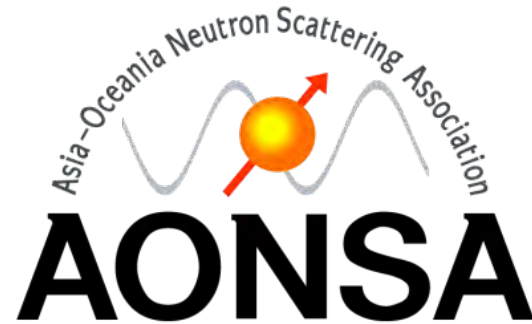


AONSA EC Meeting Financial Report



Hsiung Chou (Treasurer of AONSA, TWNSS)

2022-06-18

Video Meeting

2021-11-19

AONSA Annual fee (JPY) - by category		
	2021/06/24 2021/11/15	2021/11/15 2022/06/18
Category	Income	Income
Previous Balance	10,758,506	10,972,447
Annual fee	225,560	1,421,060
Donation	112,780	697700
interest	NA	48
Total amount	11,096,846	13,091,255
Category	Expense	Expense
AONSA travels		
AYRF 2020		
EB & domain charge	22,524	15086
Bank handling charge	1,770	1540
Transfer to Prize Fund		697700
WebRenew		5238
other	100105	
Total amount	124,399	719564
Total Balance	10,972,447	12371691

Annual Fee (\$2000) :
NSSI, ANBUG, CNSS, TWNSS, NSSI, JSNS
KNBUA, INSS, Tailand, Malaysia

Donations (\$1000Xn):
ANBUG:3000; CNSS:1000; TWNSS:1000; JSNS: 1000

~\$91,669 (←\$98,200 of 2021)

$$\frac{JPY}{USD} = 134.96$$

AONSA Prize Fund				
Date (Y/M/D)	Item	Income (JPY)	Expense (JPY)	Balance (JPY)
2021/11/11	Previous balance in 2019	4,372,347		4,372,347
2022/02/21	Interest	18		4,372,365
2022/05/17	Transfer from Office Account	570,480		4,942,845
2022/06/07	Transfer from Office Account	127,220		5,070,065
	Total amount	5,070,065	0	5,070,065

~\$37,567 (←38770 of 2021)

$$\frac{JPY}{USD} = 134.96$$

AONSA **future** (NEXT 6 MONTHS) **budge** plan

Income

AONSA Annual Fee: \$4000
Interest: a few
Donation: \$~1000

Expense

YRF \$3000
12th Neutron Sch \$3000
AONSA prize \$5000+**???**
EB charge: \$ ~100
Bank Handling: \$ ~100

OFFICE ~ \$-(1,200+11000)

PRIZE ~ \$+1,000

AONSA Prize Expenses

Prize: \$5000
Medal: \$252
Registration Fee: \$600
Airfare: \$7800 (X2)
Hotel: ~\$150X7 = \$1050
Local Travel: ~??

Subtotal >\$14702 (for X2)
or >\$10802 (for X1)

Prize balance: **\$37,567**

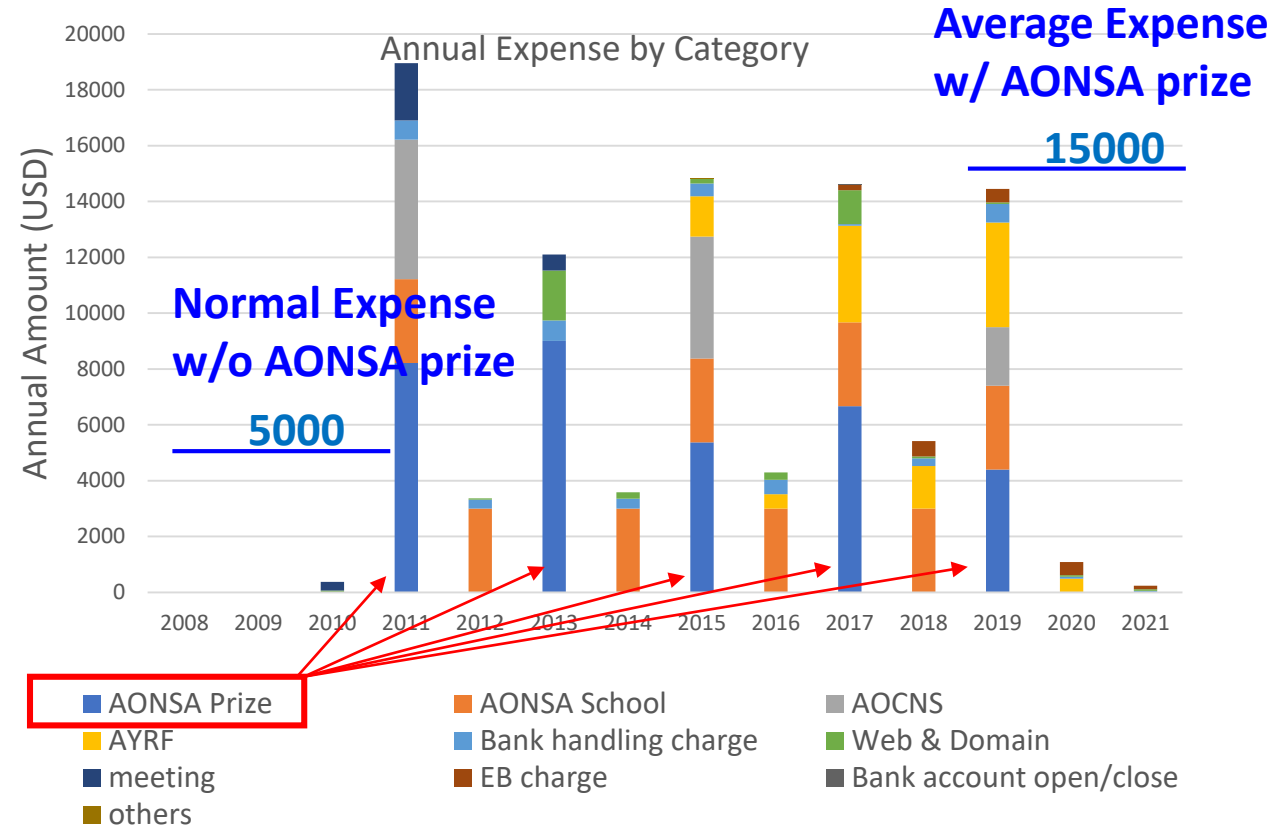
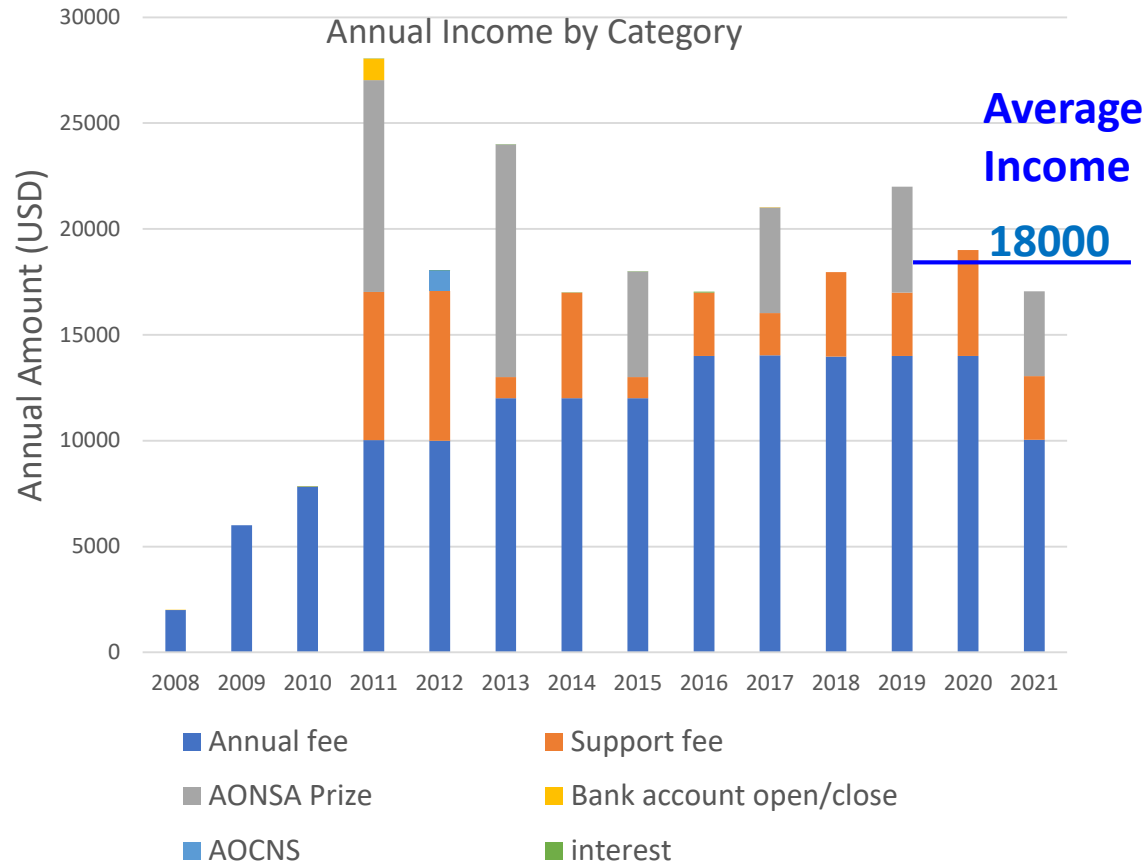
Prize expenses future plan:
Prize: \$5000
Rest : max=\$6000

EC decision

Mid-career

Award: \$2000 (?)
Number: X2 (?)
Subtotal ~4000+Medals

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.



AONSA EC Meeting
ZOOM, 2022/ 06/ 18



Public Relations Report

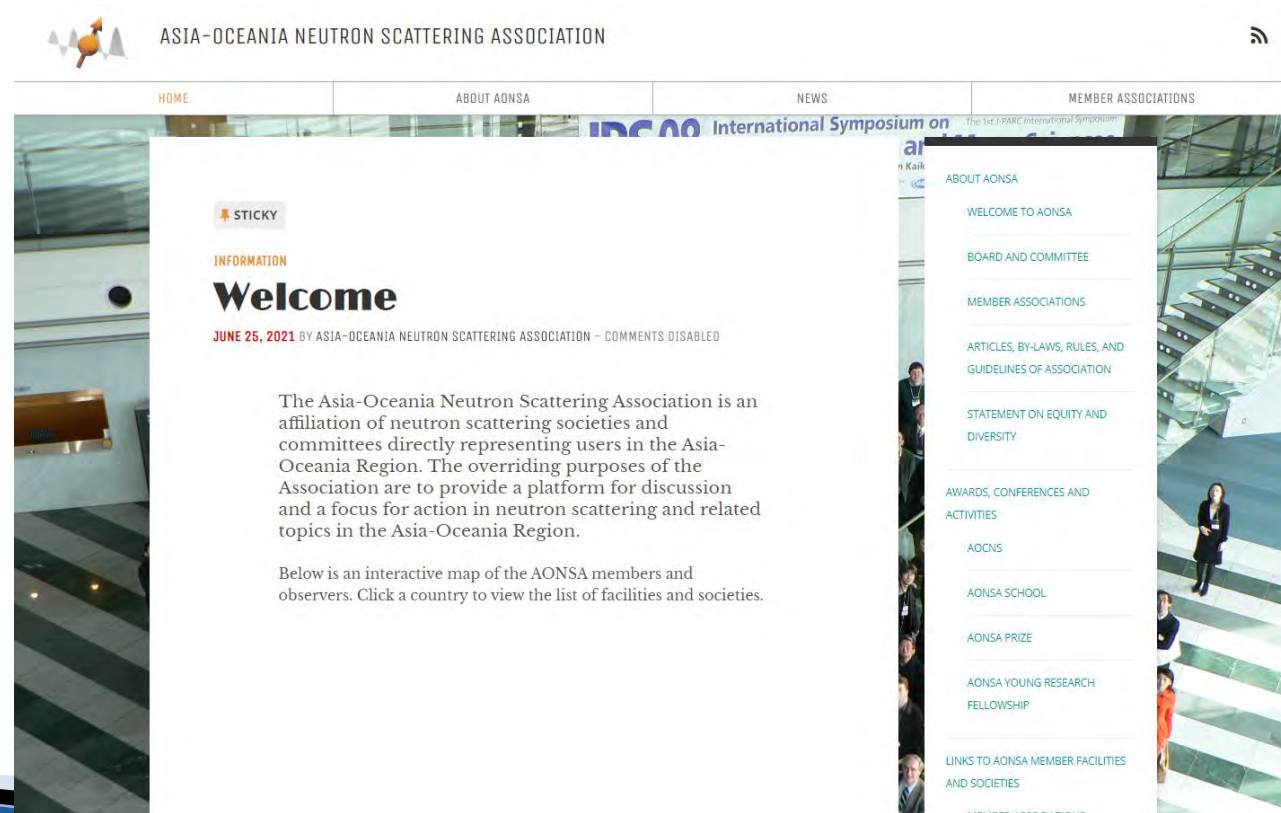
Jae-Ho Chung,
Korea University / KNBUA

Handover of Public Relations role

◆ Webpage management

- ❖ New AONSA website hosted by Godaddy.com (<http://aonsa.org/>) and supported by ANSTO
- ❖ Please send me feedback/recommendations/images/photos!

◆ Newsletter



Updates on the website

◆ AONSA School page

- ❖ Updated on the 12th AONSA neutron school
- ❖ Added the summary report of the 11th AONSA neutron school
- ❖ Note: The summary report of the 10th AONSA NS at ANSTO is missing.

◆ AONSA Prize page

- ❖ AONSA Prize 2021 result posted and linked.
- ❖ AONSA Prize 2023 soon to be announced.

◆ AOCNS page

- ❖ 4th AOCNS dates posted

Past updates

- 2021/07/05 – Minutes from 21st FDM
- 2021-08-6 – Young research fellows and AONSA prize rules /call
- 2021-11 - Installed Duplicator plugin and complete backup (2021-Nov-20.zip in FTP)
- 2021-11 Updated WordPress to version 5.8.2 (Security update)



Call for articles on the next AONSA Newsletter

◆ Deadline: July 8th, 2022 (To be issued in July 2022)

- ❖ 1. President's message (Taku Sato)
- ❖ 2. Reports on the AONSA EC meeting (David Cortie)
- ❖ 3. AONSA Prize (S. M. Yusuf)
- ❖ 4. Neutron FDM report (J. Shultz)
- ❖ 5. AONSA Young Research Fellows (S. M. Yusuf)
- ❖ 6. AONSA Neutron School (F. Wang)

Sendto: 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. Choi)
- NSSI (S. M. Yusuf)
- TWNSS (Prof. Chou)
- 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



23rd Asia-Oceania Neutron Facility Directors' Meeting

Date: June 17, 2022

Time: Sydney 1:00 pm; Japan & Korea 12:00 pm; China 11:00 am;
Indonesia 10:00 am; India 8:30 am.

Duration time: 4:00 (without a break)

Location: ZOOM internet conference

- 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. AONSA Young Research Fellows**
 - b. Next AONSA Neutron School**
- 9. Discussion on the challenges, opportunities and cooperation of neutron facilities**
- 10. Other business:**
 - a. Upcoming Neutron Meetings**
 - i. ICNS 2022 - Argentina**
 - b. Next Meeting & Chair**
- 11. Closing remark**

Opening Remarks

Chair, Local Host

Self-Introduction

all hands

Participants (21 persons):

[Chair]

Jamie Schulz (ANSTO)

[FDM Members]

Young-Soo Han (HANARO)

Fangwei Wang (CSNS)

Toshiya Otomo (J-PARC/KEK)

Masayasu Takeda (JRR-3/JAEA)

Kai Sun/Tianfu Li (CARR/CIAE)

~~Guang-ai Sun (CMRR)~~

R. Mittal (DHRUVA)

Abu Rivai (G. A. Siwabessy)

[FDM Guests]

Andrei Gubkin (IVV-2M)

Egor Lychagin (IBR-2)

Vladislav Tarnavich (PIK)

~~Viacheslav Em (IR-8)~~

[EC Board Members]

Taku Sato (President; JSNS, Tohoku U)

S. M. Yusuf (Vice President; NSSI; BARC)

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]

Kazuhisa Kakurai (JSNS, CROSS)

Tracy Rushmer (ANBUG; Macquarie U)

[Observers]

Purpose and Role of the FDM

chair

Mission Statement for the Asia-Oceania Neutron Facility Directors

- *The aim of the Asia-Oceania Facility Directors meetings is to provide tangible benefit to each other through enhanced utilization of our neutron sources. Mechanisms for achieving this include co-ordination of our user programs, multilateral exchange of technical information and personnel, and provision of support to users of facilities that are at reduced capacity.*

Aim and Scope of Asia-Oceania Neutron Facility Directors Meeting

- *to coordinate activities in support of AONSA,*
- *to provide an execution path for requests from AONSA EC,*
- *to raise operational issues for the user communities to consider,*
- *to coordinate requests to AONSA for support for our various initiatives,*
- *to foster deeper discussion of our technical developments, and of specific issues related to provision of service to our user communities.*

Membership of Asia-Oceania Neutron Facility Directors Meeting

- a) beam reactors with design thermal power $\geq 10\text{MW}$, or;
 - b) spallation neutron sources with design beam power $\geq 100\text{kW}$; and
 - c) have a stated policy of being open to scientific users from around the host country, if not more broadly across the Asia-Oceania region
-
- Each facility will be represented by one person, ~~except in the case of J-PARC which by virtue of its size and regional character will be represented by two persons.~~
 - Chair should rotate on an annual basis amongst the facility directors

Asia-Oceania Neutron Facility Directors relationship to AONSA

- a less formal entity that is independent from AONSA does not “report” to AONSA, but which will coordinate with AONSA, especially through the individual contributions of the facilities as observers at the AONSA Executive Committee.

Approval of Agenda

Chair asks to facility directors

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
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- 8. AONSA Business**
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- 11. Closing remark**

Review of Last Meeting Notes

Chair (or secretary if exists)

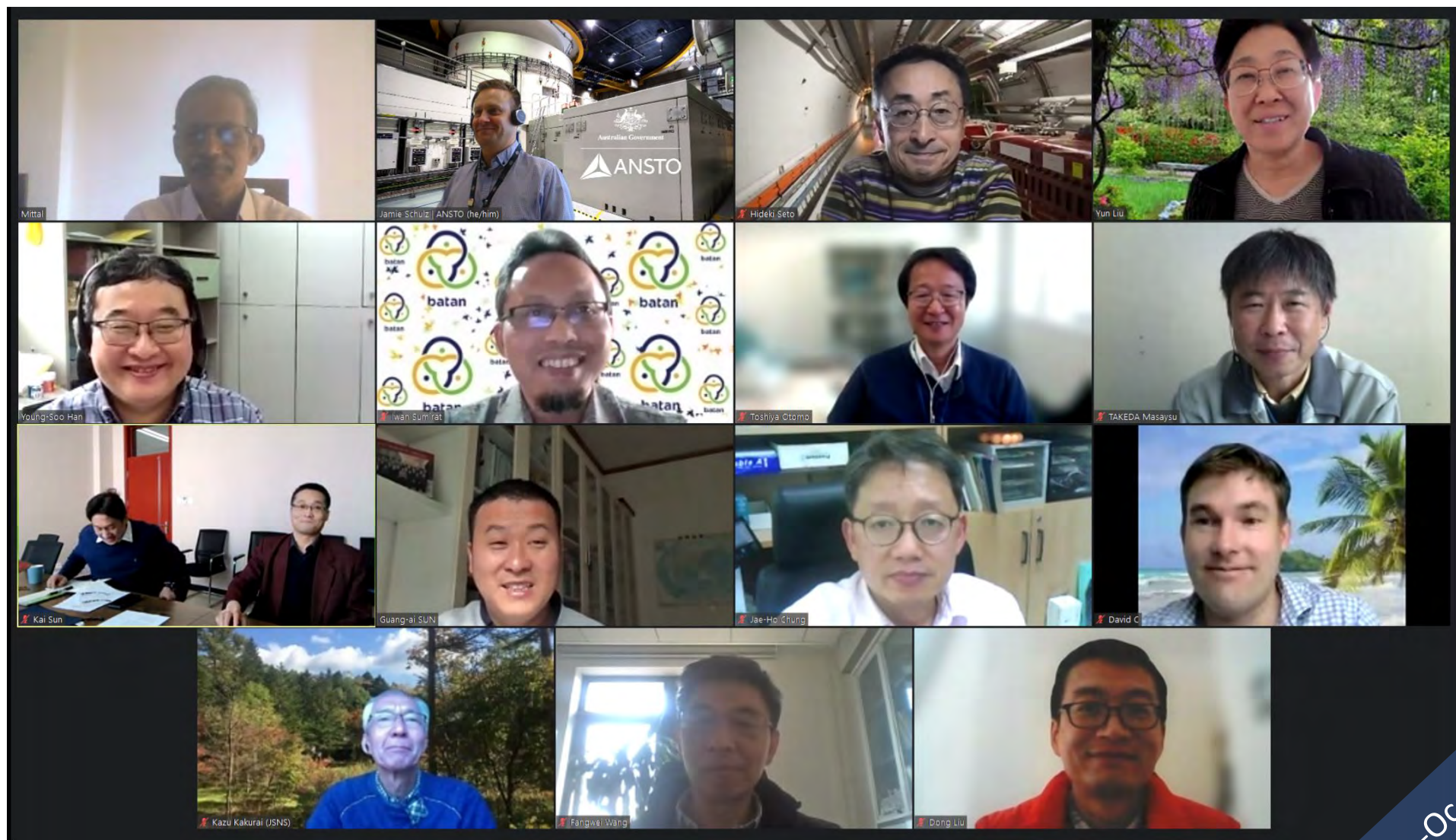
22nd Asia-Oceania Neutron Facility Directors' Meeting

Date: November 19, 2021

Time: Sydney 2:00 pm; Japan & Korea 12:00 pm; China 11:00 am;
Indonesia 10:00 am; India 8:30 am.

Duration time: 4:00 (without a break)

Location: ZOOM internet conference



22nd Asia-Oceania Neutron Facility
Directors' Meeting

Participants (19 persons):

[Chair]

Jamie Schulz (ANSTO)

[FDM Members]

Young-Soo Han (HANARO)

Fangwei Wang (CSNS)

Toshiya Otomo (J-PARC/KEK)

Masayasu Takeda (JRR-3/JAEA)

Kai Sun (CARR/CIAE)

Guang-ai Sun (CMRR)

P. U. Sastry (DHRUVA)

Iwan Sumirat (G. A. Siwabessy)

[EC Board Members]

Dongfeng Chen (President, CNSS, CIAE)

Jae-Ho Chung (Secretary, KNBUA, Korea Univ.)

David Cortie (Public Relations Officer, Univ. of Wollongong)

S. M. Yusuf (Member-at-Large, NSSI, BARC)

[EC Members]

Kazuhisa Kakurai (JSNS, CROSS)

Yun Liu (ANBUG, Australian National U)

[Observers]

Andrei Gubkin (Russian Observer, IVV-2M)

Hideki Seto (AONSA Office Liaison; J-PARC/KEK)

Ferly Hermana (BATAN)

Dong Liu (CMRR)

- 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)**
 - i. CSNS**
 - ii. HANARO**
 - iii. J-PARC**
 - iv. JRR-3**
 - v. OPAL**
 - vi. CARR/CIAE**
 - vii. CMRR**
 - viii. DHRUVA**
 - ix. G. A. Siwabessy**
 - x. IVV-2M Reactor (M.N. Mikheev Institute of metal physics)**

- 8. AONSA Business**
 - a. AONSA Young Research Fellows**
 - b. Next AONSA Neutron School**
- 9. Discussion on the challenges, opportunities and cooperation of neutron facilities**
- 10. Other business:**
 - a. Upcoming Neutron Meetings**
 - i. ICNS 2022 - Argentina**
 - b. Next Meeting & Chair**
- 11. Closing remark**

AONSA Young Research Fellows

- 2020 :



- 2021 :



- None of the AONSA fellows have been able to visit the facilities.
- Jae-Ho/Taku reported that 2022 AONSA fellows applicants have all requested J-PARC and discussion is underway regarding J-PARC potentially hosting more than 1 fellow

AONSA Neutron School

- Discussed the neutron school at CSNS in June 2022.
- Fangwei reported that it is planned to be a hybrid meeting. 20 international participants.
- Jamie suggested that facilities provide funding for 2 participants from their countries.
- Unclear on what the COVID restrictions will be in June and whether it is feasible for international participants to attend in person.
- Suggest making decision in January/February given visa applications etc.

