

# Asia-Oceania Conference on Neutron Scattering (AOCNS-2023) Agenda

Date: Dec. 2-8, 2023

Website : <http://aocns2023.ihep.ac.cn/>

## Instrument Scientist Workshop

1. Diffractometer
2. SANS
3. Reflectometry
4. Inelastic Scattering
5. Imaging

## Scientific Programs

1. Condensed Matter Physics
2. Materials Science and Chemistry
3. Soft Matter and Life Sciences
4. Engineering and Industrial Applications
5. Fundamental Physics
6. Sources, Methods and Techniques

Dec. 2	Dec. 3	Dec. 4	Dec. 5	Dec. 6	Dec. 7	Dec. 8
Registration	Registration	Opening	Plenary Lecture	Plenary Lecture	Plenary Lecture	AONSA Prize
		Plenary Lecture				
		Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
		Scientific Sessions(1-6)	Scientific Sessions(1-6)	Scientific Sessions(1-6)	Scientific Sessions(1-6)	Closing
		Lunch	Lunch	Lunch	Lunch	
Registration	Executive Committee Meeting	Scientific Sessions(1-6)	Scientific Sessions(1-6)	CSNS Tour	Scientific Sessions(1-6)	
	Instrument Scientist Workshop (1,2,3,4,5,6)	Scientific Sessions(1-6)	Scientific Sessions(1-6)		Scientific Sessions(1-6)	
		Poster	Poster	Banquet	Poster	

# Committees

1. **International Advisory Committee**
2. **International Scientific Program Committee**
3. **Local Scientific Program Committee**
4. **Local Organizing Committee**

## **International Advisory Committee**

Hesheng Chen (China Spallation Neutron Source, CAS, China)

Dongfeng Chen (China Institute of Atomic Energy, China)

Hsiung Chou (National Sun Yat-sen University, Taiwan)

Jae-Ho Chung (Korea University, Korea)

Evvy Kartini (Indonesian National Nuclear Energy Agency)

Yoshie OTAKE, (RIKEN, Japan)

Sungkyun Park (Pusan National University, Korea)

Taku J Sato (Tohoku University, Japan)

Jamie Schulz (Australia's Nuclear Science and Technology Organization, Australia)

Chris Wensrich (University of Newcastle, Australia)

S M Yusuf (Bhabha Atomic Research Centre, India)

# International Scientific Program Committee

## CNSS:

[Xun-li Wang \(Hong Kong City University, China\)](#)

Fangwei Wang(CSNS, China)

## TWNSS:

Hsiung Chou (National Sun Yat-sen University, Taiwan)

Chun Chuen Yang (National Central University)

## NISS:

S M Yusuf (Bhabha Atomic Research Centre, India)

?

## ANBUG:

?

?

## JSNS:

?

?

## KNBUA:

?

?

## INSS:

?

?

Please send the names recommended by member associations to [wangfw@ihep.ac.cn](mailto:wangfw@ihep.ac.cn)

# Local Scientific Program Committee

come from CNSS

## Local Organizing Committee

Chair: Hesheng Cheng

Co-chair: Tianjiao Liang, Fangwei Wang

1. **Condensed Matter Physics:** [Erxi Feng](#)
2. **Materials Science and Chemistry:** [Ping Miao](#)
3. **Soft Matter and Life Sciences:** [He Cheng](#)
4. **Engineering and Industrial Applications:** [Jie Chen](#)
5. **Fundamental Physics:** [Tong Xin](#)
6. **Sources, Methods and Techniques:** [Wen Yin](#)

## **Plenary speakers (45+15 mins)**

every morning, number: 4-6

## **Keynote speakers(30+10 mins)**

every afternoon, 3-4 / topic

## **Invited talks (25 +5 mins)**

6-8 / topic

## **Oral talks (15+5 mins)**

6/day/topic

## **Poster** (half afternoon of Tuesday and/or Thursday)

# Instrument Scientist Workshop Committee

Instrument Scientist Workshop Committee

Global Contactor: [He Cheng](#) (CSNS)

W1. Neutron Diffraction

[Takashi Kamiyama\(J-Parc\)](#)/[Ping Miao\(CSNS\)](#)/[Erxi Feng\(CSNS\)](#)

W2. Inelastic Neutron Scattering

[Kenji Nakajima\(JAEA\)](#)/[Denghong Yu\(Ansto\)](#)/[Qingyong Ren\(CSNS\)](#)

W3. Small Angle Neutron Scattering

[Anna Sokolova \(Ansto\)](#)/[Yun Liu \(NIST\)](#)/[He Cheng\(CSNS\)](#)

W4. Neutron Reflectometry

[Stephen Holt \(Ansto\)](#)/[Tao Zhu\(CSNS\)](#)

W5. Engineering Diffraction & Neutron Imaging

[Xunli Wang \(CityU\)](#)/[Jie Chen\(CSNS\)](#)/[Xiaohu Li\(CSNS\)](#)

# Asia-Oceania Conference on Neutron Scattering (AOCNS-2023)

Date: Dec. 2-8, 2023

Venue:

**Royal Garden Hotel**

555 Rooms



No. of Participants: **300+**

Estimated registration fee: ?+50 USD (Banquet optional) lunches included

Status	Early-bird registration	Standard registration
Student/Retired	350 USD	450 USD
Young Scientist (under age of 32)	400 USD	500 USD
Scientist	600 USD	750 USD
Accompanying person	350 USD	350 USD

Hotel	Rooms	Fee(USD/day)
<b>Royal Garden Hotel</b>	~550	70-90



**Royal Garden Hotel**  
555 Rooms



**Day 1**

Executive Committee



Instrument Workshop X4



**Day 2-5**

Plenary Hall



Parallel Sessions X4



Reception & Banquet



Buffet







## Royal Garden Hotel

### Royal Garden Hotel Dongguan Traffic



Shenzhen Airport – Hotel

➤ by Bus ~45 mins



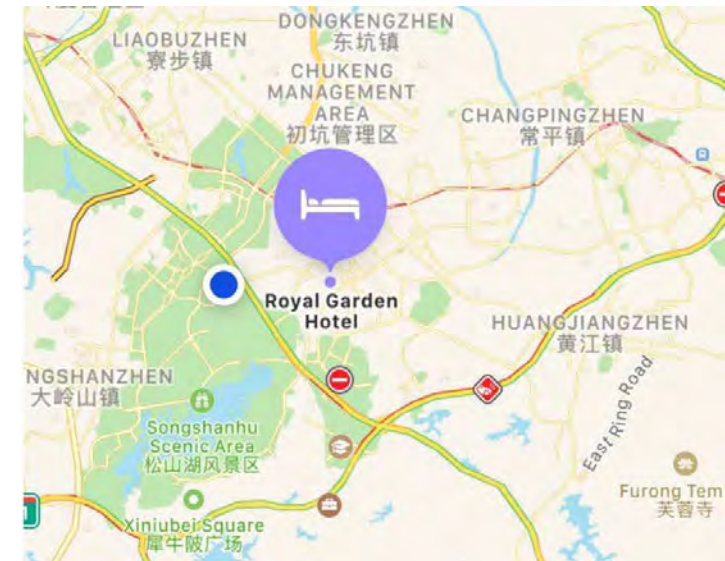
Guangzhou Airport – Hotel

➤ by bus ~1.5 hrs



Hong Kong Airport – Hotel

➤ by Eternal East Cross-Border  
Coach ~ 2.5 hrs



**Shuttle buses from the Shenzhen/Guangzhou airports to the hotel will be available in the registration day**

- about 2000 meters away from Songshan lake
- About 8 kilometers from CSNS

# Progress in AOCNS-2023 preparation

Website Publishes July 1, 2023

Call for Abstracts  
Call for Exhibitions July 1, 2023

Registration Opens July 1, 2023

Call for pre-workshop  
Call for satellite Meetings July 2023

Abstracts Closes September 15, 2023

Early-bird Registration Closes August 31, 2023

All Calls Close September 2023

Registration Closes October 30, 2023

Conference 2-8 Dec., 2023

## Work Schedule of AOCNS-2023

	Publish	open	close	date	Abstracts and Exhibitions review
Call for Abstracts and Call for Exhibitions		July 1, 2023 (ready for open)	September 15, 2023		six review groups: 1. Condensed Matter Physics 2. Materials Science and Chemistry 3. Soft Matter Systems 4. Engineering and Industrial Applications 5. Fundamental Physics 6. Sources, Methods and Techniques
Early-bird registration		July 1, 2023	August 31, 2023		
Standard registration		July 1, 2023	October 30, 2023		
Call for pre-workshop and Call for satellite Meetings		July 2023	September 2023		
Conference				December 2-8, 2023	

4

# Visa Application

## Tourist Visa

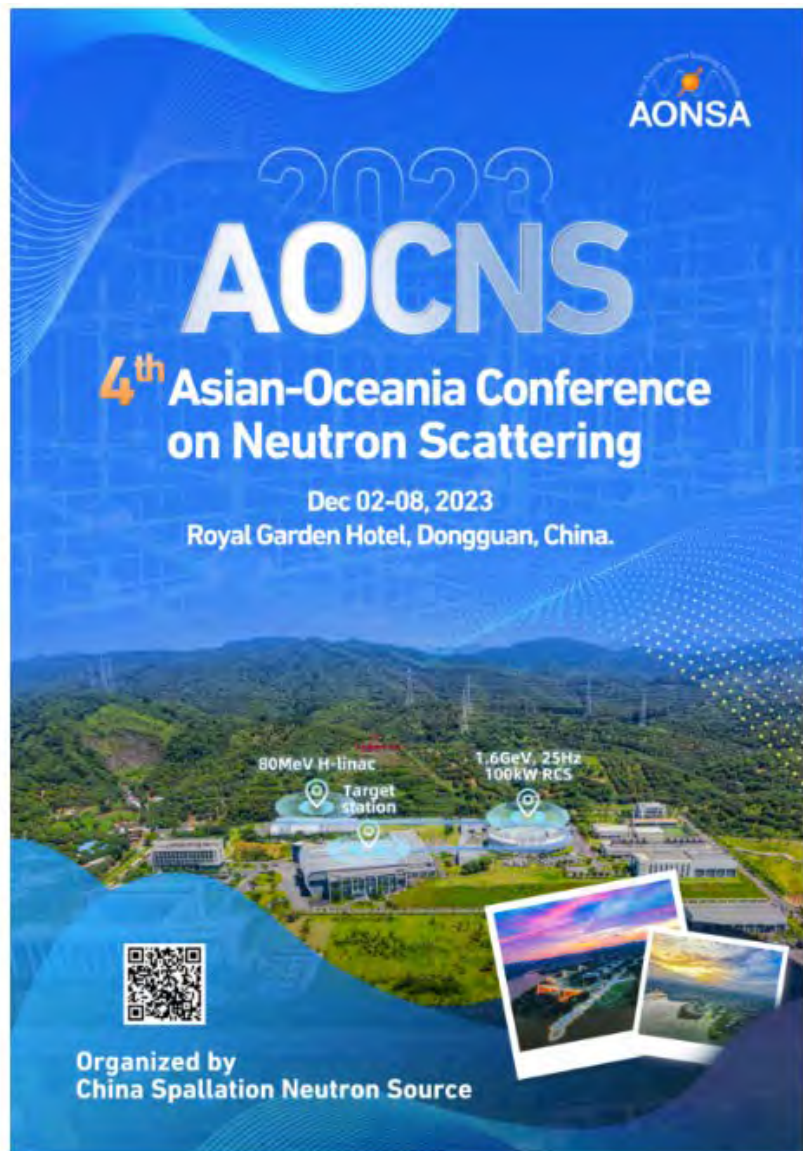
You can apply for a tourist visa of China all by yourself. Such visa is issued to foreigners for sightseeing and visiting relatives or any other personal affairs, it belongs to visa category "L". We strongly recommend to apply for a tourist visa for attending the conference ([invitation letter is NOT required for "L" visa](#))

## Official or Business Visa

If you require a letter of invitation (for Official or Business Visa) when attending the conference, please send the request to us as soon as possible. ([visa-aocns2023@ihep.ac.cn](mailto:visa-aocns2023@ihep.ac.cn) )

**For any further inquiries please contact [visa-aocns2023@ihep.ac.cn](mailto:visa-aocns2023@ihep.ac.cn) .**

# AOCNS-2023 manual is currently being prepared



## Outline ↵

Venue and Floor Plan	-----undercover↵
Registration & Payment and Hotel Accommodations	----- I ↵
Travel Guide	----- II ↵
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Committee	----- ↵
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Topic S1: Condensed Matter Physics	----- ↵
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Hideki Seto

J-PARC, KEK / AONSA Office Liaison

## Report from the AONSA Office

As of June 2023,

after the 29<sup>th</sup> EC meeting in November 2022

*This document was prepared by Ms. Mutsu Amma.*

# Budget, Report, Message from AONSA Office

- **Budget**

- Issued Invoice for Annual Fees 2023 and AONSA Prize Letter
- Issued receipts of Annual Fees in the secretary's name
- Confirm and update the deposit/withdrawal of the bank account as required
- Open a foreign currency (USD) deposit account as requested
- Started managing "AONSA Office" and "AONSA Prize Fund" budgets in both JPY and USD according to the currency of deposits and withdrawals

- **Preparation of a budget report for the EC meeting**

Send a budget report with both JPY and USD accounts activity statements to a treasurer by email

- **Message from AONSA Office**

The following announcements were distributed to the AONSA members.

- April 3- (Advanced Notice on J-PARC MLF 2023B Call for General Use Proposals(Short-term and One-year))
- April 10- (J-PARC MLF Call for General Use Proposals (April 17 - May 10))



# AONSA YRF, Others

- **AONSA Young Research Fellowship**

- Issued the certificate in the president's name to YRF2022 Dr. Naeem Muhammad
- Collected additional documents from YRF candidates per the selection committee's request

- **Others**

- Canceled the agreement for the Sakura Internet server that hosted the previous website
- Reported the payment history of each Organization's annual fees and donations at the request of JSNS

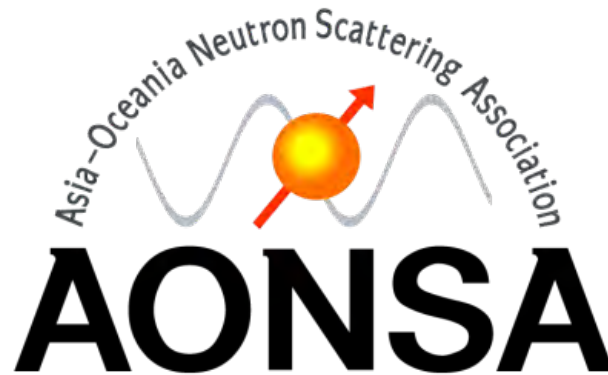
# Additional comments by Ms. Amma

- We have not received any information on airfare supports for 2 YRFs in 2023. She expects that they will contact us directly.
- AONSA office has not received Annual Fee of 2022 from INSS. She sent the invoice for 2022 with that for 2023 on February, but no response was received.
- From August, she will start to prepare the items for the AONSA Prize Ceremony held in AOCNS.



# AONSA EC Meeting

## Financial Report



**Hsiung Chou (Treasurer of AONSA, TWNSS)**

2023-06-17

EC Meeting

2022-11-17 ~ 2023-06-08

AONSA Annual fee (JPY & \$) - by category			
	2022/06/18 2022/11/15	2022/11/15 2023/06/17	
Category	Income (¥)	Income (¥)	In (\$)
Previous Balance	12,371,691	12,021,946	0
Annual fee	267,180		6000
Prize Fund			3000
Support Fee			3000
interest	59	68	
<b>Total amount</b>	<b>12,638,930</b>	<b>68</b>	<b>12,000</b>
Category	Expense(¥)	Expense(¥)	Exp (\$)
AYRF	232576		
Bank fee		7500	
EB Charge	11000	13200	
others	1600		
EC FDM (US2600)	371800		
<b>Total amount</b>	<b>616984</b>	<b>20700</b>	<b>0</b>
<b>Total Balance</b>	<b>¥12,021,946</b>	<b>¥12,001,314</b>	<b>\$12,000</b>

\$~85,797  
(\$87278 last balance)

Society	Member	Prize	Support
ANBUG			
CNSS			
INSS*			
JSNS	\$2000	\$1000	\$1000
KNBUA	\$2000	\$1000	\$1000
NSSI			
TWNSS	\$2000	\$1000	\$1000
*INSS: 2022 unpaid			

Office  
~\$85,797  
+ \$ 6,000  
\$~91,797

$$\frac{JPY}{USD} = 139.88$$

2022-11-17 ~ 2023-06-08

<b>AONSA Prize Fund</b>			
Date (Y/M/D)	Item	Income (¥)	Income (\$)
2022/11/15	Previous balance in 2019	¥3,749,960	
	Donation		\$3,000
	<b>Total amount</b>	¥3,749,960	\$3,000

\$~26,808

<b>AONSA Support Fee</b>		
Date (Y/M/D)	Item	Income (\$)
2022/11/15	Previous balance	0
	Donation	\$3,000
	<b>Total amount</b>	\$3,000

=\$3,000

<b>Office :</b>	<b>\$~92,000</b>
<b>Prize :</b>	<b>\$~30,000</b>
<b>Support :</b>	<b>\$3,000</b>

$\frac{JPY}{USD} = 139.88$
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## AONSA **future** (NEXT 6 MONTHS) **budge plan**

### Income

AONSA Annual Fee:	\$6000~8000
Interest:	a few
Prize Fund don.:	\$~3000
Support Fee:	\$~1000

### Expense

AYRF	\$4000
AOCNS2023	\$5000
EB charge:	\$ ~100
Bank Handling:	\$ ~100

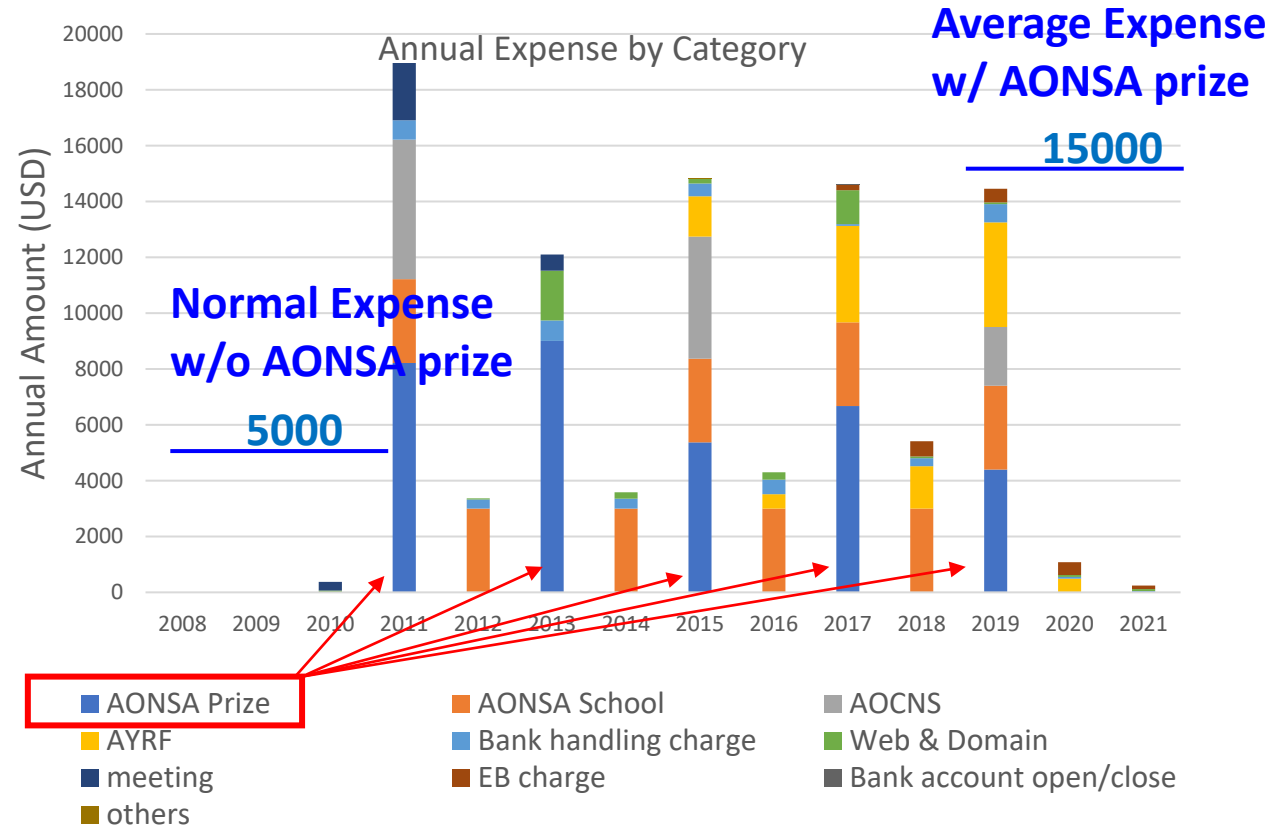
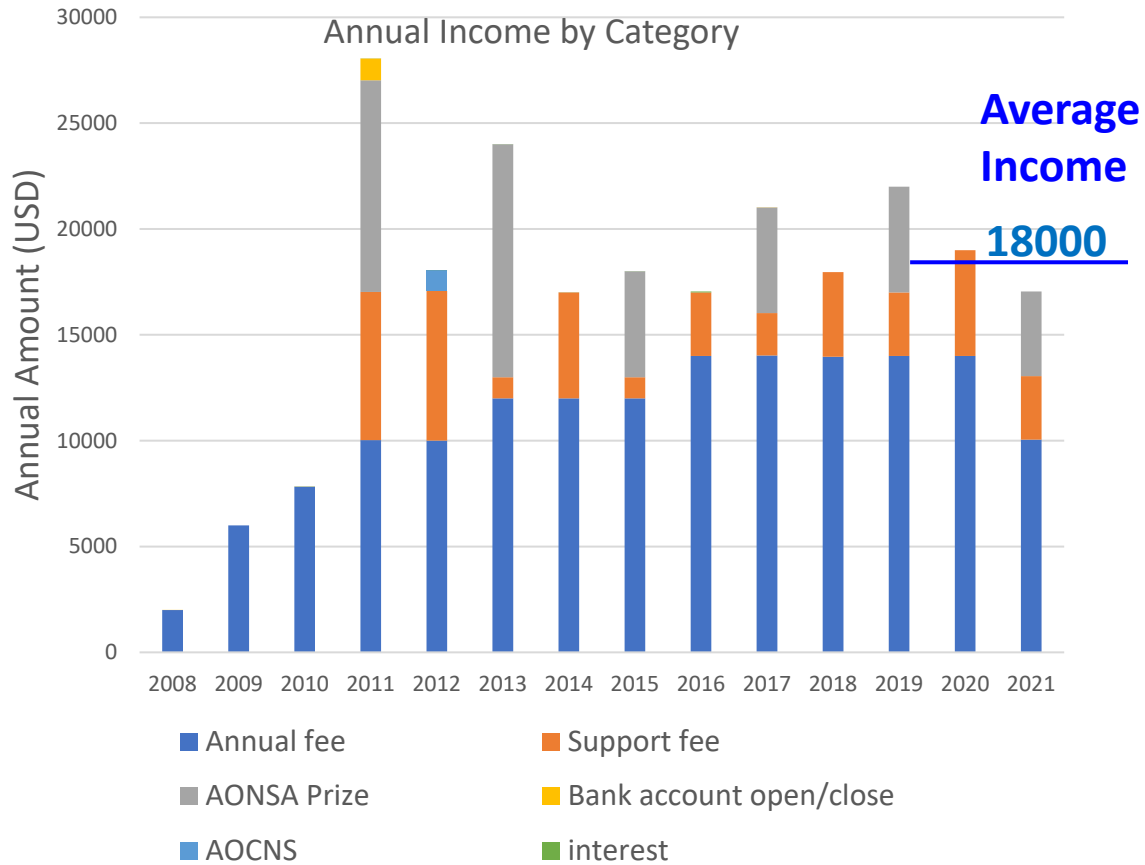
Office :	\$~92,000
Prize :	\$~30,000
Support :	\$3,000

Annual office expenses: \$~5000 ( includes YRF, Neutron School)	→ \$~6500	Annual income: \$12k~14k
AONSA prize: \$~15000 (inclues prize, attending AOCNS of IGNS)	→ \$~17000	\$ 6k~7k

Expand expenses: AONSA Sci. Award	5k	→
YRF	3k	

<b>Decision of EC</b> Medal is good and adequate. Run by AONSA prize committee Expenses can be down to \$1.5k
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# AONSA Budget Statistics



Due to inflation, the suggestion annual expenses for every two years and considering the inflation is around USD:17000  
 The net balance for every two years will be around USD:12000 or less.  
 Any consideration for setting up such as the mid-carrier award and others has better to constrain to less than USD 10000 for every two years or <5000 for every year.



## Minutes for the 29<sup>th</sup> AONSA Executive Committee Meeting

**Date:** 25 November 2022

**Time:** Sydney 13:00 -; Japan & Korea 11:00 -; China 10:00 -; Indonesia/Bangkok 9:00 -; India 7:30 -

**Place:** Hybrid, online via ZOOM, and National Battery Research Institute Technopark L2/29 BSD City, South Tangerang, Indonesia, 15314



**Participants:**

### [Board Members]

Taku J Sato (President; JSNS, Tohoku U)

S. M. Yusuf (Vice-president; NSSI; BARC)

Dongfeng Chen (Past President; CNSS; CIAE)

Jae-Ho Chung (Communications; KNBUA; Korea U)

Hsiung Chou (Treasurer; TWNSS National Sun Yat-Sen U)

David Cortie (Secretary; ANBUG, U. Wollongong)

**[Members]**

Chris Wensrich (ANBUG, Newcastle U)

Hesheng Chen (CNSS; IHEP)

Kazuhisa Kakurai (JSNS, CROSS)

Soo-Hyung Choi (KNBUA; Hongik U)

Dhananjai Pandey (NSSI; ITT BHU)

Chun-Chuen Yang (TWNSS; Chung Yuan Christian University)

Agustinus Agung Nugroho (INSS)

**[Observers]**

Jamie Schulz (ANSTO)

Fangwei Wang (CSNS)

Tianfu Li (CARR)

Hideki Seto (JPARC)

Andrey Gubkin (Rosneutro)

**[Apologies]**

Toshiya Otomo (J-PARC/KEK)



## Minutes

### 1. Process matters

- The meeting was formally opened by the AONSA president, Prof Taku Sato. He provided a brief report from the most recent AONSA Online Board Meeting held earlier in November 2022, highlighting several points of discussion including the emphasis on planning for the 4th Asia-Oceania Conference on Neutron Scattering (Dongguan China 2023) and possibility of hosting the 32 AONSA EC meeting in India. Updates on the AONSA prize and Young Research Fellow selection were also discussed.

### 2. Formal matters

- The EC approved the agenda.

### 3. Report from the AONSA Office (H. Seto) – [Appendix A](#)

- Hideki Seto provided the report of the activities from the AONSA office. The office carried out the following actions.

- Issued receipts of Annual Fees to the national member societies in the secretary's name
- Paid for AONSA Prize expenses and the YRFs' airfare reimbursement
- Made payment to NBRI for AONSA EC & FDM Meeting fees
- Confirmed and update the deposit/withdrawal of the bank account as required
- Shifted from managing budgets in each bank account to sorting by Excel table
- Placed orders for the AONSA prize ceremony; a medal, certificate with folder, and money envelope to carry out the prize ceremony at ICNS in 2022 in Buenos Aires, Argentina
- Shipped the above goods to ICNS conference chair, Prof. Rolando Granada
- Made remittance to the awardee (Prof. Robert A. Robinson)
- Organized transportation reimbursement for the awardee to attend the ceremony
- Organized airfare reimbursement for AONSA Young Research Fellows (Dr. Indri Badria Adilina and Dr. Naeem Muhammad)
- Closed AONSA Prize Fund Account (MUFG Bank) as decided at the previous EC meeting

- The full report slides can be found in the linked [Appendix A](#).

