foils. Please use the suction device when you handle the foils.
5. Box with 20 µm thick Al foils. Please use the suction device when you handle the foils.
6. Suction device to pick up and position foils for the resolution samples.
7. 8Gb USB memory-stick containing instructions. The experiment data organized as described in section 4 shall be copied to this device upon returning the sample box. A template of the folder structure is provided on the stick. Copy the template and rename according to the instructions.

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TM on Regional Research Reactor Users' Networks (RRUNs): advances in neutron imaging

26 – 30 November 2012 ; Serpong-Jakarta, Indonesia

Topics:

•On-going modernization or new projects of neutron imaging facilities
•Advances in modern neutron imaging, e.g. energy-selective imaging, real-time imaging, computed tomography, relation to neutron scattering techniques, etc.
•Role of neutron imaging in materials research and various industrial applications
•Results of the IAEA Round Robin exercises using standardization samples
•Share of good practices and strategies from international collaborations and networking in the field of neutron imaging; potential creation of users' network on neutron imaging.

Expected Output:

→Preparation of report on present status and future development of neutron imaging facilities and associated instrumentation
→Share of good practices and lessons learned from international cooperation and multi-user facilities
→Critical evaluation of Round Robin results, available by this time
→Formulation of recommendations and work-plan; potential creation of network

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TM on Use of Neutron Beams for High Precision ND Measurements

10 – 14 December 2012 ; Budapest, Hungary

Topics:

•Description and characteristics of neutron beam facilities for nuclear data measurements
•Description and characteristics of associated instrumentation and data acquisition systems
•On-going and future experimental programmes
•Share of good practices and strategies from international collaborations in using neutron beam facilities for nuclear data measurements.

Expected Output:

→Meeting report summarizing present status and future development of neutron beam facilities and associated instrumentation
→Share of good practices and lessons learned from international cooperation and multi-user facilities in this particular area.
→Initial working material for the future publication “Compendium of Neutron Beam Facilities for Nuclear Data Measurements”

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Out of more than 30 active national TC projects related to RRs, 5 projects are related to neutron beams

- CPR0012 Improving the Use of a Neutron Texture Diffractometer for Material Research and Industrial Applications
- EGY4048 Development of Neutron Irradiation and Beam Line Facilities for Effective Use of the Research Reactor
- INS1023 Upgrading BATAN's Research Reactor Facilities
- MOR1007 Establishing Technical Expertise in INAA Automation and PGNAA Installation for Applications in Environment, Agriculture, Industry, Health and Human Sciences
- SAF1005 Establishing a Regional User Access Centre of Excellence in Neutron Beam Line Applications

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New Publications: 2012-2013

→ 95% of contributions received
→ Consultancy (final review) Meeting in May
→ Submission to PC in June 2012

F1.20.23

LIMITED DISTRIBUTION

DRAFT Working Material

Development and Applications of the Residual Stress Measurements in Materials with Neutrons

(draft)

Final report related to the IAEA CRP1314, 2006-2009

Vienna, Austria, March 2012

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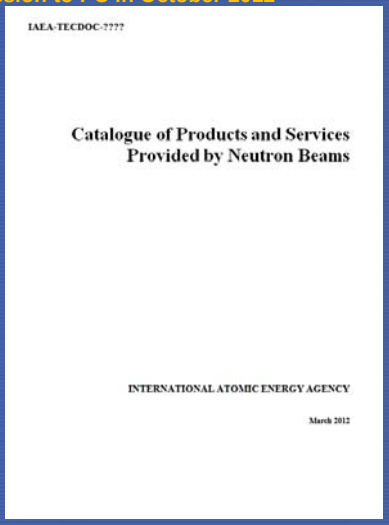
New Publications: 2012-2013

→ 50% of contributions to chapters received
→ 95% of individual papers received
→ Consultancy (final review) Meeting in September
→ Submission to PC in October 2012



IAEA-TECDOC-????

Catalogue of Products and Services Provided by Neutron Beams

INTERNATIONAL ATOMIC ENERGY AGENCY

March 2012

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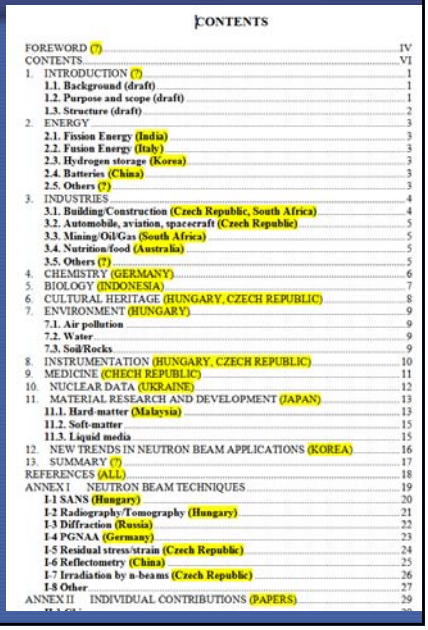

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