Other businesses

chair

Discussions items – November 2021

- ICNS2022 in Argentina – discussed attendance by the Facility Directors. Most directors planning on attending.
- Discussed the state of neutron facilities in the world & the neutron “drought”
 - Maintenance shutdowns – ILL (2022), ISIS (Jul21-Feb22), NIST (2023)
 - Outages – FRM-II, IBR-2, NIST
 - PIK – 10MW – 5 instruments already commissioned
 - India – East Coast reactor approval process progressing well.

Photo

Smile for the screen capture



Facility Updates

Facility directors or their representatives, 10 min. each

Facilities

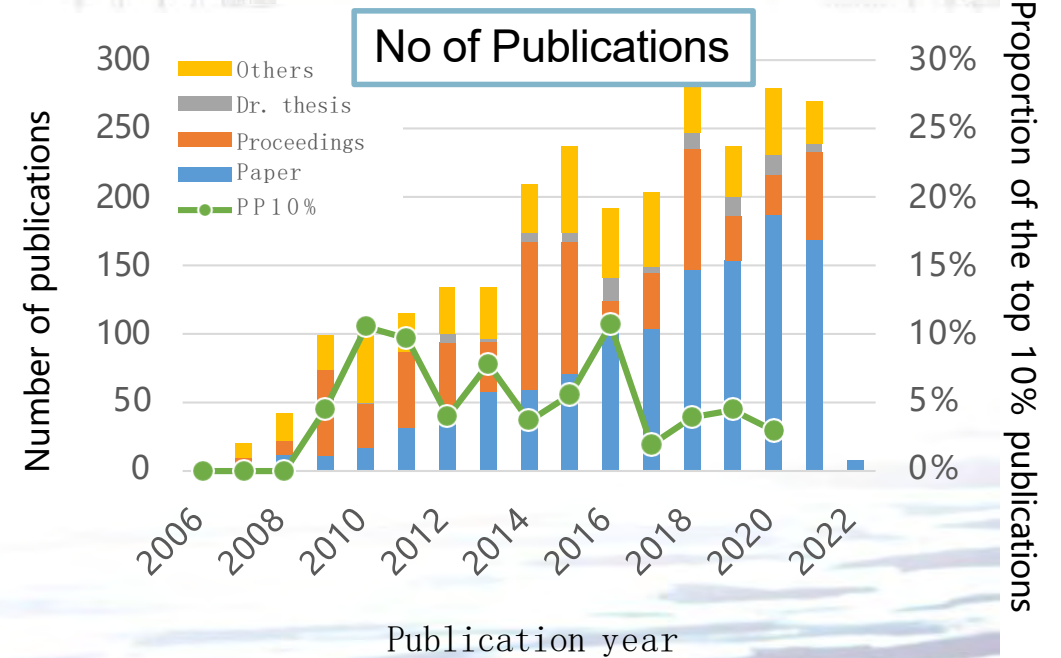
- a) CSNS
- b) J-PARC
- c) HANARO
- d) JRR-3
- e) G. A. Siwabessy
- f) OPAL
- g) CARR/CIAE
- ~~h) CMRR~~
- i) DHRUVA
- j) IVV-2M
- k) IBR-2
- l) PIK
- ~~m) IR-8~~

CSNS summary

- CSNS has been run in 125 kW since Mar. 2022.
- Four neutron instruments are in users program. For the last call (2022.2-2022.7) , 154 proposals were selected from 474 submissions. In total, more than 640 user experiments have been conducted, and many important scientific results were achieved with ~ 120 papers published.
- Atmospheric Neutron Irradiation Station (ANIS) accepted the first neutron beam on Apr. 2, 2022, will open to users soon.
- A long-term project on strain/stress in engineering materials was launched.

Summary of J-PARC MLF

- ◆ Stable 830 kW operation achieved.
- Call for proposal of 2022B
 - 349 applications proposed (including muon)
- Japanese Border Measures have been relaxed
 - But no. of visit from abroad is limited



Upcoming Events

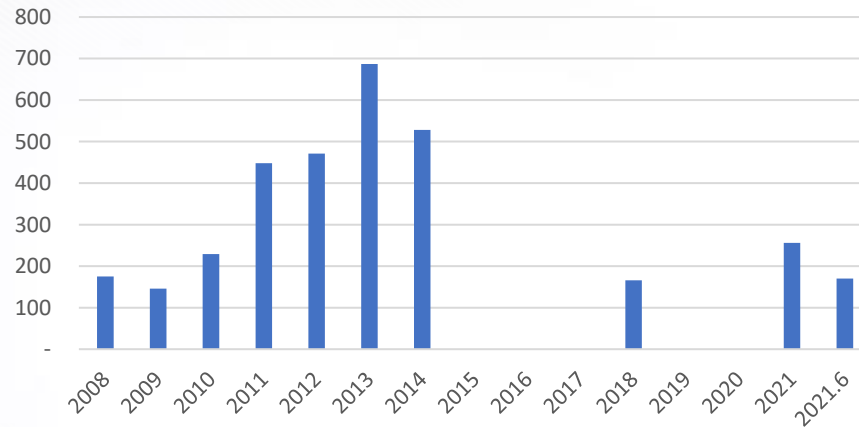
- ◆ **11th International Workshop on Sample Environment at Scattering Facilities**
 - 2022/8/28 (Sun) - 9/1 (Thu)
- ◆ **The 6th Neutron and Muon School**
 - 2022/12/12 – 2022/12/16

mlf info

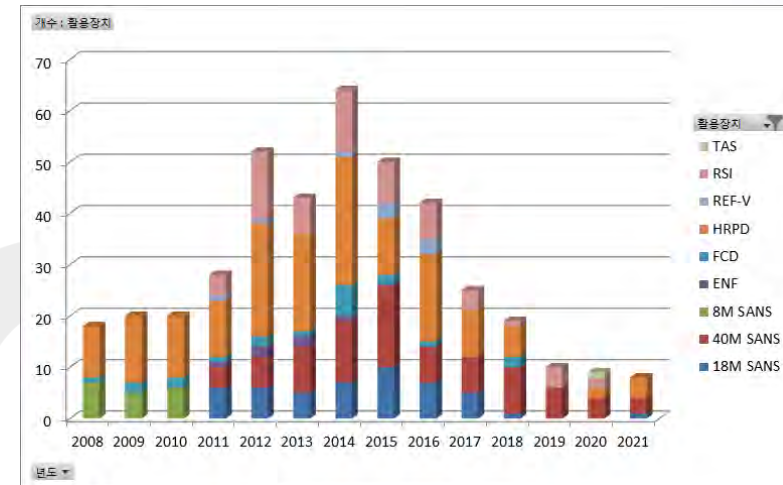


User Program, Publications and Plans

» User Statistics



» Number of Publications



» Plans for 2nd half of 2022

- Neutron Summer Schools(August)
- HANARO Symposium(September)
- 2nd HANARO International Advisory Committee Meeting(October)

Status and Activities of JRR-3

*Masayasu Takeda, and Shigeru Wada (JAEA) ,
Osamu Yamamuro (ISSP)*

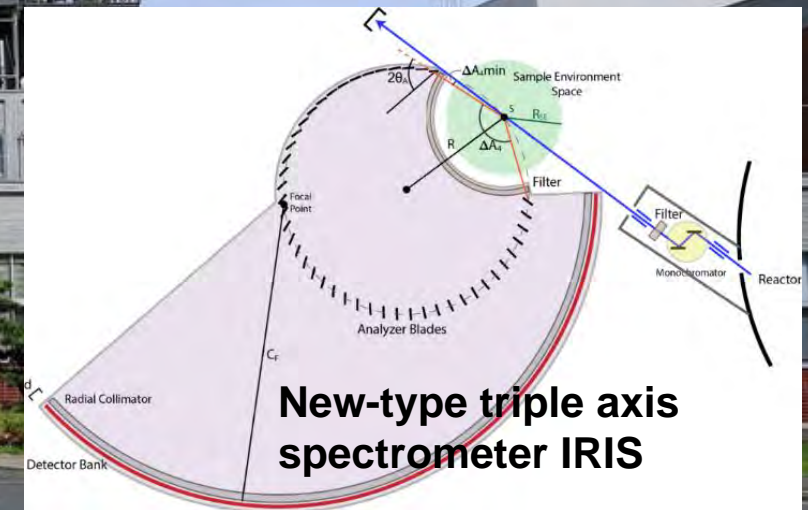
JAEA

- JRR-3 restarts in May and seven operational cycles for 180 days are planned this year, but it is not guaranteed due to unexpected increase of electricity price.
- 165 proposals of the general user program are accepted this year (123 proposals in 2021).

ISSP

- 176 general user proposals were accepted.
- The overseas-experiment program finished in March 2021. 297 proposals accepted in FY2011 – 2019 were carried out at overseas facilities.
- New neutron guides achieves to increase of neutron flux of AGNES by a factor of five.
- Commissioning of a new inelastic neutron spectrometer with multiple analysers and detectors is now under way.

FY	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
FY2020												
	<div> <div>Operation Pattern</div> <div>Mon 20MWT 4 weeks) Fri</div> <div>26 days/cycle</div> </div> <div>▼Operation</div> <div>←.....</div>											
FY	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
FY2021												
	<div>Test operation with various outputs including daily mode</div> <div>12 28 16 10 20 15 25 19</div> <div>R3-01 R3-02 R3-03 R3-04</div> <div>Periodic operator inspection</div>											
FY	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
FY2022												
		R4-01	R4-02	R4-03	R4-04	R4-05	R4-06	R4-07				
	Periodic operator inspection											



BRIN's Neutron Facility Update 17th June 2022

DN 1 Residual Stress Diffractometer

Plastic 3D printing helping in prototyping neutron instrument

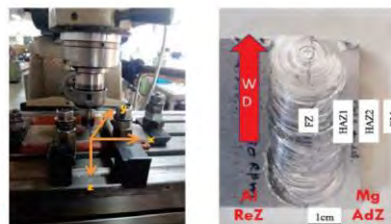


Prototyping eulerian cradle for texture measurement using plastic 3D printing technology

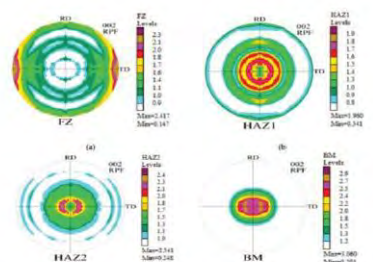
Make easier instrument scientist to explain to the engineer what component or apparatus have to made



Texture Diffractometer (DN2)



FSW of dissimilar metal Al-Mg



Pole figures of dissimilar metal Al-Mg

SN 1 Triple Axis Spectrometer (TAS)

Implementation of NICOS on SN1/TAS

Networked Instrument Control System



SN 2 Small Angle Neutron Scattering (SANS) Spectrometer

2022 Activity

Instrumentation reparation (beam stopper)



BRIN Research Project

1. Au nanorod coated with surfactant (CTAB) for radiopharmacy application



2. Nanostructured silica for catalyst application



2022 International Collaboration

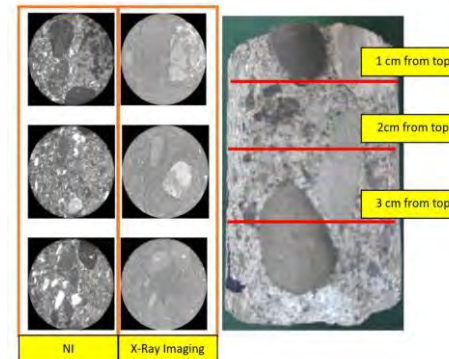


Dr. Mehul Khimani
Shivani University
- INDIA



Prof. Aleks Nikoloski
Murdoch University -
AUSTRALIA

RN Radiography/Tomography Neutron



NAA Neutron Activation Analysis



No	Future Activity Plan
1	Application of INAA to study the aquatic environment and air particulate matter.
2	Application of INAA for study of fishery products
3	NAA-Epithermal method development
4	Elemental analysis services for materials research

DN 3 High Resolution Powder Diffractometer

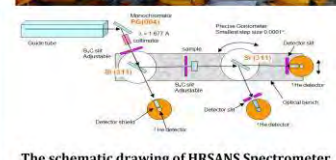
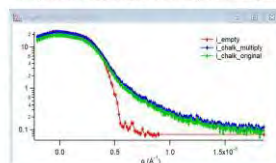
Current status

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



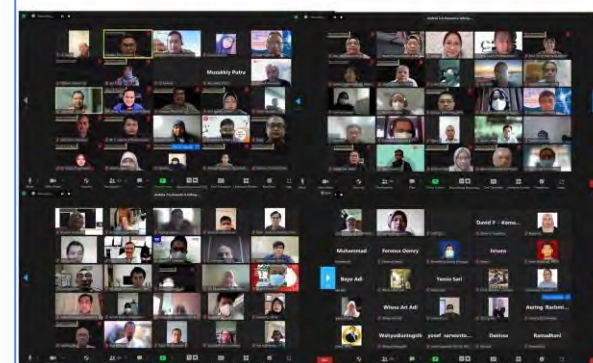
SN 3 High Resolution Small Angle Neutron Scattering (HRSANS) Spectrometer

- X'tals alignment takes time
- Under thorough evaluation (flux, beam time, collimation, data acquisition) for further assessments
- Start using different mode in data acquisition as suggested by IAEA Expert



The schematic drawing of HRSANS Spectrometer

Neutron Scattering Technology & Laboratory User Group Meeting Research Center For Detection Radiation and Nuclear Analysis [PRTDRAN] ORTN - BRIN Thursday, 16th June 2022

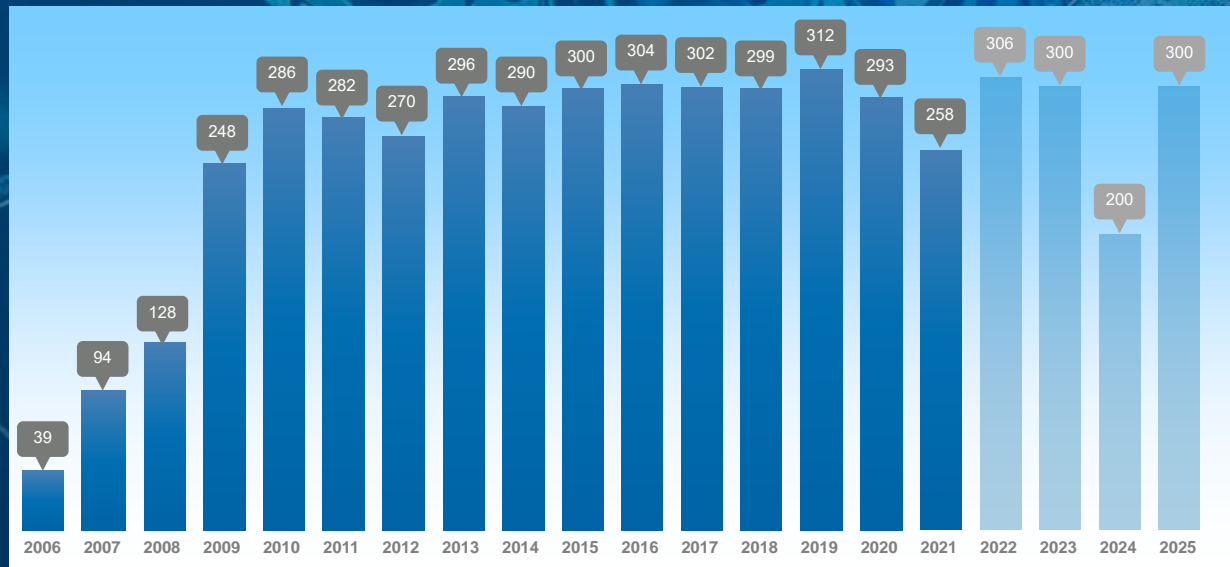


No	Participant Name	Institution
1	Dr. Mehul Khimani	Shivani University, India
2	Prof. Aleks Nikoloski	Murdoch University, Australia
3	Dr.
4	Dr.
5	Dr.
6	Dr.
7	Dr.
8	Dr.
9	Dr.
10	Dr.
11	Dr.
12	Dr.
13	Dr.
14	Dr.
15	Dr.
16	Dr.
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36	Dr.
37	Dr.
38	Dr.
39	Dr.
40	Dr.
41	Dr.
42	Dr.
43	Dr.
44	Dr.
45	Dr.
46	Dr.
47	Dr.
48	Dr.
49	Dr.
50	Dr.

Attended more than 170 participants from various Research Centers, Universities & Industries

ANSTO Status Report – June 2022 – Jamie Schulz

- Reactor & Cold Source both have run well
- 2022-1 Proposal Round
 - 180 of 331 proposals received approved
- ANSTO Research Review
 - New strategy under consultation
- ANSTO Research Infrastructure Decadal Plan
- 2021 National Research Infrastructure Roadmap
- New capabilities
- User schools & workshops

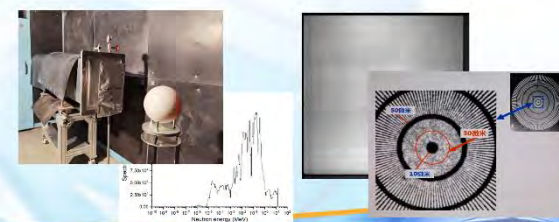


- 7 days neutron beamtime supplied by CARR in January 2022, and 10 days in June.
- Thermal neutron imaging facility have been put into operation, making a total number of 14 instruments at CARR
- ^3He neutron polarization technique developed and applied to obtain polarized neutron beam
- Some novel research applications, including residual stress in the wheel of high speed train, in-situ measurement under different sample environment, NAA on lunar samples

Thermal neutron imaging facility into operation

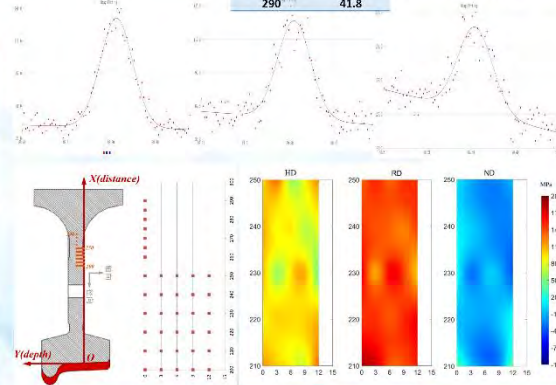


parameter	value
Max flux	$6.4 \times 10^8 / \text{cm}^2 / \text{s}$ @L/D=175 @60MW
Max imaging size	20cm*20cm
Best resolution	< 30 μm



Stress in wheel of high-speed train measured successfully

position	thickness	Gauge volume
200	27.3	3mm*3mm*3mm
250	32.7	
290	41.8	



Neutron Activation Analysis lunar samples

Chang' E-5 lunar sample; lunar meteorite;

- Important new data for related research
- Concentrations of more than 40 elements

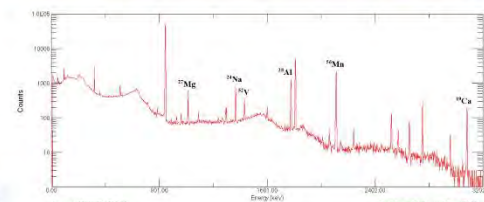
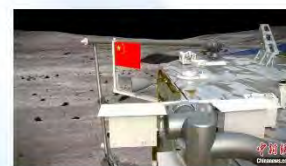


Figure 1. Spectrum of gamma rays for the short time irradiated sample CES0000703000. The spectrum was obtained using an HPGe detector combined with a digitized multichannel analyzer (MCA). The sample CES0000703000 was irradiated for 300 s in the MNSR at the CIAE and counted for 437.68 s (five times) at a decay time of 17.25 min.

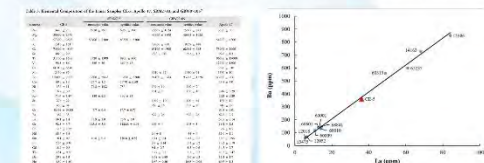


Figure 4. Bi/La ratio for the CE-5 sample and other lunar samples. The concentrations of Bi and La in the CE-5 lunar soil are 302 ± 35 and 36.1 ± 1.4 ppm, respectively. The ratio of Bi/La in the CE-5 lunar sample is 8.4, which is nearly identical to those of most Apollo lunar samples.

Chang' E-5 lunar sample

Neutron Scattering Facilities Bhabha Atomic Research Centre, Mumbai, India

28th EC Meeting: 18 June 2022 8.30 AM

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

Recent scientific highlights
~ 25 publications (6 months) in journals

Neutron irradiation induced magnetization and persistent defects at high temperatures in graphite, **Phys. Rev. B 105, 104106, (2022).**

High cubicity of D₂O ice inside spherical nanopores of MIL-101(Cr) framework: A neutron diffraction study, **Physical Chemistry Chemical Physics 24, 11872, (2022).**

Jamming of Nano-Ellipsoids in a Microsphere: A Quantitative Analysis of Packing Fraction by Small-Angle Scattering, **Langmuir 38, 3832 (2022).**

7th Conference on neutron scattering
(25-27) November 2021 (Hybrid mode)



Neutron material science facility at the IVV-2M research reactor (15 MW):

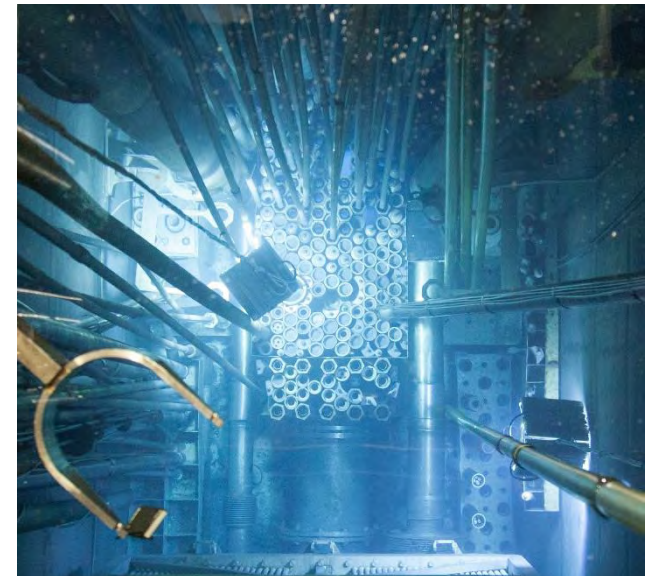
Operator of IVV-2M reactor:
Institute of Nuclear Materials (SC Rosatom)

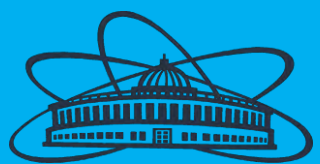


Owner and operator of neutron instruments:
M.N. Mikheev Institute of metal physics

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

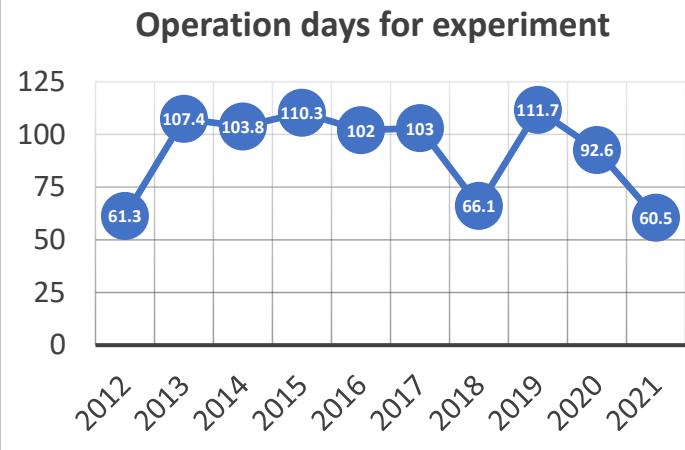
1. NMSF was in operation for 2.5 month in 2022
2. Visual survey of HECs #3 and #7 was performed. Channels were found to be in good state
3. Ongoing work on the scientific program of the Ural research reactor after 2035





Pulsed Reactor IBR-2 Summary

Current exploitation power is **1.2 MW**



13 INSTRUMENTS INCLUDE IN USER PROGRAMM

<https://ibr-2.jinr.ru/>

Two new instruments are under construction:
SANSARA – small angle + imaging (2023)
BJN – inelastic scattering (2025)



Average power, MW	2
Fuel	PuO ₂
Number of fuel assemblies	69
Maximum burnup, %	9
Pulse repetiton rate, Hz	5
Pulse half-width, µs: fast neutrons thermal neutrons	200* 340
Rotation rate, rev/min • Main reflector • Auxiliary reflector	600 300
MMR and AMR material	Nickel + steel
MR service life, hours	55 000
Background, %	7.5
Thermal neutron flux density from the surface of the moderator • Time average • Burst maximum	~10 ¹³ n/cm ² s ~10 ¹⁶ n/cm ² s

* at reactor power 2MW

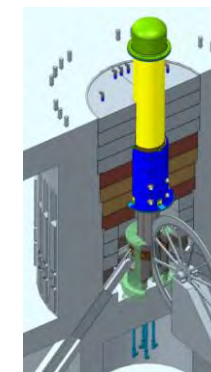
October 16, 2021, reactor shutdown due to leakage in the secondary cooling circuit air heat exchanger (HE).