### 3. Financial matters - [Appendix B](#)

- The AONSA Treasurer Prof H Chou presented the financial update for AONSA up until November 25. Annual fees have been paid from every society: NSSI, ANBUG, CNSS< TWNSS< NSSI, JSNS, KNBUA, Thailand and Malaysia. Donations were also received from ANBUG, CNSS< TWNSS, JSNS, KNBUA. Expenses included funding the 2 YRF, and domain charge.
- HC highlighted the current situation with regards to the AONSA Prize Fund. Even though the prize fund is now combined in the same account, AONSA keeps separate records which is a for the prizes (\$27 221 balance, previously \$37 567 in June). The large drop is due to rate and high expense of previous winner). The prize fund has therefore dropped of about \$10,000 (USD)
- He projected expenses for the next 6 months ~\$7000 US and income \$18000. The full report of income and expenses can be viewed in the link above in Appendix B.
- DC pointed out that there should be no charge for web domain as ANSTO now sponsors and pays for the website. HC agreed, points out this was an error on the budget, and this was actually the handling fee.
- TK, HC, HS: discussed the options with regards to the exchange rate for the Japanese Yen and agreed that the best option would be to open a new bank account in USD, as the rate for JPY has been unfavorable. The present income and balance would be kept in the original account and future income/transactions will be H Seto confirmed that in principle it is possible to open a second bank account. TK and HS agreed that they would discuss the practical steps within the Japanese community. The EC committee agreed to this proposal to open a US bank account.

#### **4. (Formal m matters continued) –**

- DC presented the minutes from the 28<sup>th</sup> Executive Meeting and highlighted some outstanding actions including inviting an Indonesian member to the AONSA board. He highlighted also the change in the AONSA office from JPARC to KEK, and the ongoing discussion surrounding diversity on committees.
- KK queried why some of the links in the minutes were not accessible, and DC clarified that only members of the EC were permitted access, and this had to be granted on a case-by-case basis in the Google drive. KK and the EC committee agreed this was preferable to making the links open to the public.

#### **5. AONSA prize**

- SM Yusuf presented the outcome of the selection of the AONSA Prize that has been awarded once every two years, since 2010 to recognize an outstanding research career.
- The prize selection was made in 2022, and the award will be presented at AOCNS2023
- SMY noted that several members requested an extension of the prize submission deadline,

which was reasonable given the disruption caused by the pandemic.

- SMY: Even after the first extension, the response rate was not highly satisfactory, and the deadline was extended for another 15 days
- Selection committee was assembled from nominees from the 7 member societies within AONSA.
- The final decision of the committee was to award the prize to Prof Yasuhiko Fujii. He has made an impressive scientific contribution to neutron science, with an average citation index of 58, and has been a recipient of several other awards. His achievements include being an AONSA founding member and board member, and chair of the IUCR neutron scattering committee. He was the founding president of JSNS and the president the Physical Society of Japan, and the Quantum Beam Science Directorate. SMY will prepare a summary and citation for the website and newsletter.
- TS requested details which SMY clarified: 4 nominations were received one from NSSI, JSNS, TWNSS, TWNSS.
- SMY mentioned strong feed back on the issue of gender equity from some of the award committee members. No nominations were received from female candidates, and diversity is still low. How do we correct this? SMY questioned how the fundamental demographics of neutron scattering science is reflected in the award process. SMY suggested supporting mid-level female researchers into the selection committee process and awards.
- The EC committee approved the final award decision.

## **6. AONSA Young Research Fellows 2022 (49:30)**

- Only two applications were received.
- SMY discussed the selection committee and announcement. Both are good candidates: Jianyan Wu and Ferensa Oemery.
- SMY: Will follow up on whether eligibility is valid (within 8 years of PhD) for the second candidate
- TS: The eight years eligibility window is defined from the deadline period, so technically not met in this case. SMY pointed out that due to the pandemic it was not practical for candidates to apply in those rounds. TS: YRF does allow for exemption for career disruption which could cover the effect of pandemic. DC agreed and showed that the rules do allow for career interruption and argued that COVID19 constituted a career interruption. In light of this, the EC agreed to extend the eligibility period to account for career disruptions caused by the

pandemic.

- HC: Pointed out the many YRF leave neutron scattering after their fellowships, may form links to industry and leave neutron science. There was some discussion (EK, HC) about this pointing out that YRFs should be involved in leading and supporting their own neutron societies.
- SMY: Both have selected their first choice to be based at ANSTO. Queried if this would be possible.
- TS queried the ranking and priority of each candidate. The first candidate focused on neutron diffraction of battery materials. The second candidate focused on inelastic neutron spectroscopy supported by DFT on metal-organic frameworks.
- JS: ANSTO only has capacity for 1 year FTE Fellowship. If both candidates select ANSTO, then only 6 months per candidate would be possible.
- DC: queried the amount of time was requested by each of the candidates. SMY will follow up and clarify this point.
- TS requested ranking from the committee.
- SMY provide more detail on projects and provided ranking: 1<sup>st</sup> ranked (Wu), 2<sup>nd</sup> (Oemery)
- EC committee approved ranking of candidates: 1<sup>st</sup> ranked (Wu), 2<sup>nd</sup> (Oemery)
- TS and EC committee agreed to follow-up by email, contact first candidate to request preferred time span and make a decision from that point,
- KK: thanked the selection committee on behalf of the JSNS for the AONSA prize recipient.
- KK queried: How will the AONSA award be announced? TS: SMY will prepare a public release statement and this will also be part of the newsletter. Last time this was announced on the website by the public relations officer. SMY: who will contact Prof Fujii? JH: this will be announced on the website, however we need a high quality photo. JH suggested that SMY will prepare the text/citation and contact Prof Fujii for a high quality photo. This was agreed upon.

## 7. AONSA Neutron School [Appendix C](#).

- FW presented the report on the 12<sup>th</sup> AONSA Neutron School in CNSS which was held Nov 21-23 November 2022, online.
- The school had 5 days of lectures and two days of on-site training. Multiple neutron scattering techniques were covered including powder diffraction, PDF, magnetic neutron scattering, SNAS and neutron reflectometry across diverse research areas in physics, chemistry and biology, life, and food.
- Due to the pandemic disruption in China, unfortunately the onsite component had to be

cancelled.

- Over 1000 registrants registered and at any one time there were 130-370 participants online many parts of the world, see below:



- FW thanked all of the speakers and participants.
- FW mentioned the plan to post video recordings of past and future lectures on the AONSA webpage
- TS: congratulated the CNS and Fangwei for running the successful school
- DC queried if any lectures were recorded and will be uploaded/made public. FW said he will follow up with each speaker individually to see if each speaker is willing to put their videos on youtube or the AONSA website. AAN suggested AONSA create its own Youtube channel.
- TS: asked if there is any plan to report to Neutron News and in the AONSA newsletter. FW agreed it would be good to write a short article for neutron news as a follow-up action.

## 7. AONSA Newsletters and Homepage [Appendix D](#)

- Jae-ho Chung provided an update of the website. He is striving to make it more useful and easier to manage. He will create a separate news page from the main page. Several other cosmetic improvements have been made.
- JHC requested a list of past board members as he would like to add this to the website but does not have all of the information yet. He identified that the EC minutes and other information is not easily available prior to the 11<sup>th</sup> EC meeting (held in 2013), and requested that, if anyone has this information from earlier meetings, could they please send this to him. He is also looking for any photos and other information to add to the website.

- Some logos for the facilities/societies may be out of date on the website. JHC requests that the EC check and send new logos if needed.
- Some past EC minutes are also missing and difficult to find. JHC has created a separate page to store the minutes. As agreed earlier, the minutes will be made public, but the detailed reports/slides in the Appendices will only be available to EC members.
- The latest newsletter has just been uploaded (Volume 13, No , December 2021)
- JHC issued a call for the next issue. Deadline December 2<sup>nd</sup> 2022. He suggested there will only be one newsletter in 2022 given the number of submitted articles.
- DC suggested that perhaps one way to manage this would be at society could submit an update once per month which will go to the website and at the end of the year this could be collated.
- KK queried whether the current newsletter will contain content from June 2022. JHC clarified that the next newsletter will cover the entire 2022 period. JHC clarified it may also be good to combine the last two FDM meetings into a 1 page article, but also fine just to report on the latest FDM.
- EK thanked JHC for his excellent work on updating the website.
- AG suggested the clicking the map should link to the national society.
- DC shared the email from Neutron News that we could write one article to highlight all updates. We could also aim for a special edition with numerous articles. DC requests feedback from interested EC members via email after the meeting.

#### **9. Activities Related to SE Asia and Other Non-member Countries (D Chen/T Sato)**

- TS said he will contact non-member countries.
- A.G suggest providing an introduction to the Kazakhstan neutron scattering community which has a research reactor and is in the process of building a high-resolution powder diffractometer. AG will provide contact details to TS to establish contact.

#### **10. Report on the 24<sup>th</sup> Neutron Facility Directors Meeting (Tianfu Lo) [Appendix E](#)**

- Tianfu Li (CARR) acted as chair in place of Kai Sun.
- Tianfu provided the summary of the 24<sup>th</sup> FDM meeting which was held November 24. The full summary is provided in the attached slides.
- He highlighted the international shortage of neutrons
- One major point of discussion was the shortage of high quality graphite crystals for moderators, as Panasonic who previously produced this is planning to cease production. TL proposed a joint letter to the company from all of the facility directors.

- The next meeting will be held in parallel with the next EC meeting. The chair will be Tianfu Li.

#### **11. Cooperation with IUCr and IAEA (T Sato)**

- TS has tried to find a point of contact and will invite a delegate to a future AONSA EC meeting.
- The next IUCR will be in Melbourne 2023
- A Joint Magnetic Structure School will be held in 2023 or possibly 2024 would be preferred. This will be discussed with Maxim Avdeev to host either in Japan or Australia. TS: Suggested to call the school: "The AONSA Magnetic Structure School"
- DP mentioned that is sometimes possible for the IUCR to provide sponsorship for joint activities. In the past the IUCR provided support for travel.
- DF Chen suggested inviting members from IUCR and other non-member countries to the AONSA hybrid meetings
- DF Chen also mentioned he received an email from the Gordon Godfrey Conference, which will be held next workshop in the United States. He queried how many AONSA members will be able to attend in the USA, given that the past meetings occurred in Hong Kong. TS said we need a new point of contact as many emails to non-member countries are not been delivered successfully.

#### **12. Cooperation with NSSA and ENSA (T Sato)**

- DC and TS highlighted the joint award ceremony ICNS.
- TS met ENSA chair at the ICNS and committed to have a virtual three-person meeting between the presidents of the three international neutron societies.

#### **13. Cooperation with AOFSSR (T Sato)**

- DC has made contact with current members on the AOFSSR executive, including Richard Garret to discuss joint activities. DC proposed inviting an observer from the AOFSSR to the next AONSA meeting. DC proposed the possibility of joint schools in areas of shared interest (e.g. diffraction).

#### **14. Promotion of diversity in AONSA (T Sato)**

- DC and SMY highlighted challenges for finding a gender-balanced award selection committee and set of award nominees.
- DC and TS proposed implementing the rule discussed at the previous EC meeting that each society must provide 1 male and 1 female member for award committees. If a society is unable to provide a balanced set of candidates, they can provide a written letter explaining why this occurred which the AONSA board/EC may choose to accept. DP highlighted major challenges in the "1:1 rule", and suggested female involvement could be strongly encouraged but not mandated because there are not enough people available to serve on the EC in the short-term, even if in the long run we do want 1:1 as the ultimate target. Each country has its own unique challenges/situation. TS supports making the 1:1 rule, but understanding that we will accept a letter of exemption describing why this is not possible. DP mentioned that most societies would prefer not to have to provide this in writing. DC points out that this would be a private communication and not made public, but we need some action given that the Diversity statement has been in place for 3 years but progress has been slow. DC also pointed out that the awards/committee memberships is available as a matter of public record, and this is the key area where AONSA should seek to take on a leadership role in the region.
- CW asked whether this "1:1 rule" applied for the award committee or for the AONSA board. DC clarified this applied to the awards committee, but ultimately the board also needs to be balanced. CW recognises that the representation in the EC also represents their national society. DC points out that diversity covers not only gender but also age, regional background, ethnicity.
- DC suggests possibly we could improve diversity on some award committees to request participation from ENSA and NSSA.
- SMY emphasized we need to be clearer in our messaging to encourage association members to work actively to achieve gender diversity. He suggests this should be "in black and white" on the website and also in the newsletter. DC illustrated the D&E statement currently on the website, and requests any suggestions for improvement to the wording.
- TS pointed out that we have discussed this at length in past meetings but the in the end no formal action was taken. He strongly encouraged the EC to support the 1:1 proposal as trial to see if this formal action can improve the situation. CW agrees with this.
- CW suggested collect demographic data for each AONSA member society to better understand the makeup of AONSA, and identify where the challenges lie. This was agreed on, in principle, within the EC. JS mentioned that ANSTO has a 40:40:20 rule which is 40% male and 40% female, 20% discretionary which could serve as a model for the EC.



- HC suggested it would be valuable to invite additional observers to the AONSA EC members from younger generations to improve diversity as this can involve emerging early and mid-career scientists who will lead the society in the future. He also highlighted the high work load on female scientists who have to serve on multiple committees. DC points out there is no limit on EC membership for observer. HC points out that attending a hybrid meeting is a good option.
- KK : the JSNS and Japanese community support the proposal for the 1:1 rule in selection committee as a useful first step. There were no objections raised from within the EC committee on the "1:1" policy on AONSA selection prize committee.
- The executive therefore has agreed to trial this new 1:1 policy/rule for the award selection committee.
- SMY points out that the bigger / longer-term challenge is to make sure we also have equity in the nominees to get gender balance in the awards themselves. DC agrees, but we need to affect change both from the "top" (i.e. by changing rules) and "from the bottom" (by organically growing the number of excellent researchers from all backgrounds)
- EC committee agreed we will collect a demographic survey on its membership as suggested by CW.
- DP highlighted we need to also make changes to the EC and Board, and agreed as first step is to add Observers. TS agrees we can add more observers within the current rules and societies are encouraged to nominate suitable individuals.

#### **16. Venue for the 30<sup>th</sup> and 31<sup>st</sup> EC Meetings**

- DC and TS propose to aim for one hybrid meeting per year and one in person. Suggest the meeting in June 2023 for the 30<sup>th</sup> EC could be hybrid.
- TS later asked if the EC committee agreed with this proposal for the next EC meeting. HC suggested it would be good to have at least every second meeting in person as this often leads to better solutions and outcomes. He highlighted that in the past in-person meeting could be timed to coincide with AONSA schools. HC suggested it would better to aim to interact with new communities if possible, JS agrees. Possibly the philosophy should be always to have a hybrid meeting, every meeting.
- DC: should every meeting be hybrid? TS pointed out this depends on how many people are willing to travel. If there are not sufficient people to travel then fully online meeting may be better. TC suggested we do a survey via email and use this to make decision.

#### **15. Calendar of AONSA Activities (D Cortie) (see Appendix F at the bottom of this document)**

- DC presented the calendar. As a key point, CH said the dates for the AOCNS will be 2<sup>nd</sup>-8<sup>th</sup> December 2023 and it should be possible to run this in person.
- TS urged the CSNS to make the decision about in-person or hybrid format as early as possible to allow people to schedule travel. CH said that this should be possible to make this decision 6 months before the conference to give a clear answer on this point. DC queried if meeting could include a hybrid component. CS confirmed this should be possible.

## 16. Reports from Neutron Associations and communities>

The individual neutron societies gave their reports. The full details and slide packs are available below.

- ANBUG (C. Wensrich) – [Appendix F](#)
- CNSS (H. Chen) – [Appendix G](#)
- INSS (E Kartini) – Report presented, but file not yet received
- JS: proposes “promotion of science” donation category
- JSNS (K Kakurai) [Appendix H](#)
- KNUBA (J.-H. Chung) – [Appendix I](#)
- NSSI (D Pandey) – [Appendix K](#)
- TWNSS (Chue-Chuen Yang) - Report presented, but file not yet received
- Thailand (A. Maneewong) – No report presented at this time.
- Malaysia (A. A. Mohamed) – No report presented at this time.
- RosNeutro (A. Gubkin) – Report presented, but file not yet received

## Appendix 1: Calendar of AONSA Activities

### Year 2022

Date	Events
24 November	23rd Facility Directors' Meeting (Zoom)
25 November	29 <sup>th</sup> AONSA EC Meeting (Indonesia)
21-23 November	12 <sup>th</sup> AONSA Neutron School (CSNS, China)

### Year 2023

Date	Events
June TBD	Facility Directors' Meeting (Zoom) + EC
TBD November	30 <sup>th</sup> AONSA EC Meeting (TBD), (Hybrid in China)
2-8 December	4 <sup>th</sup> Asia Oceania Neutron Scattering Conference, Royal Garden Hotel, Dongguan, China

### Year 2024

Date	Events
June TBD	FDM + EC
TBD November	30 <sup>th</sup> AONSA EC Meeting (TBD), (India )
TBD	Neutron School

## AONSA Dinner, Plataran Hutan Kota, Jakarta 24 Nov 2022



Deputy Director BRIN of HR : Dr. Eddy Giri &  
Prof.Ratno Nuryadi, Director of Research Organization Nano Material



AONSA EC Meeting  
ZOOM, 2023/06/17

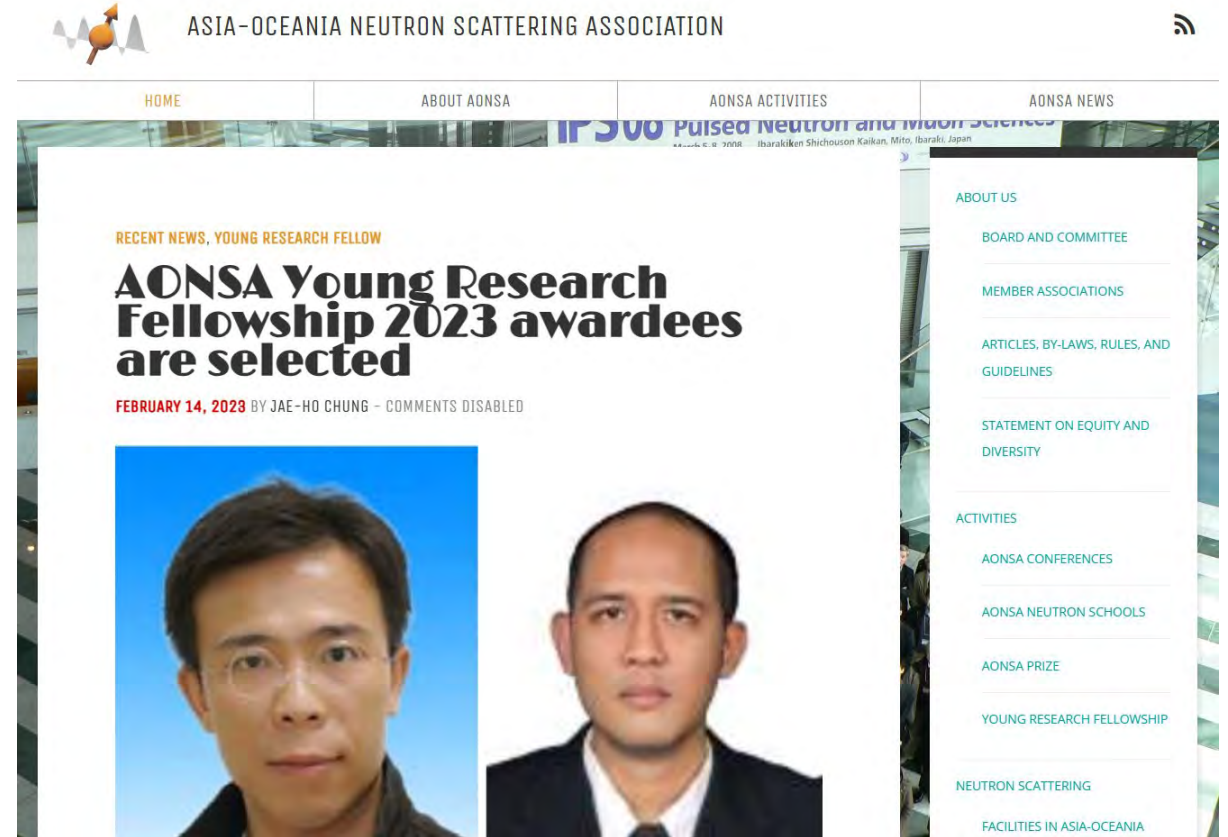
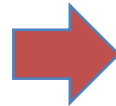
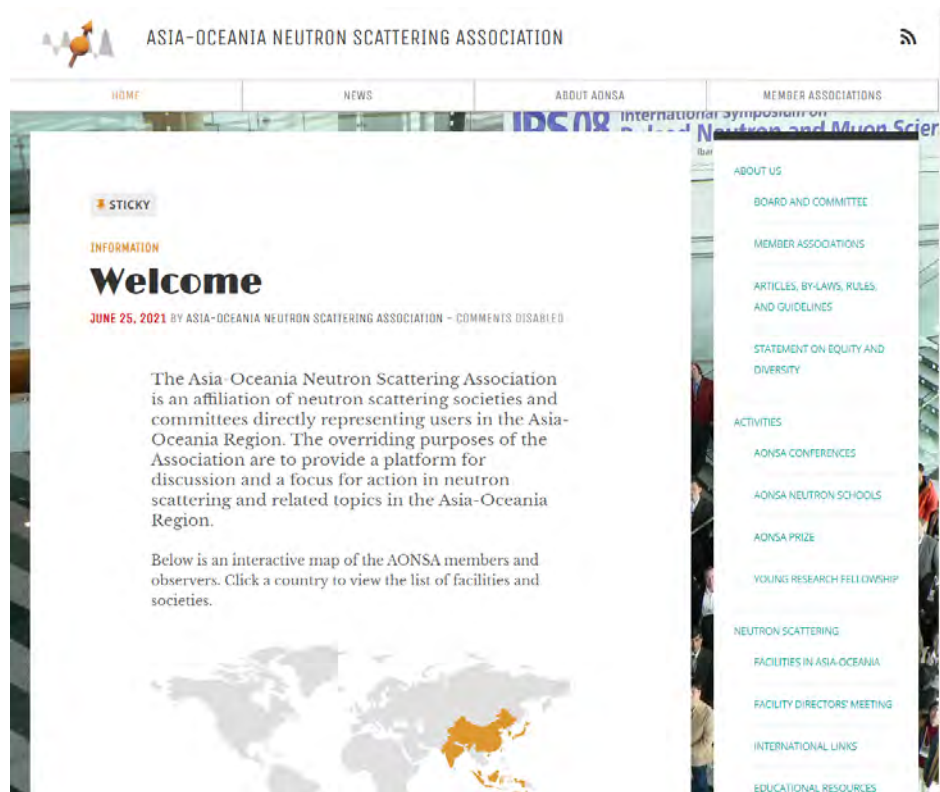


# Public Relations Report

Jae-Ho Chung,  
Korea University / KNBUA

# Updates on the AONSA website – Main page

## ◆ Recent News displayed on the Main page



# Updates on the AONSA website – Main page

## ◆ Recent News displayed on the Main page

RECENT NEWS, YOUNG RESEARCH FELLOW

### AONSA Young Research Fellowship 2023 awardees are selected

FEBRUARY 14, 2023 BY JAE-HO CHUNG – COMMENTS DISABLED



AONSA PRIZE, RECENT NEWS

### AONSA Prize 2023 is awarded to Professor Yasuhiko Fujii

DECEMBER 29, 2022 BY JAE-HO CHUNG – COMMENTS DISABLED



NEWSLETTERS, RECENT NEWS

### AONSA Newsletter December 2022 released!

HO CHUNG – COMMENTS DISABLED

The AONSA newsletter has the latest news from around the region, with updates from facilities and user groups. The December 2022 edition is now available for download here:

[AONSA Newsletter December 2022 Volume 14](#) [Download](#)

It includes the announcement of the AONSA Prize 2023 and research highlights from the community.

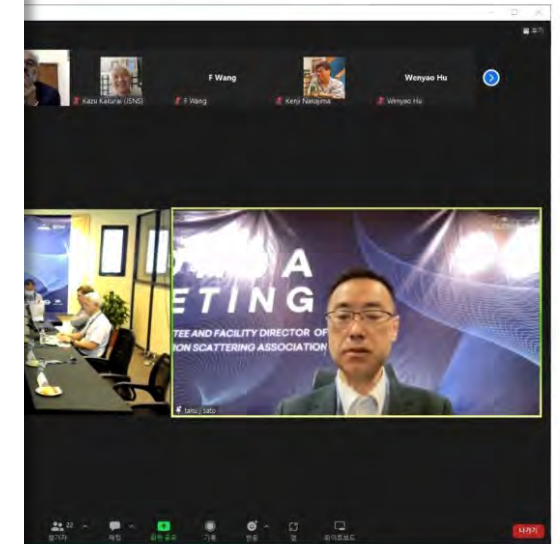
The cover photo of the December 2022 edition is the snapshots from the 29th EC meeting held in hybrid format from the National Battery Research Institute in Indonesia on November 22nd, 2022. It was the first on-venue meeting in three years since the 23rd EC meeting in Kenting.



EC OR BOARD MEETING, RECENT NEWS

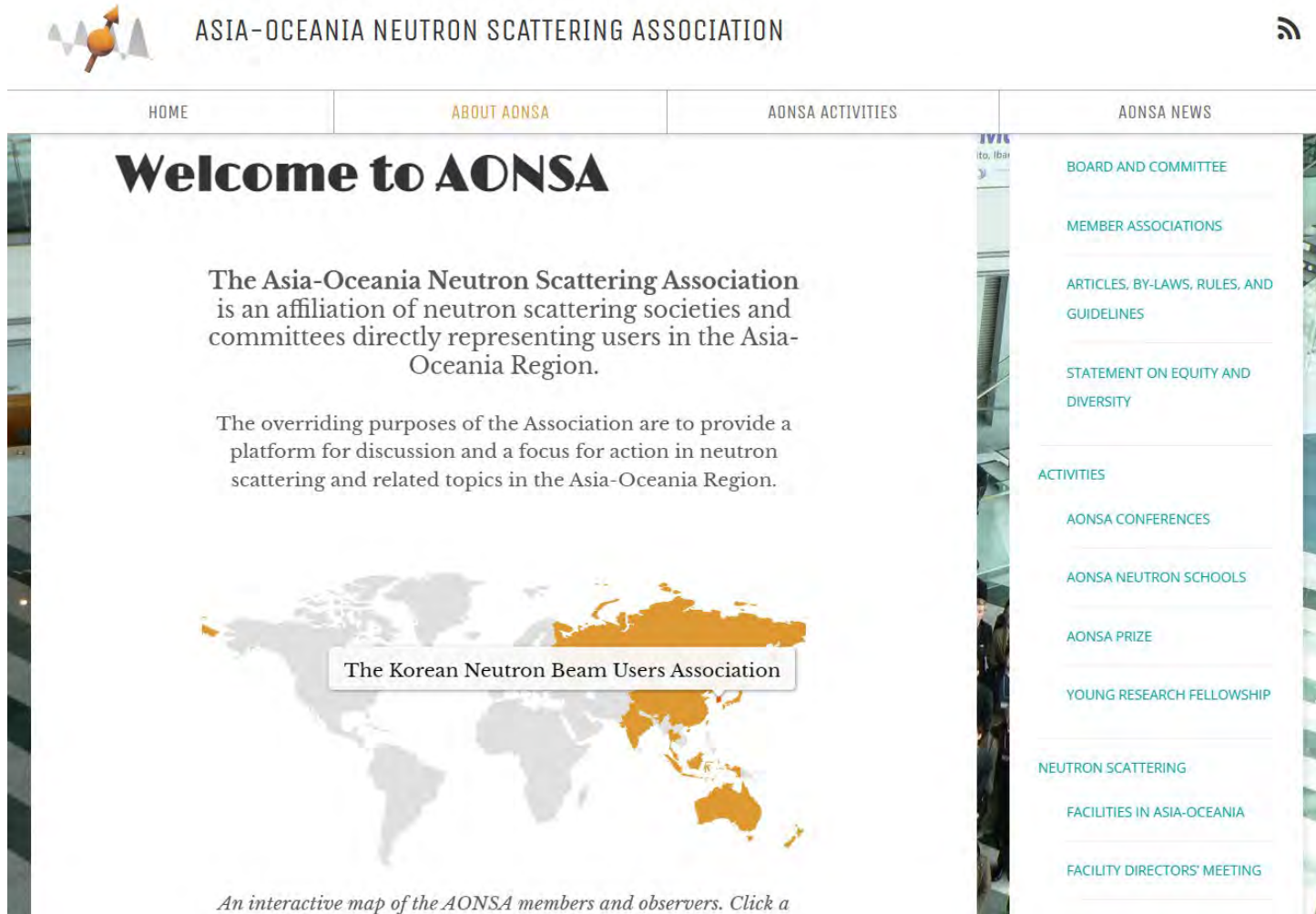
### The 29th AONSA EC meeting was held as hybrid on November 25, 2022.