On September 30, 2022, current license for the reactor exploitations will expired.

Time schedule for HE replacement:

- Repair of the affected HE (due to the safety regulations we need 2 operated HE) – has been done in April 2022;
- Forming the whole package of the documentation for licensing – September 2022;
- Obtaining the license – March 2023;
- Replacement of the old HE's with the new ones – until the end of May 2023;
- **Reactor startup – October 2023.**

Work continues to developed a source that should replace the IBR-2 in the early 40s



Reactor PIK (Gatchina, Russia)

- **7 megawatts power** reached in **February 2022**
- Full power (100MW) - **2024-2025**

Instrumental program is under construction.

Cold neutron source - HEC 3

Hot neutron source - HEC 8

Ultra cold neutron source - HEC 4

Instruments (20 stations)

Experimental stations for condensed matter (13)

- Diffractometers (3)
- Spectrometers of inelastic scattering (5)
- SANS machines (3)
- Reflectometers (2)

Experimental stations for nuclear and particle physics (7)

Commissioning all instruments - 2024-2025

	Value
Power	100 MW
Reactor core volume	50 l
Core height	500 mm
Coolant	H ₂ O
Reflector	D ₂ O
Maximal neutron flux in moderator	$1.3 \times 10^{15} \text{ n/cm}^2\text{c}$
Maximal neutron flux in central trap	$5 \times 10^{15} \text{ n/cm}^2\text{c}$
Operation cycle	~30 day
Experimental channels	
- Horizontal (HEC)	10
- Vertical (VEC)	6
- Inclined (IEC)	6
- Central (CEC)	1

AONSA business

chair

AONSA Young Research Fellows

- 2020 :



- 2021 :



- None of the AONSA fellows have been able to visit the facilities.

2023 AONSA Young Research Fellows

- ANSTO – 1
- JRR3 – 0
- CSNS – 1-2
- J-PARC – 1 or more depending upon the instrument
- CARR – 0
- HANARO – Operation status not stable.
- GA Swinburn – 0
- BARC – 0 – not possible

AONSA Neutron School

- Discussed the neutron school at CSNS in June 2022.
- Now planned for November 2022 – 100% virtual
- Discussed the option of delaying to 2023 to be held in conjunction with AOCNS
- To be discussed at the EC meeting

Discussion on the challenges, opportunities and cooperation of neutron facilities

chair

COVID impacts

- Travel restrictions
- Additional visa requirements
- Heavy water shortage in Australia

Other business

chair

Other business

- ICNS2022 in Argentina – discussed attendance by the Facility Directors. Most directors planning on attending
 - International Facilities Directors Meeting – Hybrid meeting.

Next Meeting & Chair

No.	Location	Date	Chair
1st	Bandung, Indonesia	19th May, 2011	Shane Kennedy (OPAL)
2nd	Tsukuba, Japan	20th November, 2011	Rob Robinson (OPAL)
3rd	Kajang, Malaysia	21st May, 2012	Kye-Hong Lee (HANARO)
4th	Beijing, China	26th October, 2012	Kye-Hong Lee (HANARO)
5th	Tokai, Japan	19th June, 2013	Kye-Hong Lee (HANARO)
6th	Guangdong, China	16th November, 2013	Kye-Hong Lee (HANARO)
7th	Daejeon, Korea	20th February, 2014	Mitsu Shibayama (JRR3)
8th	Serpong, Indonesia	15th, October, 2014	Mitsu Shibayama (JRR3)
9th	Sydney, Australia	19th July, 2015	Yuntao Liu (CARR/CIAE)
10th	Tokai, Japan	3rd December, 2015	Mitsu Shibayama (JRR3)
11th	Guangdong, China	30th May, 2016	Yuntao Liu (CARR/CIAE)
12th	Mumbai , India	17th November, 2016	Jamie Schulz (OPAL)
13th	Daejeon, Korea	8th July, 2017	Jamie Schulz (OPAL)
14th	Bangkok, Thailand	25th November, 2017	Toshi Kanaya (J-PARC MLF)
15th	Malaysia	24th June, 2018	Toshi Kanaya (J-PARC MLF)
16th	Sydney, Australia	16th November, 2018	Sungil Park (HANARO)
17th	Mianyang, China	24th May, 2019	Sungil Park (HANARO)
18th	Kenting, Taiwan	24th May, 2019	Sungil Park (HANARO)/Fangwei Wang (CSNS)
19th	Zoom	19th June, 2020	Fangwei Wang (CSNS)
20th	Zoom	27th November, 2020	Kenji Nakajima (J-PARC MLF)
21st	Zoom	25th June, 2021	Kenji Nakajima (JRR-3/J-PARC MLF)
22nd	Zoom	19th November 2021	Jamie Schulz (OPAL)
23rd	Zoom	17th June 2022	Jamie Schulz (OPAL)
24th			Kai Sun (CARR/CIAE)

Closing Remarks

Chair



Australian Neutron Beam Users' Group

Bringing together Australia and New Zealand's neutron beam research community

Report to AONSA

Yun Liu (ANBUG President)
Tracy Rushmer (past ANBUG President)

June 18, 2022

2021-2022 ANBUG executive committee



President
Prof. Yun Liu
ANU



Past President
Prof. Tracy Rushmer
Macquarie University



Vice-President
A/Prof Chris Wensrich
University of Newcastle



Treasurer
Dr David Cortie
ANSTO



Secretary
Dr. Leonie van't Hag
Monash University



Website and Comms
Dr. Karyn Jarvis
Swinburne University of
Technology



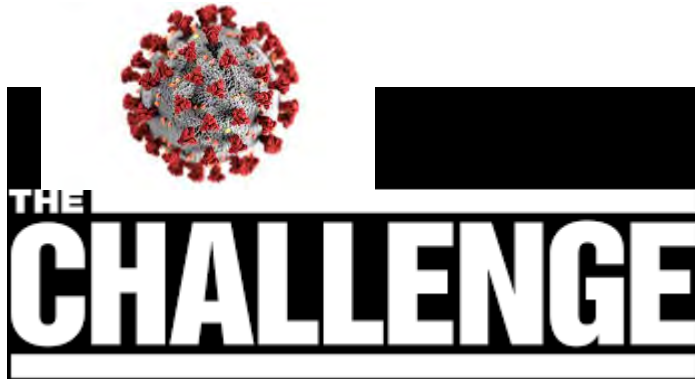
ECR member
Dr. Teng Lu
ANU



NZ Member
Dr. Ben Mallett
Victoria University of Wellington

- Management
- Regular EC meeting
- Active actions on events, policy and support for users
- Finance
- ACNS program advisory committee
- Working closely with ACNS/AINSE.

Outline achievements 2021



2021 June: 330 members

2021 Nov: 400 members

2022 June: 306 members

Updated



Website and communication



ANBUG ↔ ACNS



ANSTO Joint User Meeting 2021



A big survey

- 2021 National Research Infrastructure Roadmap
- 2021 ANSTO Decadal Plan
- ACNS: Second Guide Hall



Town Hall meeting and workshop



New Technical Award



Financial capability

ANBUG's actions in first half 2022

(since last AONSA EC meeting)

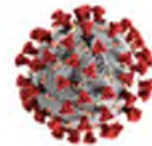


EVENTS:

- ANBUG AGM : 26 Nov 2021
- The biennial ANSTO user meeting (Neutron & Synchrotron) – Online, November 2021.
- ANBUG workshop: introduction to polarized neutron scattering, 29 April, 2022

AWARENESS:

- Twitter: ANBUGneutron (≈470 followers)
- ANBUG email list (≈357)
- ANBUG Newsletters
 - o Quarterly update – Call for user success
- ACNS Scatter Maters



POLICY AND GOVERNANCY :

- Involvement in the ACNS program advisory committee to represent ANBUG.
- Consulting to manage the backlog by the COVID
- Blind review survey (three parts: submission, review/assessment and awarding)

ANSTO AUM 2021



Involvement in organising committee and program committee



Co-chair program committee
on behalf of ANBUG



Vice-President
A/Prof Chris Wensrich,
University of Newcastle



Dr Shinji Kihara (ECR)
University of Auckland
New Zealand

Program

- 124 Talks
- 4 Capability Updates
- 81 Posters
- 1 Special Session

Registration

- 258 total registrations
- Incl. 113 students registered

Special Thanks to

- AINSE for student support throughout the event
- NZ Sync Group (Sponsor 1st prize student poster)

ANBUG Awards 2021



Thanks to the awards committee members:

- John White
- Anna Paradowska
- Rico Tabor
- *EC committee members:* Teng Lu, Tracy Rushmer, David Cortie
- *EC committee Secretary:* Leonie van 't Hag

Competitive and high participation

22 Nominations across 5 categories (at least 3 in each category)

- ANBUG Career Award
- ANBUG Young Scientist Award
- ANBUG Technical Award – new in 2021 – for outstanding service contributing to technical aspects of neutron scattering by university / institute staff or a beamline scientist. It is likely, but not mandatory, that it will be awarded to those who are traditionally not eligible for the other ANBUG awards, from areas such as engineering, sample environment, workshops or instrument staff that have gone *above and beyond* to facilitate your beam time from a technical perspective
- ANBUG Neutron Award
- ANBUG Outstanding PhD Prize

ANBUG Awards 2021



Outstanding PhD Prize



Dr Gemeng Liang
University of Wollongong

Neutron Award



Prof Elliot Gilbert, ANSTO

Career Award



A/Prof Trevor Finlayson
University of Melbourne

Technical Award



Mr Norman Booth, ANSTO

Young Scientist Award



Dr Leonie van't Hag, Monash University



Organising committee for 2021



Vice-President

A/Prof Chris Wensrich,
University of Newcastle



Treasurer

Dr David Cortie,
ANSTO



NZ Member

Dr Ben Mallett
Victoria University of Wellington



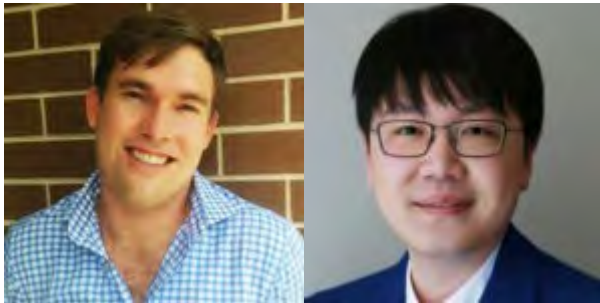
ECR member

Dr Teng Lu
ANU

Routine action

- Identify the topics
- Identify the speakers and discuss the lecturing content
- Coordinate events

Polarised neutron scattering : 29 April 2022



Over 34
participants

ANBUG workshop: Introduction to polarised neutron scattering

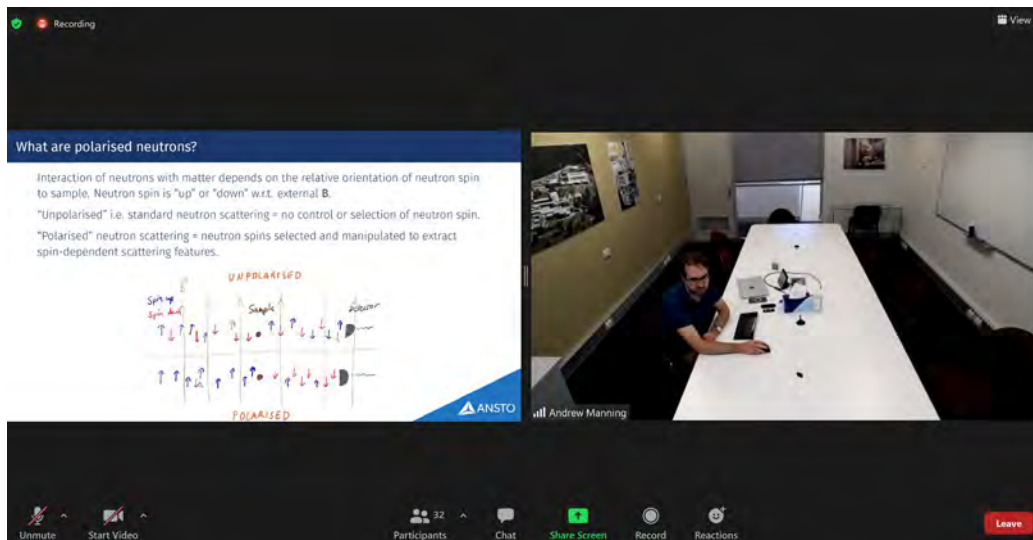
Date: 29 April, 2022, 14:00 – 15:00

Host: Dr Andrew Manning (ACNS)

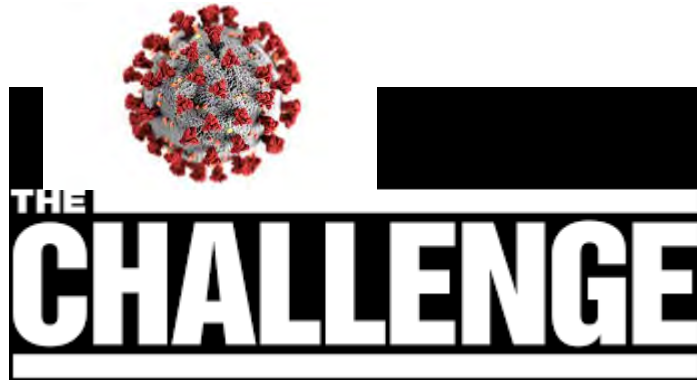
Host: Drs David Cortie and Teng Lu

Abstract: The ability to control and filter the spin of neutrons can be used to enhance a wide variety of neutron scattering experiments. In this talk, an introduction to both the theoretical and experimental aspects of scattering studies using spin-polarised neutrons will be given, with a particular focus on the capabilities available at ACNS. Traditionally, polarised neutrons have been used to study complex magnetic structures, however there are now emerging applications for addressing a wider range of scientific problems, such as a Li, H or Na dynamics, by allowing for the separation of coherent and incoherent contributions. Some examples of experiments where polarised neutrons are key to achieving unique measurements will be described, including a discussion of the considerations required to undertake such experiments successfully. Finally, a brief overview of some more advanced types of studies will be outlined, and questions will be encouraged so feel free to ask about anything that you are interested!

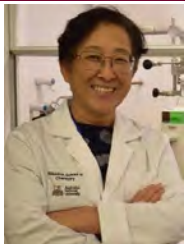
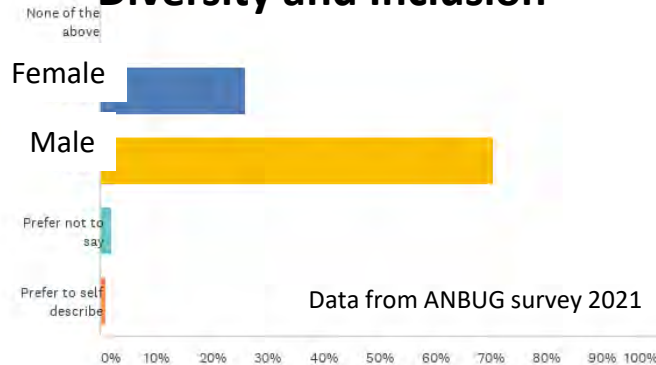
Questions/comments/connection issues? Email: dcortie@uow.edu.au



Plan for 2022



Diversity and Inclusion



Professor Yun Liu
Also the 2021 ARC Georgina Sweet
Australian Laureate Fellow

Promote Women in Neutron Scattering



- Availability of beamtime
- Clear backlog caused by the COVID lockdown



AANSS2022 (9 – 11 Nov, 2022)

ANBUG AINSE Neutron Scattering Symposium



Chair

Ms. Karyn Wilde
ANSTO Deuteration
Deuteration proposals

ANBUG EC member nomination/election: late 2022 for 2023-2024

Town Hall meeting: new capability (second guide Hall)

Workshop: support users



Report from China Neutron Scattering Society

Hesheng CHEN

AONSA EC Meeting June 18, 2022

Outline

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

Outline

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

Neutron Scattering Facilities in China

User community > 3800 and expands quickly



CNSS focus for 2022

- **Coordination of the research and application of neutron scattering**
 - Develop neutron scattering technology
 - Coordinate the instrument development and running plans of 3 facilities
 - Promote the output of scientific results
 - Training users and students
 - Promote International cooperation and exchanges
- **Promotion of the groups for major fields of NS application**
 - Promote academic exchanges and cooperation in working groups
 - Establish awards for young researchers
 - Promote the writing of the series of books in the field of neutron scattering
- **Preparation for international and domestic conferences**
 - Asia-Oceania Conference on Neutron Scattering -2023
 - AONSA Neutron School
 - 9th national conference on neutron scattering & applications (delayed due to pandemic control, will be held in the later of 2022).....

2021 CSNS Annual User Conference



- 2021 annual user conference took place at CSNS from December 9 to 12. More than 600 experts from home and abroad joined the event both online and offline.
- The conference focused on the application of the instruments at CSNS, and it comprised of 14 parallel sessions based around seven themes, including neutron diffraction, small angle scattering, neutron reflection, inelastic neutron scattering, application of engineering materials, large-scale dynamics, and the application of high-energy neutron, proton and muon.

The kick-off meeting of High-performance Engineering Materials Platform of CAS



- On December 13, the kick-off meeting of “High-performance Engineering Materials Platform” (CSNS, Inst. of Metal, Steel Research Institute Group) was held at CSNS.
- Prof. Hesheng Chen serves as the director of platform. The meeting focused on the CSNS experimental research scheme and plan, the development of experimental methods and technology, and the key research work of next year.

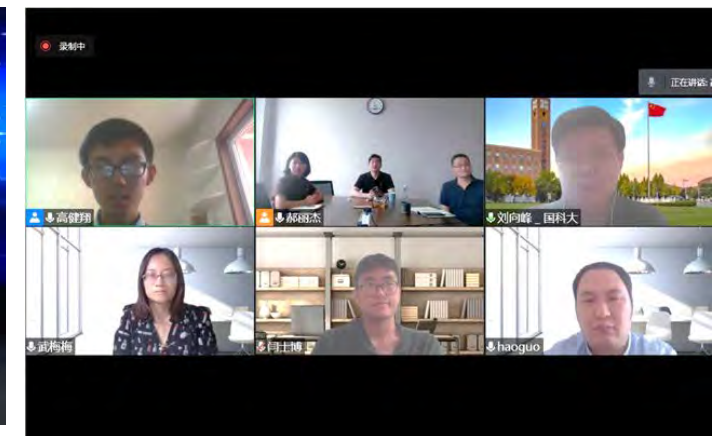
CSNS Launches the Fifth Public Science Day



- On May 21, 2022, the 5th Public Science Day of China Spallation Neutron Source came as scheduled.
- In cooperation with the Nanfang+ platform, the public was led to "tour" the national large scientific installation – CSNS on line.
- This event received a total of 630,000 hits on the websites such as Science and Technology Daily, China Science and Technology Network, and Sohu Technology, setting a new high in the past years.

CARR—Conferences and Meetings

- ❑ Introducing neutron technique and CARR facilities to visitors
- ❑ Popular science lectures on TV program
- ❑ Talks at conferences of different scientific fields
- ❑ Training courses for young researches and students

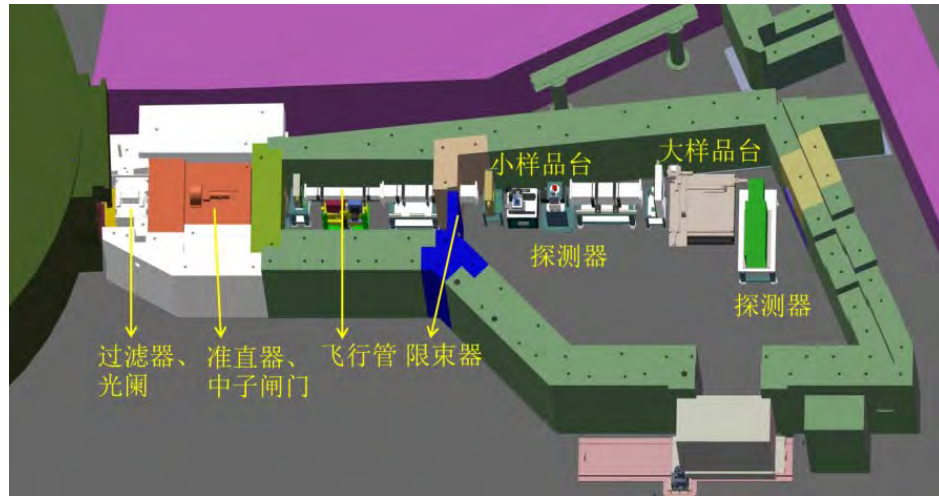


Outline

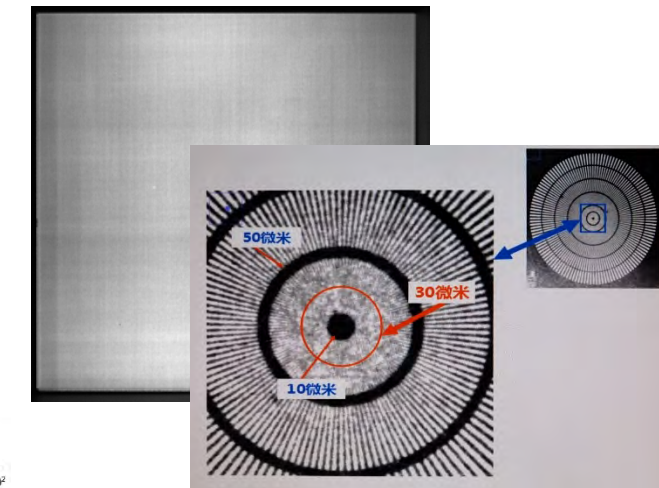
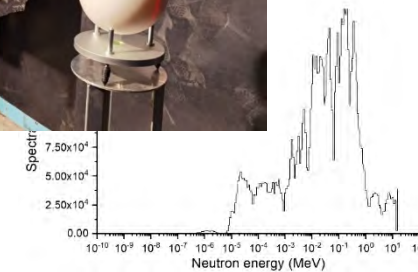
- 1 CNSS activities overview
- 2 **Status of CARR, CMRR and CSNS**
- 3 Summary

2.1 CARR: Instrument Development

Thermal neutron imaging facility into operation

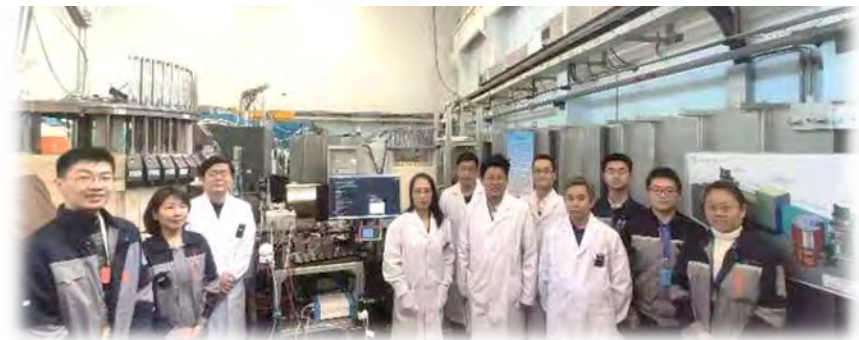
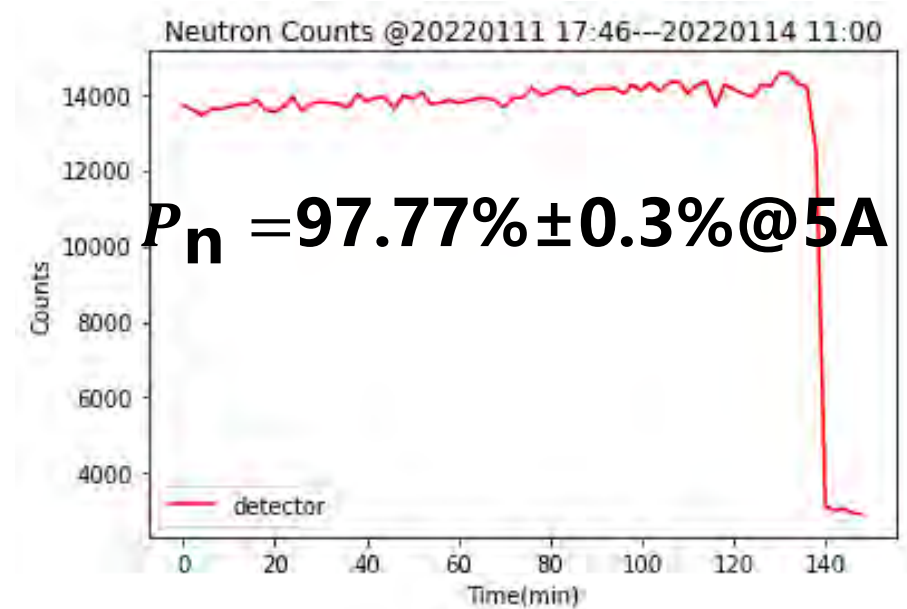
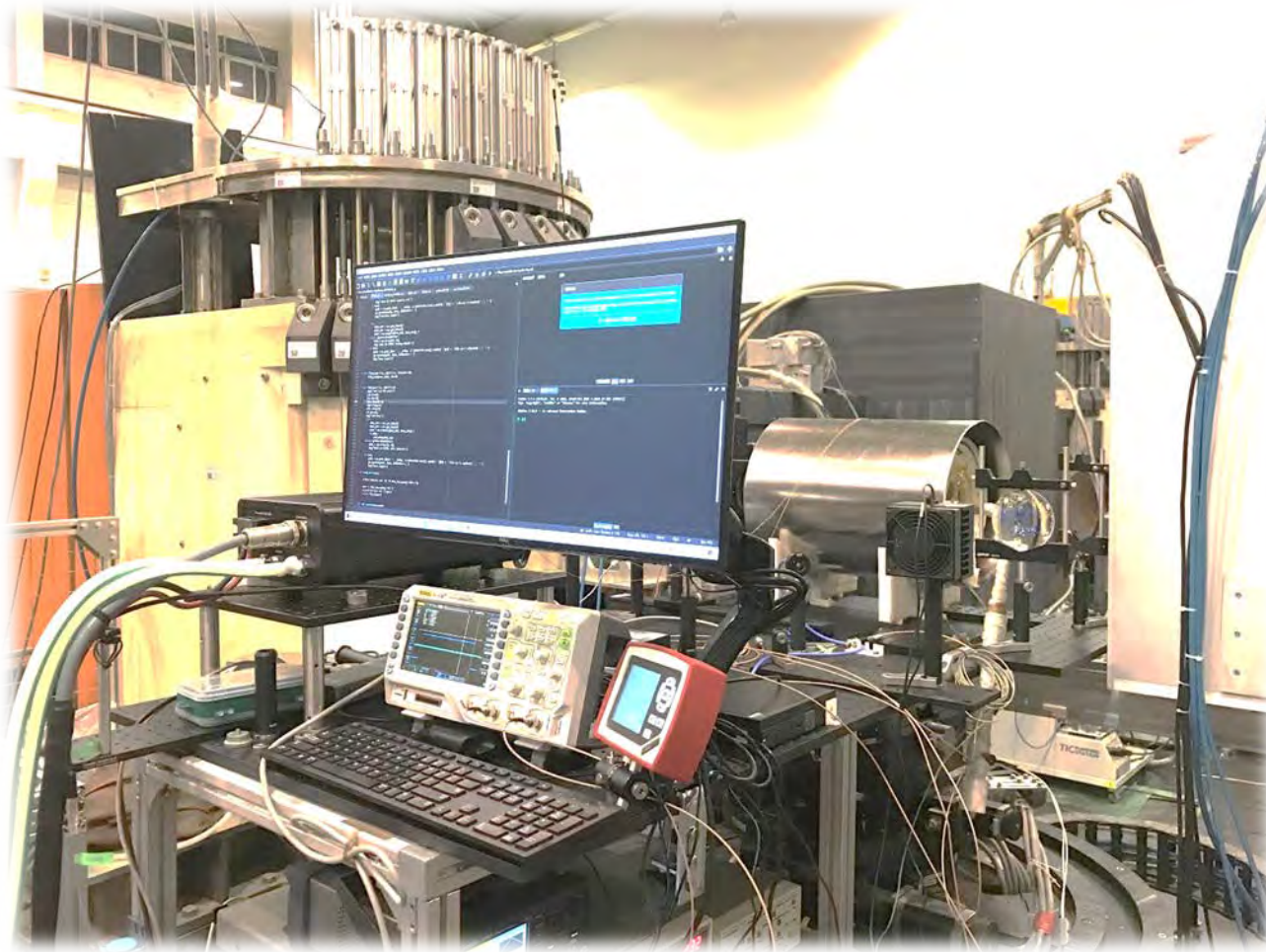


parameter	value
Max flux	$6.4 \times 10^8 / \text{cm}^2/\text{s}$ @L/D=175 @60MW
Max imaging size	20cm*20cm
Best resolution	< 30 μm



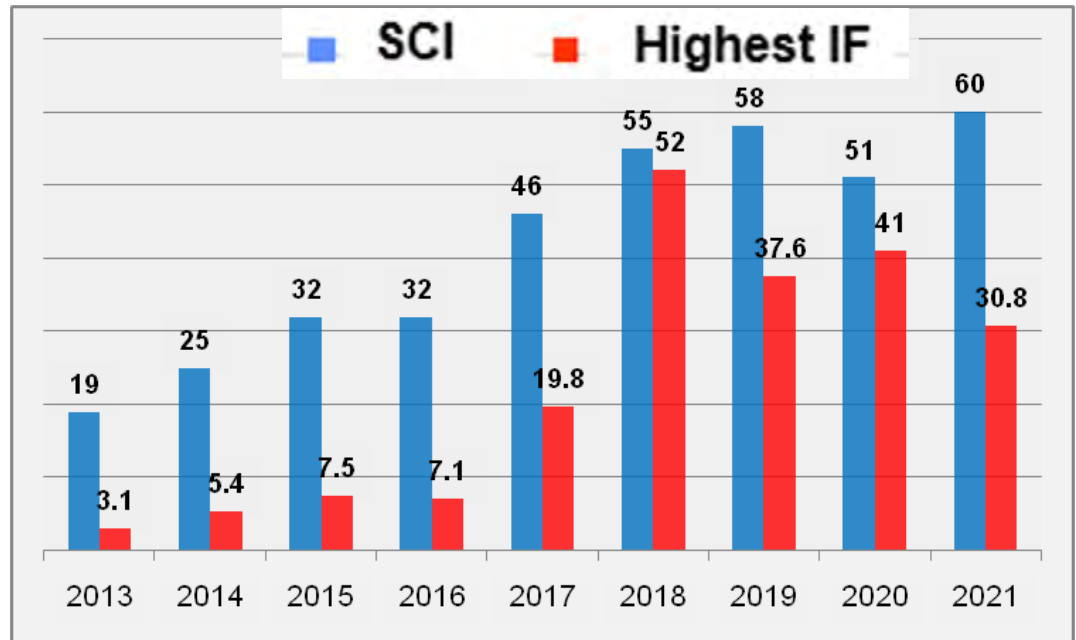
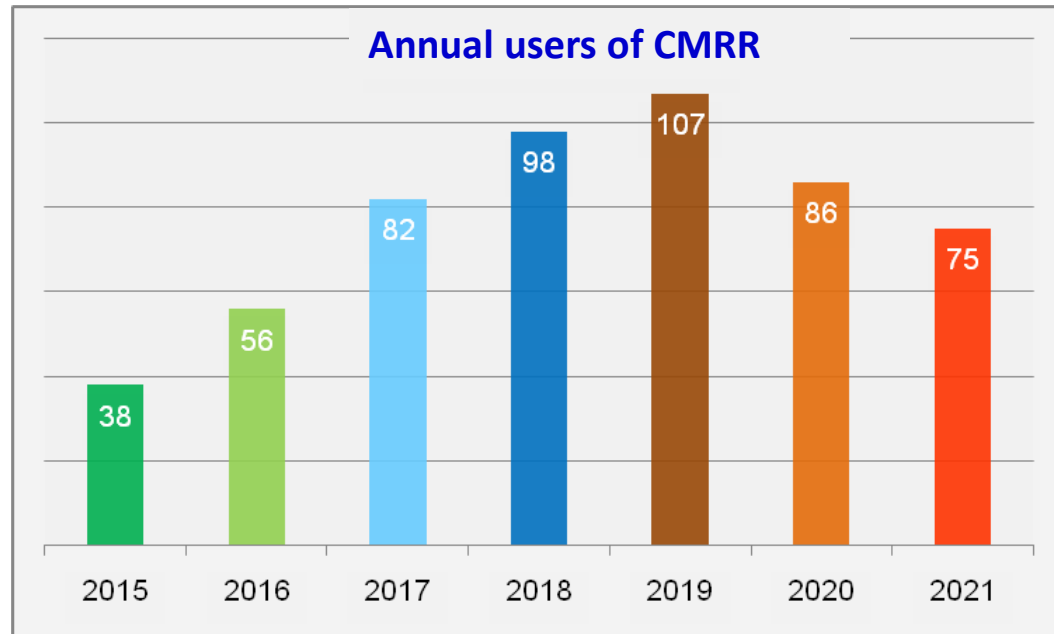
CARR—Technique Development

Polarized neutron beam obtained by using ^3He polarizer



2.2 CMRR—beam time and users

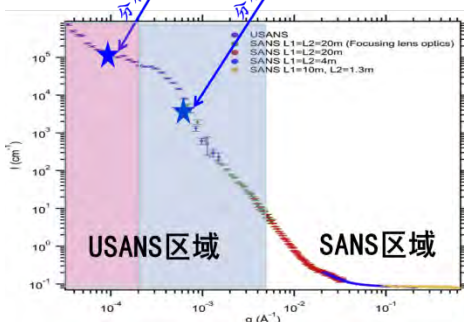
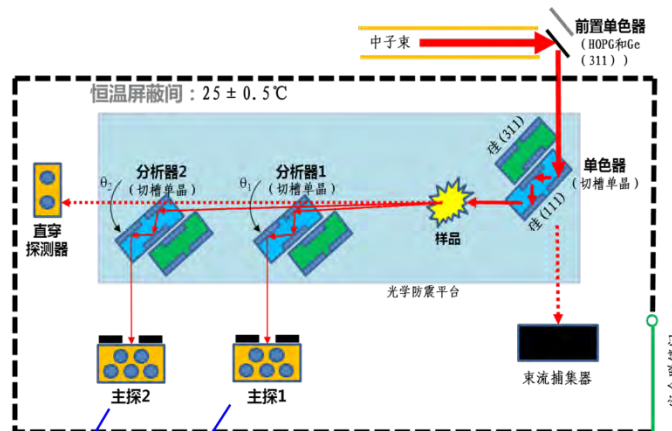
- CMRR has offered beam time for more than **70 users/year**.
- More than **50 papers/year** have been published on Journals such as Phys. Rev. Lett., J. Am. Chem. Soc., Adv. Materials



CMRR- Capability improvement on neutron science

➤ Ultra-small angle neutron scattering spectrometer

Aiming at the detection of structures ranging from submicron to microns in the fields of life, geology and materials. The USANS is a Bonse-Hart type one, equipped with double analyzers and double detectors.



设计指标:

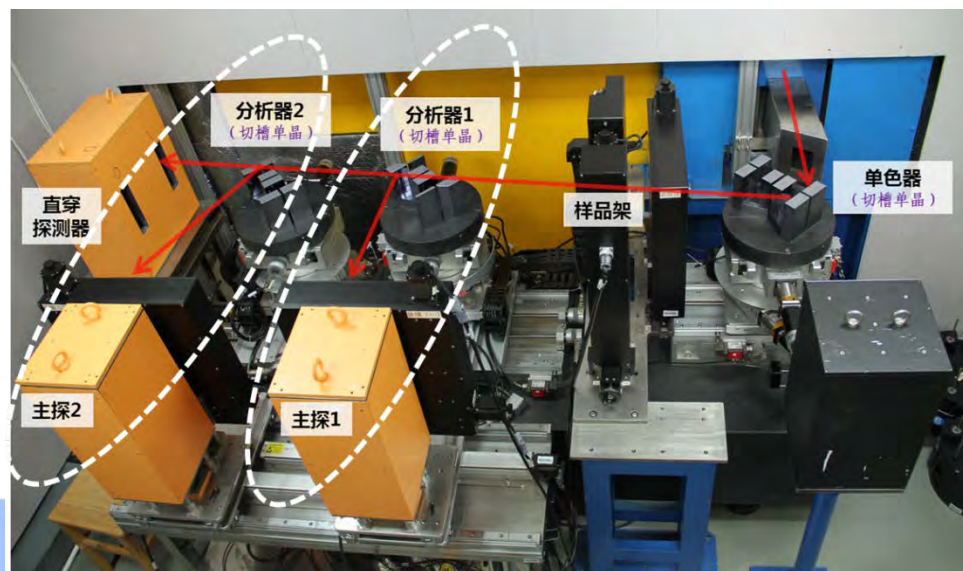
散射矢量Q范围:

$2 \times 10^{-5} \sim 5 \times 10^{-3} \text{\AA}^{-1}$;

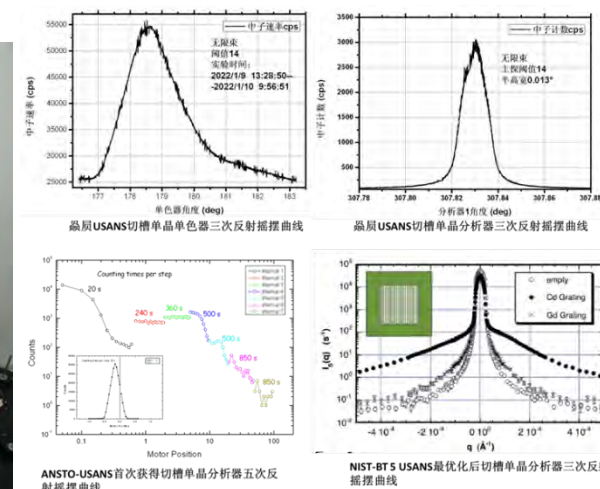
特征结构: 200nm~20 μm ;

工作波长: 2.41 \AA 和4.74 \AA ;

信噪比: $S/N \geq 1.0 \times 10^5$;



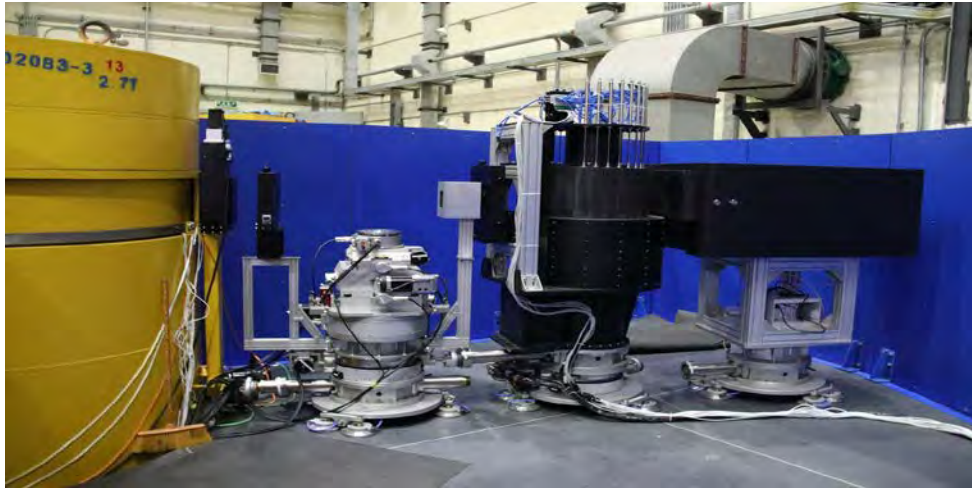
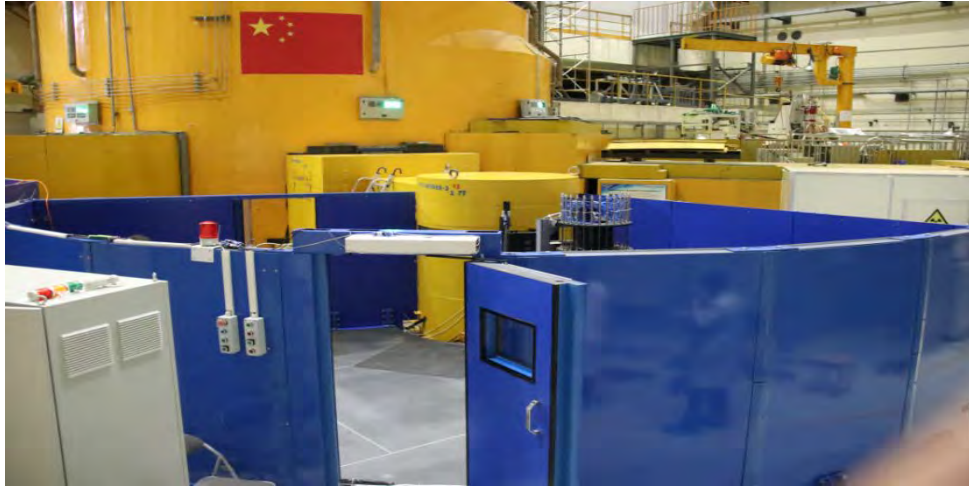
The intensity and q range are similar to the one at NIST,



Data of single crystal monochromator and analyzer were obtained for the first time on January 10, 2022

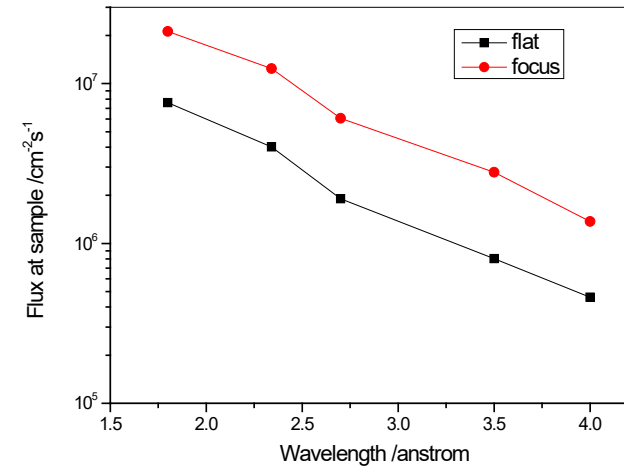
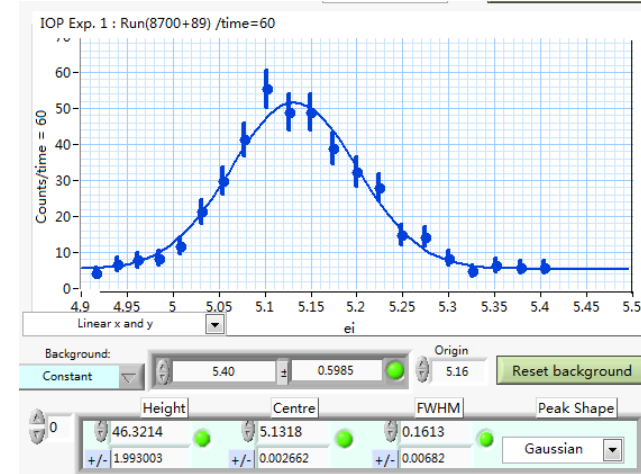
CMRR- Capability improvement on neutron science

➤ Thermal triple-axis spectrometer (TTAS)



Monochromator: **PG(002)& Cu(220)** ; Monochromator take off angle: **15° ~90°**

Scattering angle: **-90 ° ~90 °** ; Analyzer: **PG(002) & Ge(311)**

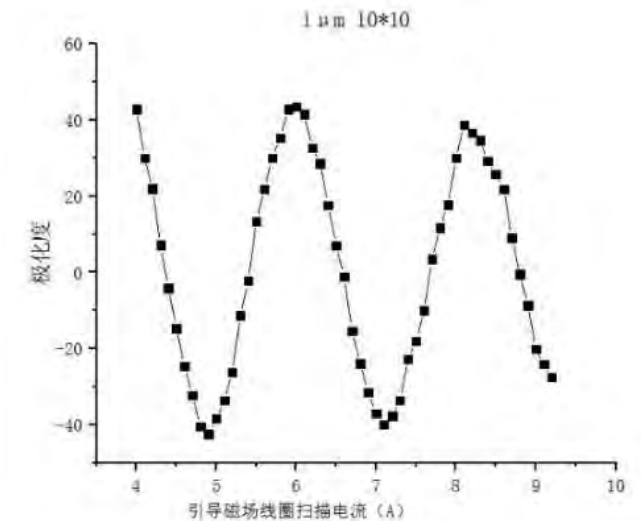
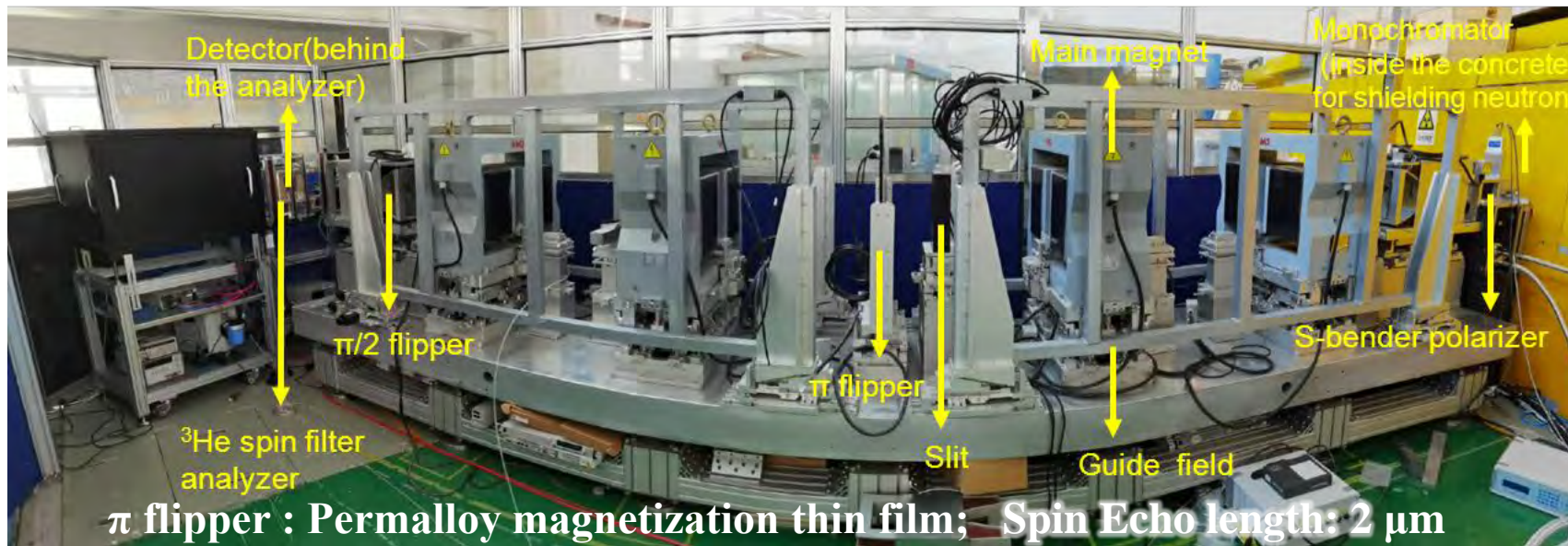