NOVEMBER 28, 2022 BY JAE-HO CHUNG – COMMENTS DISABLED



# Updates on the AONSA website – About us

## ◆ International map has become now interactive



The screenshot displays the AONSA website homepage. At the top, the logo features a stylized orange and grey globe with a neutron scattering pattern, followed by the text "ASIA-OCEANIA NEUTRON SCATTERING ASSOCIATION" and a RSS icon. A navigation bar includes "HOME", "ABOUT AONSA", "AONSA ACTIVITIES", and "AONSA NEWS". The main content area is titled "Welcome to AONSA" and contains two paragraphs of text. Below the text is a world map with orange highlights in Asia and Oceania. A tooltip over the Korean peninsula reads "The Korean Neutron Beam Users Association". At the bottom of the map area, it says "An interactive map of the AONSA members and observers. Click a". The right sidebar lists various links: "BOARD AND COMMITTEE", "MEMBER ASSOCIATIONS", "ARTICLES, BY-LAWS, RULES, AND GUIDELINES", "STATEMENT ON EQUITY AND DIVERSITY", "ACTIVITIES" (with sub-links for "AONSA CONFERENCES", "AONSA NEUTRON SCHOOLS", "AONSA PRIZE", and "YOUNG RESEARCH FELLOWSHIP"), "NEUTRON SCATTERING" (with sub-links for "FACILITIES IN ASIA-OCEANIA" and "FACILITY DIRECTORS' MEETING"), and "FACILITY DIRECTORS' MEETING".

ASIA-OCEANIA NEUTRON SCATTERING ASSOCIATION

HOME ABOUT AONSA AONSA ACTIVITIES AONSA NEWS

## Welcome to AONSA

The Asia-Oceania Neutron Scattering Association is an affiliation of neutron scattering societies and committees directly representing users in the Asia-Oceania Region.

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.

The Korean Neutron Beam Users Association

An interactive map of the AONSA members and observers. Click a

- BOARD AND COMMITTEE
- MEMBER ASSOCIATIONS
- ARTICLES, BY-LAWS, RULES, AND GUIDELINES
- STATEMENT ON EQUITY AND DIVERSITY
- ACTIVITIES
  - AONSA CONFERENCES
  - AONSA NEUTRON SCHOOLS
  - AONSA PRIZE
  - YOUNG RESEARCH FELLOWSHIP
- NEUTRON SCATTERING
  - FACILITIES IN ASIA-OCEANIA
  - FACILITY DIRECTORS' MEETING





# Updates on the AONSA website – menus

## ◆ *About Us*

### ❖ *Board and Committee*

- Past Board Members are listed.
- Delegate list may have to be updated.

### ❖ MEMBER ASSOCIATIONS

### ❖ ARTICLES, BY-LAWS, RULES, AND GUIDELINES

### ❖ STATEMENT ON EQUITY AND DIVERSITY

## Past Board Members

### 2020 – 2021

President	Dongfeng Chen (CNSS)
Vice President	Taku J. Sato (JSNS)
Secretary	Jae-Ho Chung (KNBUA)
Treasurer	Hsiung Chou (TWNSS)
Public Relations Officer	David Cortie (ANBUG)
Member-at-Large	Evvy Kartini (INSS)
Member-at-Large	S. M. Yusuf (NSSI)

### 2018 – 2019

President	Brendan Kennedy (ANBUG)
Vice President	Dongfeng Chen (CNSS)



# Updates on the AONSA website – menus

## ◆ *Activities*

❖ *Asia–Oceania Conference on Neutron Scattering*

❖ *AONSA neutron school*

➤ Will be updated with the last school's report.

➤ Lecture videos will be uploaded to “Educational Resources”

❖ *AONSA Prize*

❖ *Young Research Fellow*

### **AOCNS 2023**

The 4th AOCNS will be held on December 2 – 8, 2023 at the Royal Garden Hotel, Dongguan, China. (Please note that the date is not in November.)

[Click here to open the conference webpage.](#)



### **AONSA Prize 2023: Yasuhiko Fujii**

*“For his outstanding achievements in the structural and dynamical study of phase transitions of condensed matter by neutron scattering, promotion of the neutron science in Japan as well as the national user program for neutron scattering facilities, and dedicated contributions for the promotion of neutron science in the Asia- Oceania region.”*



- The Executive Committee selected Professor Yasuhiko Fujii as a recipient of the 7th AONSA Prize. The Prize Ceremony will be held during the AOCNS 2023 in Dongguan, China.
- [Read the announcement of the AONSA Prize 2023](#)

The purpose of the Asia-Oceania Neutron Scattering Association (AONSA) Young Research Fellowship Program is to support highly talented young scientists with leadership potential in the Asia-Oceania region, helping them to develop their career and expertise in neutron science and technology. The Program will provide financial support for Fellows to visit major neutron facilities in the region for collaborative research using neutrons.

### **TBA: Call for Applications for the AONSA Young Research Fellowship 2024**

- Call for applications is expected to be announced during the early summer of 2023.
- For your information, please refer to the previous call : [Call for applications 2023](#) 408.48 KB [Download](#)
- For your information, [click here to download](#) the previous application form.



### **AONSA Young Research Fellowship 2023 selection result (New?)**

- [Click here to download](#) the announcement.



# Updates on the AONSA website – menus

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## ◆ *Neutron Scattering*

- ❖ An additional page was created to show the submenus.
- ❖ *Neutron Scattering Facilities in Asia–Oceania*
  - Any recent changes in logos or titles?
- ❖ *Facility Directors' Meeting*
  - Any suggestions for improvements?
- ❖ *International Links*
  - Any suggestions for additional items?
- ❖ *Educational Resources*
  - Lecture videos of the 12<sup>th</sup> AONSA Neutron School will be uploaded.



# Updates on the AONSA website – menus

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## ◆ *AONSA News*

- ❖ *Recent News* – News on the main page is duplicated
- ❖ *Newsletters*
  - Volume 14 No 1 (December 2022) has been uploaded.
- ❖ *Executive Committee Meeting*
  - Minutes of 1<sup>st</sup> ~ 27<sup>th</sup> EC meetings are uploaded (10<sup>th</sup> missing).
    - ❑ Appendices are not uploaded yet.
  - Minutes of 28<sup>th</sup> ~ 29<sup>th</sup> EC meetings will be uploaded.

## ◆ *Site map*

- ❖ Will be updated

## ◆ *CONTACT US*



# Call for articles on the next AONSA Newsletter

- ◆ The newsletter volume 15 no. 1.
  - ❖ We may issue one number per year
- ◆ Deadline: July 14<sup>th</sup>, 2023 (To be issued in August 2023, *if possible*)
  - ❖ 1. President's message (Taku Sato)
  - ❖ 2. Reports on the AONSA EC meetings (David Cortie)
  - ❖ 3. AONSA Prize (S. M. Yusuf)
  - ❖ 4. AONSA Young Research Fellows (S. M. Yusuf) ) **already submitted**
  - ❖ 5. AONSA Neutron School (F. Wang) **already submitted**
  - ❖ 6. 4<sup>th</sup> AOCNS (F. Wang)
  - ❖ 7. Neutron FDM report (Tianfu Li)

Sendto: [jaehc@korea.ac.kr](mailto:jaehc@korea.ac.kr)



# Call for articles on the next AONSA Newsletter

- ❖ 7+3 Reports from neutron associations
  - ANBUG (Y. Liu)
  - CNSS (D. Chen)
  - INSS (E. Kartini)
  - JSNS (K Kakurai)
  - KNUBA (S. Park)
  - NSSI (S. M. Yusuf)
  - TWNSS (C. C. Yang)
  - Thailand (T. Rattanawongwiboon)
  - Malaysia (A. A. Mohamed)
  - ROSNEUTRO (A. Gubkin)
- ❖ 8 Reports from neutron facilities
  - J-PARC (T. Otomo)
  - JRR-3 (M. Takeda)
  - ANSTO (J. Schulz)
  - KAERI (Youngsoo Han)
  - CARR (T Li/Kai Sun)
  - CSNS (F. Wang)
  - National facility for neutron beam research (S. M. Yusuf)
  - BATAN (I. Sumirat)

Sendto: [jaehc@korea.ac.kr](mailto:jaehc@korea.ac.kr)



# 25<sup>th</sup> Asia-Oceania Neutron Facility Directors' Meeting

Date: June 16, 2023

Time: Sydney 2:00 pm; Japan & Korea 1:00 pm; China 12:00 am; Indonesia 11:00  
am; India 9:30 am.

Duration time: 4:00 hours (with a short break)

Location: ZOOM internet

- 1. Opening remarks**
- 2. Self-introduction of attendees**
- 3. Purpose & Role of the FDM**
- 4. Approval of Agenda**
- 5. Review of last meeting notes**
- 6. Photo (Screen Capture)**
- 7. Facility Updates (10 min each)**
  - a. CSNS**
  - b. J PARC**
  - c. HANARO**
  - d. JRR 3**
  - e. G. A. Siwabessy**
  - f. OPAL**
  - g. CARR/CIAE**
  - h. CMRR**
  - i. DHRUVA**
  - j. IVV 2M**
  - k. IBR 2**
  - l. PIK**
  - m. IR 8**



- 8. AONSA Business**
  - a. Facility reports at AOCNS**
  - b. AONSA Young Research Fellows**
  - c. Next AONSA Neutron School**
  
- 9. Discussion on the challenges, opportunities and cooperation of neutron facilities**
  
- 10. Other business:**
  - a. Neutron Meetings**
  - b. Next Meeting & Chair**
  
- 11. Closing remark**

## **Participants:**

[Chair]

Tianfu Li (CARR/CIAE)

[FDM Members]

Young-Soo Han (HANARO)

Fangwei Wang (CSNS)

Toshiya Otomo (J-PARC/KEK)

Kenji Nakajima (JRR-3/JAEA)

Jamie Schulz (ANSTO)

R. Mittal (DHRUVA)

Abu Rivai (G. A. Siwabessy)

[FDM Guests]

Andrei Gubkin (IVV-2M)

Sergey Kulikov (IBR-2)

Vladislav Tarnavich (PIK)

[EC Board Members]

Taku Sato (President; JSNS, Tohoku U)

David Cortie (Secretary; ANBUG, U. Wol)

Hsiung Chou (Treasurer; TWNSS, Nat Sun Yat-Sen U)

Jae-Ho Chung (Public Relations Officer; KNBUA; Korea U)

Dongfeng Chen (Past President; CNSS; CIAE)

Hideki Seto (AONSA-Office Liaison, KEK)

[EC Members]

Yoshie Otake (JSNS, RIKEN)

Chris Wensrich (ANBUG; U Newcastle)

Evvy Kartini (INSS, BATAN)

Che-Yi Chu (TWNSS; National Chung Hsing University)

[Observers]

Yukinobu Kawakita (J-PARC)

# 25<sup>th</sup> Asia-Oceania Neutron Facility Directors' Meeting



# Facility Updates

- a) CSNS
- b) J-PARC
- c) HANARO
- d) JRR-3
- e) G. A. Siwabessy
- f) OPAL
- g) CARR/CIAE
- ~~h) CMRR~~
- i) DHRUVA
- j) IVV-2M
- k) IBR-2
- l) PIK
- ~~m) IR-8~~

# CSNS summary

- CSNS runs in 140 kW with the beam availability of 96%.
- Four Instruments fully open to users. Some user experiments were completed during the commissioning of Atmospheric Neutron Irradiation Station and Engineering Diffractometer. Other 5 user instruments obtained the first neutron beam and under commissioning.
- More than 1000 user experiments in total have been conducted.
- CSNS-II passed the review on the preliminary engineering design.
- The 4<sup>th</sup> Asia-Oceania Conference on Neutron Scattering is on the way.

# Summary of J-PARC MLF

24

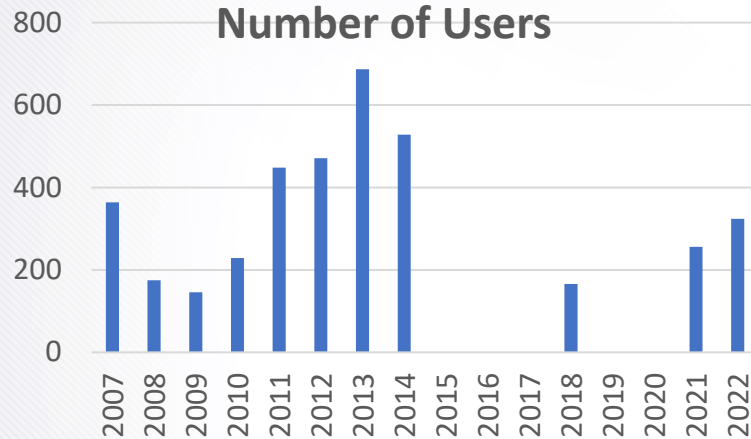
- ◆ Power Ramp-up of proton beam is steadily achieved (840 kW at MLF, April 2023)
- ◆ New organization of CROSS operates Ibaraki BLs from April 2023
- ◆ Deuteration Lab started
- Call for proposal of 2023B
  - 351 applications proposed (including muon)
- International exchanges revived

mlf info

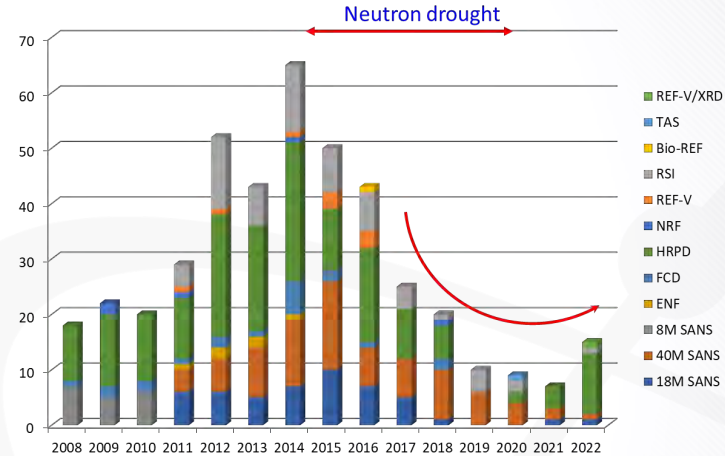


# User Program, Publications and Plans

## » User Statistics



## » Number of Publications



## » Plans for 2<sup>nd</sup> half of this year

- Two Scheduled Neutron Summer Schools(August)
- Additional User Training
- HANARO Symposium(September)
- Trying to change the regulation

# Status and Activities of JRR-3

Kenji Nakajima(JAEA) , Osamu Yamamuro (ISSP),  
Toshiaki Kishi(JAEA), Masami Kinase(JAEA)

1. JRR-3 was operated for 169 days (7 cycles) in JFY2022 and will be operated for 161 days (7 cycles) in JFY2023. In JFY2023, user program will start from August 21.
  2. 29 Neutron Instruments are operated by JAEA, universities group and QST.
  3. Future upgrade & update planes (including update of the cold moderator) exist.
  4. User program is operated by JAEA & universities group separately.
  5. Universities group will accept international proposals from next round (for JFY2024).
- \* QST: National Institute for Quantum Science & Technology

FY	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.							
FY2023					10	21	15	25	20	30	24	4	22	8	2	12	8	18	5
	Periodic operator																		
	inspection						R5-01	R5-02	R5-03	R5-04				R5-05	R5-06		R5-07		

### New instrument: HODACA

### Industrial applications using neutron radiography

by Kansai University in 2022

### Social implementation of neutron activation analysis

All-solid-state battery      Returned sample from Ryugu

Intensity (counts) vs Energy (keV)

LiCoO<sub>2</sub>    Li<sub>3</sub>PO<sub>4</sub>    Ta

LiCoO<sub>2</sub> charge    Li<sub>3</sub>PO<sub>4</sub> charge

T. Kobayashi *et al.*, Small 18 (2022) 2204455.

The experiments on the Ryugu sample were conducted in Nov. 2022.

Almost 40 research papers have been submitted since the restart of JRR-3 in 2021 and more than 30 papers are now in preparation. In addition, high-impact results, which are not shown in this slide, have been obtained by complementary uses of JRR-3 and MLF.



# BRIN's Neutron Facility Recent Activities 2023

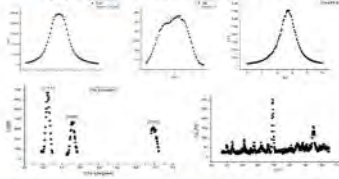
AONSA FDM 16<sup>th</sup> June 2023

## SN1 – Triple Axis Spectrometer (TAS)

### (1) Instrument characteristic

<b>Monochromator</b>	
Type	Rotating-shield type
(1) Crystal	Flat PG(002)
(2) Heusler/Polarizer	Cu <sub>2</sub> MnAs
Scattering angle range	15° < 2θ <sub>m</sub> < 75°
Filter	PG(removable)
<b>Sample Table</b>	
Scattering angle range	-5° < 2θ <sub>s</sub> < 110°
<b>Analyzer</b>	
Crystal	Flat PG(002)
Scattering angle range	-5° < 2θ <sub>a</sub> < 90°
Collimator	1 – 4 (20°, 40°)

### (3) Preliminary data (elastic)



### (2) Upgrade HW (PXI) & SW (NICOS)



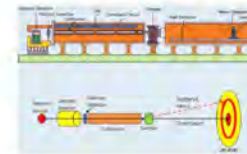
### (4) New shielding (main detector table)



## SN 2 - Small Angle Neutron Scattering (SANS) Spectrometer

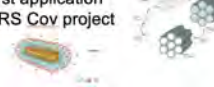
### 2023-Current status

1. The acquisition system is not in good condition
2. The flux calculation using gold foil gain a fine result
3. However, the detector cannot record most of the neutron coming from the beam
4. The high noise in detector is still a big problem



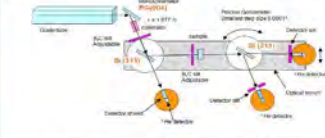
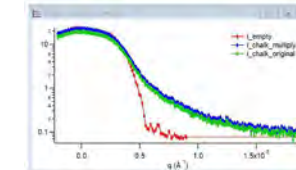
BRIN Research Project (planned to be done, but have to be canceled)

1. Au nanorod coated with surfactant (CTAB) for radiopharmacy application
2. Nanostructured silica for catalyst application
3. Protein-drug interaction for SARS Cov project



## SN3 - High Resolution Small Angle Neutron Scattering (HRSANS) Spectrometer

- Alignment needs time
- Under Evaluation (flux, beam time, collimation, data collecting)
- Still using different mode as suggested by IAEA Expert



The schematic drawing of HRSANS

## DN 1 Residual Stress Diffractometer

Plastic 3D printing helping in prototyping neutron instrument



Prototyping eulerian cradle for texture measurement using plastic 3D printing technology

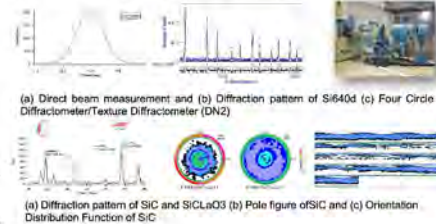
Make easier instrument scientist to explain to the engineer what component or apparatus have to made



## DN 2 Neutron Texture Diffractometer

FCD/TD is in good condition and it can be operated normally. Activities from November 2022 to June 2023 include equipment calibration and material characterization. During this period, no publications were produced because data collection was still continuing. The activities are as follows:

1. Instrument Calibration using Si640d standard sample
2. Materials Characterization: SiC, SiCLaO<sub>3</sub>, and FeSi steel after ageing for 20 hours



Diffraction patterns of FeSi steel (a) 250 watts and (b) 500 watts due to the effect of aging for 20 days

## DN 3 High Resolution Powder Diffractometer

### Current status

1. Working fine
2. Temperature controlling condition from 20 K (cryostat) up to 850°C (furnace)
3. Moderate/low neutron flux intensity
4. Quite high background
5. Some electronic noises
6. Software has to be upgraded



### Development

**Mechanics:**

1. Sample changer
2. Sample environment

**Electronics:**

- System stability

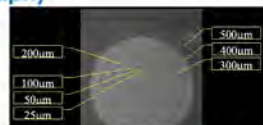
**Software:**

- Data acquisition system
- Function integrated control system
- Remote monitoring/control system

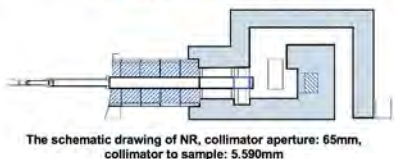
Philippine Journal of Science, Microstructures of Austenitic Stainless Steel 56Fe25Ni16.6Cr0.9Si0.5Mn Solid-Treated with Different Cooling Rates. Mohammed Dani, et al. 152 (3): 989–998, June 2023

## NR Neutron Radiography/Tomography

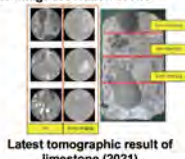
Neutron flux at sample position: 10<sup>8</sup> to 10<sup>7</sup> n/cm<sup>2</sup>/sec  
Beam size at sample position: 30 cm (dia)  
Collimator L/D ratio : 86  
Image Resolution: 200µm  
Cadmium ratio : 6.4  
Neutron/Gamma ratio: >10<sup>3</sup> n/cm<sup>2</sup>/mR  
Film method: Gd converter and X-ray film, Li<sub>2</sub>ZnS,  
Digital method: Not Available  
(the camera has been damaged since 2022).



Radiographic results of Siemens Star shows image resolution of NR



The schematic drawing of NR, collimator aperture: 65mm, collimator to sample: 5.590mm



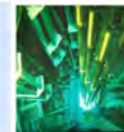
Latest tomographic result of limestone (2021)

## NAA Neutron Activation Analysis

### Recent Activity (Nov 2022-2023)

The NAA equipment function properly, used for:

1. Analysis of **water, sediment and rock** samples from lake in Bali and Rote;
2. Analysis of **obsidian rock** samples;
3. Validation of **epithermal NAA** by standard reference material (for NAA epithermal method development)
4. Analysis of **fishery product**;
5. Elemental analysis service for **material research**.

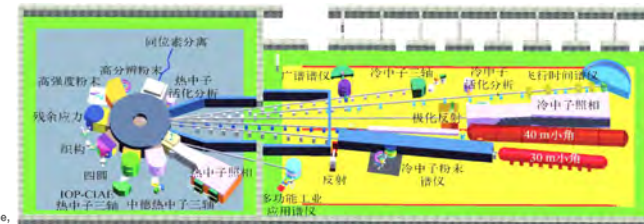
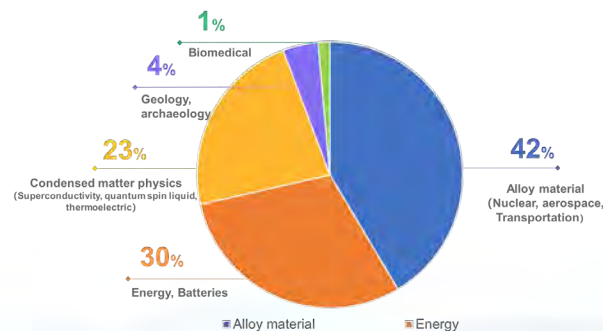
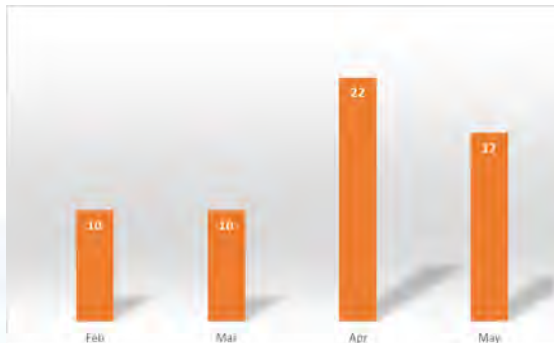


- 5 of 8 instruments are working fine.
- 2 instruments (TAS, HRSANS) are under upgraded.
- SANS are facing a problem in the detector system.
- Users are coming from internal researchers, BRIN, universities, industries.
- On going program for revitalization the facilities and extension of reactor operation (nuclear fuel).