March 20, 2022, The measured parameters were: energy resolution: **0.16 μeV**, Flux: **1.5E7cm⁻²s⁻¹@14.7meV**

CMRR- Capability improvement on neutron science

➤ SESANS spectrometer

- ✓ The construction of **SESANS** is finished, the components including guides, focusing monochromator, polarizer, slit, V-coil, main coils, π , monitors, etc;



On November 24, 2021, the first neutron spin echo signal was obtained, and the length of spin echo was 2.2 μm when the polarization was 34%

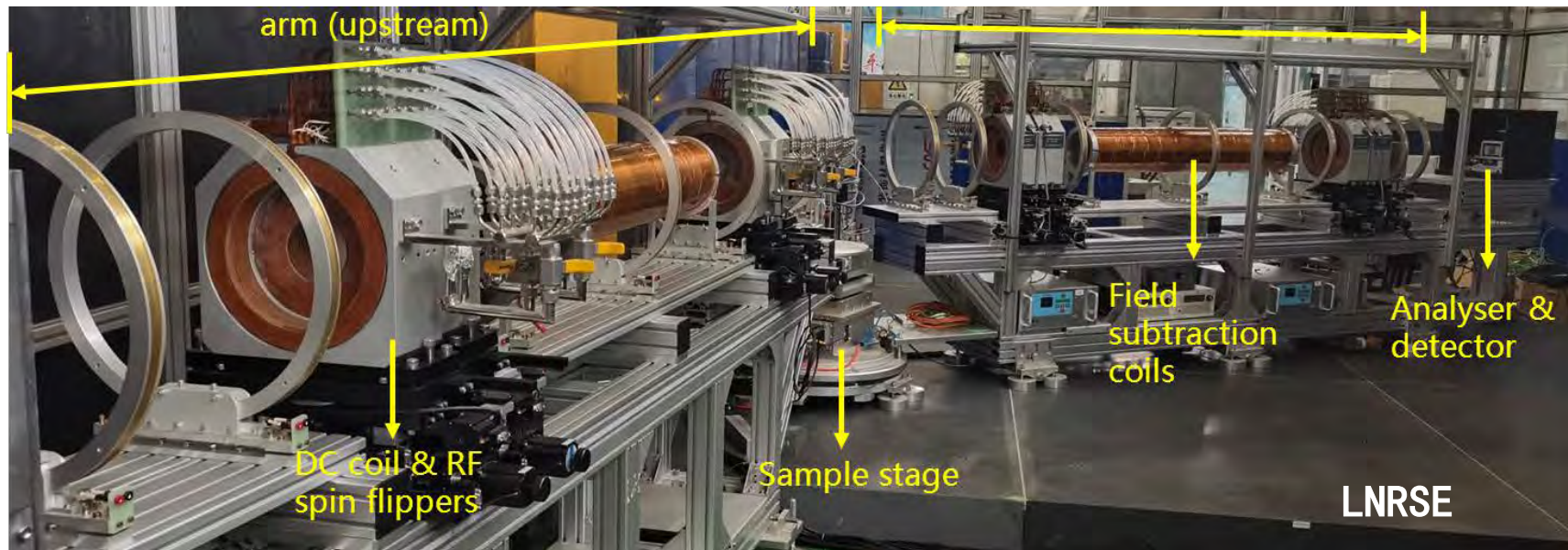
T Wang, X Tu*, G Sun* et al. *Nucl. Instrum. Methods Phys. Res., Sect. A*, 2021, Accepted

T Wang, Y Wang*, et al., *Software: Practice and Experience*, 2021; 51: 438- 448

CMRR- Capability improvement on neutron science

➤ Latitude Neutron Resonance Spin Echo Spectrometer

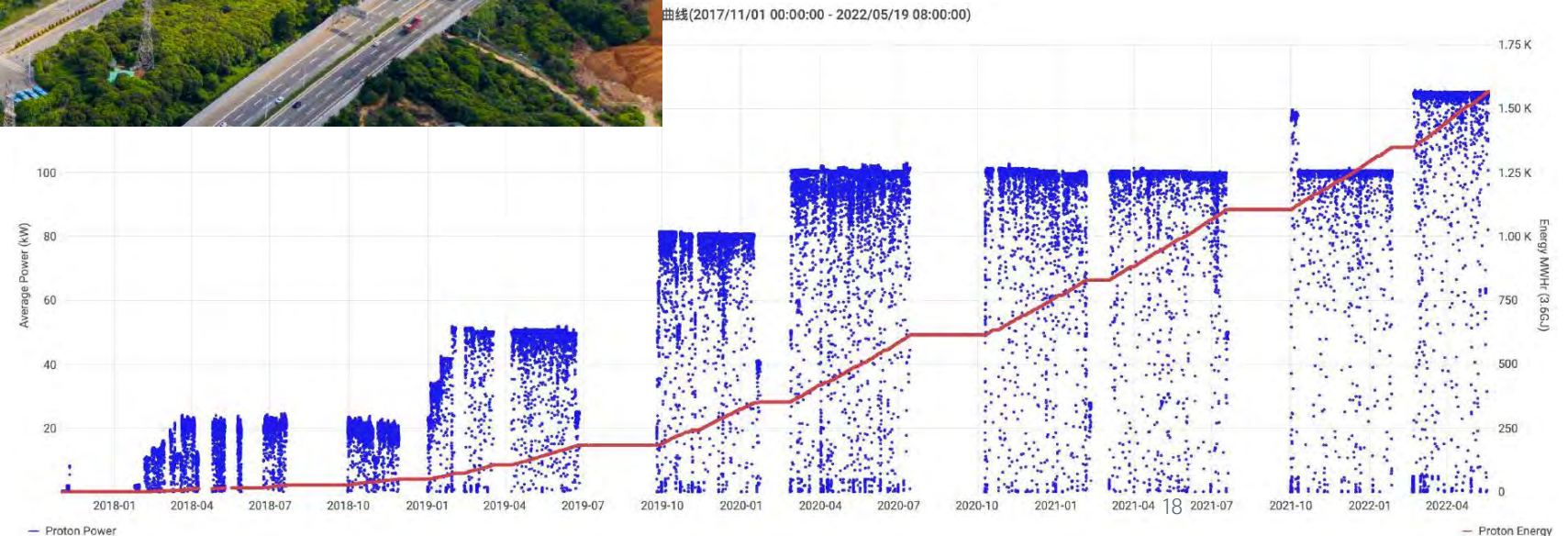
The Latitude Neutron Resonance Spin Echo Spectrometer was developed in China for the first time, which achieved energy resolution better than 100 neV so far. It could be used to study the microscopic dynamic mechanism of element diffusion/migration in materials



Around the world, FRMII (Germany) has a similar device. The energy resolution are similar
Key devices developed: the main magnetic field and resonance frequency of the flipper are the highest

2.3 China Spallation Neutron Source (CSNS)

From Oct. 2021 to Jun. 2022, the accelerator has been operating smoothly, and the beam availability reached 97%. From Mar. 2022, the accelerator beam power was increased to 125kW, which exceeds the designed value by 25%.

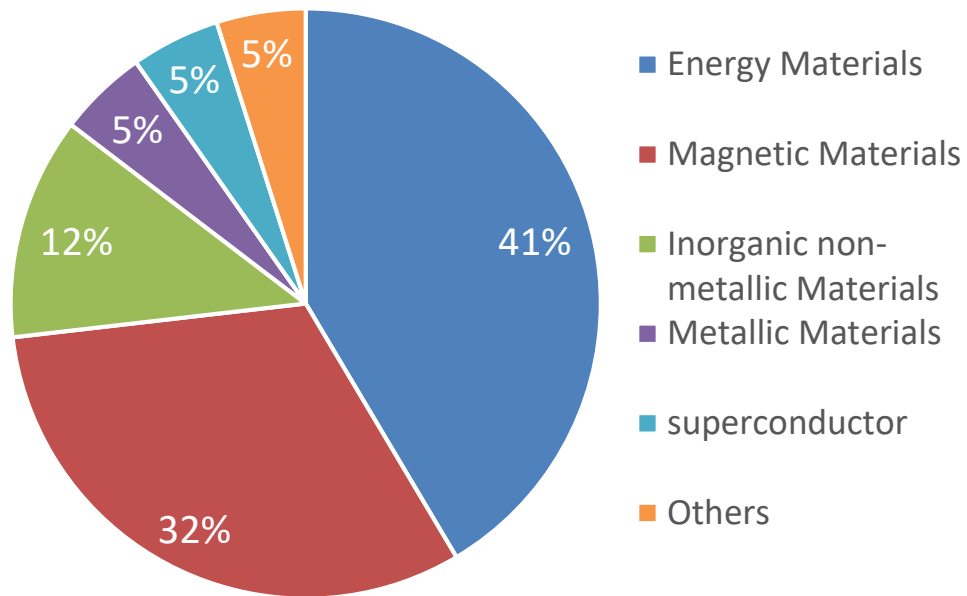


Atmospheric Neutron Irradiation Spectrometer Successfully Built at CSNS

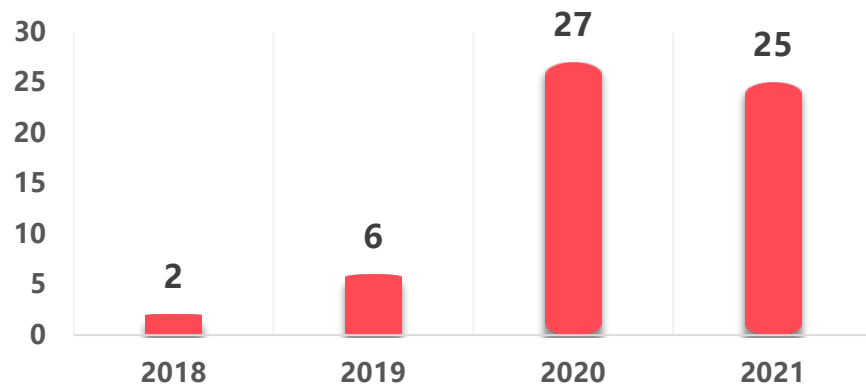


- CSNS's Atmospheric Neutron Irradiation Spectrometer (ANIS) received its first beam on April 2, 2022.
- As a fruitful collaboration between CSNS and CEPREI Laboratory, ANIS is the only facility in China that is capable of conducting accelerated atmospheric neutron irradiation tests—it is able to produce high flux neutron beams with an atmospheric neutron spectrum (ranging from meV to GeV) similar to that in the real space and terrestrial environment.

GPPD—Publications



Number of user articles for GPPD@CSNS



Highlight works

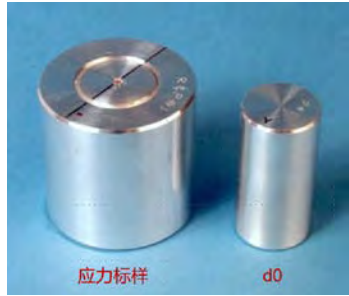
1. *Science*, 2021, 373, 315-320. IF=47.728
2. *Nature Communication*, 2021, 12(1), 3085. IF=14.919
3. *Nature Nanotechnology*, 2021, 16, 331–336. IF=39.213
4. *Energy Storage Materials*, 2022, 44, 1-9. IF=17.790
5. *Journal of the American Chemical Society*, 2021, 143, 6798–6804. IF=15.419
6. *CCS Chemistry*, 2020, 2, 2298–2306. IF=10
7. *Nature Communication*, 2021, 12(1), 3071. IF=14.919
8. *Nature Communication*, 2021, 12(1), 3136. IF=14.919
9. *Nature Communication*, 2021, 12(1), 4410. IF=14.919
10. *Angewandte Chemie International Edition*, 2021, 60, 22026–22034. IF=15.336

.....

As of May 2022, GPPD has produced a total of **70** research papers, including research papers published in top international journals such as *Science*, *Nature Communications*, *Advanced Materials*, *Materials Horizons*, etc. The total impact factor reached **833.68**, the average impact factor is **11.90**.

GPPD —Establishment and application of residual stress conditions for engineering materials

Testing and evaluation of diffractometer performance



ring and plug standard
round robin samples

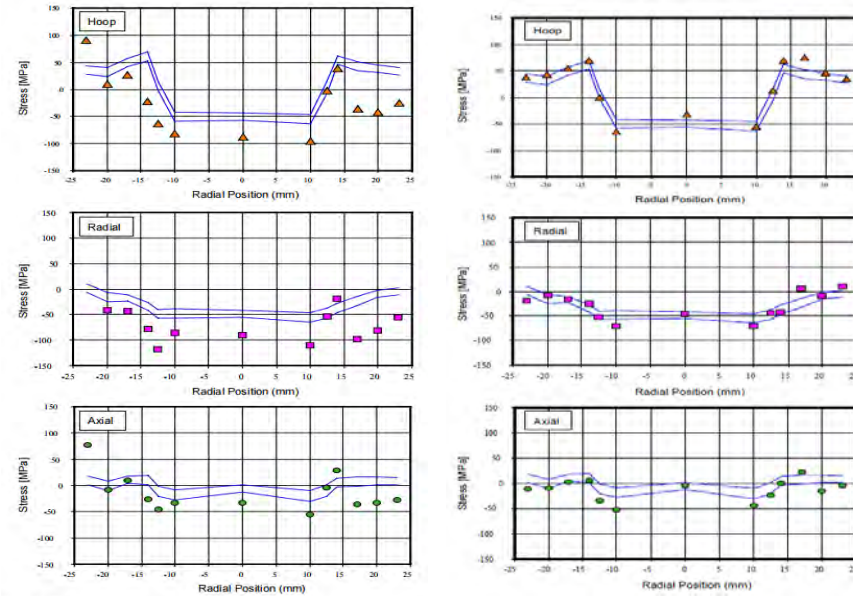
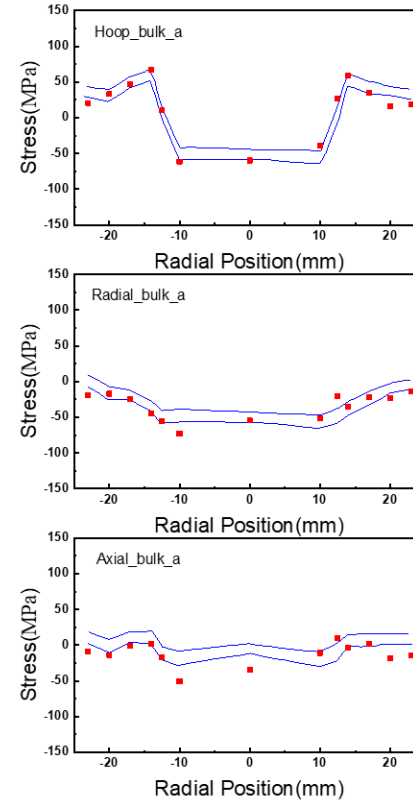


Fig. 5/2 Stress

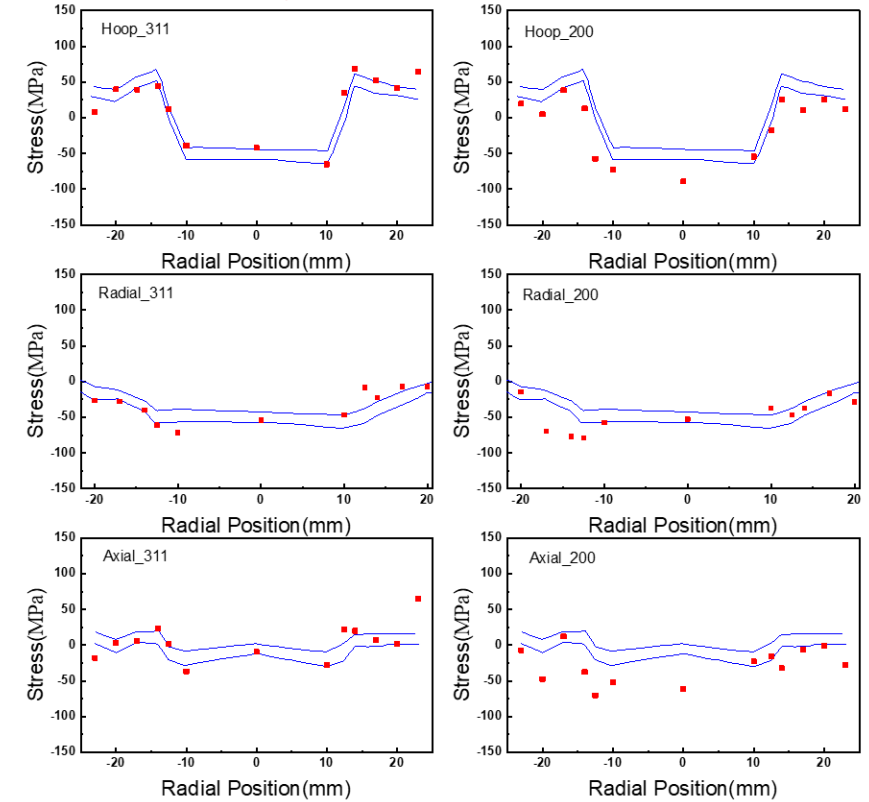
VAMAS report No. 38 ISSN 1016-2186 (2000)

The only stress standard sample in the world,
with 18 measurements made at various
international neutron sources

results from Rietveld refinement



results from single peak analyses of (311) and (200) Peaks

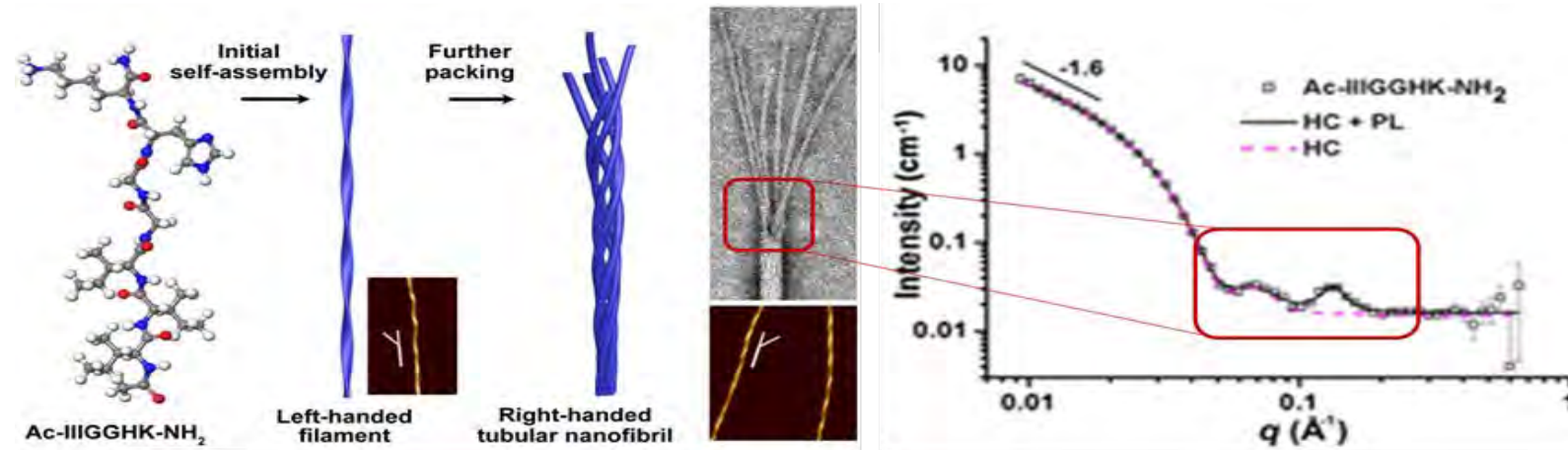


- GPPD has carried out a lot of testing work of the system, including the performance of each component and the whole system.
- Experimental methods of GPPD such as precise positioning of samples and micro-area measurement are feasible and effective.
- GPPD has the ability to resolve the stress gradient distribution, and the accuracy is less than 50MPa.