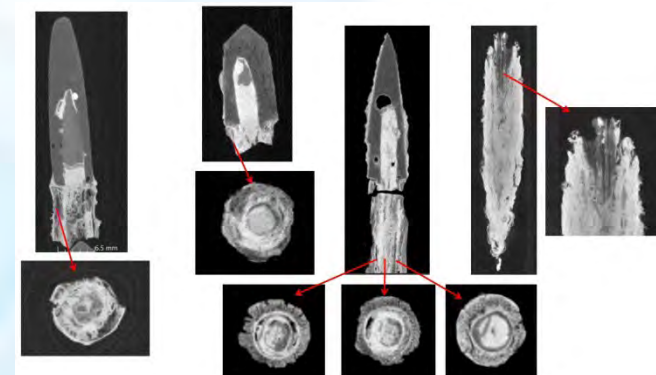
# ANSTO Status Report – June 2023 – Jamie Schulz

- Reactor & Cold Source both have run well (> 99% availability & reliability)
- 2023-2 Proposal Round
  - 270 proposals received
- Running user schools & workshops
- New Capabilities & Upgrades
  - Koala return to user service after upgrade
  - Wombat detector replacement
  - Bilby Detector refurbishment
- AONSA Young Research Fellows visit ANSTO
  - Indri Adilina, Indonesian Institute of Sciences, Indonesia (Oct22 to Sep23)
  - Wu Jianyuan, China Spallation Neutron Source, China (TBD)
  - Ferensa Oemry, National Research and Innovation Agency (BRIN), Indonesia (Oct23 – Mar24)





- ❑ CARR has run 70 days since Feb. more than 100 days are planned this year .
- ❑ 56 user experiment proposals has been carried out.
- ❑ Installation of CNGC shielding have done and some new sample environments developed.
- ❑ More exciting scientific output is expected



## Neutron Scattering Facilities Bhabha Atomic Research Centre, Mumbai, India

**Neutron source type:** Reactor (Dhruva)  
**Reactor Power:** 100 MW (Thermal)  
**Neutron beam instruments (operational) (12)**

**Recent scientific highlights**  
 ~ 35 publications (6 months) in journals

Magnetic properties and coupled spin-phonon behavior in quasi-one-dimensional screw-chain compound  $\text{BaMn}_2\text{V}_2\text{O}_8$   
**Physical Review Materials 7 (2023) 014402 (PD2)**

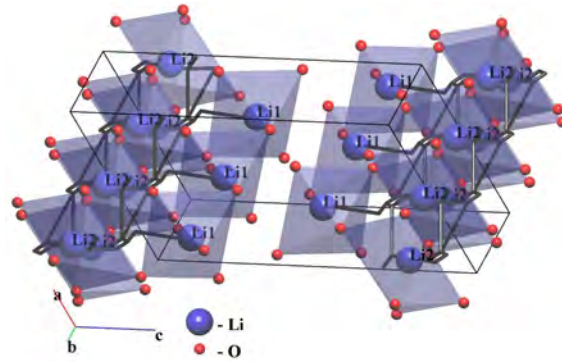
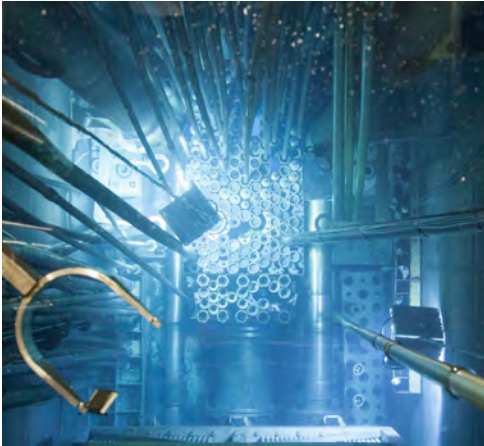
Two-dimensional short-range spin-spin correlations in the layered spin-3 2 maple leaf lattice antiferromagnet  $\text{Na}_2\text{Mn}_3\text{O}_7$  with crystal stacking disorder:  
**Physical Rev. B 107 (2023) 064419 (PD1)**

In-plane magnetic anisotropy and magnetization reversal in phase-separated  $(\text{La}_{0.5}\text{Pr}_{0.5})_{0.625}\text{Ca}_{0.375}\text{MnO}_3$  thin film  
**Physical Review B, 107 (2023) 024420. (PNR)**

Modifying interprotein interactions for controlling heat-induced protein gelation  
**Physical Review Materials 7 (2023) 015601 (SANS-I)**

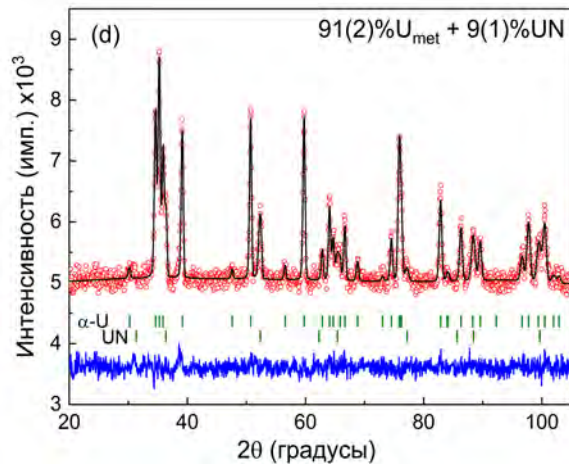


## Reactor IVV-2M, 15 MW



### Summary:

1. NMSF was in operation since December 2022
2. In total, 6 academic and 1 industrial proposals were completed in 2023
3. Ongoing work on the scientific program of the new research reactor Ural

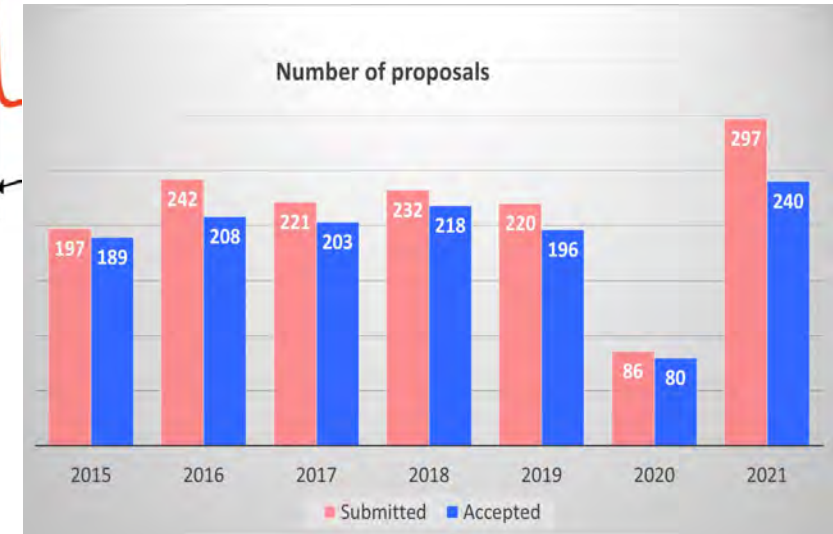
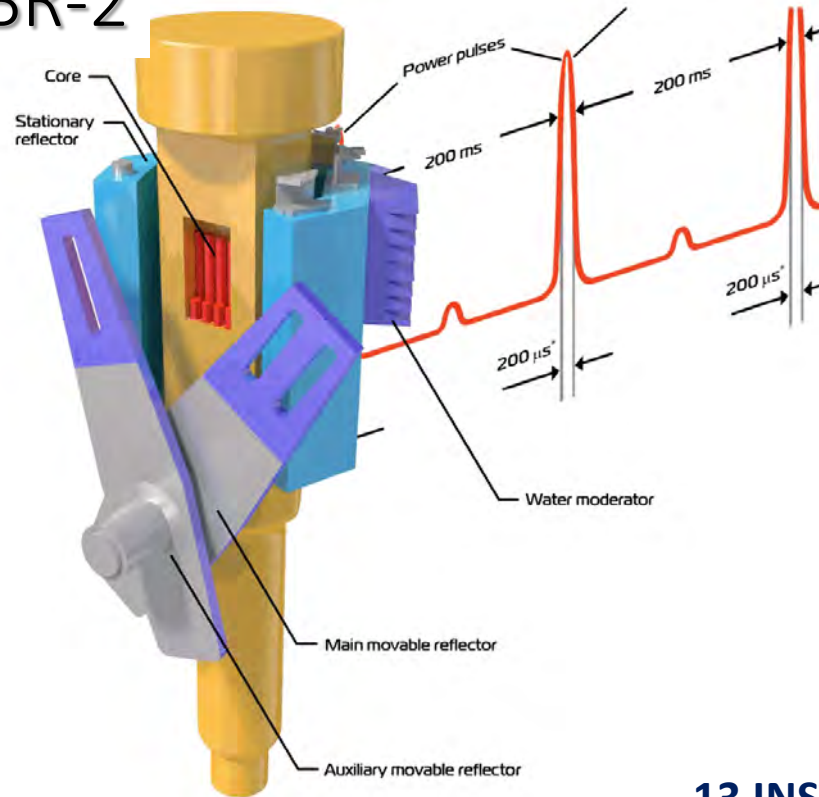
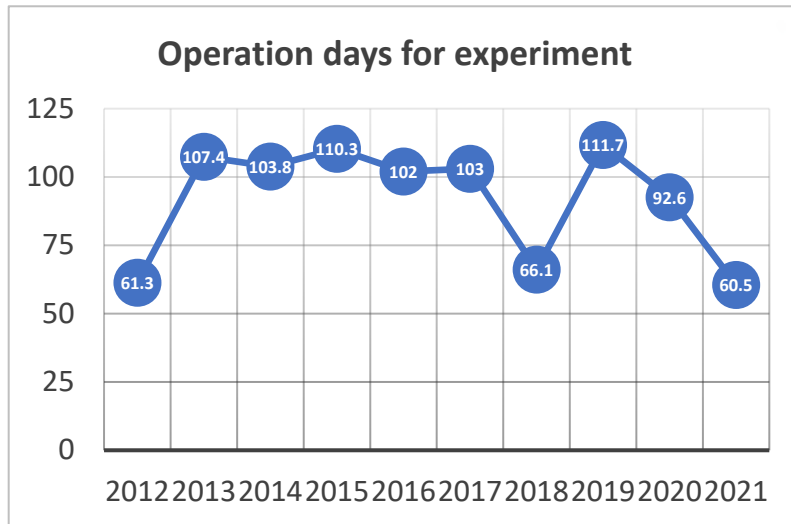


INM  
ROSATOM



M. N. Mikheev Institute of Metal Physics  
of Ural Branch of Russian Academy of Sciences

# Pulsed Research Reactor IBR-2



On 2022 the license for the reactor exploitations was expired.

Obtaining the license and reactor startup – beginning of 2024.

## 13 INSTRUMENTS INCLUDE IN USER PROGRAMM

**Under construction two instruments:**

- **SANSARA** – small angle + imaging (2024)
- **BJN** – inelastic scattering (2025)

# Status of PIK reactor complex

Vladislav Tarnavich (NRC “Kurchstov institute”-PNPI)

Roadmap of instruments commissioning including 3 phases:

- First phase (includes 4 neutron facilities) at the stage of equipment installation.
- Second phase (includes 7 neutron facilities) at the stage of development of design documentation by the contractor and acceptance of documentation by the institute.
- Third phase (includes 9 neutron facilities) at the stage of commencement of work by the contractor.

Cold neutron source for neutron guide system (exp. Channel №3) and neutron guide system:

- equipment inspection by Rostekhnadzor (The Federal Service for Environmental, Technological and Nuclear Supervision) is passed.
- the next step is to install the system on site.

## 8. AONSA Business

### a. Facility reports at AOCNS

Discussion on whether there should be a dedicated facility reports at AOCNS, December 2023, Dongguan, China  
JS - If it is agreed it should not be at the expense of scientific presentations from the community.

### b. AONSA Young Research Fellows

Status of 2020-2023 AONSA YRF on the next slide

Facility hosts for the 2024 YRF's

- CSNS - one or two for one year
- J-PARC - maybe one for three months depend on instruments requested by the YRF
- HANARO - no
- JRR-3 - no (difficulty for YRF, maybe some other kind of collaboration?)
- G. A. Siwabessy - no
- OPAL - two for six month / one for one year
- CARR/CIAE - one or two for one year
- CMRR - ?
- DHRUVA - no

Discussion on how the YRF programme has impacted the careers of the fellows? FDM recommends a review is completed by AONSA on the effectiveness of the YRF



# AONSA Young Research Fellows

• 2020 :

not yet

Completed

not yet



Tingting  
Song China  
ANBUG

CSNS



Jungju Ryu  
Republic of  
Korea

KNBUA

ANSTO



Taisen ZUO  
China  
CNSS

J-PARC

1 people completed

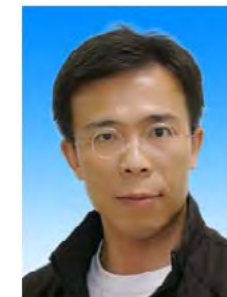
1 people in progress

6 people not started yet

• 2023 :

not yet

Not yet



Wu Jianyuan  
ANSTO



Ferensa Oemry  
ANSTO

• 2021 :

not yet

In progress

not yet



Lu, Teng  
J-PARC AMATERAS



Adilina, Badria, Indri  
ANSTO QUOKKA/  
PELICAN/EMU



Haque, Rezwanul  
CSNS SANS/MPR

## 8. AONSA Business

### c. Next AONSA Neutron School

Discussion on who will host the next AONSA school – too late for 2023 AONSA Neutron School

- 2022 - CSNS
- 2024 - BARC
- 2025- J-PARC and JRR3?

Discussion on whether the neutron school is open to outside the AONSA region – yes.

However on the AONSA website it states (<http://aonsa.org/articles-by-laws-rules-and-guidelines-of-association/>):

*2. No more than 50% of the student attendees should be from institutions in the host country; at least 50% should come from other user communities in the Asia-Oceania region, with a reasonable spread;*

Recommendation to AONSA that the school also allows participants from outside the Asia-Oceania region.

# Discussion on the challenges, opportunities and cooperation of neutron facilities

chair

# Discussion on the challenges, opportunities and cooperation of neutron facilities

- Shortage of Neutron MWD detector suppliers in the world, Denex ILL, Ordela.
  - He3 remains expensive @ approx. \$USD5000 Litre
  - ANSTO – Brookhaven detector on Wombat has online gas cleaning system which has extended the usage life.
  - ANSTO has used He3 gas which needs to be cleaned. ILL is able to do this.
- Neutron Facility Support Societies
  - International Society for Sample Environment (ISSE) - <https://sampleenvironment.org/>
  - International Society of Neutron Instrument Engineers (ISNIE) - <https://instrumentengineers.org/>
  - DEUNET is the international deuteration network of Deuteration Facilities and laboratories world-wide - <https://deuteration.net/>
  - The formation of a “User Support Society/Network” is under consideration – to cover laboratories, proposal safety & regulatory assessments, mailing, importing & exporting of samples
- International Facility Director’s Meeting?
  - Option to hold one with AOCNS – would have to be short.
  - Online later in the year may be the best option.

# Other business

**a. Neutron Meetings**

- **Only note is that have restarted after COVID**

**b. Next Meeting & Chair**

- **Agreed that Young-soo Han (HANARO) will be the chair for the next 2 meetings.**

# Report from China Neutron Scattering Society

*Hesheng CHEN*

*AONSA EC Meeting June 17, 2023*

# Outline

- 1 CNSS activities overview**
- 2 Status of CARR, CMRR and CSNS**
- 3 Summary**

# Outline

## 1 **CNSS activities overview**



# Neutron Scattering Facilities in China

User community > 4800 and expands quickly



# CNSS focus and plan for 2023

- **Coordination of the research and application of neutron scattering in China**
  - **Develop neutron scattering technology**(detector, neutron guide, neutron polarizer ).....
  - **Promote International cooperation and exchanges .....**
- **Promotion of the working groups for major fields of NS application**

**The following working groups have made progress:**

  - Detector
  - Polarization Neutron Technical
  - Monte Carlo Simulation System for Neutron Transport
  - Engineering Stress Research
  - Lithium Battery Technology
  - Deuterium Technology
- **Preparation for international and domestic conferences**
  - **Asia-Oceania Conference on Neutron Scattering -2023 (2023.12)**
  - **The 24th meeting of The International Collaboration of Advanced Neutron Sources (ICANS XXIV)(2023.10)**

# The 9<sup>th</sup> national conference on neutron scattering & workshop on applications of national neutron facilities



- ✓ sponsored by the Chinese Neutron Scattering Society (CNSS), co-sponsored by CMRR, have been held from April 18th to 21st, 2023, at Mianyang.
- ✓ More than 300 researchers and students, from around 100 universities, institutes, companies, etc., attended the conference.

# The 9<sup>th</sup> national conference on neutron scattering & workshop on applications of national neutron facilities

- ✓ 80 speakers shared their latest research achievements in these themes: the progress of neutron instruments, large-scale neutron scattering, neutron diffraction and structure, neutron inelastic scattering, etc.
- ✓ 2 winners of Young Outstanding Paper Awards, presented by Academician Hesheng Chen.



# The 10th Plenary Meeting of CNSS (April 19th, 2023, at Mianyang)



## Main Topics:

- Domestic main neutron platform seminars, domestic and international exchanges and cooperation;
- 6 working groups for major fields of NS application reported on the latest progress.

# Boron drugs and BNCT Seminar



- ◆ On March 19-21, 2023, the "Seminar on Boron Drugs and BNCT" was held in CSNS, Dongguan.
- ◆ More than 100 experts from more than 30 domestic universities, research institutes, hospitals and pharmaceutical companies attended the meeting.



- ◆ boron chemistry in the development of boron drugs, BNCT combined with other tumor therapies, the mechanism of inducing immunity, the clinical transformation of boron drugs, and BNCT therapy techniques, etc. were discussed.

# CARR—Meetings and Public Activities

- CARR neutron facilities and research progress reported by CCTV



- Introducing neutron science to high school students



- User workshop for neutron diffraction



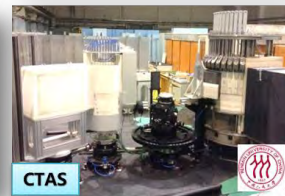
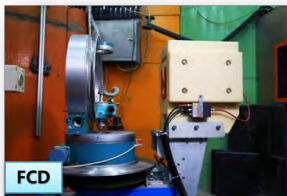
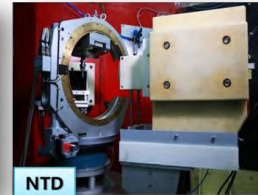
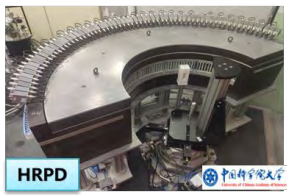
# Outline

## 2 Status of CARR, CMRR and CSNS



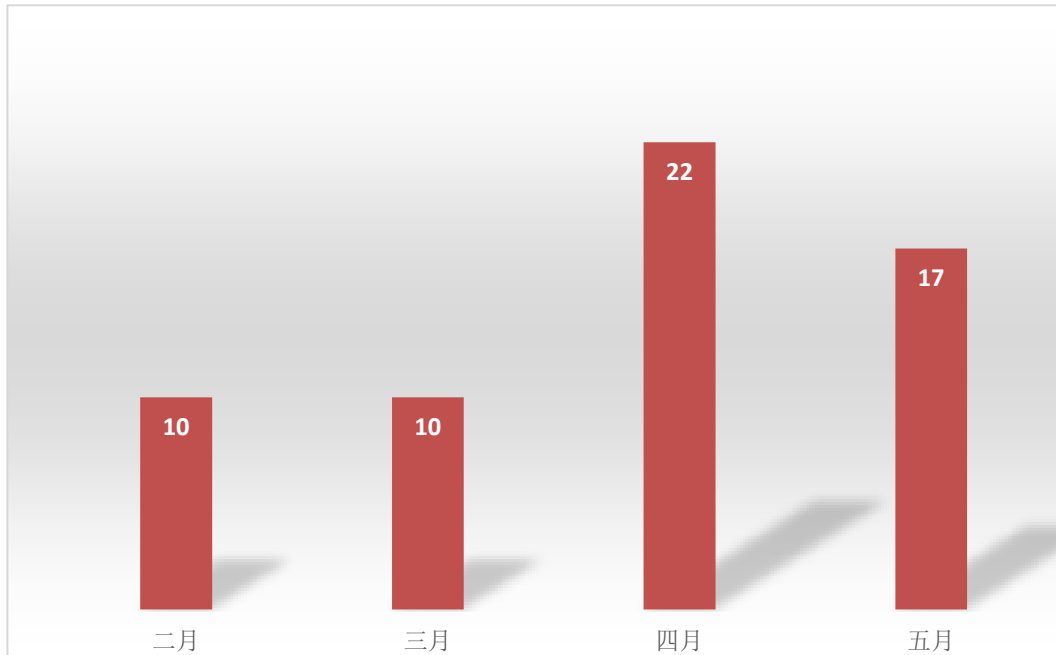
# CARR—Progress on CARR neutron facilities

- 15 neutron instruments have been built
- The installation of the neutron guide CNGC and its shielding have been done.

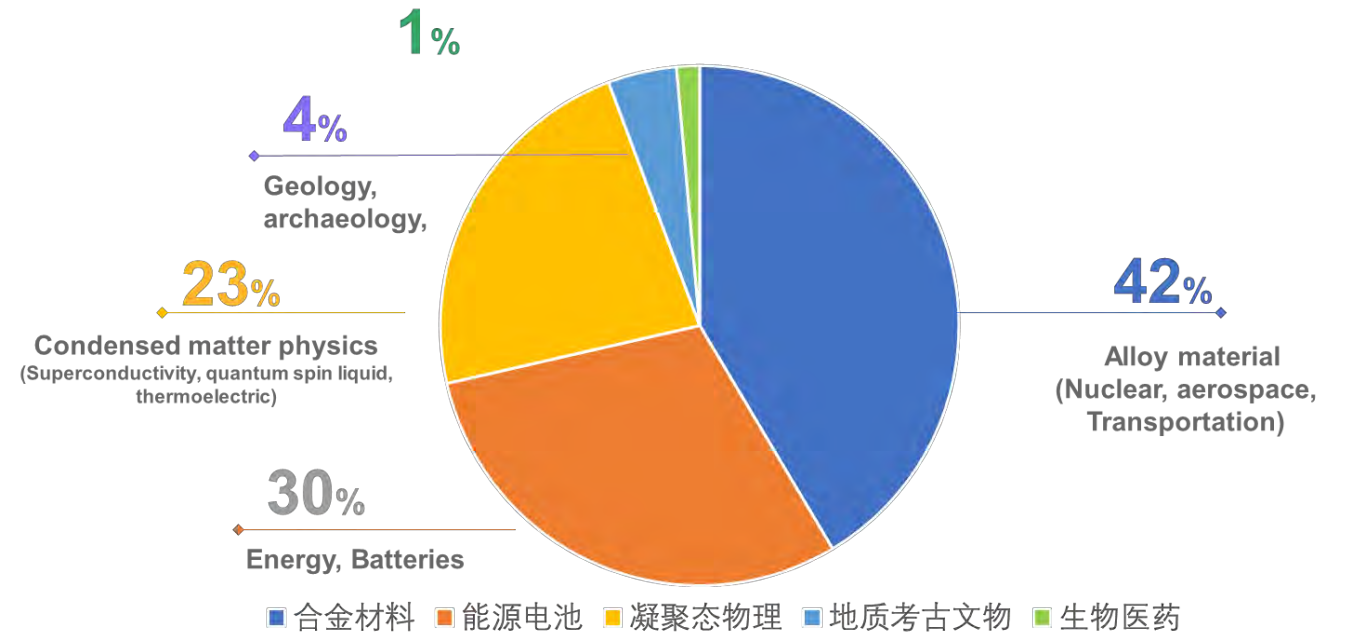


# CARR—Operation and Utilization of CARR

- CARR has run 67 days since Feb. 2023
- 56 proposal have been conducted



Neutron beamtime at CARR since Feb. 2023



Statistics on the approved proposals

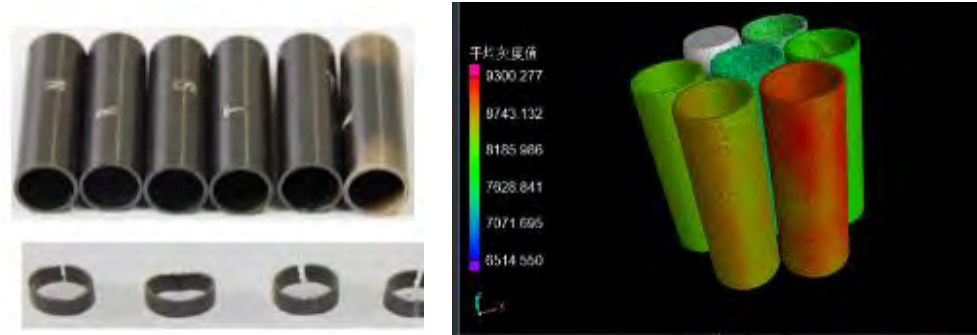
# CARR—Recent research examples

Researches for industry application and fundamental studies have been conducted.

## ◆ Uranium in nuclear fuel element



## ◆ Distribution of hydrogen in zircaloy cladding

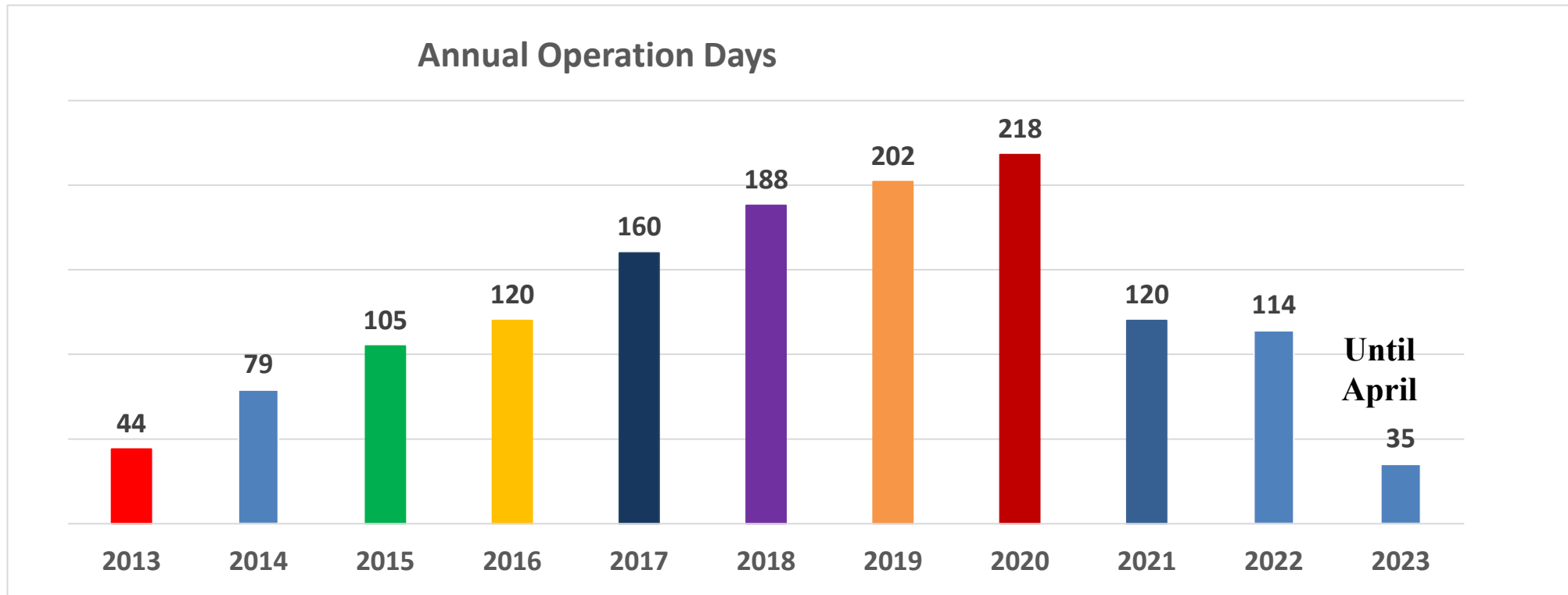


## ◆ Residual Stress in a superalloy ring for aeroengines



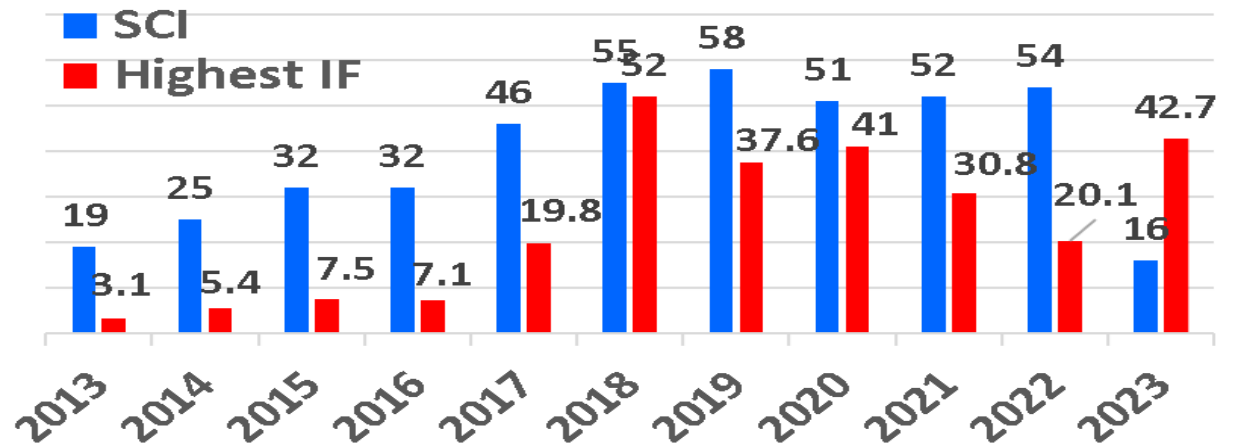
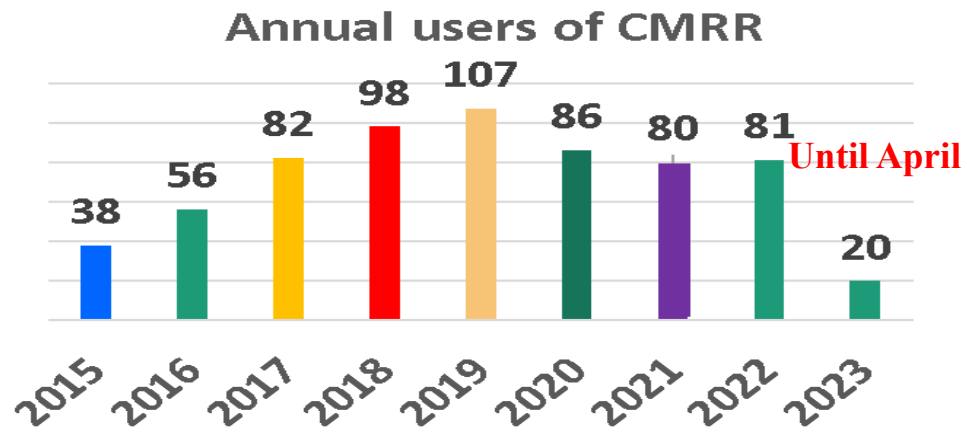
# China Mianyang Research Reactor

- CMRR operated 120 and 114 days in 2021 and 2022, respectively.
- Until April, 2023, the reactor has operated 35 days.



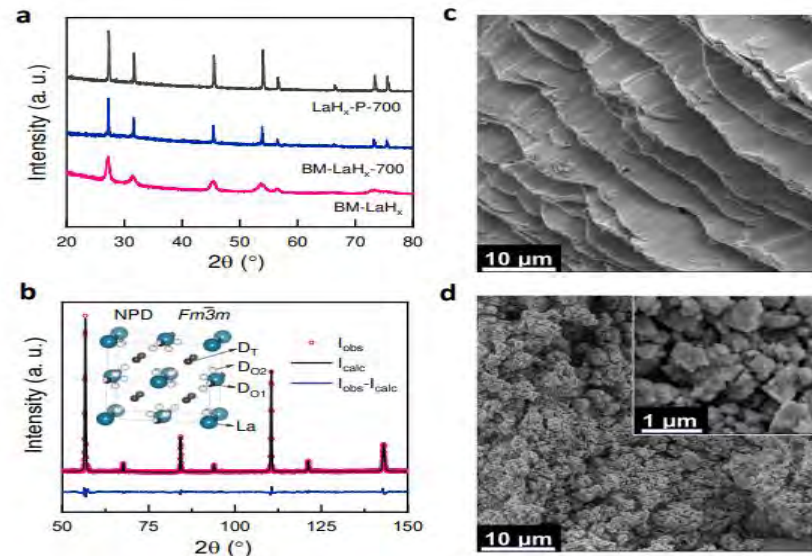
# CMRR—beam time and users

- CMRR has offered beam time for more than 80 users per year.
- In 2023, the No. of users is 20 so far, 16 papers were published, and the highest IF is 42.7 (Nature).
- Notable discoveries were obtained in the areas of soft matter, physics, energy materials, sodium-ion batteries, etc.



## Notable scientific discoveries 1- superionic conduction

- By creating nanosized grains and defects in the lattice, the electronic conductivity can be suppressed by more than five orders of magnitude. This transforms  $\text{LaH}_x$  to a superionic conductor with a record high  $\text{H}^-$  conductivity of  $1.0 \times 10^{-2} \text{ S}$ . The position information of H atoms and the transmission path of H ions in the lanthanum trihydride material were confirmed by neutron diffraction.



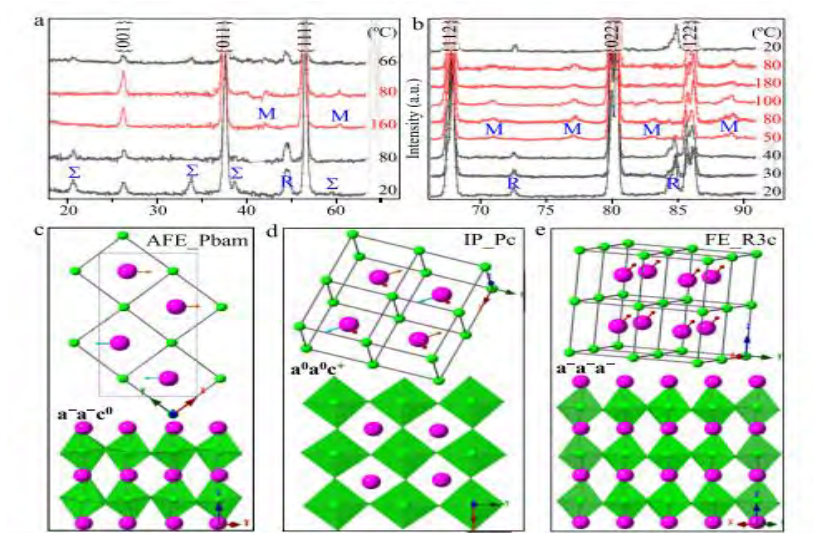
Structural characterization of BM-LaH<sub>x</sub>



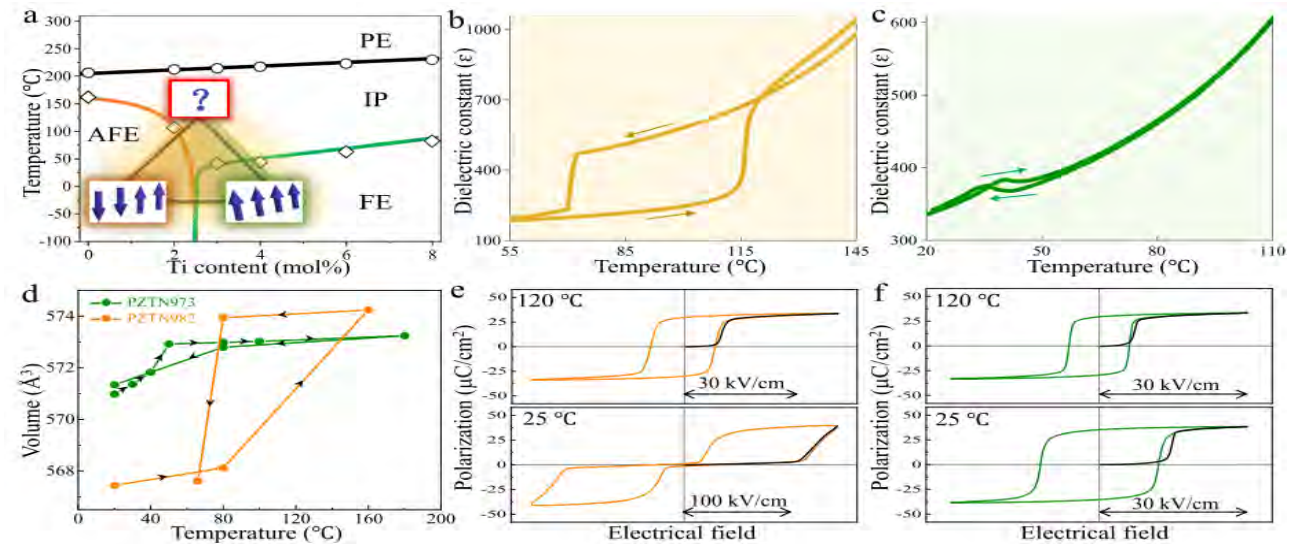
Schematic diagram of H ion transport path

## Notable scientific discoveries 2- PZT ceramics

- In-situ neutron diffraction was used to study the atomic reconfiguration process during the boundary three-state transition of ferroelectric/ antiferroelectric phase in PZT ceramics. It is shown that the same mesophase can be transformed into ferroelectric phase or antiferroelectric phase.



Neutron Diffraction Spectrum and Structure Diagram of PZT Ceramics

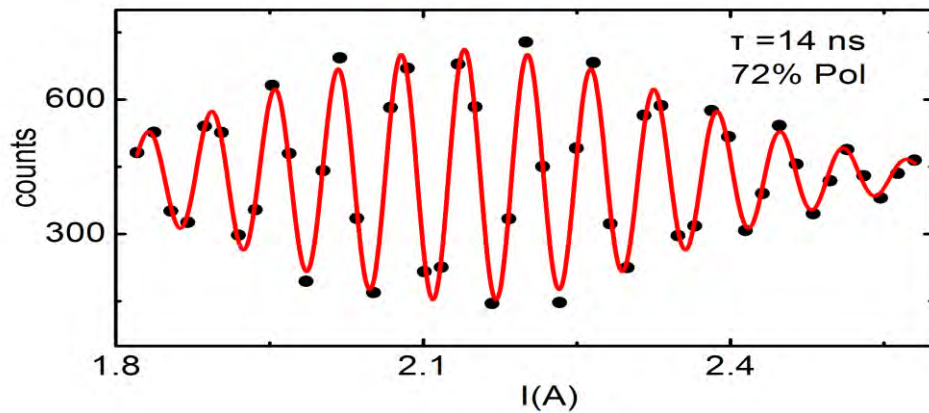
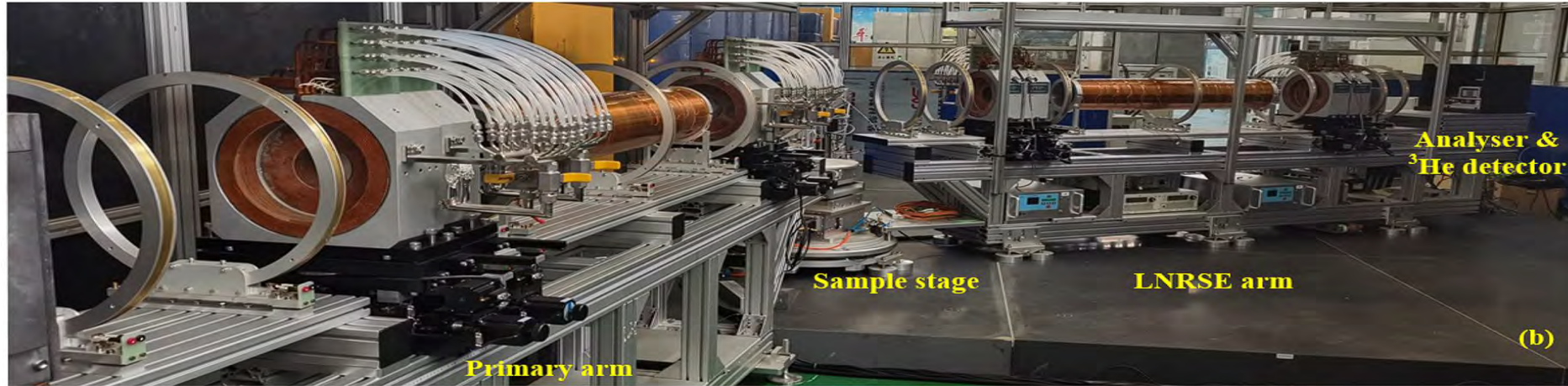


Phase Diagrams and Ferroelectric Curves of PZT Ceramics

Nature Communications. 2022(13): 1390

# CMRR- Capability improvement : LNSNSE

- The first Longitudinal neutron resonance spin echo spectrometer in China



- ✓ Obtained spin echo time of 14 ns neutron signal, polarization rate of 72%, on the basis of the current, further debugging is expected to reach more than 40 ns



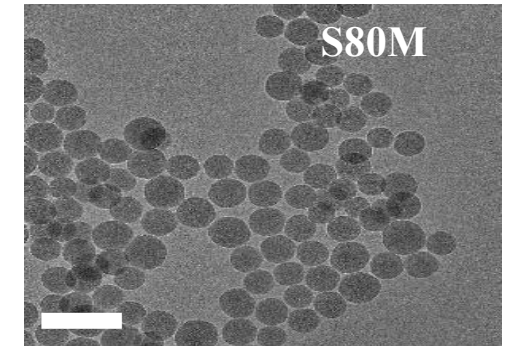
# CMRR- Capability improvement : GISANS

➤ To achieve GISANS on Spectrometer SANS-Suanni (the exist one)

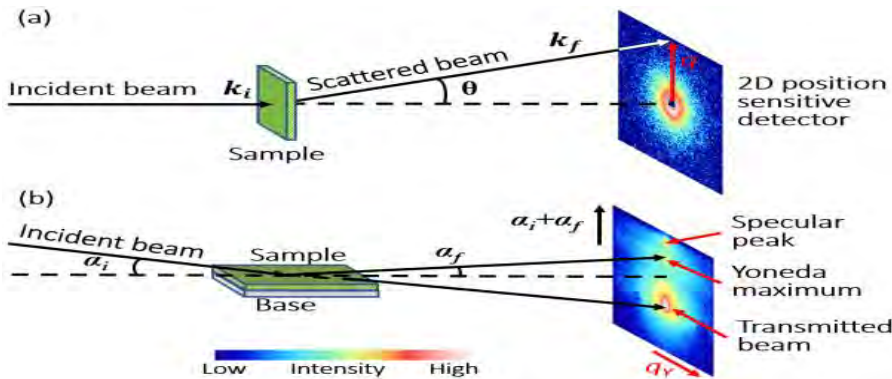
## SANS-Suanni



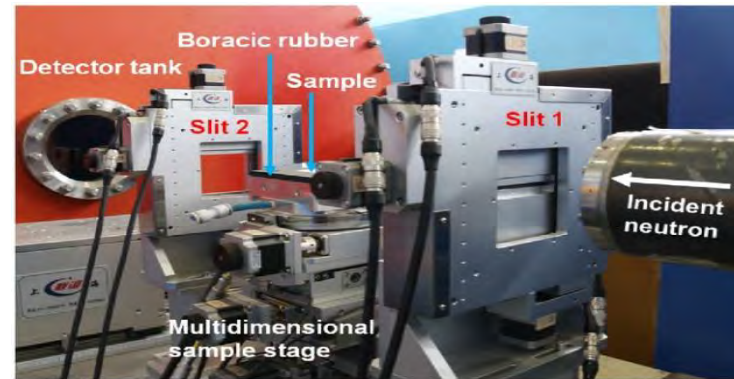
M. Peng, et al., *Nucl. Instrum. Methods Phys. Res., Sect. A*, 2016, 810: 63-67



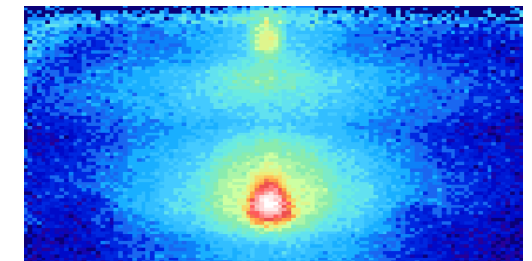
Film sample: Silica on substrate



Scattering geometry for SANS and GISANS experiments, respectively.



The multi-dimensional sample stage with both front and back slits for GISANS

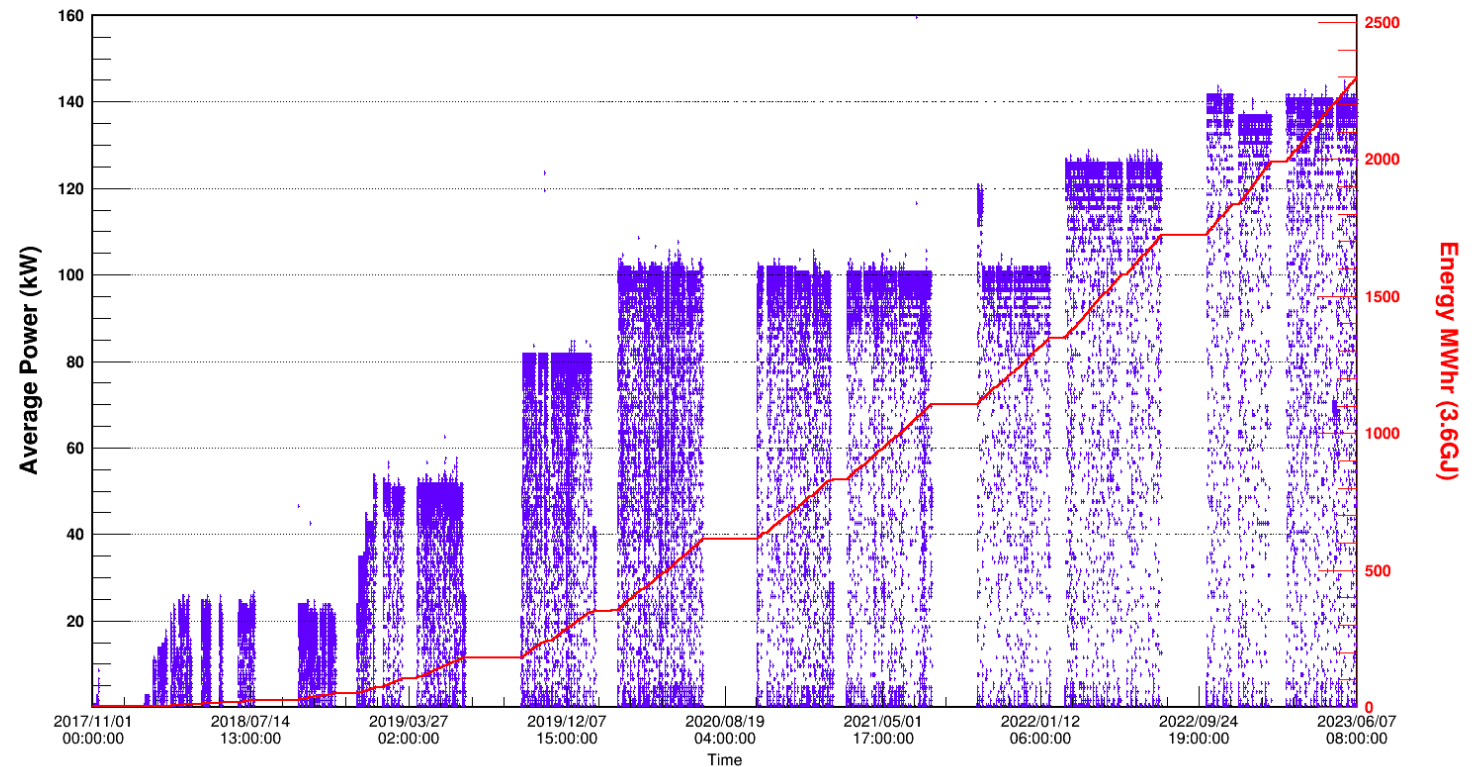
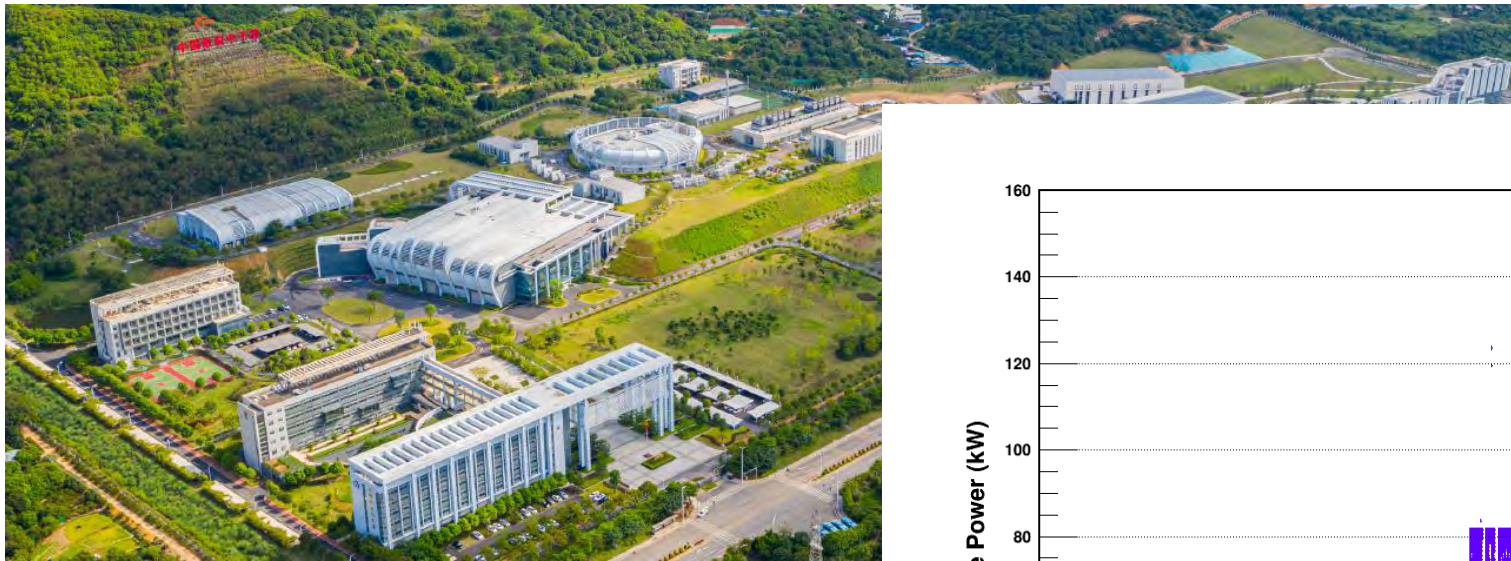


S80M  
2D-GISANS data

J Chen, G Sun\*, D Liu\* et al., *Nucl. Instrum. Methods Phys. Res., Sect. A*, 1051 (2023) 168228

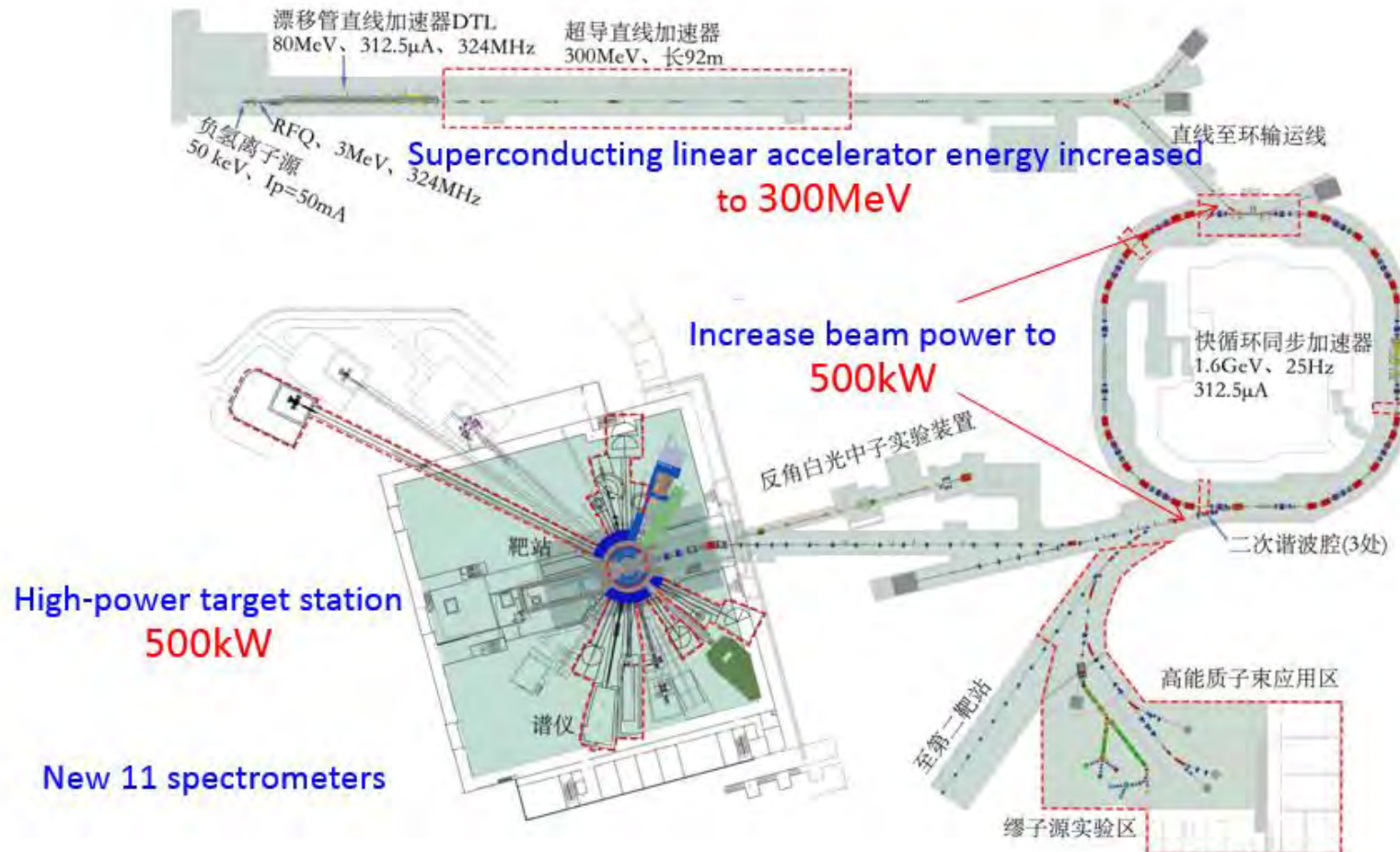
# China Spallation Neutron Source (CSNS)

In February of 2020, the accelerator beam power reached the design goal of 100 kW. In September of 2022, the accelerator beam power was increased to 140kW, which exceeds the designed value by 40%, and the beam availability is over 96% at 140kW operation.