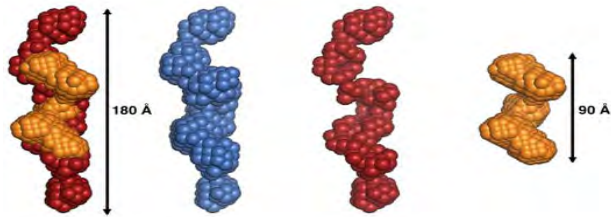
SANS—Biomacromolecules and Pharmaceuticals

- **Assembly process of biomacromolecules in solution**
- **Pathways and mechanisms of protein folding and supercoiling**

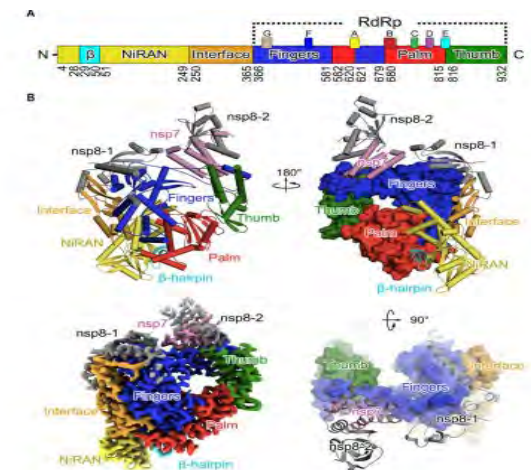
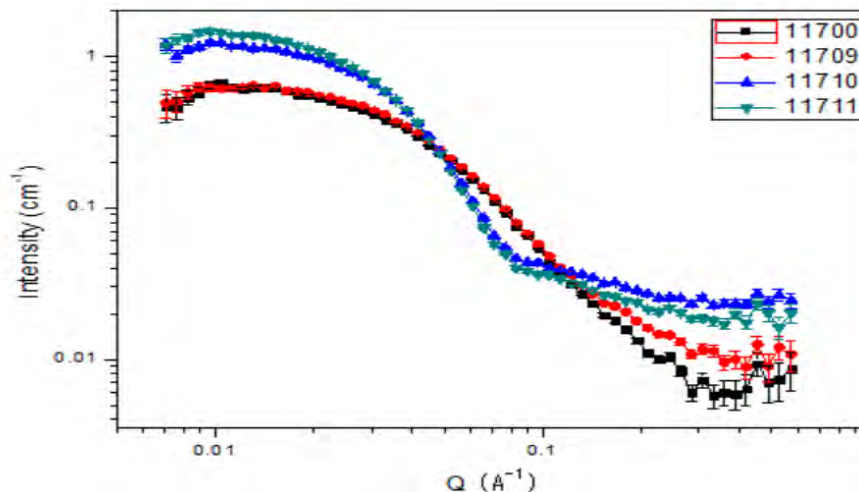
➤ *Multilayer nanotube structure formed by the self-assembly of polypeptides*



Hai Xu, *et al.* Nano Lett. 2021, Just accepted



➤ *COVID-19 protein structure*



Multi-purpose Reflectometer



Applications:

- Magnetic thin films
- Superconductor and topological films
- Functional oxide films
- Soft matters

Recent publications:

Phys. Rev. B.105.184405 (2022)

Phys. Rev. Lett. 128, 167202 (2022)

Phys. Rev. Lett. 128, 017202 (2022)

J. Mater. Chem. A 10, 10880 (2022)

Crystals 12, 759 (2022)

Phys. Rev. B 104, 134408 (2021)

Nature Communications, 12, 6226 (2021)

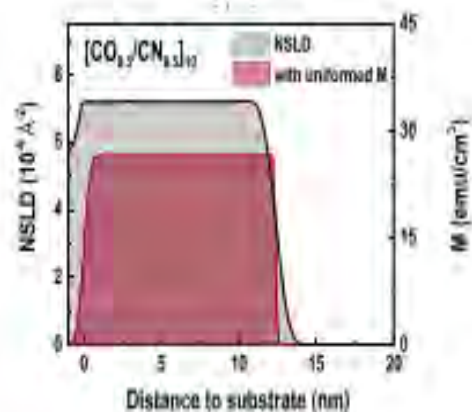
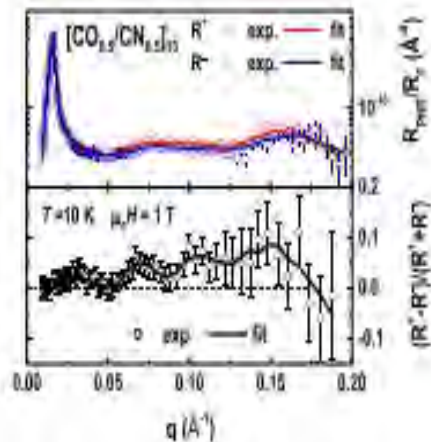
Appl. Phys. Lett. 119, 212406 (2021)

Phys. Status Solidi RRL 15, 2100386 (2021)

Nuclear Inst. and Methods in Physics Research B 504, 43 (2021)

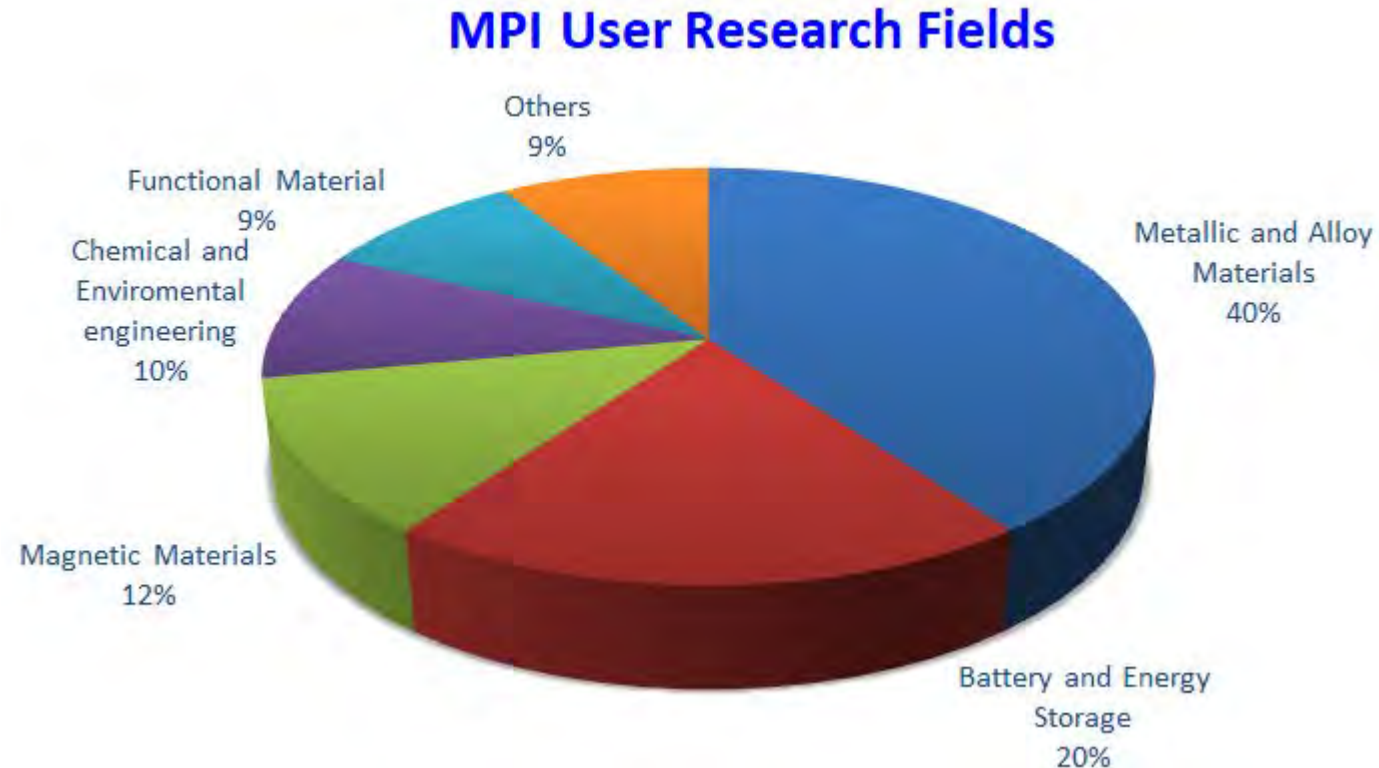
Recent instrument updates:

- Additional shielding for the detector
- Commissioning of a translation platform for detectors
- Commissioning of an automated sample changer



MPI-total scattering diffractometer

- ◆ During commissioning in 2021, the MPI had been finished the 5 test experiments.
- ◆ In Oct. 2021, MPI opened to the user community. It received 123 proposal applications and finished 44 experiments during the first open cycle.
- ◆ In the first half year of 2022, the MPI received 176 proposal applications and 62 applications was passed by the review.
- ◆ Some user results have been published or received by Nature Sustainability, Nano Energy, Scripta Materialia, Journal of Chemical Physics, and so on.



Progress of CSNS user instruments



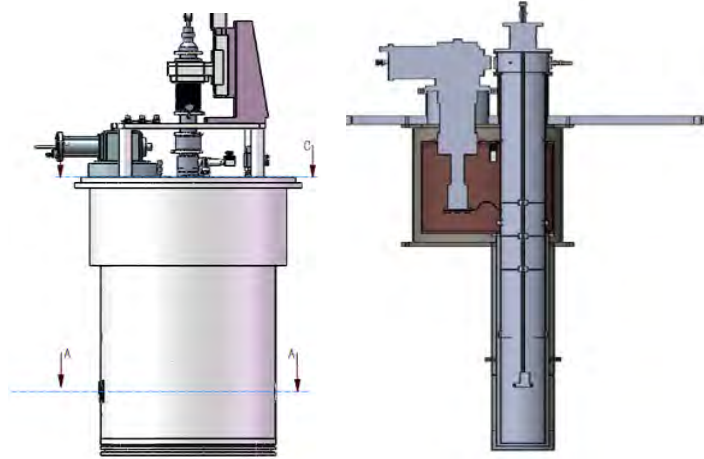
Progress of CSNS user instruments



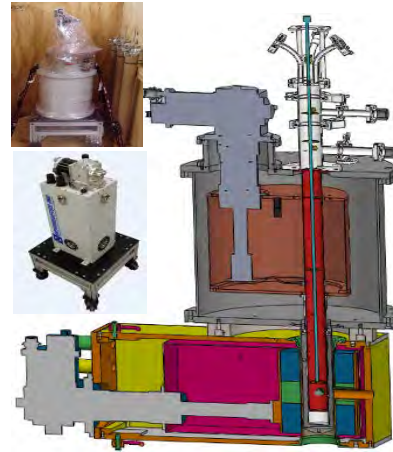
CSNS New Sample Environment: manufacturing & commissioning

To meet the needs of more users, we have completed the design and manufacturing of a variety of new sample environment. Most of the acceptance will be completed by the end of this year.

7T magnet & big bore CCR for
Inelastic spectrometer



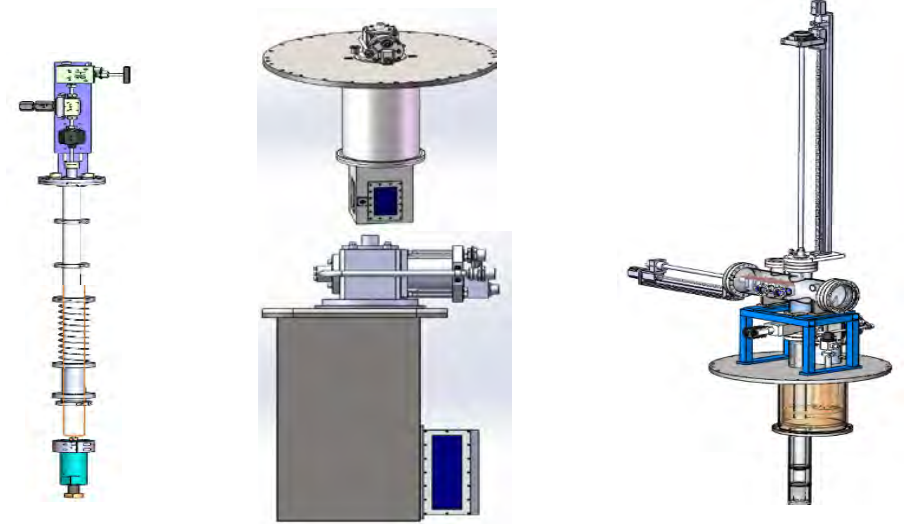
MR/SANS 5T magnet



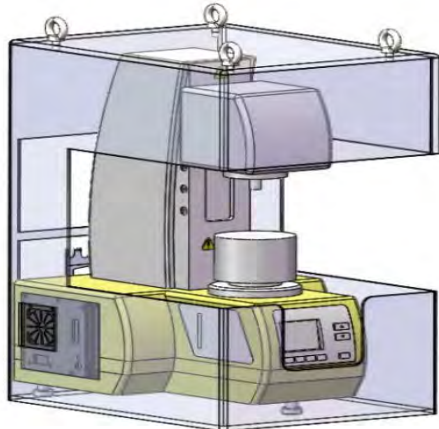
Gas insert for
furnace + CCR



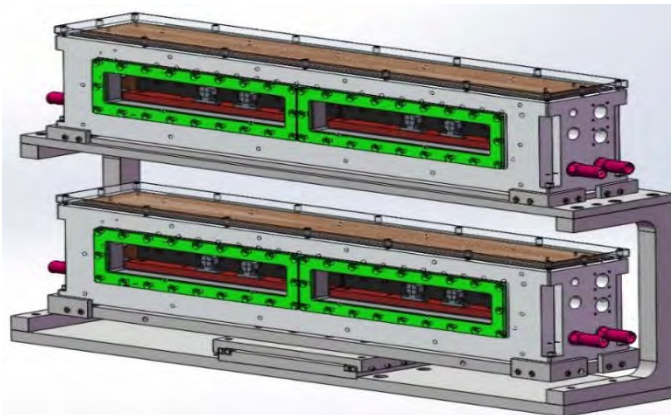
Bottom-loading CCRs Cryo-auto-changer



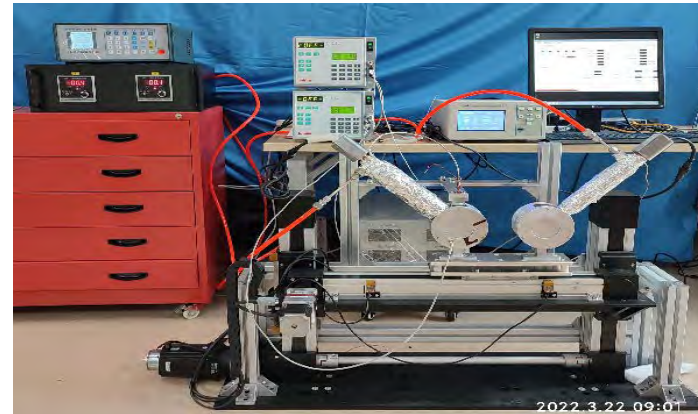
Rheometer



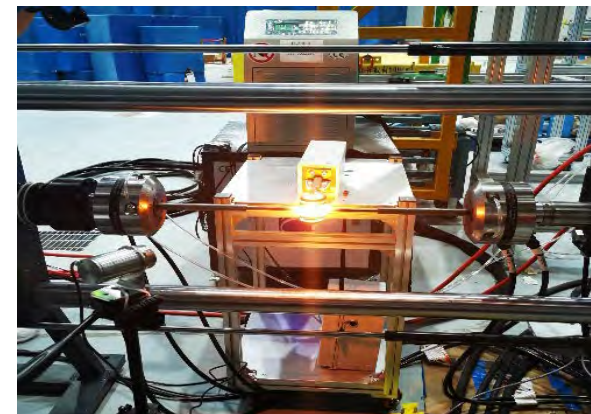
VSANS auto changer



Temperature jump cell



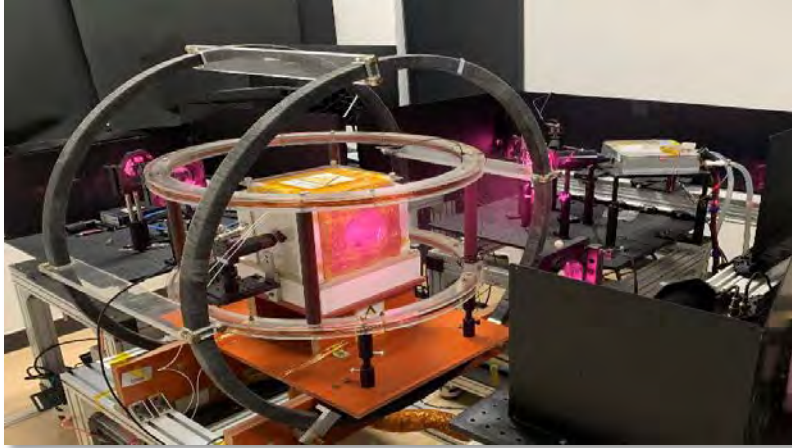
Load frame & its heater



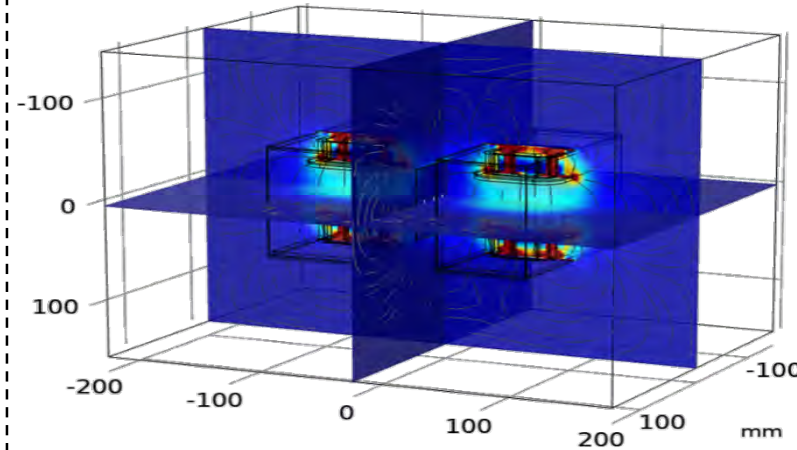
Polarized Neutron at CSNS

- Expanding in-house time-of-flight polarized neutron capability

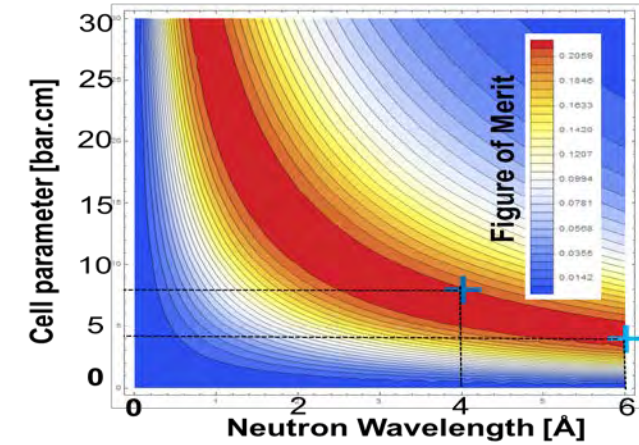
On-site SEOP ^3He pumping station



Magnetic field simulation



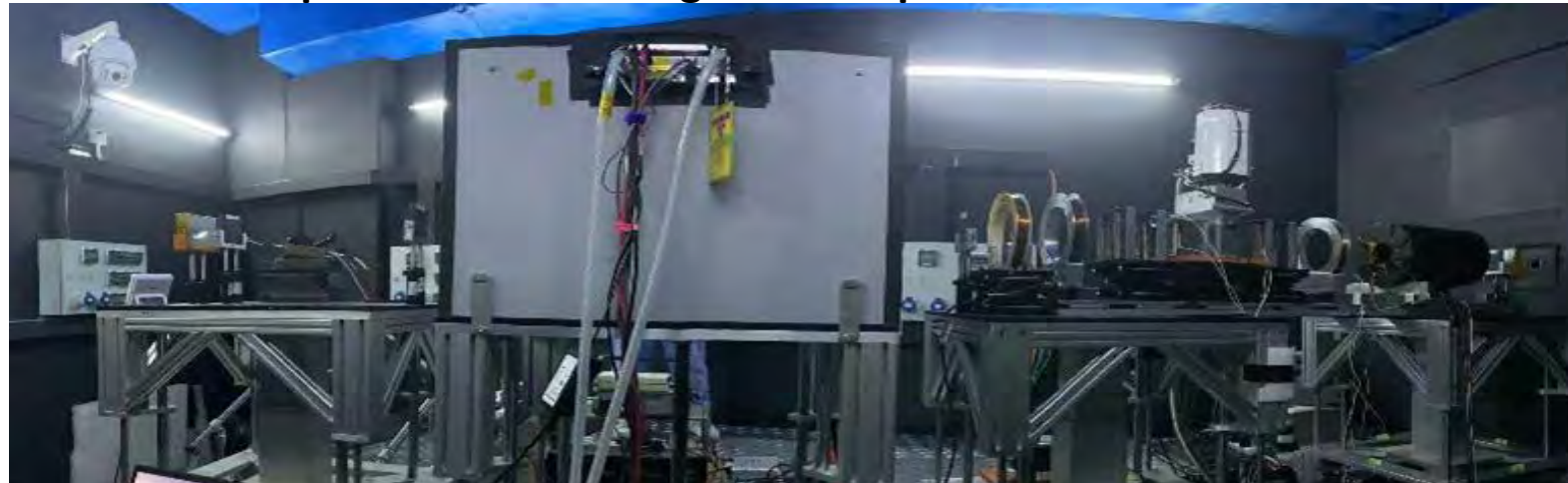
Performance analysis



Multiple In-situ ^3He filter systems

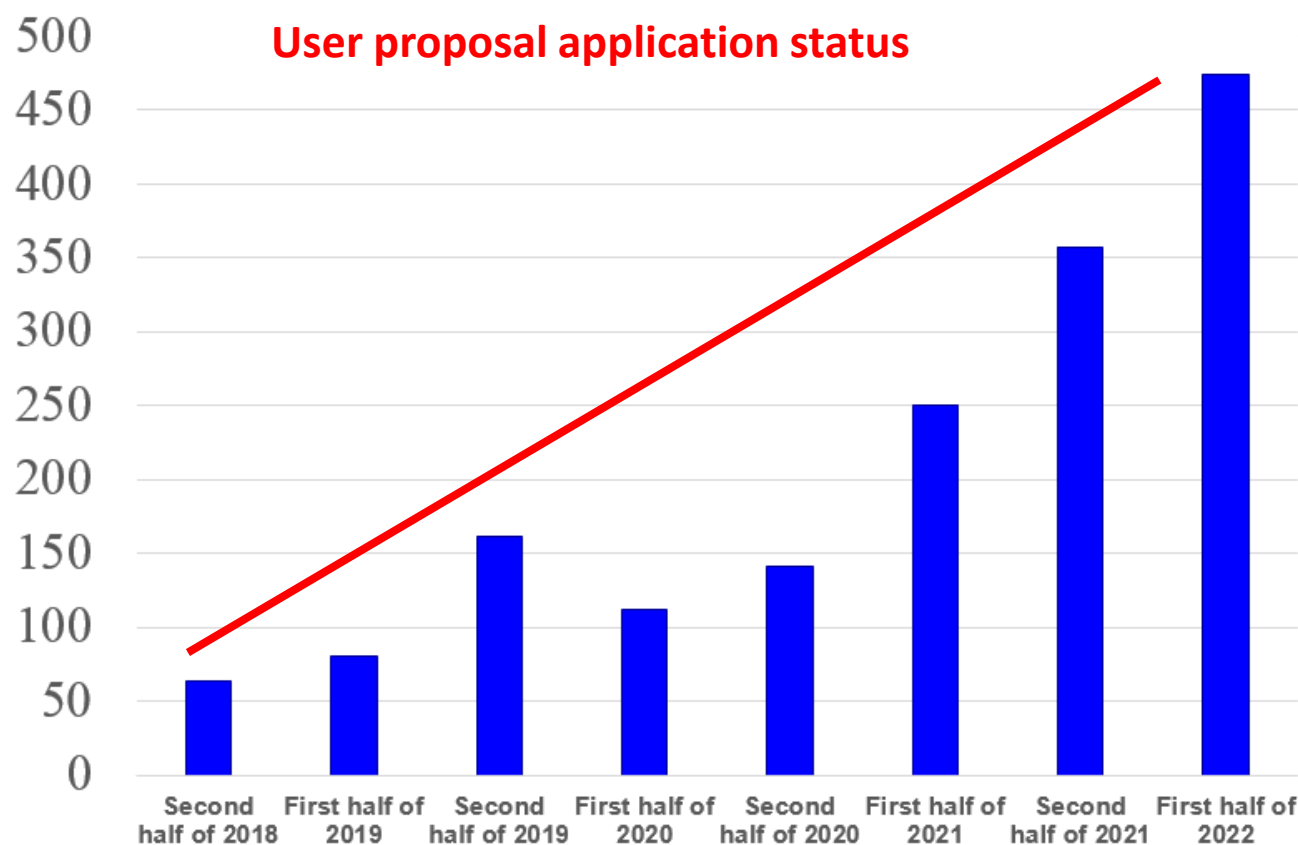


Neutron performance testing at development beamline



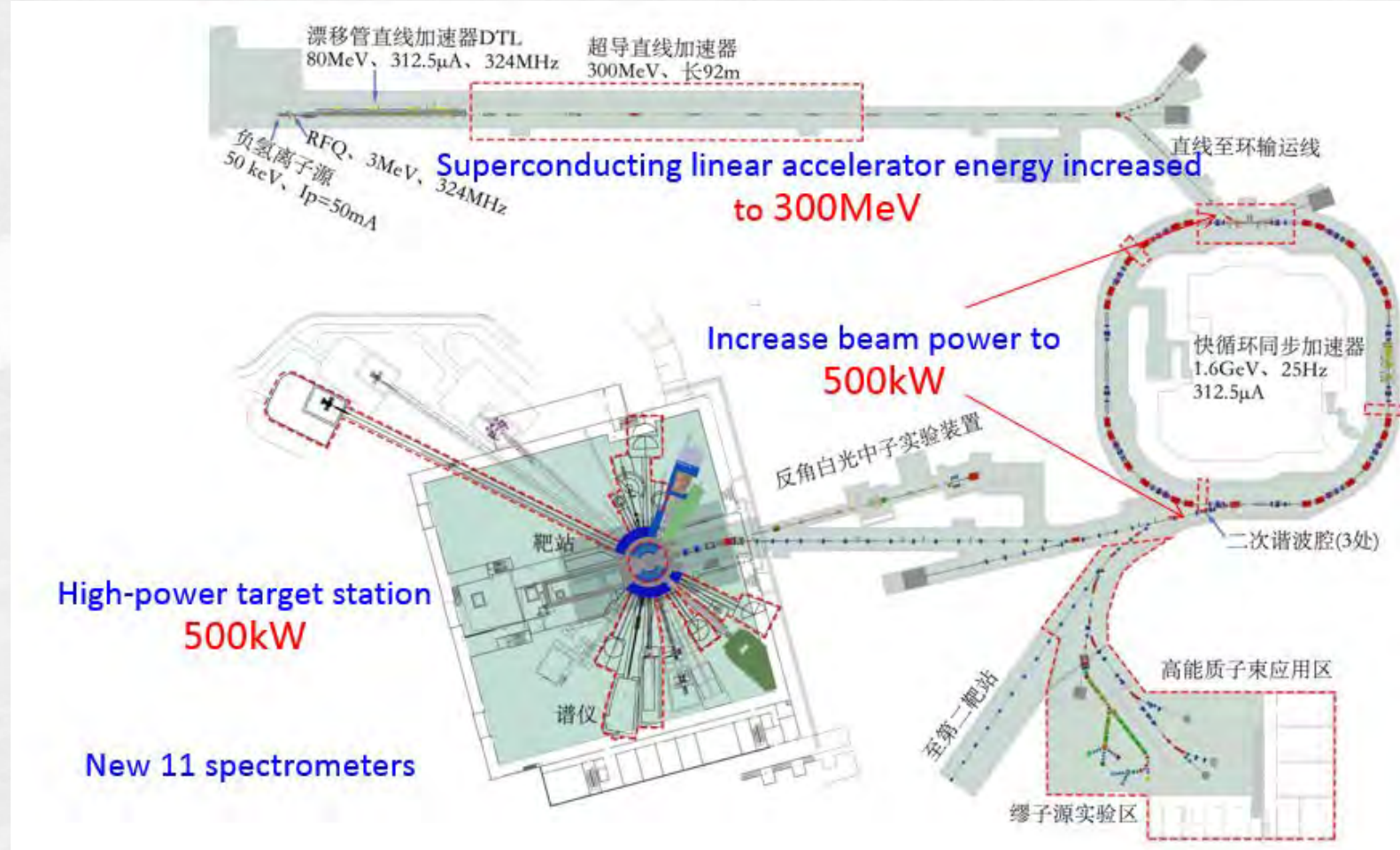
CSNS User Community and Achievements

In the eight-round runs of CSNS, more than 3,600 users registered in the CSNS User Service System, more than 640 user proposals have been completed, and more than 140 articles have been published in journals such as Science, Nature Nanotechnology, Nature Communication, Advanced Materials, and JACS, etc.