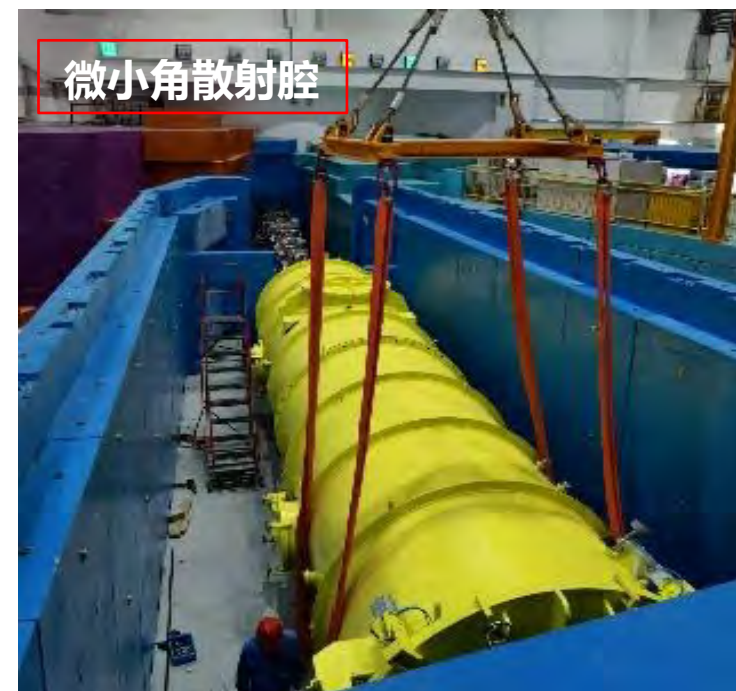
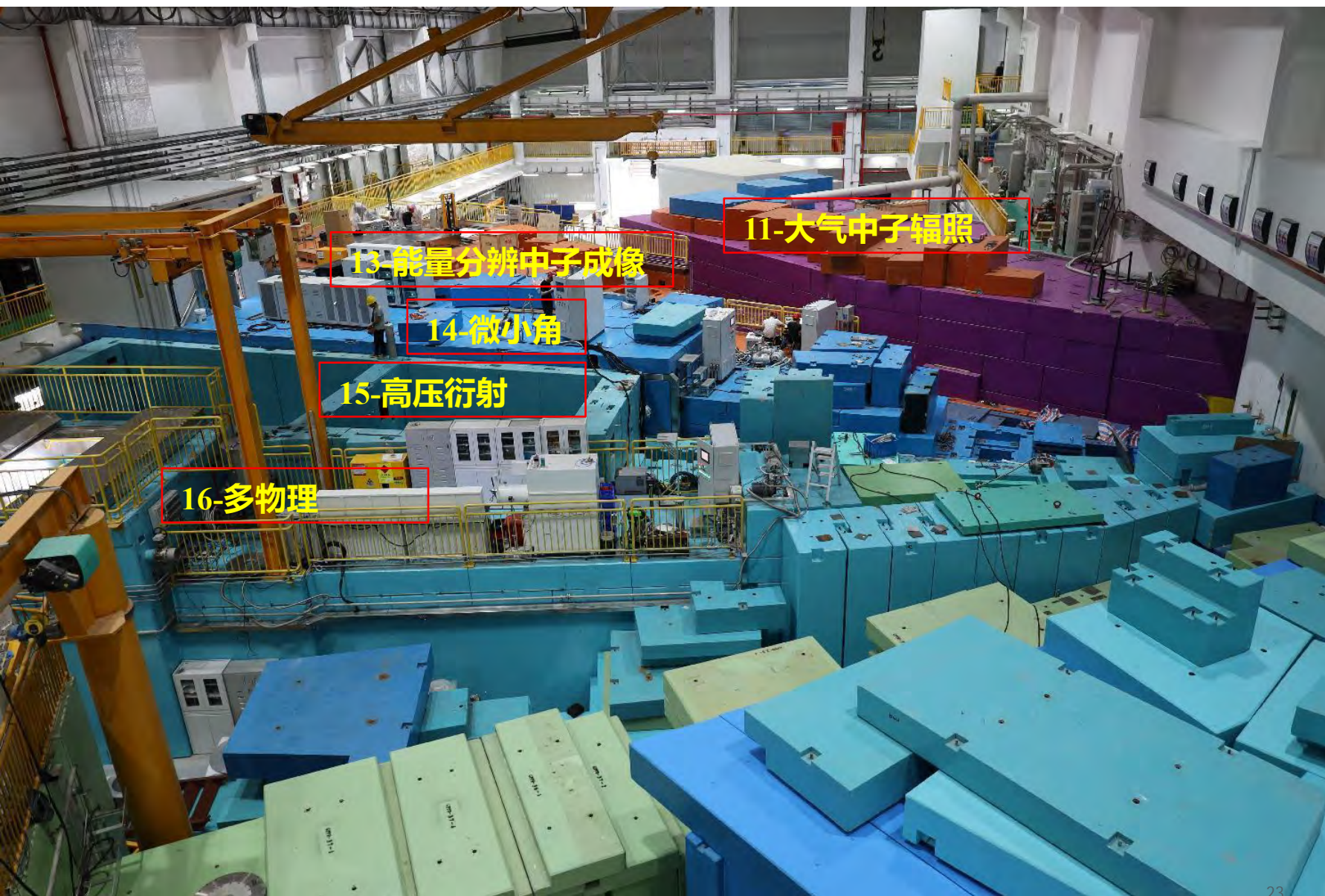
# China Spallation Neutron Source (CSNS)

CSNS Phase II Project has been approved to be included in the 14th 5-Year Plan of China. In May 2023, CAS organized the project design and investment review meeting.



	I	II
Proton beam power(kW)	100	500
Pulse repetition frequency (Hz)	25	25
Target	1	1
Beam intensity( $\mu\text{A}$ )	62.5	312
Beam energy (GeV)	1.6	1.6
Injection energy for ring (MeV)	80	300
Instruments	3	11

# Progress of CSNS instruments

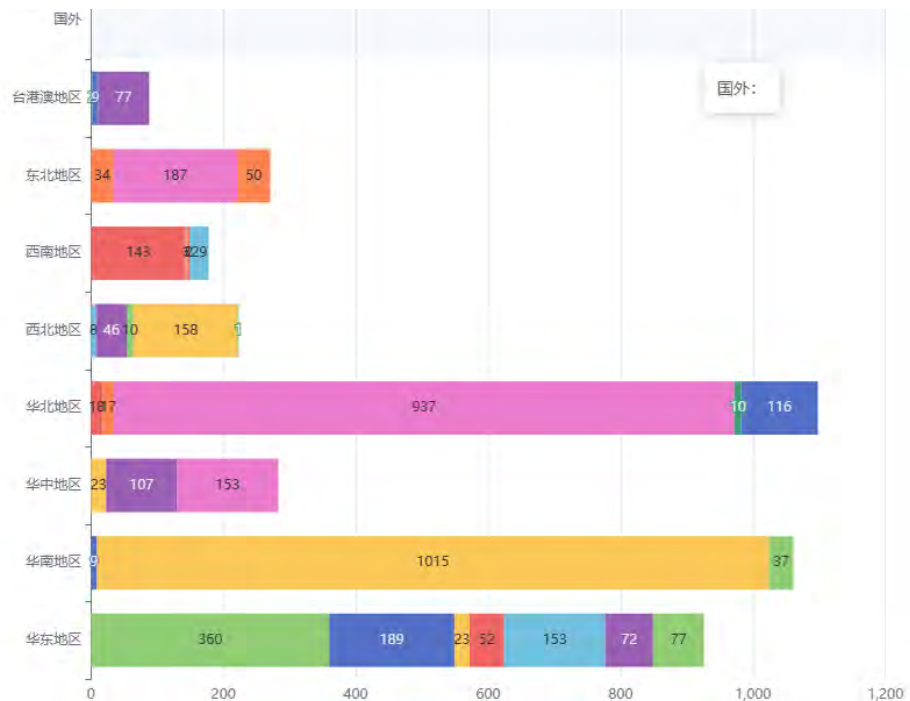
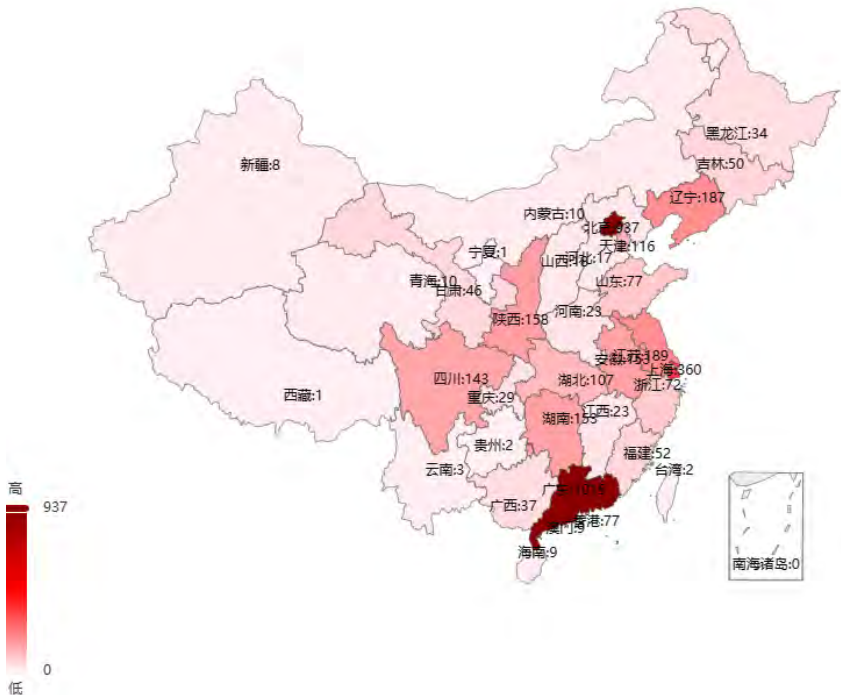


# Progress of CSNS instruments

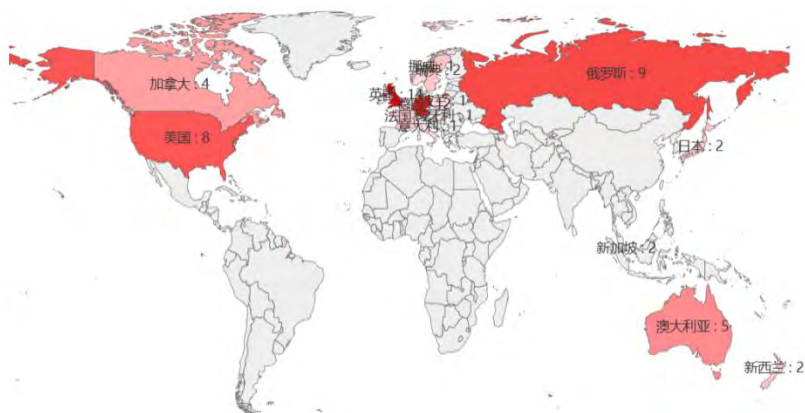
- Multiple Physics Instrument—**already open for operation**
- Atmospheric Neutron Irradiation— **ready for operation**
- Engineering Diffractometer—**the obtained the first neutron beam in December, 2022.**
- Very small angle neutron scattering , Energy resolved neutron imaging , High energy chopper spectrometer —**obtained the first neutron beam in January , 2023**
- High Pressure Diffractometer , High-resolution neutron powder diffractometer —**development and processing of key components, installation of some equipment, will be completed in 2023**

# Geographical distribution of registered users of CSNS

➤ More than 4700 registered domestic users



➤ 69 International users



**730** general proposals received for GPPD, SANS, MR and MPI, and **238** accepted.

- **104** ( 24.9%) Proposals accepted from 418 submissions (2022.10-2023.1)
- **134** (42.9%) Proposals accepted from 312 submissions (2023.2-2023.7)

Instrument	Summary of the ninth circle (2022.10-2023.1)			Summary of the tenth circle (2023.2-2023.7)		
	Total proposal received	Total proposal allocated	Pass Rate (by number)	Total proposal received	Total proposal allocated	Pass Rate (by number)
General Purpose Powder Diffraction	122	24	19.7%	84	30	35.7%
Multipurpose Reflectometer	31	15	48.4%	39	30	76.9%
Small Angle Neutron Scattering	121	28	23.1%	86	30	34.9%
Multi-Physics Instrument	144	37	25.7%	103	44	42.7%
In total	<b>418</b>	<b>104</b>	<b>24.9%</b>	<b>312</b>	<b>134</b>	<b>42.9%</b>

# Summary

- **3 facilities in China run well, and more scientific results obtained.**
- **CSNS II has been approved to be included in the 14th 5-Year Plan of China. In May 2023, CAS organized the project design and investment review meeting.**
- **The NS user community are increasing year by year, neutron spectrometers supply are in short supply.**
- **6 working groups for major fields of NS application have made important progress.**
- **Asia-Oceania Conference on Neutron Scattering 2023 is being prepared on schedule .**
- **Welcome intl. users and cooperation in the neutron scattering and applications.**



**Look Forward for More  
International Cooperation !**





Report by INSS

Prof.Dr. Evvy Kartini

President of INSS

President of MRS-INA & Founder of NBRI

17 June 2023



National  
Battery  
Research  
Institute



# WELCOME DELEGATES!

**EC & FDM  
MEETING**

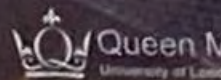
Asia-Oceania Neutron  
Scattering Association

**IMAC**

International Workshop  
on Material and Advanced  
Characterization



National  
Battery  
Research  
Institute



Queen M  
University of London

# AONSA EC & FD Meeting 2022



**NBRI**

Prof. Jamie Schultz, ANSTO, Australia  
Prof. Young Soo Han, HANRO, South Korea  
Prof. J. Taku Sato, President AONSA



**24-25 Nov. 2022**

Prof. Hsiung Chou, Taiwan  
Dr. David Cortie, ANSTO, Australia  
Prof. Evvy Kartini, Indonesia  
Prof. Agung Nugroho, ITB, Indonesia



**Token Appreciation to the President AONSA, Prof.Dr. Taku J. Sato**

# AONSA EC & FD Meeting 2022



**NBRI**

Prof. Jamie Schultz, ANSTO, Australia

Prof. Young Soo Han, HANRO, South Korea

Prof. J. Taku Sato, President AONSA



**24-25 Nov. 2022**

Prof. Hsiung Chou, Taiwan

Dr. David Cortie, ANSTO, Australia

Prof. Evvy Kartini, Indonesia

Prof. Agung Nugroho, ITB, Indonesia

# INTERNATIONAL WORKSHOP ON MATERIALS AND ADVANCED CHARACTERIZATION (IMAC)

"The Power of Neutron and X-Ray for  
Advanced Material Characterization"

THURSDAY - FRIDAY

24-25 November  
2022

📍 NBRI Workshop, Techno Park L2/29  
BSD City, South Tangerang



**Prof. Taku J Sato**

President of Asia-Oceania  
Neutron Scattering Association  
(AONSA) and Professor of  
Tohoku University, Japan



**Dr. Jamie Schulz**

Director of Australian Centre for  
Neutron Scattering, Australian  
Nuclear Science and  
Technology (ANSTO), Australia



**Prof. Hsiung Chou**

Supervisor of Taiwan Neutron  
Science Society (TNSS) and  
Professor of National Sun Yat-sen  
University, Taiwan



**Dr. David Cortie**

Neutron Reflectometry  
Instrument Scientist of Australian  
Nuclear Science and Technology  
Organization (ANSTO), Australia



**Prof. Fangwei Wang**

Deputy Head of Chinese  
Spallation Neutron Source  
(CSNS) and Professor of  
Institute of Physics Chinese  
Academy of Sciences China



**Prof. rer. nat. Evvy Kartini**

Founder of National Battery  
Research Institute, President of  
Indonesian Neutron Scattering  
Society, and Research Professor  
of National Research and  
Innovation Agency (BRIN)

## WHAT YOU WILL LEARN

- General overview of Neutron Scattering and X-Ray Diffraction
- Spallation neutron sources in China (CSS) and Japan (J-PARC)
- Density Functional Theory
- Magnetic quasicrystal
- Advanced material characterization by neutron scattering and X-Ray diffraction
- Neutron reactor sources in Australia (ANSTO), Indonesia (BRIN), South Korea (KAERI) and Taiwan

## WHAT YOU WILL GET

- Complete E-Learning Modules
- International E-Certificate (Certified by NBRI, QMUL, INSS, AONSA)
- Meet and Discuss with distinguished international lecturers across six countries
- Seminar Kit
- Two days meal, coffee break, and lunch

## REGISTER NOW

[bit.ly/REG-IMAC2022](https://bit.ly/REG-IMAC2022)

## QR CODE



Supported by



For more information, visit us at

<https://www.nbri-events.org/agenda/imac-2022/>

# How to become World Class Materials Scientist with Advanced Characterization & Learning from the Expert





**Participant of International Workshop on Materials and Advanced Technology**



**Visited Reactor Sywabessy, BRIN 24 Nov 202**

# NBRI Moving to ILSC : Parking & Lobby & Laboratory



Class room

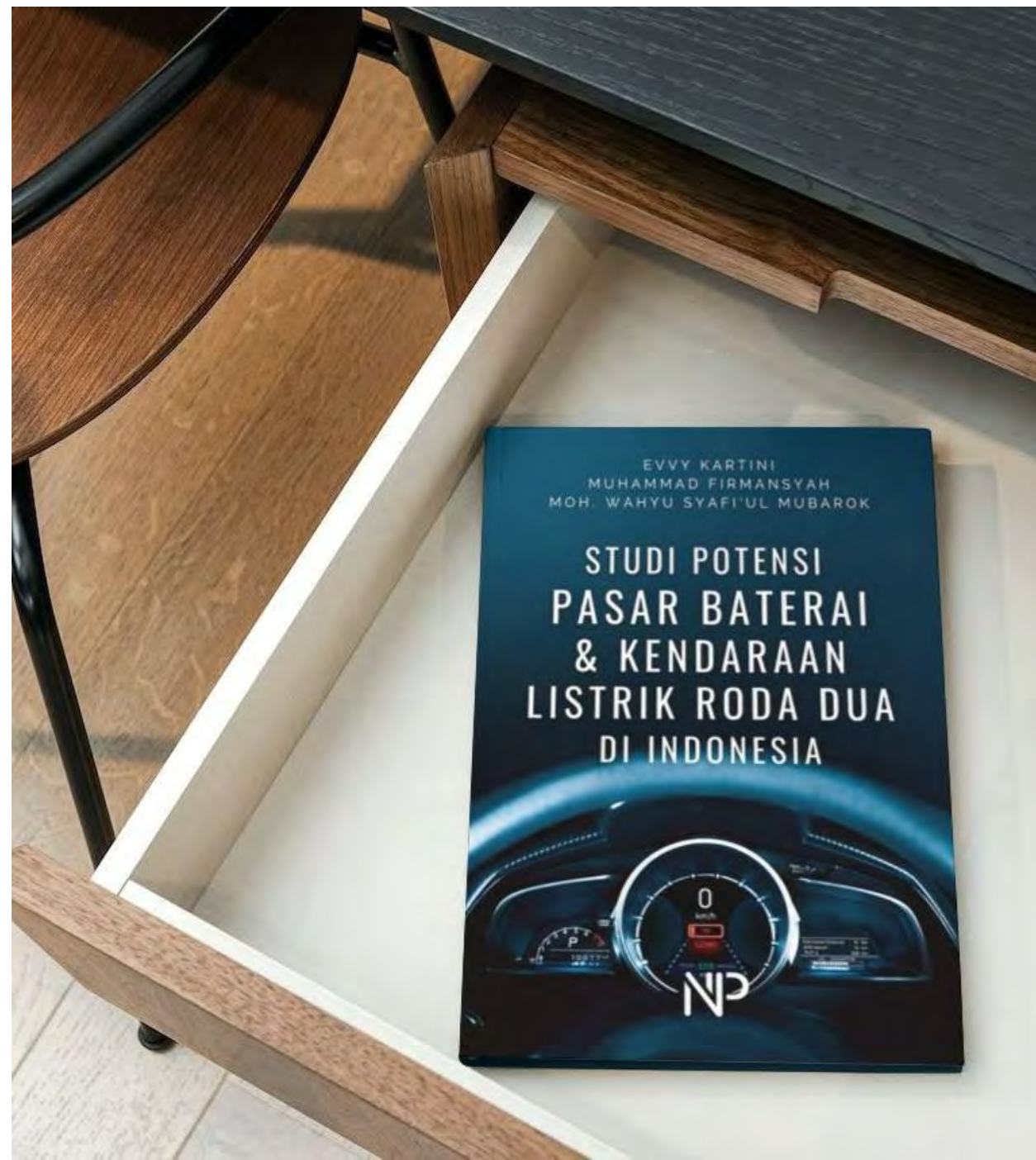
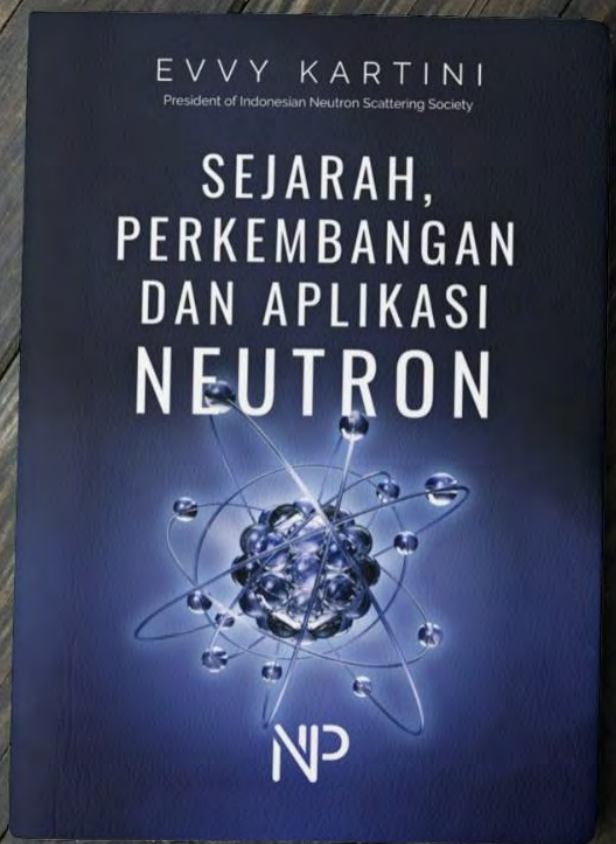


Laboratory



Entrance







National Research and Innovation Agency



# Strengthening the cooperation among AONSA members through Science & Neutron

- Visiting Scientists visited and performed neutron experiments at AONSA member facilities
- Dr Indri Badria Adilina (ANSTO), AONSA Young Research Fellow 2021
- Dr.Ferenza Oemri (ANSTO), Visiting Scientist, funding from ANSTO
- Dr. Maykel Manwan (ANSTO), Joint research, funding from University of Indonesia
- Dr. Teguh Y.S. Putra (J-PARC), research fellow of KEK & J-PARC

# Neutron Scattering Studies for Sustainable Use of Nature's Resource



Dr Indri Badria Adilina

Researcher

Research Center for Chemistry

National Research and Innovation Agency (BRIN)

AONSA Young Research Fellow 2021



Science & Technology Facilities Council  
ISIS Neutron and Muon Source





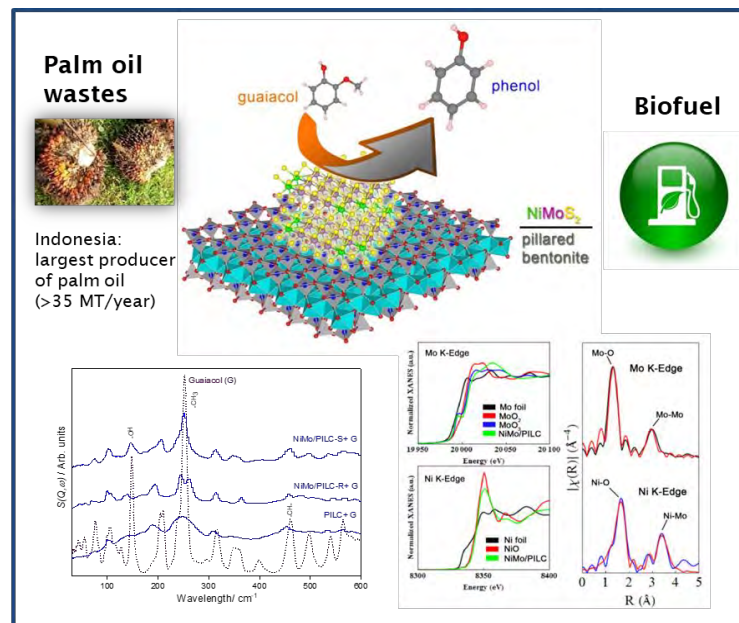
# BRIN-ISIS Collaboration

## Funding:

- ❖ Newton Fund Science and Technology Facilities Council (2018-2021)
- ❖ Pendanaan Riset Unggulan LIPI (2018-2020)
- ❖ Newton Fund British Council Institutional Links (2020-2022)

## Team:

- ❖ Research Center for Chemistry BRIN (Dr Indri B Adilina)
- ❖ Research Center for Quantum Physics BRIN (Dr Ferensa Oemry)
- ❖ Department of Bioenergy Engineering and Chemurgy ITB (Dr Yazid Bindar)
- ❖ Molecular Spectroscopy Research Group ISIS (Prof Stewart Parker)
- ❖ Department of Chemistry University of Warwick (Prof Richard Walton)



## Research:

Understanding molecular interactions on the surface of catalyst materials using INS and QENS techniques

## Achievements/Outputs:

- ❖ Adilina, JPCC, 2019, 123, 21429
- ❖ ISIS Impact Awards 2019
- ❖ Adilina, Molecules, 2020, 25, 1901
- ❖ Satyalancana Wirakarya Award 2020
- ❖ Adilina, Catalyst, 2021, 11, 1434
- ❖ Oemry, PCCP, 2023, 2023, 25, 2978

# Recent Works in Inelastic Neutron Scattering



**Ferensa Oemry**

**Visiting Scientist**

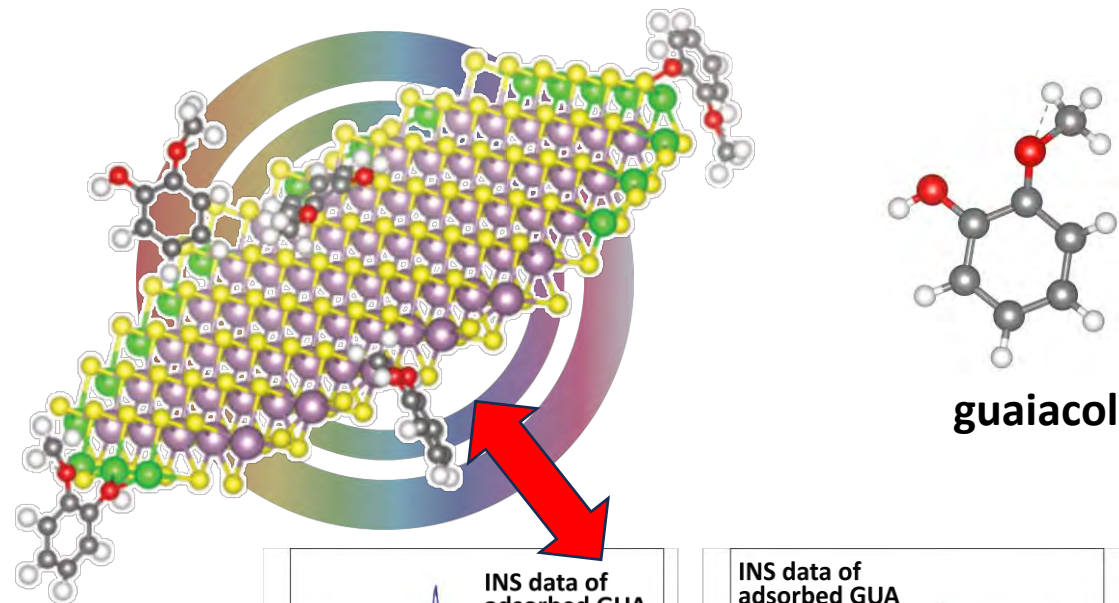
**Australian Nuclear Science and Technology Organisation (ANSTO)**

**Researcher**

**National Research and Innovation Agency (BRIN)**



# Inelastic Neutron Scattering : TOSCA (ISIS)



## Funding:

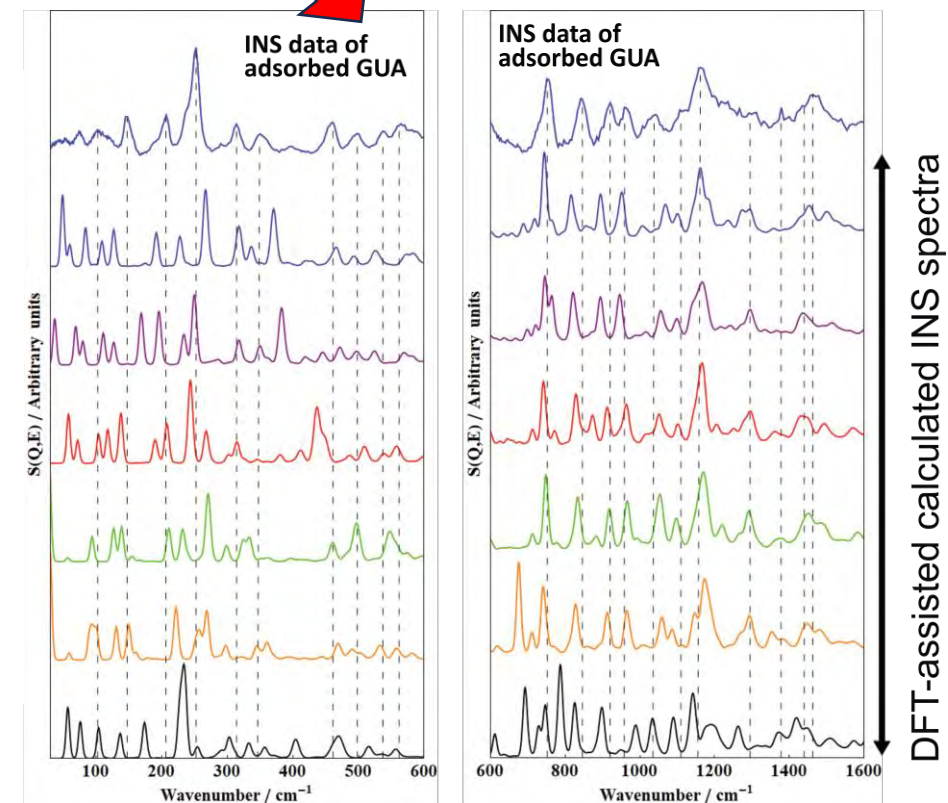
- ❖ Newton Fund Science and Technology Facilities Council (2018-2021)