- The phase-I instruments: GPPD, MR, SANS
- The 8 user instruments: All are built by CSNS (turn key).
 1. Multiple Physics Instrument In operation Spring 2021
 2. Atmospheric Neutron Irradiation was completed summer 2022
 3. Engineering Diffractometer to be In operation Autumn 2022
 4. High energy chopper spectrometer will be completed by Autumn 2022
 5. Very small angle neutron scattering to be completed by the end of 2022
 6. Energy resolved neutron imaging to be completed by the end of 2022
 7. High Pressure Diffractometer to be completed by the end of 2023
 - 8 High-resolution neutron powder diffractometer to be completed by the end of 2023

CSNS Phase II Project has been approved to be included in the 14th 5-Year Plan of China. The feasibility study report of the CSNS-II project has passed the CAS pre-review.

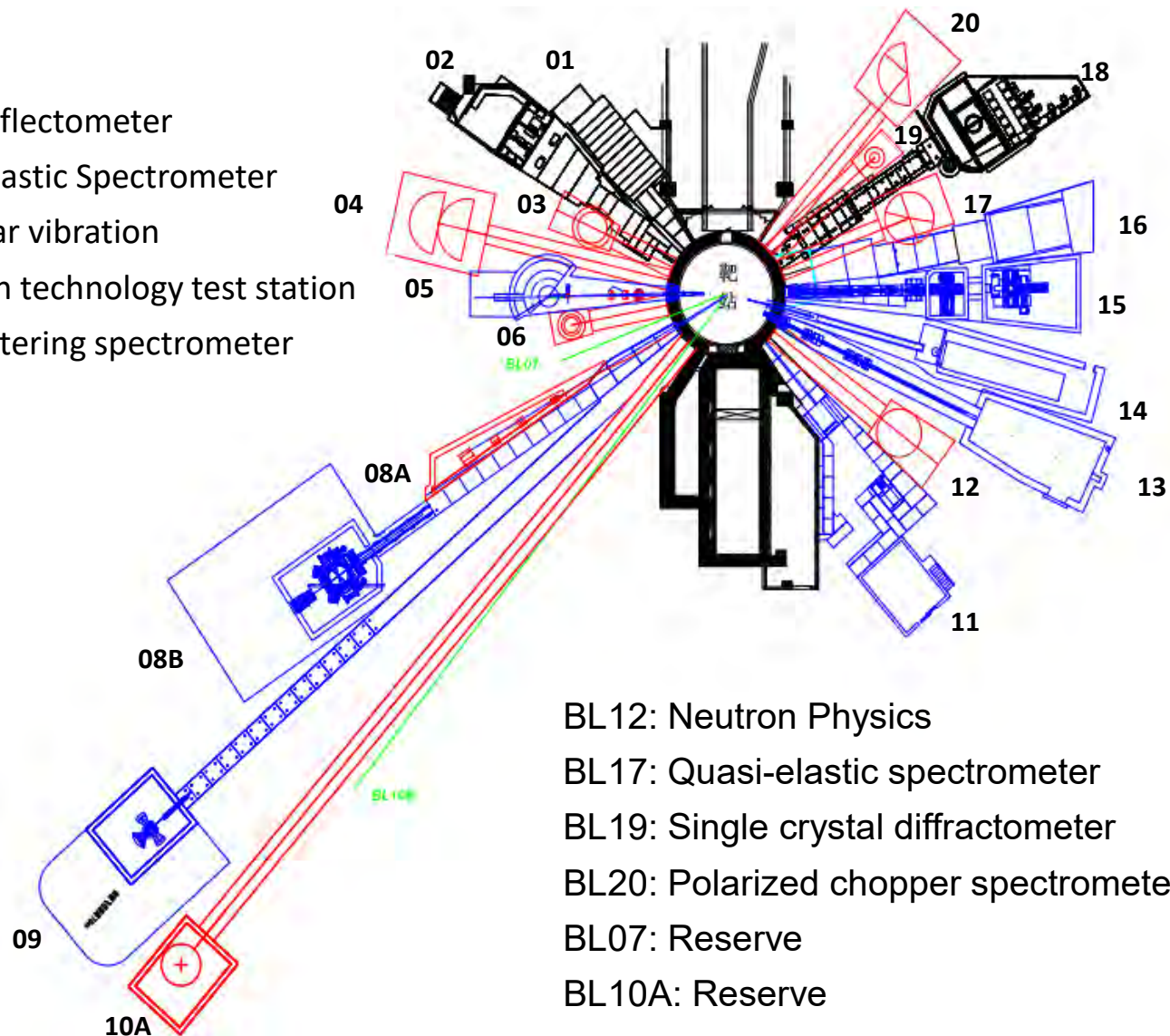


	I	II
Proton beam power(kW)	100	500
Pulse repetition frequency (Hz)	25	25
Target	1	1
Beam intensity(μA)	62.5	312
Beam energy (GeV)	1.6	1.6
Injection energy for ring (MeV)	80	300
Instruments	3	11

CSNS Phase II Project had been approved to be included in the 14th 5-Year Plan of China



BL03: Liquid reflectometer
BL04: Cold inelastic Spectrometer
BL06: molecular vibration
BL08A: neutron technology test station
BL10: Backscattering spectrometer



9 instruments + 1 Muon Beam + 1 Proton Terminal + 500 kW upgrade

- In operation: GPPD, SANS, MR, MPI
- Completed: ANIS
- Under construction: 4 user instruments + 2 Guangdong instruments

• CSNS II: 9+2

CSNS Phase II Instruments

The feasibility study report of the CSNS-II project has passed the CAS pre-review. The primary conceptual and physical design of nine instruments of CSNS II were completed, and entered the feasibility study stage.

Instrument	main parameter	Scientific goals
Liquid reflectometer	Momentum transfer Q : 0.0038-0.41 \AA^{-1}	Interface structure of thin-film materials such as biology, energy, corrosion resistance, etc.
Cold inelastic Spectrometer	Best energy resolution $\Delta E/E$: 1.5 %	Lattice and spin dynamics of thermoelectric, polyiron, superconducting, semiconductor, photovoltaic materials, etc.
Polarized chopper spectrometer	Polarizability $\geq 90\%$	High-temperature superconductors, quantum magnetic materials and other phonon anharmonic effects, electro-acoustic coupling, and magnetic correlation
molecular vibration	Best resolution $\Delta E/E$: 1.5 %	Molecular vibration of catalysis, energy, environment, biomedical materials
Backscattering spectrometer	Best resolution ΔE : 2.5 μeV	Slow dynamics such as diffusion and rotation in biomedicine, quantum physics, energy, etc.
Neutron Physics	Neutron flux $\geq 1\text{E}+08 \text{ n/cm}^2/\text{s}$	Prompt gamma activation analysis and neutron depth profile analysis of new materials, basic neutron physics
neutron technology test station	Neutron flux $\geq 4\text{E}+06 \text{ n/cm}^2/\text{s}$	Neutron detection, transport, absorption, moderation, polarization technology and equipment research and development
Quasi-elastic spectrometer	Best resolution $\Delta q/q$: 0.6 % @ 90°	Frustration magnets, ferroelectrics, high-temperature superconductors, ionic conductors, quantum spin liquids and other magnetic structures and excitations
Single crystal diffractometer	Minimum sample volume 0.1 mm^3	The crystal structure and magnetic structure of organic and inorganic single crystals, the crystal structure of biological macromolecules
Proton Terminal	Beam intensity $\geq 5\text{E}+06/\text{s}$	Research on Single Event and Biological Effects of Electronic Devices
Muon beams	Beam intensity $\geq 1\text{E}+05/\text{s}$	Research on local static, dynamic and magnetism of spin glass, giant magnetoresistance, low-dimensional, heavy Fermi system, etc.

Summary

- 3 facilities in China run well, and more scientific results obtained against the backdrop of the pandemic.
- CSNS II has been approved to be included in the 14th 5-Year Plan of China. The feasibility study report of the CSNS-II project has passed the CAS pre-review.
- The NS user community are increasing year by year, neutron spectrometers supply are in short supply.
- Training users and cultivate young talents in neutron scattering research and technology development is key issue.
- Welcome intl. users and cooperation in the neutron scattering and applications.

**Look Forward for More
International Cooperation !**



Report from Japanese Society for Neutron Science

K. Kakurai

CROSS

2022 Board of JSNS (Apr. 2022- Mar. 2023)

President: Kazuhisa Kakurai (CROSS)

Members of Council (16)

2021-2022 fiscal year

Hazuki Furukawa (Ochanomizu Univ.)

Takashi Kamiyama (Hokkaido Univ.)

Takashi Kamiyama (KEK /CSNS)

Hiromichi Kishimoto (Sumitomo Rubber Ind.)

Takuji Kume (Kao Corporation)

Kenji Ohyama (Ibaraki Univ.)

Toshiya Otomo (KEK)

Masayasu Takeda (JAEA)

Board of Administration

Secretary

Hitoshi Endo (KEK)

Masato Matsuura (CROSS)

Rintaro Inoue (Kyoto Univ.)

Treasurer

Yojiro Ohba (JAEA)

Noriki Terada (NIMS)

Public-Relations

Ken Morishima (Kyoto Univ.)

Hiroshi Akiba (Univ. Tokyo)

Green color: Industry

Red color: Lady

Newly elected (Nov. 2021):

2022-2023 fiscal year

Taka-hisa Arima(Univ. of Tokyo)

Masahiro Hino (Kyoto Univ.)

Yoshiaki Kiyanagi (Nagoya Univ.)

Kenji Nakajima (JAEA/J-PARC)

Yoshie Ohtake (RIKEN)

Taku Sato (Tohoku Univ.)

Hideki Seto (KEK)

Masaaki Sugiyama (Kyoto Univ.)

Events Coordination

Ryoji Maruyama (J-PARC)

Koichi Mayumi (Univ. Tokyo)

Hirotaka Sato (Hokkaido Univ.)

Communication

Maiko Kofu (J-PARC)

Minoru Soda (Ochanomizu Univ.)

Publication

Masato Hagihala (JAEA)

Yu Hirano (QST)

Current Status of JSNS and Events

Membership (26 May 2022)

578 members (including 54 students)

In addition 33 Senior members (Total of 611)

27 supporting members

Events from the last EC meeting

The 21st 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 5th Neutron and Muon School @ J-PARC MLF was held on line (December 6-9, 2021)

School Master: Prof. K. Kubo; Executive Committee Chair: Prof. H. Seto

(in planning)

The 22st Annual Meeting of the Japanese Society for Neutron Science will be 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 6th Neutron and Muon School @ J-PARC MLF will be held in hybrid format (Dec. 12-16, 2021)

School Master: Dr. Kazuhisa Kakurai; Executive Committee Chair: Dr. Ryoji Kiyanagi

The 21th Annual Meeting of the Japanese Society for Neutron Science

December 1-3, 2021, virtual conference (Kumatori), Institute for Integrated Radiation and Nuclear Science (KURNS), Kyoto University

Conference Chairperson: Prof. Masaaki Sugiyama (KURNS, Kyoto University)

Program Committee Chairperson: Prof. Masahiro Hino (KURNS, Kyoto University)

Participants (registered) : 275

Including 58 students

Oral presentations: 50

Poster presentations: 110

Plenary Speakers

Prof. Toshiji Kanaya (Kyoto Univ.)

Prof. Christian Pfleiderer (TU Munich)

Invited Speakers

Dr. Masatoshi Arai (ESS)

Dr. Ken Andersen (ORNL)

JSNS General Assembly on the 1st 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. Shibayama (CROSS)

Prof. T. Kamiyama (Hokkaido Univ.), Prof. H. Tanaka (TiT), Prof. Y. Uwatoko (ISSP, Univ. Tokyo),

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

JSNS Awards

The JSNS Science Prize

Hideki Seto

Institute of Materials Structure Science / J-PARC Center
High Energy Accelerator Research Organization (KEK)

‘ Application and development of neutron scattering techniques for soft matter science research ’

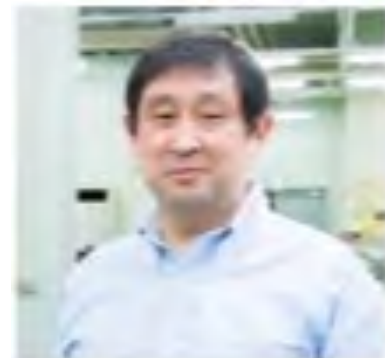


The JSNS Technology Prize

Takuya Hosobata and Yutaka Yamagata

Ultrahigh precision Optics Technology Team
RIKEN Center for Advanced Photonics

‘ Development of ultrahigh precision curvature metallic substrate for neutron focusing mirror ’



JSNS Awards

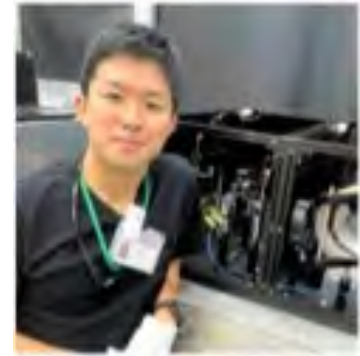
The JSNS Young Researcher Prizes

Takuya Okudaira

Division of Particle and Astrophysical Science, Graduate School of Science

Department of Physics, Nagoya Univ.

'Development and advanced research of high-performance ^3He neutron spin filter at J-PARC'



Koichi Mayumi

Neutron Science Laboratory, The Institute for Solid State Physics (ISSP), University of Tokyo

'Molecular structure and dynamics investigation of polyrotaxane by means of neutron scattering'



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School Master: Prof. K. Kubo; Executive Committee Chair: Prof. H. Seto

(in planning)

The 22st Annual Meeting of the Japanese Society for Neutron Science will be 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

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School Master: Dr. Kazuhisa Kakurai; Executive Committee Chair: Dr. Ryoji Kiyanagi

By courtesy of Prof. H. Seto



KEK-IINAS School

The 5th Neutron and Muon School

KEK-IINAS School
The 5th Neutron and Muon School
6-9 December 2021
Online / J-PARC (Tokai-Ibaraki, Japan)

The School provides training for newcomers to neutron and muon beam research from across the fields of physics, chemistry, biology, materials science and more. In addition to lectures, practical sessions are included with hands-on data analysis.

E-mail:
nm-school@cross.or.jp

For more information:
URL: <https://mlinfo.jp/sp/school/5th-nms/about.html>

Logos at the bottom: JIMMS, J-PARC, CEA, IMSS, IINAS, CROSS, and others.

<https://mlinfo.jp/sp/school/5th-nms/>
<https://conference-indico.kek.jp/event/164/> (pass: nmschool2021)

Organizers

School Principal:

Kenya M. Kubo (JMMS)

Organizing Committee:

Kazuhisa Kakurai (JSNS)

Shuichi Wakimoto (J-PARC, JAEA)

Mitsuhiro Shibayama (CROSS)

Kenji Nakajima (MSRC, JAEA)

Osamu Yamamuro (ISSP, Univ. of Tokyo)

Hironori Kodama (Ibaraki Pref.)

Teruyuki Ikeda (Ibaraki Univ.)

Toshiya Otomo (J-PARC, KEK)



Local Organizing Committee

Chair:

Hideki Seto (J-PARC, KEK)

Committee Member:

Yukinobu Kawakita (J-PARC, JAEA)

Ryoji Kiyanagi (J-PARC, JAEA)

Kazuki Ohishi (CROSS)

Toyotaka Osakabe (MSRC, JAEA)

Ryuji Maruyama (J-PARC, JAEA / JSNS)

Tadashi Adachi (Sophia Univ / JMMS)

Akihiro Koda (J-PARC, KEK)

Hirotooshi Hayashida (CROSS)

Taro Nakajima (ISSP, Univ. of Tokyo)

Kenji Ohoyama (Ibaraki Univ.)

Kazuaki Iwasa (Ibaraki Univ.)

Masaaki Hibi (IUSNA)

Yugo Ookubo (Ibaraki Pref.)

Kazutaka Ikeda (J-PARC, KEK)

Takanori Hattori (J-PARC, JAEA)

Takashi Ohhara (J-PARC, JAEA)

Yoshino Hayes (IINAS, KEK)

Atsuko Irie (IMSS, KEK)

Kaoru Ohuchi (CROSS)

Masatoshi Tukada (J-PARC, KEK)

Beamline staff (Hands-on exp.)

[PLANET (BL11)]

Takanori Hattori (J-PARC, JAEA)
Asami Sano (J-PARC, JAEA)
Shinichi Machida (CROSS)
Jun Abe (CROSS)
Nobuo Okazaki (CROSS)

[HRC (BL12)]

Taro Nakajima (ISSP, Univ. of Tokyo)
Shinichiro Asai (ISSP, Univ. of Tokyo)
Hikaru Saito (ISSP, Univ. of Tokyo)
Daichi Ueta (J-PARC, KEK)
Shinichi Itoh (J-PARC, KEK)

[Senju (BL18)]

Takashi Ohhara (J-PARC, JAEA)
Ryoji Kiyonagi (J-PARC, JAEA)
Yoshihisa Ishikawa (CROSS)
Koji Munakata (CROSS)
Kentaro Moriyama (CROSS)

[NOVA (BL21)]

Takashi Honda (J-PARC, KEK)
Kazutaka Ikeda (J-PARC, KEK)

[ARTEMIS (S1)]

Akihiro Koda (J-PARC, KEK)
Takehito Nakano (Ibaraki Univ.)
Izumi Umegaki (J-PARC, KEK)
Sohtaro Kanda (J-PARC, KEK)
Shoichiro Nishimura (J-PARC, KEK)

Program

Dec. 6			
9:30	Opening Remarks	10 min	K. Kubo (ICU)
9:40	Overview of J-PARC MLF	30 min+10	T. Otomo(J-PARC/KEK)
10:20	Introduction to Neutron Science	50 min+10	R. A. Robinson (Ibaraki U., U. of Wollongong)
11:20	Introduction to Muon Science	50 min+10	K. Shimomura (J-PARC/KEK)
12:20	Lunch		
13:30	Neutron Production	50 min+10	K. Kino(AIST)
14:30	Muon Production	50 min+10	N. Kawamura (J-PARC/KEK)
15:30	break		
15:40	Muon Spin Rotation	50 min+10	A. Hillier (ISIS)
16:40	Self introduction		
Dec. 7			
10:00	Neutron Diffraction	50 min+10	Vanessa Peterson (ANSTO)
11:00	Inelastic Scattering	50 min+10	Shinichi Itoh (J-PARC/KEK)
12:00	break		
12:10	Small-Angle Scattering	50 min+10	Elliot Gilbert (ANSTO, U. of Queensland)
13:10	Lunch		
14:00	Hans-on Experiments		

Program

Dec. 8			
10:00	Neutron Physics	50 min+10	Masaaki Kitaguchi (Nagoya Univ.)
11:00	Muon Physics	50 min+10	H. Iinuma (Ibaraki Univ.)
12:00	break		
12:10	Neutron Reflectometry	50 min+10	Sungkyun Park (Pusan National Univ.)
13:10	Lunch		
14:00	Hands-on Experiments		
Dec. 9			
10:00	Quasi-elastic Scattering	50 min+10	M. Nagao (NIST)
11:00	Muonic X-ray Measurements	50 min+10	K. Ninomiya (Osaka Univ.)
12:00	break		
12:10	Neutron Imaging	50 min+10	H. Sato(Hokkaido Univ.)
13:10	Lunch		
14:00	Hands-on Experiments		

School Statistics

Total number of applicants: 94

(India(29), Japan(19), China(14), Indonesia(9), Taiwan(6), Canada(3), Korea(2), Germany(2), UK(3), Switzerland(2), Thailand(1), USA(2), Venezuela(1), Italy(1))

Applicants for the Hands-on Training: 55

(India(24), Japan(11), China(7), Indonesia(5), Taiwan(4), Canada(2), UK(1), USA(1))

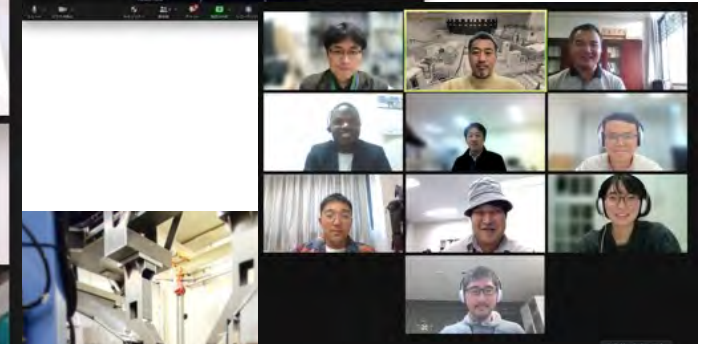
for the instruments:

HRC (27), PLANET (6), SENJU (6), NOVA (4), ARTEMIS (12)

Participants of the Hands-on Training: 25

HRC (9), PLANET (5), SENJU (5), NOVA (3), ARTEMIS (3)

Zoom connections to the lectures: max. 94 to min. 37 per day.



Current Status of JSNS and Events

Membership (26 May 2022)

578 members (including 54 students)

In addition 33 Senior members (Total of 611)

27 supporting members

Events from the last EC meeting

The 21st 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 5th Neutron and Muon School @ J-PARC MLF was held on line (December 6-9, 2021)

School Master: Prof. K. Kubo; Executive Committee Chair: Prof. H. Seto

(in planning)

The 22st Annual Meeting of the Japanese Society for Neutron Science will be 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 6th Neutron and Muon School @ J-PARC MLF will be held in hybrid format (Dec. 12-16, 2022)

School Master: Dr. Kazuhisa Kakurai; Executive Committee Chair: Dr. Ryoji Kiyanagi

Report from the Korean Neutron Beam Users Association

The 28th AONSA EC meeting
Online via ZOOM
2022/06/18



Jae- Ho Chung (Korea Univ.)
Soo-Hyung Choi (Hongik Univ.)