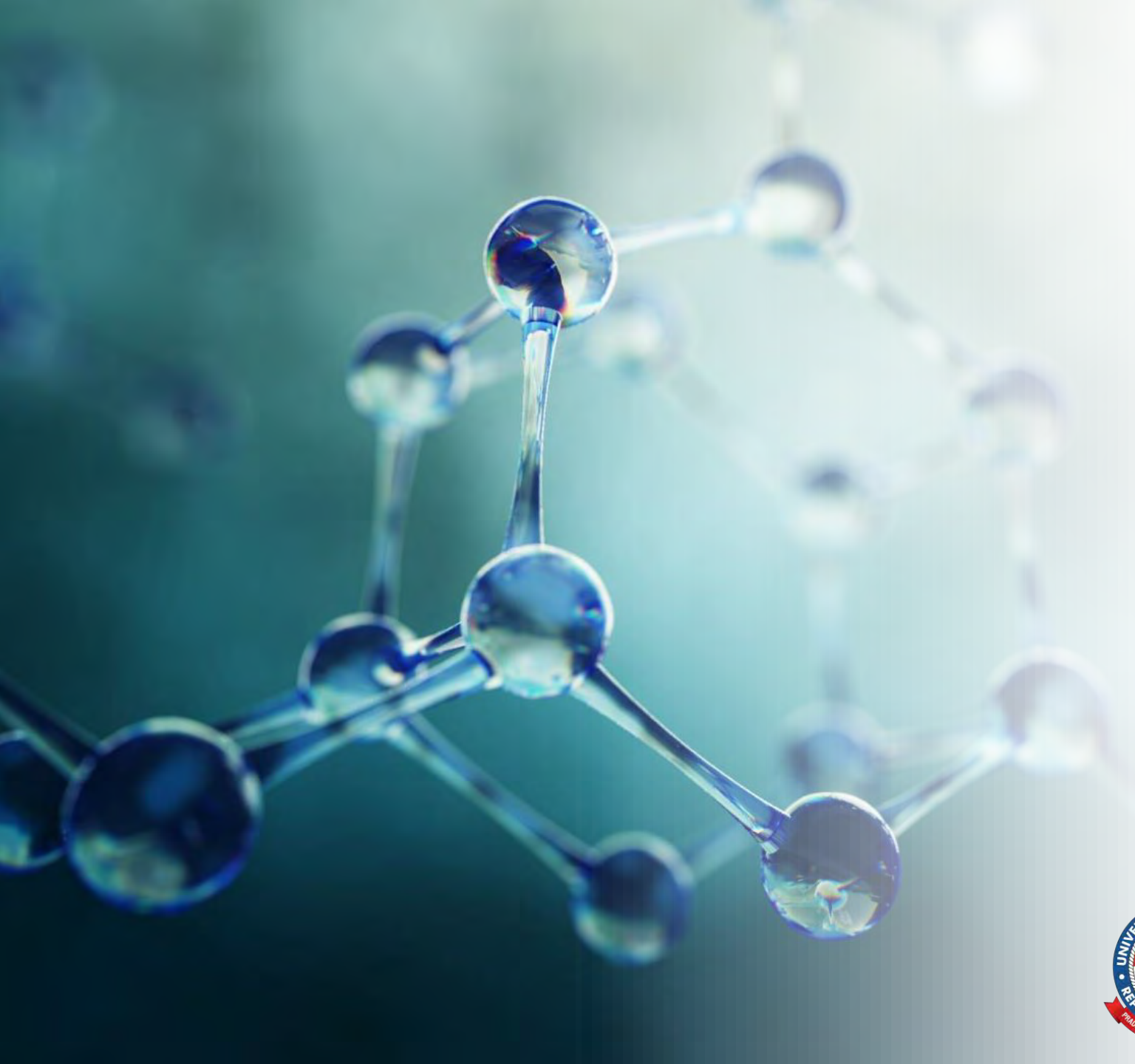
## Team members:

- ❖ Research Center for Chemistry BRIN (Dr Indri Badria Adilina)
- ❖ Molecular Spectroscopy Research Group ISIS (Prof Stewart Parker)
- ❖ Department of Physics, Universitas Jenderal Soedirman (Prof Wahyu Tri Cahyanto)

## Research:

Simulation and data interpretation of INS data of adsorbed guaiacol (GUA) on NiMoS<sub>2</sub> catalyst using density functional theory (DFT)





# Neutron Diffraction Experiment

---

Maykel Manawan



# Team & Fund Sources

## ❖ Experiment group member:

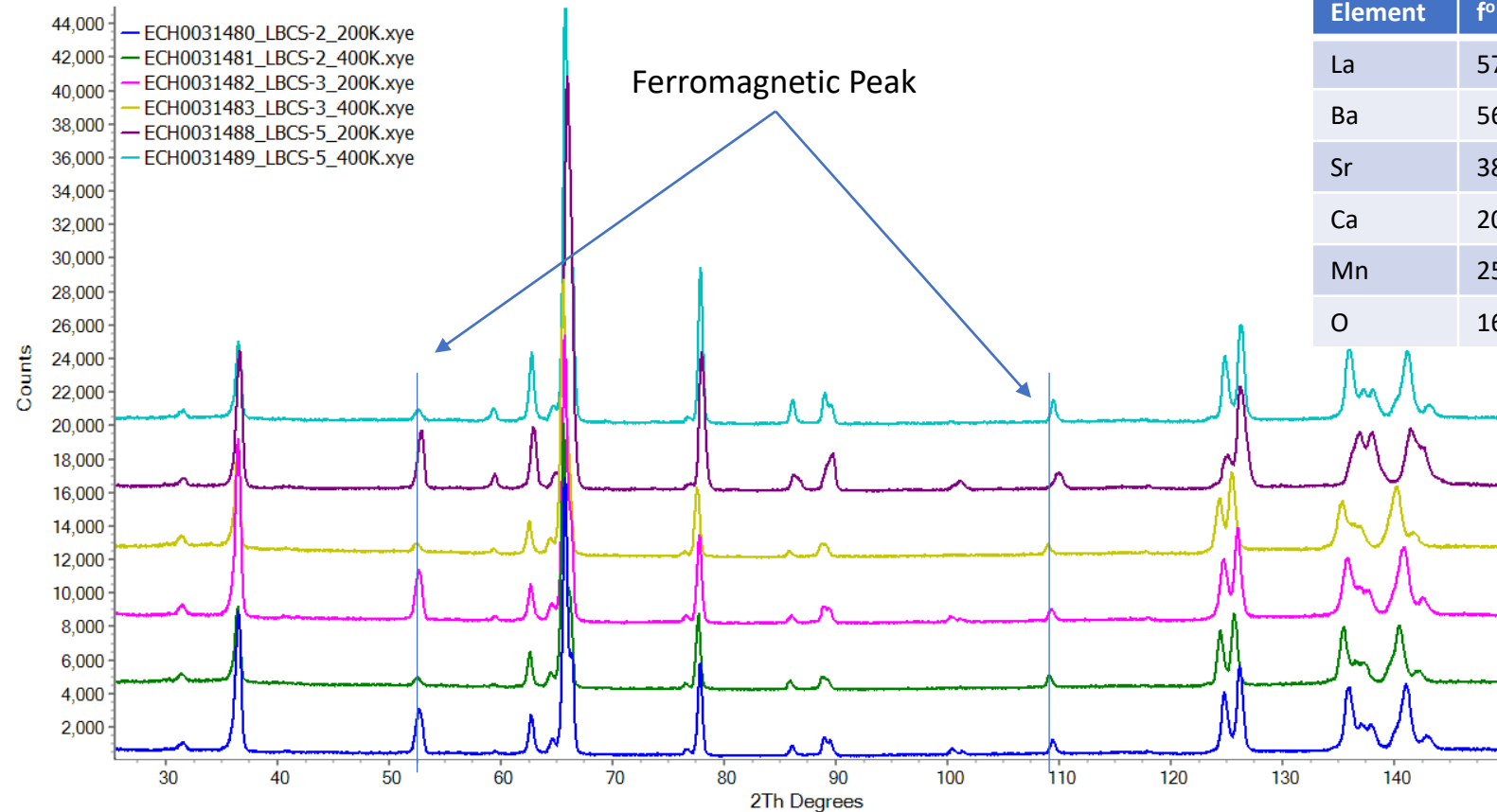
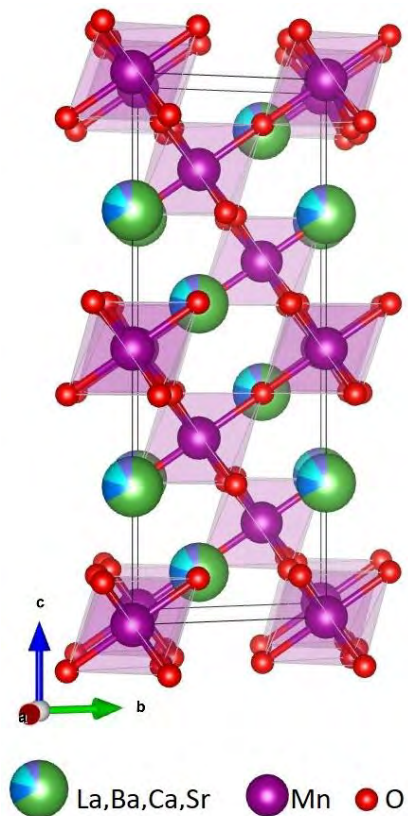
1. Maykel Manawan, Indonesia Defense Univ. & BRIN (Principal Scientist)
2. Max Avdeev, ANSTO – ACNS (Co-proposer)
3. Budhy Kurniawan, Universitas Indonesia (Co-proposer)
4. Dicky Rezky Munazat, Universitas Indonesia (Co-proposer)
5. Tony Wang, QUT Australia (Co-proposer)

## ❖ Fund sources:

1. Measurement : ANSTO – ECHIDNA (proposal no. P15398)
2. Transportation and Accommodation : Universitas Indonesia – Hibah PUTI Q1 (proposal no. NKB-465/UN2.RST/HKP.05.00/2023)

# Experiment Data - 01

We simultaneously investigate three divalent ion substitutions of Ba, Ca, and Sr in LaMnO<sub>3</sub> compound to complete the phase diagram and further explore the magnetic structure. Since the atomic scattering factor of La and Ba, which has a value of 57 and 56, it is impossible to distinguish La from Ba by X-ray diffraction. Thus, we use the neutron diffraction to exercise the partial atomic occupancy prior to La site substitution by the advantage of the neutron scattering length as shown in table below. We got 6-day experiment at ECHIDNA, total 9 samples with temperature above and below T<sub>c</sub>.



Element	$f^o$ (z)	b (fm)
La	57	8.42
Ba	56	5.07
Sr	38	7.02
Ca	20	4.70
Mn	25	-3.73
O	16	5.803

# The Team



UNHAN/BRIN\*, UI, UI



UNHAN/BRIN\*, BRIN, UI



UNHAN/BRIN\*, UI, QUT



UNHAN/BRIN\*, UI,  
QUT, ANSTO – will be  
taken on Monday 19  
June 2023

\*Candidate

FELLOW of  
Institute of Materials Structure Science (IMSS),  
High Energy Accelerator Research Organization (KEK),  
Neutron Division - Materials and Life Science Facility (MLF),  
Japan Proton Accelerator Research Complex (J-PARC)

# Neutron Diffraction Technique for Study of Lithium-ion Batteries

Teguh Yulius Surya Panca Putra, Ph.D.

Pusat Riset Material Maju (PRMM)

Organisasi Riset Nanoteknologi dan Material (ORNM)

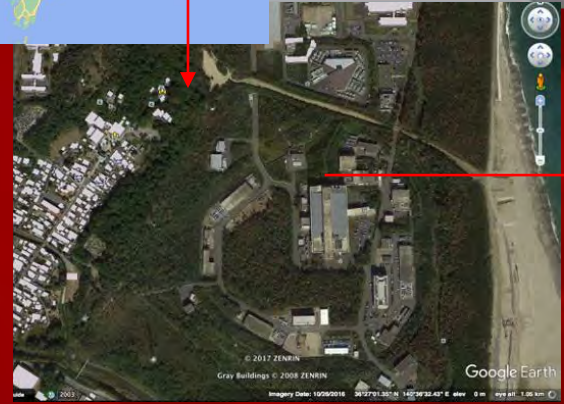
Badan Riset dan Inovasi Nasional (BRIN)



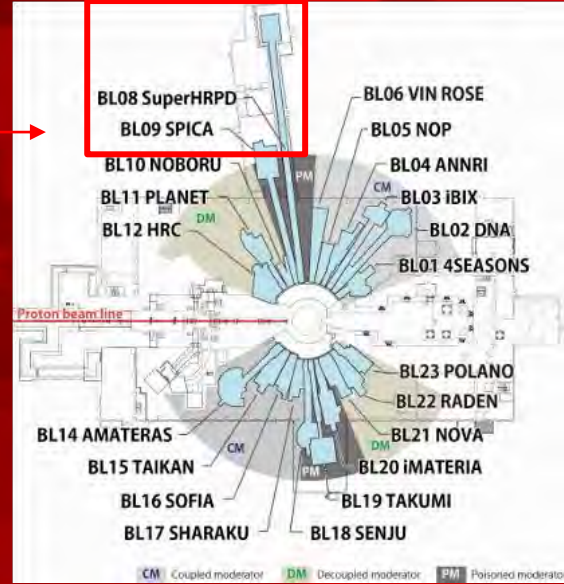


BRIN

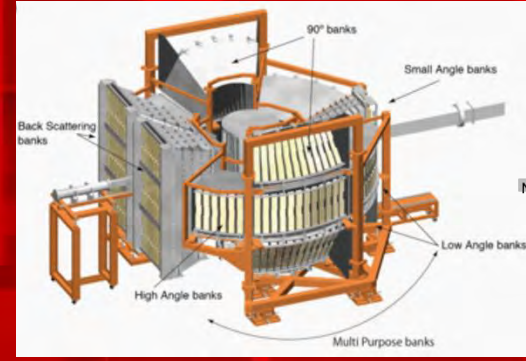
# KEK and J-PARC



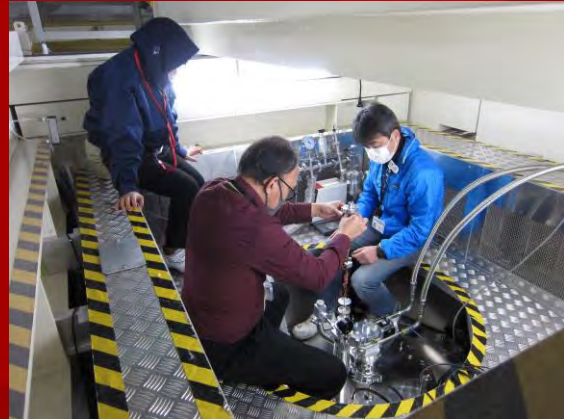
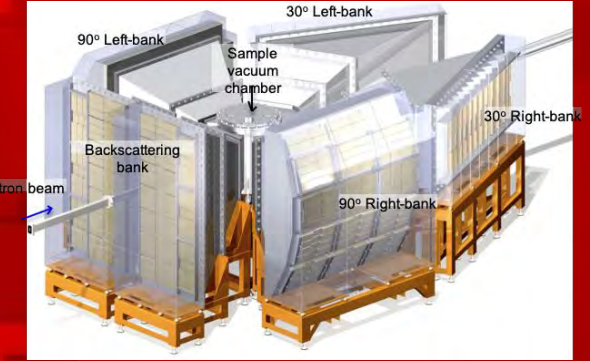
### J-PARC Spallation Neutron Source



### BL09 SPICA



### BL08 Super-HRPD





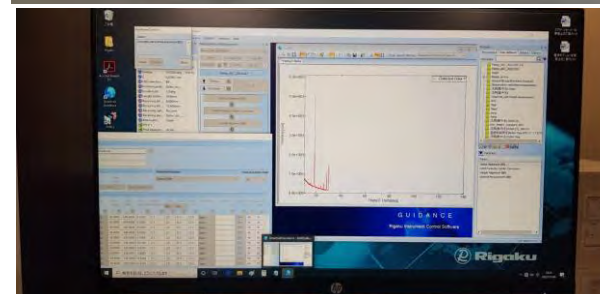
BRIN

# Activities

“Synthesis and structural study using neutron diffraction technique for the cathode material  $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$  with the addition of rare earth metals for lithium-ion batteries”

## Samples:

- Nd-doped LNMO
- Ce-doped LNMO
- $\text{LiO}_2 \cdot \text{P}_2\text{O}_5$
- NMC541
- NMC pouch cell



XRD exp.

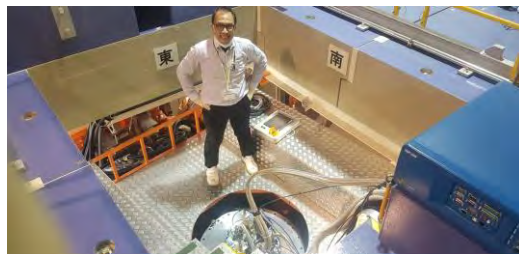




BRIN

# Experiments

## ROOM TEMPERATURES



## BL09 SPICA

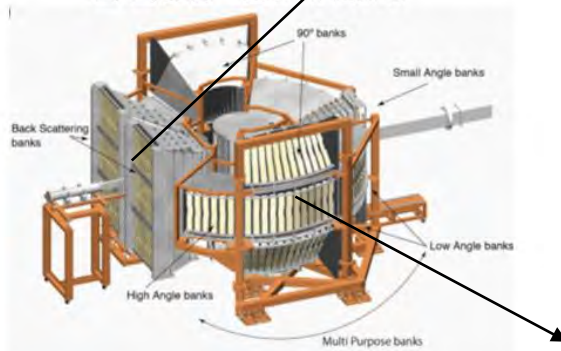
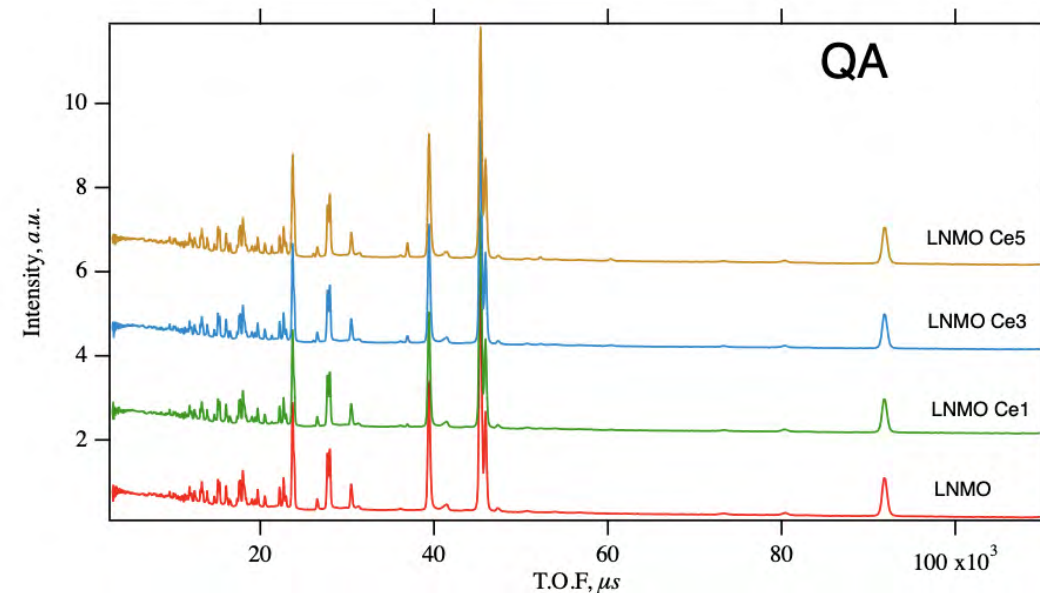
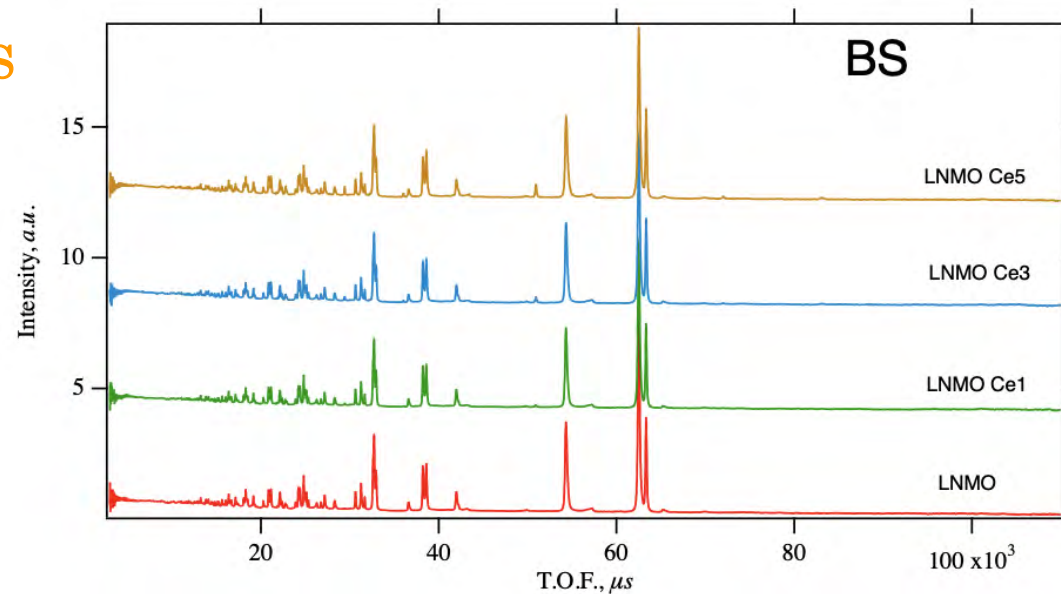


Figure 4. Neutron diffraction pattern of  $\text{LiNi}_{0.5-x}\text{Ce}_x\text{Mn}_{1.5}\text{O}_4$  ( $x = 0, 0.01, 0.03, 0.05$ ) of backscattering (BS) and  $90^\circ$  (QA) banks of SPICA BL09 at room temperature.

## Ce-doped LNMO



# National Battery Research Institute

**Prof.Dr.rer.nat.Evvy Kartini**

Founder of National Battery Research Institute (NBRI)

Commissioner PT Infiniti Energi Indonesia

Professor at National Research and Innovation Agency (BRIN)



# Fastmarkets : Asian Battery Materials Conference 2023

Singapore 1-3 May 2023





## Asean Battery Consortium, Battery Electric Vehicle Technology Conference

Nusa Dua, Bali, 9 May 2023



## International Expo

### ASEAN Largest EV Technology Exhibition

25-26 May 2023



### ASEAN largest Solar PV & BESS Technology Exhibition

25-26 March 2023

# Training of Trainers

2022

BATTERY TECHNOLOGY  
FROM UPSTREAM TO  
DOWNSTREAM



TOT: Battery Technology from Upstream to Downstream

Participants: Mining Industries

Grand Sahid Jaya, 14-15 December 2022





## TOT : Battery for Renewable Energy

For Polytechnic Lecturers



## International Battery School 2023: Battery for EV and its conversion

For Polytechnic Lecturers



National  
Battery  
Research  
Institute



Queen Mary  
University of London



2023 INTERNATIONAL  
BATTERY SUMMIT

Battery as a Core Technology  
for Accelerating Clean Energy Transition

Jakarta, 1-2 August 2023



2023 INTERNATIONAL  
BATTERY SUMMIT

## ABOUT SUMMIT

International Battery Summit 2023 will discuss the main topics regarding [the latest battery projects and industry in Indonesia](#) and internationally from upstream, midstream, to downstream. Also, the latest innovation & technology, policy & regulation, standardization as well as the track towards Indonesia becoming main player for global battery and electric vehicles industry. International Battery Summit 2023 offers all stakeholders related to battery and its ecosystem a great stage to present their achievements and provides a prominent opportunity to meet and connect among industry players and investors. The theme of this year summit is "Battery as a core technology for accelerating clean energy transition."



National  
Battery  
Research  
Institute



Queen Mary  
University of London

Presented by



# INTERNATIONAL BATTERY SUMMIT

Battery as a Core Technology for  
Accelerating Clean Energy Transition

Jakarta, 01-02 August 2023

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Co organized by



# THE FIRST INTERNATIONAL BATTERY SUMMIT

JAKARTA, INDONESIA

Supported by





2023 INTERNATIONAL  
BATTERY SUMMIT

# THE SESSIONS



**Mapping Indonesia's Potential Resources in  
Global Battery Supply Chain**

**Climbing-up Indonesia's nickel value chain  
through battery industry**

**Current State of Global Battery Manufacture  
Technology**

**Capturing Growth of Battery Industry in Emerging  
Electric Vehicles Ecosystem**

**Enabling Business Opportunity of Battery  
Technology in Renewable Energy Ecosystem**



# 2023 INTERNATIONAL BATTERY SUMMIT

## SPEAKERS



**Prof. Evvy Kartini**

Founder of National Battery Research Institute



**Prof. Alan J Drew**

Queen Mary University of London, United Kingdom



**Drs. Nanan Soekarna**

Chairman of Asosiasi Penambang Nikel Indonesia



**Prof. Neeraj Sharma**

Director of Australian Battery Society, Australia



**Prof. Rodrigo Martins**

President of International Union of Material Research Societies, Portugal



**Rene Schroeder**

Executive Director of European Automotive and Industrial Battery Manufacturers (EUROBAT), Belgium



**Prof. Arief S Budiman**

Director of Oregon Renewable Energy Center, USA



**Dr. Agus Gumiwang K.**

Minister of Industry, Republic of Indonesia



**Prof. Jun Liu**

Director of the Innovation Center for Battery 500 Consortium, The United States of America



**Prof. Worawat Meevasana**

Professor of Suranaree Institute of Technology, Thailand



**Dany Amrul Ichdan**

Director of Institutional Relation, MIND ID



**Prof. Giichiro Uchida**

Professor of Meijo University, Japan



**Toto Nugroho P.**

President Director of Indonesia Battery Corporation (IBC)



**Prof. Robert M. Toressi**

Professor of University of São Paulo, Brazil

AND MANY MORE!



# THE EVENT



Grand Sahid Hotel,  
Jakarta, Indonesia



1-2

August  
2023



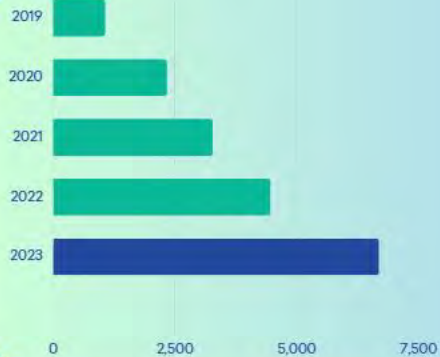
- International Battery Summit 2023
- Launching of Indonesia's Battery Outlook 2023 and NBRI's Books
- Exhibition of Battery Ecosystem for Renewable Energy and Electric Vehicles
- International Conference on Battery for Renewable Energy and Electric Vehicle (ICB-REV) 2023
- Youth Ideas Competition (YIC) 2023





Reaching  
35 Countries

Indonesia, Australia, Singapore, India, Brazil, Poland, Portugal, United Kingdom, Algeria, United States of America, Canada, Japan, South Korea, Thailand, Belgium, Norway, Bangladesh, Brazil, China, Ghana, Iraq, Malaysia, Morocco, Nigeria, Pakistan, Philippines, Russia, Rwanda, Taiwan, Tunisia, Turkey, French, Hongkong, Egypt, Vietnam



Projected Audience



6675

# 2023 INTERNATIONAL BATTERY SUMMIT

## VALUE PREPOSITION



**Exclusive networking** on battery industry and its ecosystem



**Comprehensive insight** on current state of battery technology from upstream to downstream



**Prominent discussion** on battery forecast and its prospect



# Report from Japanese Society for Neutron Science

**Yoshie.OTAKE**

**RIKEN**

**T.Sato**

AONSA EC meeting  
June 17, 2023

波紋

The Japanese Society for Neutron Science



# 2023- New president with New policy

President: Yoshie OTAKE(RIKEN)

From the JSNS Home page

## Promoting “Science diversity” and making societies **more visible**

Promote 'science diversity' to encompass diverse actors, such as basic/applied, large/small (compact) facilities, user/instrument scientists (researchers/technicians), science/engineering/humanities and social sciences.



The screenshot shows the homepage of the JSNS (Japan Society for Neutron Science). At the top, there is a navigation bar with links for Home, Society, Membership, Using Neutrons, Intro, Publications, This Year's Summary, Society Activities, and More. The main content area is titled "日本中性子科学会 会長挨拶" (Message from the President of JSNS). Below the title is a portrait of the president, Yoshie Otake. The main heading of the message is "「サイエンス・ダイバーシティの推進と学会の見える化の実現」" (Promotion of Science Diversity and Realization of Making the Society Visible). The text of the message discusses the society's goals, its history since 2001, and its commitment to promoting science diversity and making the society more visible. It mentions the society's focus on basic/applied research, large/small facilities, user/instrument scientists, and science/engineering/humanities and social sciences. The message also highlights the society's efforts to promote science diversity and make the society more visible, and its commitment to promoting science diversity and making the society more visible.

# 2023 Board of JSNS (Apr. 2023- Mar. 2024)

President: Yoshie OTAKE(RIKEN)

Green color: Industry

Red color: Lady

## Members of Council (16)

### 2022-2023 fiscal year

Taka-hisa Arima(Univ. of Tokyo)  
Masaki Fujita (Tohoku Univ.)  
Yoshiaki Kiyanagi (Nagoya Univ.)  
Kenji Nakajima ( JAEA/J-PARC)  
Taku Sato (Tohoku Univ.)  
Hideki Seto (KEK)  
Masaaki Sugiyama (Kyoto Univ.)

### 2023-2023 fiscal year

Osamu Yamamuro(Univ. of Tokyo)

## Board of Administration

### Secretary

Kazuki Ohishi (CROSS)  
Rintaro Inoue (Kyoto Univ.)

### Treasurer

Sora Takanasi (RIKEN)  
Noriki Terada (NIMS)

### Public-Relations

Yuya Doi (Nagoya Univ.)  
Hiroshi Akiba (Univ. Tokyo)

### Newly elected (Nov. 2022):

### 2023-2024 fiscal year

Seiko Kawamura (JAEA)  
Takashi Kamiyama (Hokkaido Univ.)  
Takuji Kume (Kao Corporation)  
Kenji Ohyama (Ibaraki Univ.)  
Toshiya Otomo (KEK)  
Hitoshi Endo (KEK)  
Kazuhisa Kakurai (Tohoku Univ.) )  
Kazuaki Iwasa (Ibaraki Univ.)

### Events Coordination

Shinichi Takata (J-PARC)  
Takashi Honda (KEK)  
Hirotaka Sato (Hokkaido Univ.)

### Communication

Shinichiro Asai (Univ. Tokyo)  
Minoru Soda (Ochanomizu Univ.)

### Publication

Yoshihisa Fujii (Mie Univ.)  
Yu Hirano (QST)

# Current Status of JSNS and Events

## Membership (22 May 2023)

569 members (including 49 students)

In addition 35 Senior members (Total of 604)

26 supporting members

## Events from the last EC meeting

- **The 22<sup>st</sup> Annual Meeting of the Japanese Society for Neutron Science was held in person; October 26-28, 2022 in International Convention Complex Makuhari Messe, hosted by the Institute for Solid State Physics (ISSP), University of Tokyo. Meeting Chair: Prof. Osamu Yamamuro; Program Chair: Prof. Takatsugu Masuda**

- **The 6<sup>th</sup> Neutron and Muon School @ J-PARC MLF was held on line (December 12-16, 2022 School Master: Prof. K. Kakurai; Executive Committee Chair: Dr. R. Kiyonagi**

(in planning)

- **The 23<sup>st</sup> Annual Meeting of the Japanese Society for Neutron Science will be held in person; September 13-14, 2023 Hokkaido University, hosted by Hokkaido University Meeting Chair: Prof. Masato Ohnuma; Program Chair: Prof. Takashi Kamiyama**

- **The 7<sup>th</sup> Neutron and Muon School @ J-PARC MLF, JRR3 will be held in person, and hibride. (December 12-16 2023)**

# The 22<sup>th</sup> Annual Meeting of the Japanese Society for Neutron Science

**October 26-28, 2022 in International Convention Complex  
Makuhari Messe, hosted by the Institute for Solid State Physics  
(ISSP), University of Tokyo**

**Meeting Chair: Prof. Osamu Yamamuro (Univ. Tokyo); Program  
Chair: Prof. Takatsugu Masuda (Univ. Tokyo)**

Participants (registered) : 241

Including 35 students

Oral presentations: 54

Poster presentations: 92

## **Plenary Speakers**

**Prof. Kozo Ito (Univ. Tokyo)**

**Prof. Hidekazu Tanaka (Titech)**

## **Invited Speakers**

**Prof. Masaaki Sugiyama (Kyoto Univ.)**

**Prof. Takafumi Yamamoto (Titech)**

**Prof. Shinichiro Seki (Univ. Tokyo)**

## **JSNS General Assembly on the 1<sup>st</sup> day of the meeting**

**Reports and discussion on the society organization business**

**JSNS Awards recipients were honored and presented their award lectures**

Selection Committee Members chaired by Prof. M. Kataoka (NAIST)

Prof. Y. Saito (Kyoto Univ.), Prof. Y. Endo (Tohoku Univ.), Prof. Y. Uwatoko (Univ. Tokyo),

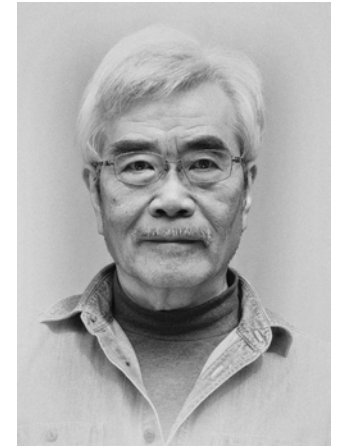
Prof. Y. Sugawara (Toyota Physical and Chemical Institute & Kitasato Univ.)

# JSNS Awards

## The JSNS Distinguished Achievement Prize

Masashi Iizumi

JAEA  
*“Contribution to Japan's early neutron scattering research, the construction of the JRR-3 research reactor, and the realization of the Japan-U.S. Cooperative Research Program”*



## The JSNS Science Prize

Yoshie Otake

Riken Center for Advanced Photonics  
Neutron Beam Technology Team

*‘Development and dissemination of an infinitely lightweight compact neutron source and infrastructure non-destructive measurement technology’*



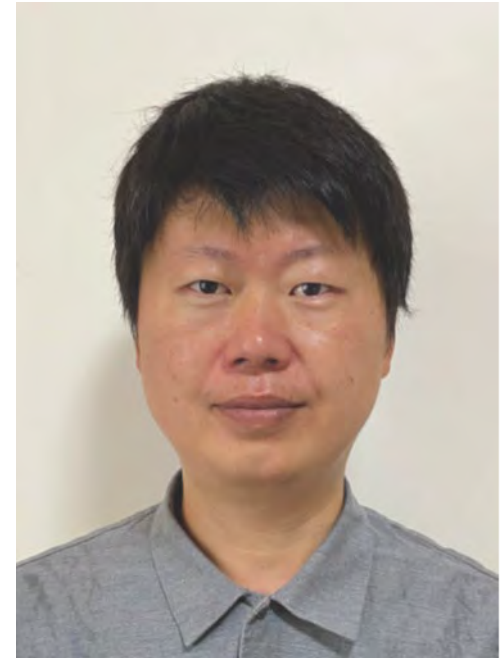
# JSNS Awards

## The JSNS Young Researcher Prizes

Gong Wu

J-PARC Center, Japan Atomic Energy Agency

*'Microstructural control and mechanical properties of advanced materials using pulse neutron diffraction'*





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The 21<sup>st</sup> Annual Meeting of the Japanese Society for Neutron Science was held virtual; December 1-3, 2021 in Kumatori, hosted by the Institute for Integrated Radiation and Nuclear Science (KURNS), Kyoto University  
Meeting Chair: Prof. Masaaki Sugiyama; Program Chair: Prof. Masahiro Hino

**The 6<sup>th</sup> Neutron and Muon School @ J-PARC MLF was held on line (December 12-16, 2022)**

**School Master: Prof. K. Kakurai; Executive Committee Chair: Dr. R. Kiyanagi**

## (in planning)

- The 23<sup>st</sup> Annual Meeting of the Japanese Society for Neutron Science will be held in person; September 13-14, 2023 Hokkaido University, hosted by Hokkaido University
- The 7<sup>th</sup> Neutron and Muon School @ J-PARC MLF, JRR3 will be held in person, and hibride. (December 18-22 2023)

# The 6<sup>th</sup> Neutron and Muon School



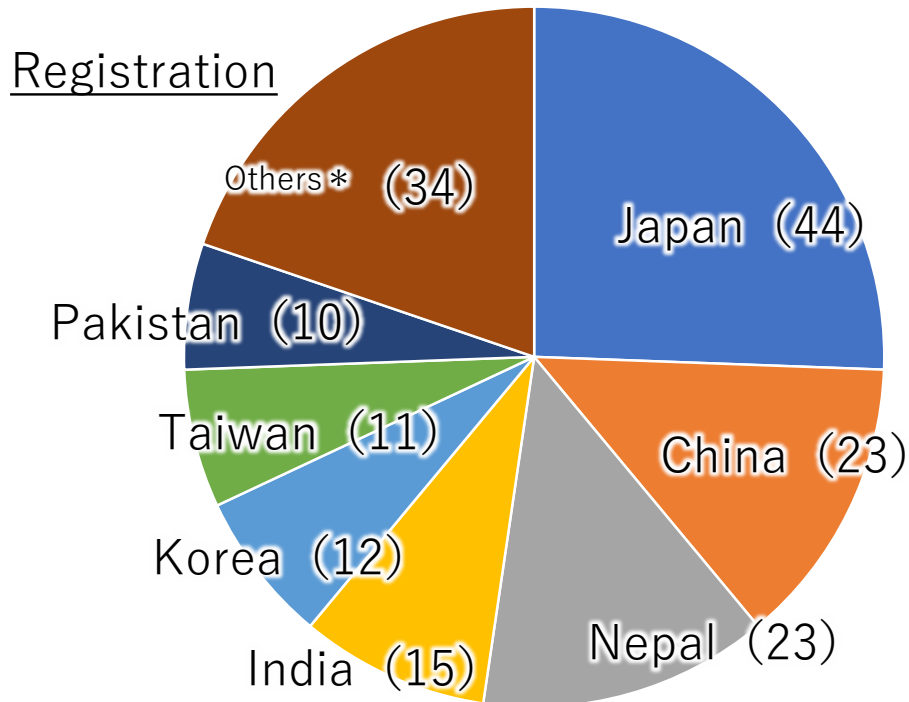
# The 6<sup>th</sup> Neutron and Muon School

Date: December 12-16, 2022

Lectures: online & on-site

Hands-on Experiment: on-site

Registrations: 175 for lectures and 18 for hands-on experiment



\* Sweden, USA, Italy, Russia, Canada, Germany etc...

**The 6th Neutron and Muon School**

**12-16 December 2022**  
**hybrid (lecture: online & on-site, hands-on: on-site)**  
**J-PARC MLF & JRR-3 (Tokai, Ibaraki, Japan)**

The School provides lectures and practical training for newcomers to neutron and muon beam research from across the fields of physics, chemistry, biology, materials science and more. The lectures cover most of the basic neutron and muon methodologies applied to material research. In the practical hands-on training, participants will experience actual experiments and data analyses on neutron/muon instruments at J-PARC MLF or JRR-3.

For more information:  
URL: <https://mlfinfo.jp/sp/school/6th-nms/about.html>

E-mail: [nm-school@cross.or.jp](mailto:nm-school@cross.or.jp)



# Lectures

<b>Introduction to Neutron Science :</b>	K. Kakurai (JSNS, CROSS)
<b>Introduction to Muon Science:</b>	K. Kubo (JMMS, IUC)
<b>Neutron Diffraction:</b>	V. Peterson (ANSTO)
<b>Neutron Imaging:</b>	H. Sato (Hokkaido U.)
<b>Neutron physics:</b>	M. Kitaguchi (Nagoya U.)
<b>Muon physics:</b>	H. Iinuma (Ibaraki U.)
<b>Small Angle Neutron Scattering:</b>	E. Gilbert (ANSTO, U. of Queensland)
<b>Quasi-elastic Scattering:</b>	M. Nagao (NIST)
<b>Inelastic Scattering:</b>	S. Itoh (KEK)
<b>Neutron Reflectometry:</b>	T. Saerbeck (ILL)
<b>Muon Spin Rotation:</b>	K. Kojima (TRIUMP)
<b>Muonic X-ray:</b>	K. Ninomiya (Osaka U.)
<b>Advanced science with neutrons:</b>	H. Arai (TITech)

Lecturers: 13 (Oversee: 5)

# Hands-on training

## Inelastic Neutron Scattering

- > [BL01: 4SEASONS, MLF](#)
- > [BL02: DNA, MLF](#)
- > [BL14: AMATERAS, MLF](#)

## Diffraction

- > [BL09: SPICA, MLF](#)
- > [BL19: TAKUMI, MLF](#)
- > [FONDER, JRR-3](#)

## SANS/Reflectometry

- > [BL17: SHARAKU, MLF](#)

## Elemental analysis/Imaging

- > [BL22: RADEN, MLF](#)

## Muon

- > [S1: ARTEMIS, MLF](#)
- > [U1A: Muon U1, MLF](#)

実習装置	First	middle	Family	Affiliation	Position
BL01	Takayuki		Nishiyama	Kyoto University	Researcher
	Hiroki		Kobayashi	The University of Tokyo	Master student
BL02	Tomochika		Sogabe	Hiroshima University	Master student
BL09	Utami		Widyaiswari	Hokkaido University	Researcher
	YOUNGHU		SON	Kyungpook National University	PhD student
	Woonghee		Cho	Seoul National University	Master student
	Shingo		Takahashi	Ibaraki University	PhD student
BL14	Jialiang		Jiang	Osaka Metropolitan University	Master student
	Yeochan		An	Seoul National University	Master student
	Cole	Gresham	Teander	North Carolina State University	Master student
	Rina		Takano	電通大	PhD student
BL19	Li		Zhu	City University of Hong Kong	Postdoc
	DIGVIJAY		SINGH	National Institute for Materials Science (NIMS)	Postdoc
SANS-U	Yoshinobu		Hirata	Gifu university	PhD student
	Jakkrit		Prateepkaew	Hokkaido University	Master student
S1	Anita	Eka	Putri	RIKEN	Student
	Taiki		Shiotani	Kyoto University	Master student
U1A	Yota		Komiyama	Sophia University	Master student

# The 6<sup>th</sup> Neutron and Muon School

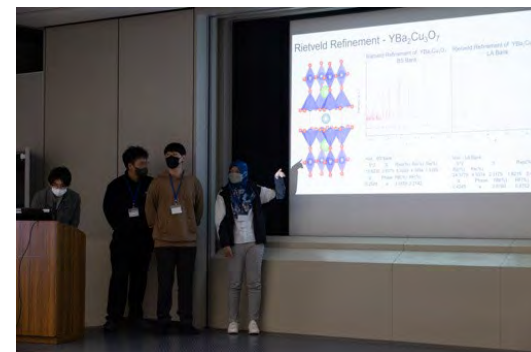
## Lecture



## Hands-on training



## Presentation



## Self-introduction



## Lunch & Dinner



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Meeting Chair: Prof. Osamu Yamamuro; Program Chair: Prof. Takatsugu Masuda

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# Report from the Korean Neutron Beam Users Association

The 30<sup>th</sup> AONSA EC meeting  
Online via ZOOM  
2023/06/17



Sungkyun Park (Pusan Nat'l Univ.)  
Sooyoel Lee (Chungnam Nat'l Univ.)

AONSA EC Meeting, June 17, Time 14:00-18:00 (Sydney time), 12:00 – 16:00 (Beijing), 13:00-17:00 (Tokyo).

<https://uow-au.zoom.us/j/82750790875?pwd=MDZPeklGQI9FQXFtVjlqTHRmdkVxZz09>

# Korean Neutron Beam Users Association

Local office (tentative)
NURI @ PNU

President
Sungkyun Park (PNU)

Auditor
Kwanwoo Shin (Sogang U)

Advisor
Sungmin Choi (KAIST) Sungil Park (KAERI)

## Organization Committee (2023-2024)

General Secretary
Soo Yeol Lee (Chungnam Nat'l U)

Public relation
Soo-Hyung Choi (Hongik U)

Media related
Jonngsoon Kim (SKKU)

Accounting
Taw-Hwan Kim (Jeonbuk Nat'l U)

International Liaison
Jae-Ho Chung (Korea U) – AONSA Jitae Park (FRM-II) – EU Young June Kim (Toronto U) – N. America

Scholar/Editing
Jaesung Koo (Chungnam Nat'l U) Myungchul Choi (KAIST)

Business/Operation
So Youn Kim (SNU) Jeong Hwa Kim (Samsung) Seung wook Lee (PNU)

Facility Liaison
Youngsoo Han (KAERI)

# Korean Neutron Beam Users Association

## ◆ Issues

- Increase activity in KNBUA
- Finding a stable facility for neutron experiments in Korea
- ...

# Korean Neutron Beam Users Association

## ◆ Upcoming plans

- ❑ Summer workshop (2023.06.27-28)
  - ❖ Agenda: Rebuilding KNBUA activities post COVID-19
  
- ❑ Preparing a funding proposal (3-year) for travel support (for international beamtime users and collaboration)
  
- ❑ Finding a collaboration facility (beamline) for KNBUA → proposing funding to the Korean government
  
- ❑ SCES 2023 [<https://www.sces2023.org/>] @ July 2 -7, 2023

## A brief report from the Russian neutron scattering society (ROSNEUTRO)

A.F. Gubkin

*M.N. Mikheev Institute of metal physics, Ekaterinburg, Russia*

*Institute of nuclear materials, SC Rosatom*



Russian  
Neutron Scattering  
Society

[www.rosneutro.ru](http://www.rosneutro.ru)

## ROSNEUTRO team since 2022

President: Dr. A.F. Gubkin, MIMP

Vice President: Dr. E.A. Kravtsov, MIMP

Secretary: Dr. N.V. Proskurnina, MIMP

### Executive committee:

Dr. M.V. Avdeev, JINR, Dubna

Prof. A.M. Balagurov, JINR, Dubna

Dr. D.P. Kozlenko, JINR, Dubna

Dr. A.V. Varivtsev, INM SC Rosatom, Zarechniy

Prof. V.V. Voronin, NRCKI - PNPI, Gatchina

Prof. S.V. Grigoriev, NRCKI - PNPI, Gatchina

Prof. A.I. Kurbakov, NRCKI - PNPI, Gatchina

Dr. V.T. Em, NIC KI, Moscow

Prof. S.V. Rogozhkin, MEPHI, Moscow

IBR-2 research reactor

IVV-2M reactor, SC Rosatom

PIK research reactor

IR-8 research reactor

User community

## Neutron facilities:

I. JINR, Dubna IBR-2, 1984 / 2012, 2 MW	15 instruments TOF-technique	<b>Temporarily shut down</b>
II. NRCKI, Moscow IR-8, 1957 / 1981, 8 MW	6 instruments $\lambda = \text{const}$	<b>Operating</b>
III. IMP, Yekaterinburg IVV-2M, 1966 / 1982, 15 MW	2 instruments 1 instrument $\lambda = \text{const}$	<b>Operating</b> <b>Temporarily shut down</b>
IV. TPU, Tomsk IRT-T, 1967/2020, 6 MW	2 instruments under construction $\lambda = \text{const}$	

## Ongoing commissioning

V. PNPI, Gatchina PIK 100 MW $\lambda = \text{const}$	7 MW power reached in February 2022 5 instruments commissioned 20 instruments under construction
---	--

## Members:



**270** registered members in ROSNEUTRO



Newcomers from Tomsk are expected to  
join ROSNEUTRO



## EVENTS:

Council on neutron scattering at the [Russian Academy of Sciences](#) has been reorganized:

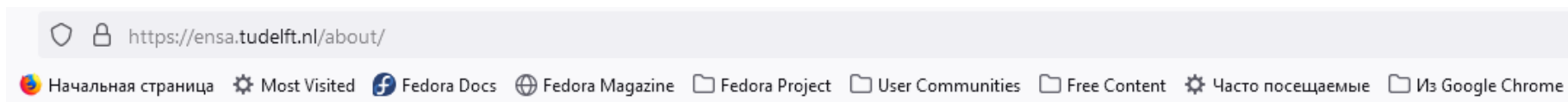
Main tasks:

1. Roadmap of neutron scattering science in Russia
2. Annual reports for the Russian Academy of Sciences on the progress in neutron science



*Russian Academy of Sciences*

## Relations with ENSA:



## Temporary Exclusion of Russian Delegate to the ENSA meetings

- 1. Should ENSA accept the decision by ECNS 2023 organizers to exclude participation by scientists with Russian affiliation?*
- 2. Should ENSA communicate on their web-site its position concerning the decision by ECNS 2023 organizers to exclude participation by scientists with Russian affiliation?*
- 3. Should ENSA temporarily suspend for 6 months the participation of Russian delegates to the ENSA meetings?*

*The outcome of the voting resulted in ENSA deciding 'yes' to each of the 3 posed questions.*



The European Neutron  
Scattering Association

## Conference:

### About RNIKS-2023 conference

The Conference «Neutron Scattering in Condensed Matter Research» (RNIKS-2023) continues the tradition of all-Russia scientific meetings where use of neutron scattering methods in the modern science is discussed. For more than half a century, RNIKS has been the largest national platform for discussing the latest achievements in the field of neutron instrumentation, crystal and magnetic structure phase transitions, dynamical properties and elementary excitations in solids, biological systems and objects of cultural heritage, as well as fundamental properties of neutrons.

**RNIKS-2023 will be held from 25 to 28 September, 2023 in Yekaterinburg.**

**~200 participants**

### Organizers:



M. N. Mikheev Institute of Metal Physics  
of Ural Branch of Russian Academy of Sciences



CONFERENCE «NEUTRON SCATTERING IN CONDENSED MATTER RESEARCH» (RNIKS-2023)  
Ekaterinburg, 25-28 September 2023  
rniks2023@imp.uran.ru

#### CHAIRMANS

##### Conference Chairman:

M.V. Kovalchuk  
(National Research Center «Kurchatov Institute», Moscow)

##### Chairman of the Organizing Committee:

N.V. Mushnikov  
(IMP UB RAS, Ekaterinburg)

##### Program committee co-chairs:

V.V. Ustinov  
(IMP UB RAS, Ekaterinburg)  
A.E. Blagov  
(National Research Center «Kurchatov Institute», Moscow)

#### ORGANIZERS

- National Research Center «Kurchatov Institute»
- M. N. Mikheev Institute of Metal Physics, Ural Branch of Russian Academy of Sciences
- Ural Federal University named after the first President of Russia B. N. Yeltsin
- JSC Institute of Nuclear Materials
- Russian Neutron Scattering Society
- Ural Branch of Russian Academy of Sciences

#### TOPICS

- Crystal structures and elementary excitations
- Magnetic structures and interactions
- Magnetism and polarized neutrons
- Strongly correlated electronic systems
- Non-crystalline materials, polymers and liquids
- Surfaces, thin films and multilayered structures
- Functional and construction materials, radiation damage physics
- Applied research (energy, environment, geophysics, cultural heritage)
- Fundamental research with neutrons
- Neutron sources, instruments and experimental techniques
- Neutron detectors
- Neutron scattering and complementary experimental techniques

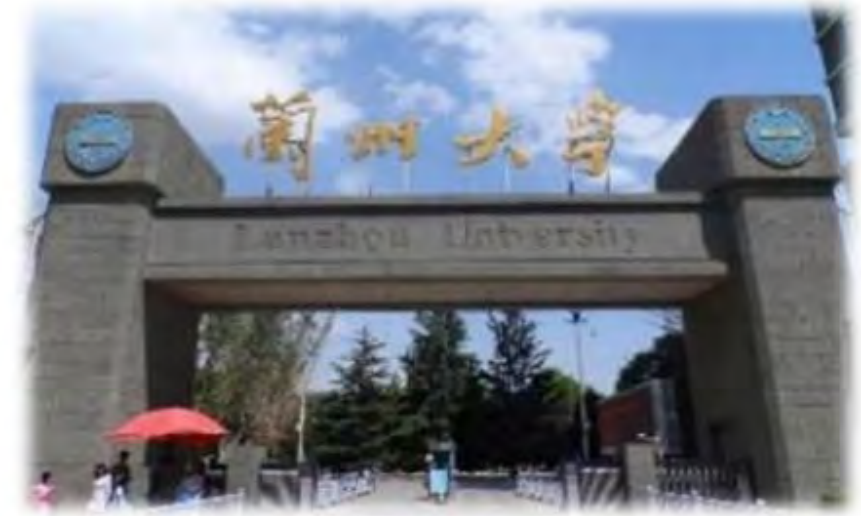


#### КОНТАКТНАЯ ИНФОРМАЦИЯ

M.N. Mikheev Institute of Metal Physics, Ural Branch of Russian Academy of Sciences  
18 S. Kovalevskaya Street, Ekaterinburg, 620108, Russian Federation

• Phone: +7 (343) 378-38-10 • Fax: +7 (343) 374-52-44 • E-mail: rniks2023@imp.uran.ru





## 29<sup>th</sup> International Seminar on Interaction of Neutrons with Nuclei ISINN-29

«Fundamental Interactions & Neutrons, Nuclear Structure,  
Ultracold Neutrons, Related Topics»

**148** participants

Online + Onsite (Dubna, Russia and Lanzhou, China)

May 29<sup>th</sup> - June 2<sup>nd</sup>, 2023



## Conference on Small-Angle Neutron Scattering 21-23 June 2023 Gatchina, St. Petersburg, Petersburg Nuclear Physics Institute

The Conference on Small-Angle Neutron Scattering (MURomets - 2023) deals with the study of nano-objects and nanostructures by means of neutron and X-ray scattering methods. The Conference is organized by Petersburg Nuclear Physics Institute (NRC "Kurchatov Institute" - PNPI). The entire series of conferences is closely related to the construction of the high-flux reactor PIK at the NRC "Kurchatov Institute". - PNPI. It is also timed to coincide with bringing the reactor PIK to the MW power and equipping the reactor with experimental stations. The conference is no less important for stimulating the activities of the Russian scientific community in the field of small-angle neutron scattering and neutron reflectometry.

**91 participants**

## Summary:

- ❖ Council on neutron scattering at the Russian Academy of Sciences has been organized
- ❖ Tomsk polytechnic university is about to join Russian neutron scattering society
- ❖ Cooperation between ROSNEUTRO and ENSA is temporarily suspended by ENSA
- ❖ All-Russia conference on neutron scattering RNIKS-2023 will be hosted in Yekaterinburg, 25-28<sup>th</sup> September 2023

Thank you for your attention!