Korean Neutron Beam Users Association

◆ KNBUA EC Meeting (2021. 11. 26 & 2022. 05. 06)

- ❑ **President: Jae-Ho Chung (Korea U)**
- ❑ **Secretary: Soo-Hyung Choi (Hongik U)**
- ❑ **HANARO representative: Young Soo Han (KAERI)**
- ❑ **Discussion**
 - Budget status and spendings (funded by KAERI)
 - Internal discussion about the relationship with Korea Multi-Purpose Accelerator Complex
 - Financial support for students attending ICNS 2022
 - Updates of HANARO status



Travel support for neutron scattering from Korea

- ◆ **Who:** Students affiliated with South Korean universities and institutions
- ◆ **What:** Airfare + local expenses for neutron scattering experiments outside of South Korea
- ◆ **When:** 2020/06/17 – 2022/12/31 expected to extend to 2023/06/31
- ◆ **How:** By contacting the PI and temporarily becoming a research team member of **CMRNB**
 - Contact: Jae-Ho Chung (Korea University) at jaehc@korea.ac.kr
- ◆ Letters of information will soon be sent to facility directors and user offices by e-mails.

Research Grant to support neutron research

◆ Center for Materials Research using Neutron Beams

- ❑ Supported by the NSF of Korea by the Grant to Support Researches Using Large Overseas Research Facilities.
- ❑ Period: 2020/06/17 – 2022/12/31 submitting a request to extend to 2023/06/31
- ❑ Fund: approximately USD 165,000 x three years
 - ❖ Neutron beamtime experiments (partly synchrotron and muon)
 - ❖ Neutron schools and workshops
 - ❖ Can support students from non-participating research groups
- ❑ Primary Investigator: Jae-Ho Chung (Korea University)
- ❑ Regular Participants: Sungkyun Park (Pusan NU), Soo-Hyung Choi (Hongik U), Tae-Hwan Kim (Cheonbuk NU), Su-Yeol Lee (Chungnam NU), Eun-Soo Park (Seoul NU), Seungwook Lee (Pusan NU), Hyeon-Cheol Oh (Kyeongnam STU), Minyoung Yoon (Kyeongbuk NU)



Website: <http://nssi.org.in>

Email : neutron@barc.gov.in

Total members: 245

Managing committee of NSSI members (2021-2024)

S. No.	Name and affiliation	Post
1.	Prof. Dhananjai Pandey	President
2.	Dr. Ranjan Mittal	Vice President (HQ)
3.	Prof. K. G. Suresh	Vice President
4.	Dr. V.K. Aswal	General Secretary
5.	Dr. P. D. Babu	Treasurer
6.	Prof. Arumugam Thamizhavel	Member
7.	Dr. S. L. Chaplot	Member
8.	Dr. S. M. Yusuf	Member
9.	Dr. P.U. Sastry	Member



7th Conference on Neutron Scattering

Organized by Solid State Physics Division, Bhabha Atomic Research Centre

In Association with Neutron Scattering Society of India

25-27, November 2021 (Hybrid mode), Anushaktinagar, Mumbai, India



Scope: Neutron scattering is an indispensable technique for investigating structure and dynamics in condensed matter, covering a vast multidisciplinary research spectrum. Solid State Physics Division is carrying out fundamental research in the area of advance magnetism, structure and dynamics, soft matter, nanostructured materials and thin films primarily using neutron scattering facilities at Dhruva. Aim of this conference, being organized jointly with Neutron Scattering Society of India, is to discuss the recent advances in condensed matter physics research using neutron scattering and current developments on neutron instruments and facilities.

Topics: The conference will cover applications of the neutron scattering in the following areas:

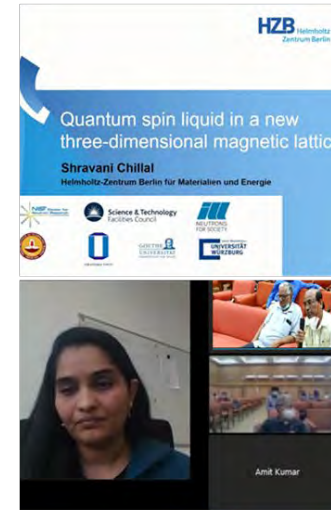
Magnetism and Superconductivity
Energy and Green Materials
Soft Matter and Biological Systems
Nanomaterials
Glasses and Liquids
Thin Films and Interfaces
Neutron sources and Instrumentation

Organising committee:

S. M. Yusuf, BARC, Mumbai (Chairman), President NSSI
Jitendra Bahadur, BARC, Mumbai (Scientific Secretary)
D. Pandey, BHU, Varanasi & EC member, NSSI
K. G. Suresh, IITB, Mumbai & EC member NSSI
A. Thamizhavel, TIFR, Mumbai & EC member, NSSI
S. L. Chaplot, EC member NSSI, Mumbai
R. Mukhopadhyay, EC member NSSI, Mumbai
J. A. E. Desa, Univ. of Goa, Goa & EC member NSSI
P. D. Babu, UGC-DAE CSR, Mumbai
V. K. Aswal, BARC, Mumbai
Amitabh Das, BARC, Mumbai
P.S.R. Krishna, BARC, Mumbai
S. Mitra, BARC, Mumbai
R. Mittal, BARC, Mumbai
Mala N. Rao, BARC, Mumbai
P. U. Sastry, BARC, Mumbai
Debasis Sen, BARC, Mumbai

7th Conference on neutron scattering was organized by SSPD, BARC in association with NSSI at Anushaktinagar, Mumbai during (25-27) November 2021 (Hybrid mode). Meetings on neutron scattering attended by NSSI members.

Photographs of CNS-2021



The 7th Conference on Neutron Scattering (CNS-2021) was organized in a hybrid mode during November 25-27, 2021 in Mumbai, India to discuss the recent advances in condensed matter physics research through neutron scattering and current developments in neutron instrumentation and facilities. The conference covered all the emerging topics of advances in magnetism, novel techniques, structure and dynamics in supramolecular systems, strongly correlated electron systems, energy materials, mesoscopic systems, and quantum Materials. Nearly 200 contributory abstracts were received and 27 abstracts were selected for oral presentations. There were 25 invited talks by the experts covering all the topics of the conference.

Some of the speakers :

Peter Müller-Buschbaum, Technical University of Munich, Germany.

Je-Geun Park, Seoul National University, Korea

S. M. Yusuf, BARC, India

D. T. Adroja, ISIS facility, Rutherford Appleton Laboratory, U.K.

Jamie Schulz, ANSTO, Australia

Ross Stewart, ISIS facility, Rutherford Appleton Laboratory, U.K.

Michihiro Nagao, NIST, USA

Taku Sato, Tohoku University, Japan

H. Seto, J-PARC, Japan

Vitaliy Pipich, JCNS, Germany

1st NSSI lecture on Neutron Scatteing-2021



1st NSSI lecture on neutron scattering-2021 delivered by Dr. B. A. Dasannacharya who contributed immensely to neutron scattering research in India, through his early development of neutron spectroscopy and its applications for the dynamics in low-temperature liquids and molecular solids. Dr. B. A. Dasannacharya was felicitated with medal and citation.



Meetings on neutron scattering attended by NSSI members

DAE-BRNS TWO-DAY THEME MEETING ON Strategic Planning for Enhancing Research Reactor Utilization RRU-2022 at Mumbai, India, 6-7 May 2022. Organised by BARC in association with UGC DAE CSR, Mumbai Centre, Society for Positron Annihilation and Nuclear Probes (SPAN), BARC.

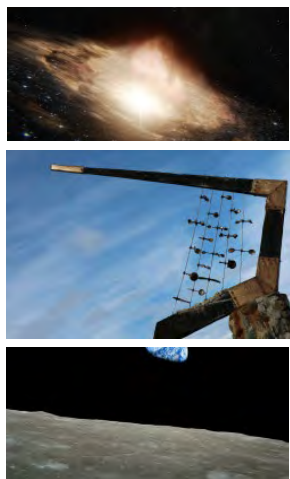
Speakers in this meeting:

Physics using neutrons at Dhruva reactor,
Mala N. Rao (invited talk)

Understanding of Thermodynamic Behaviour of Neutron-Irradiation Graphite From CIRUS Reflector
R. Mittal (Oral)

Origin of enhanced leaching resistance in Lead Phosphate glasses: A neutron diffraction study
S.Wajhal (Oral)

Apart from this, about 15 poster presentations were done by NSSI members



28th AONSA EC Meeting

TWNSS Activity Report 2022/06/18

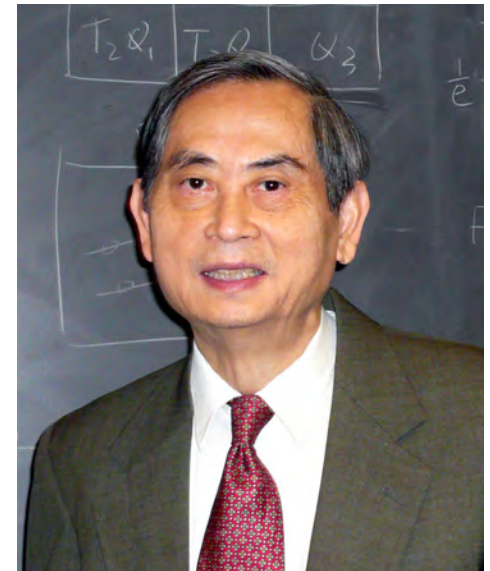
Chun-Chuen Yang, TWNSS President



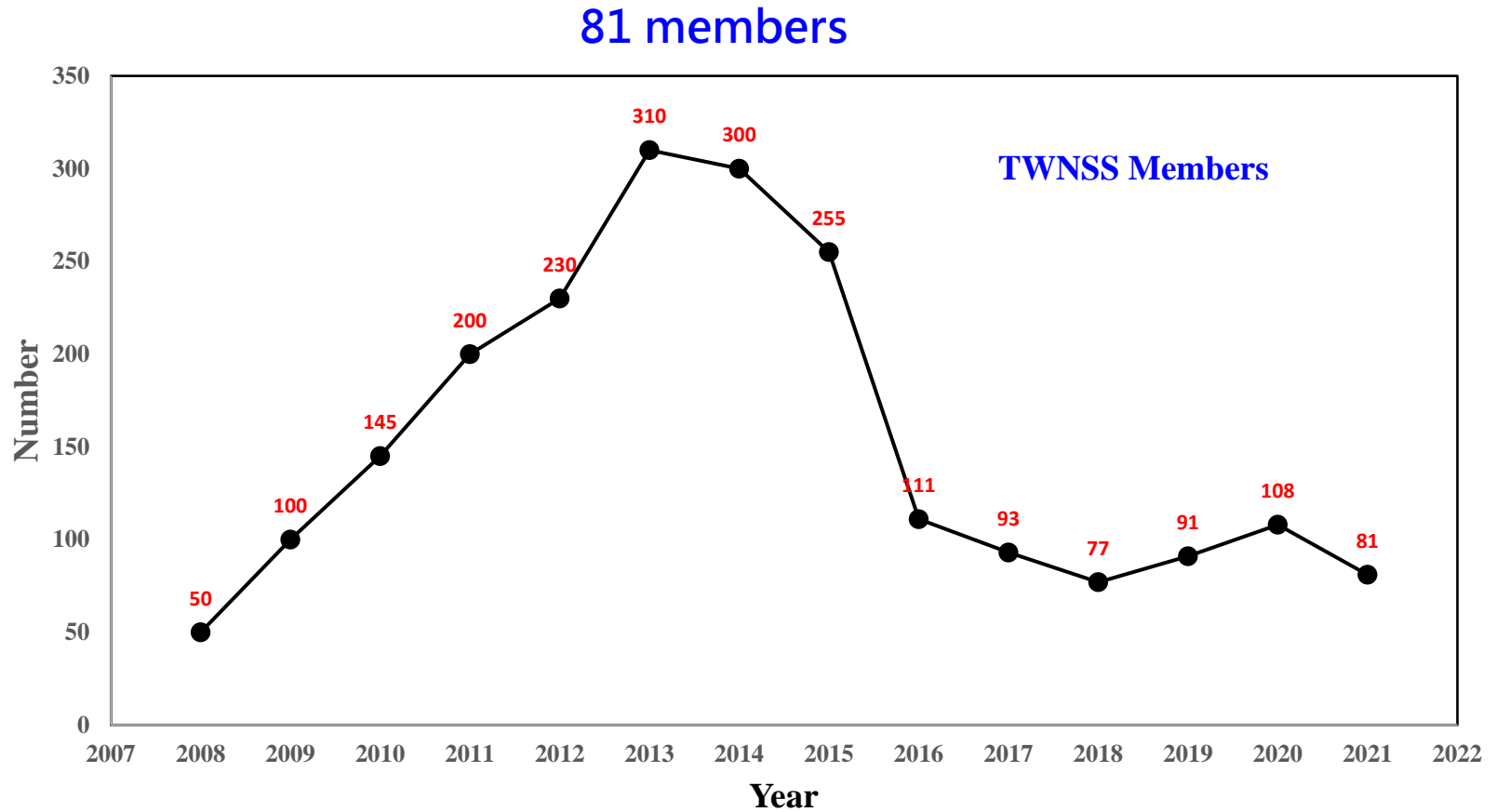
TWNSS Annual Meeting 2021



TWNSS Annual Meeting 2021



Member numbers



Renew TWNSS address

TWNSS move the permanent address to NSRRC (National Synchrotron Radiation Research Center).

300新竹市東區新安路101號
101 Hsin-Ann Road, Hsinchu Science Park,
Hsinchu 30076, Taiwan

財團法人國家同步輻射研究中心 函

地址：30076 新竹市科學園區新安路101號
聯絡人：張敏志
電話：03-5780281#8401
電子信箱：yuchih@nsrrc.org.tw

受文者：台灣中子科學學會

發文日期：中華民國110年5月24日
發文字號：國輻政字第1100000855號
速別：普通件
密等及解密條件或保密期限：
附件：
主旨：貴中心擬以本中心地址為新會址案，原則同意，並請依說明辦理。

說明：
一、本中心同意設址二年，自民國110年5月18日起至民國112年5月18日止。
二、貴會稅務、通訊及其他衍生事務，由貴會自行妥處，本中心不負相關責任。
三、本中心地址：新竹市科學工業園區新安路101號。

正本：台灣中子科學學會
副本：

主任 羅國輝

財團法人國家同步輻射研究中心公文專郵 共1頁



TWNSS 2022 annual meeting (11/18-20, 2022)



2022
TWNSS Annual Meeting
TIME
2022/11/18-20
VENUE:
National Kinmen Senior High School
Online registration
2022/10/19~10/31
Registration Fee:
Student : NTD 1500 · PI : NTD 3000
Payment: Remit money
To: TWNSS
Bank Name: Sino Bank
Account No.: 044-018-0009116-1
Contact person : 0928221206 Prof. Yang
E-Mail : chunchuenyang@gmail.com
Official Web Site:
<https://reurl.cc/I57mkA>

Plenary Speaker :



Keynote Speaker:

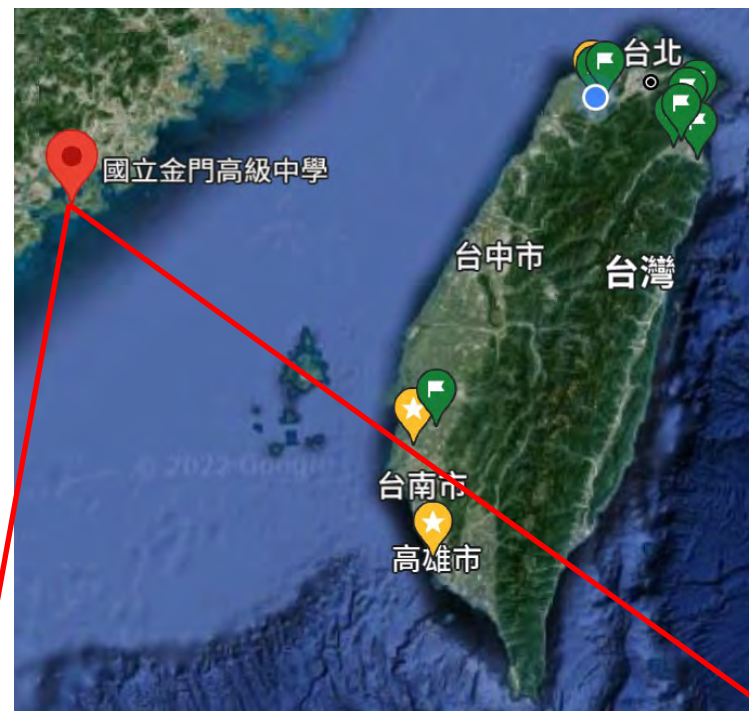


Chairman : President Prof. Chun-Chuen Yang (CYCU)
Committee : Prof. Hsiung Chou (NSYSU)
Prof. Che-Yi Chu (NCHU)
Dr. Hsiao Hui Chen (INER)
Dr. U-Jer Cheng (NSRRC)
Prof. Lin Show Yeh (NYUST)









TWNSS 2022 annual meeting (11/18-20, 2022)



Renew TWNSS Website




台灣中子科學學會

Taiwan Neutron Science Society

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2022/06/01 ANSTO-HZB Neutron School



CALL FOR ABSTRACTS OPEN

Submission closing
24 June 2022

ANSTO-HZB Neutron School
9th - 14th October 2022 | Sydney, Australia

The Australian Nuclear Science and Technology Organisation (ANSTO) and the Helmholtz Zentrum Berlin (HZB) are pleased to announce another instalment of the ANSTO - HZB Neutron School to be held in 2022. This follows the first successful joint school in 2019 and the long tradition of neutron schools being held in Berlin.

The aim of the school is to provide a broad overview of new scattering theory and applications to demonstrate the utility of neutron scattering science. The course will consist of lectures and practicals using the neutron beam instruments at the OPAL Multipurpose Reactor. Subjects covered include basic theory, instrumentation, small-angle scattering, reflectometry, deuteration, crystallography and diffraction, imaging, residual stress and strain scanning, inelastic scattering, quasi-elastic scattering, and polarised neutrons. There will also be a demonstration of sample environment equipment and a tutorial on writing proposals. Students will have the opportunity to present their work to fellow participants and ANSTO and HZB staff in a relaxed and friendly atmosphere at the school poster session.

The school is particularly suited to those who are new to neutron scattering and is aimed at students (Honours, Masters, PhD) and early career researchers. Those encourage to apply are studying in the areas of:

台灣中子科學學會/TWNSS

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學會會刊 / Bulletin of TWNSS

Next Release Date : August 2021

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【TWNSS Newsletter】第5期第1冊 2017/12/01	TWNSS-Newsletter_第5期第1冊_20171201.pdf
【TWNSS Newsletter】第3期第1冊 2015/03/23	TWNSS-Newsletter_第3期第1冊_20150323.pdf
【TWNSS Newsletter】第2期第2冊 2014/10/05	TWNSS-Newsletter_第2期第2冊_20141005.pdf



<https://www.twnss.org.tw/>

Publications of TWNSS members (2022)

1. *The role of intrinsic stacking fault in facilitating the pressure-induced phase transition in CoCrFeMnNi high entropy alloys*, Chih-Ming Lin*, Ching-Pao Wang, Sean R. Shieh, Yao-Jen Chang, Tony Huang, Dong-Zhou Zhang, Chin-Wei Wang, An-Chou Yeh, Jenh-Yih Juang*, Materials Chemistry and Physics 275, 125273 (2022) ANSTO (IF=4.094)
2. *Design of doxorubicin encapsulated pH-/thermo-responsive and cationic shell-crosslinked magnetic drug delivery system*, Ndumiso Vukile Mdllovu, Kuen-Song Lin*, Meng-Tzu Weng*, You-Sheng Lin, Colloids and Surfaces B: Biointerfaces 209, 112168 (2022) Jparc (IF=3.997)
3. *Antiferromagnetic spin correlations above the bulk ordering temperature in NiO nanoparticles: Effect of extrinsic factors*, Tai-Yue Li, Ming-Kang Ho, Tus-En Hsu, Hsin-Hao Chiu, Kuan-Ting Wu, Jen-Chih Peng, Chun-Ming Wu, Ting Shan Chan, B. Vijaya Kumar, P. Muralidhar Reddy, Shyue-Chu Ke, Chia-Liang Cheng, Ashish Chhaganlal Gandhi*, Sheng Yun Wu*, Appl. Surf. Sci. 578, 152081 (2022) ANSTO (IF=6.610)
4. *Non-conventional superconductivity in magnetic In and Sn nanoparticles*, Ma-Hsuan Ma, Erdembayalag Batsaikhan, Huang-Nan Chen, Ting-Yang Chen, Chi-Hung Lee, Wen-Hsien Li*, Chun-Ming Wu, and Chin-Wei Wang, Sci. Rep. 12, 775 (2022) ANSTO (IF=4.379)
5. *Magnetic ordering in the rhombohedral α -DyGa₃*, Meng-Ru Cong, Chin-Wei Wang*, Wei-Jun Ren**, M. Avdeev, Chris D. Ling, Fei Gao, Bing Li, Zhi-Dong Zhang, J. Alloys Compd. 903, 163906 (2022). ANSTO (IF=5.316)
6. *Tensile Response of As-Cast CoCrFeNi and CoCrFeMnNi High-Entropy Alloys*, Tu-Ngoc Lam*, Mao-Yuan Luo, Takuro Kawasaki, Stefanus Harjo, Jayant Jain, Soo-Yeol Lee, An-Chou Yeh, E-Wen Huang*, Crystal 12, 157 (2022). J-Parc (IF=2.404)
7. *Manipulating the structures and photoresponsive properties of an azobenzene-containing triblock copolymer by changing solvency and adding salts*, Yu-Shen Wu, Jin-Yao Ma, Jitendra P. mata, Chunming Wu, Kai-Ling Hsu, Chien-Tsung Lo*, J. Mol. Liq. 348, 118013 (2022). ANSTO (IF=5.850)
8. *Magnetic properties and non-collinear spin structure of tin-rich stannide Ho₅Co₆Sn₁₈*, Chin-Wei Wang*, Sunil K. Karna†, Shin-ichiro Yano, Chi-Hung Lee, Maxim Avdeev, Chin Shan Lue, Chia Nung Kuo, Phys. Rev. B 105, 104429 (2022) ANSTO (IF=3.664)
9. *Relief of spin frustration through magnetic anisotropy in the quasi-one-dimensional $S = 1/2$ antiferromagnet Na₂CuSO₄Cl₂*, M. Fujihala*, Y. Sakuma, S. Mitsuda, A. Nakao, K. Munakata, R. A. Mole, S. Yano, D. H. Yu, K. Takehana, Y. Imanaka, M. Akaki, S. Okubo, H. Ohta, Phys. Rev. B 105, 144410 (2022) ANSTO, J-Parc (IF=3.644)
10. *Interconnected Microporous and Mesoporous Carbon Derived from Pitch for Lithium-Sulfur Batteries*, Yu-Chien Ko, Chun-Hsiang Hsu, Chang-An Lo, Chun-Ming Wu, Hung-Ling Yu, Chun-Han Hsu, Hong-Ping Lin*, Chung-Yuan Mou*, Heng-Liang Wu* ACS Sustainable Chem. Eng. 2022, 10, 4462-4472 ANSTO (IF=7.800)

***Thank you for your
Attention!***

New ROSNEUTRO team since 2022:

President: Dr. A.F. Gubkin, MIMP

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

Secretary: Dr. N.V. Proskurnina, MIMP

New Executive committee:

M.V. Avdeev, JINR, Dubna

A.M. Balagurov, JINR, Dubna

D.P. Kozlenko, JINR, Dubna

A.V. Varivtsev, INM SC Rosatom, Zarechniy

V.V. Voronin, NRC KI - PNPI, Gatchina

S.V. Grigoriev, NRC KI - PNPI, Gatchina

A.I. Kurbakov, NRC KI - PNPI, Gatchina

V.T. Em, NRC KI, Moscow

S.V. Rogozhkin, MEPHI, Moscow

Neutron facilities:

I. JINR, Dubna	Outage till October 2023
IBR-2, 1984 / 2012, 2 MW	
II. NRCKI, Moscow	
IR-8, 1957 / 1981, 8 MW	operating
III. IMP, Yekaterinburg	
IVV-2M, 1966 / 1982, 15 MW	operating

Ongoing commissioning

IV. NRC KI - PNPI, Gatchina	7 MW power by
PIK 100 MW	by February 2022