Hideki Seto

J-PARC, KEK / AONSA Office Liaison

Report from AONSA Office

As of November 2022,
after the 28th EC meeting in June 2022

Budget, Report, Message from AONSA Office

- **Budget**
  - Issued receipts of Annual Fees 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
  - Confirm and update the deposit/withdrawal of the bank account as required
  - Shifted from managing budgets in each bank account to sorting by Excel table

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

  Send all revenue and expenditure reports with copies of the account book and bankbooks to a treasurer by email

- **Message from AONSA Office**

  The following announcements were distributed to the AONSA members.
  - July 26- (The 6th Neutron and Muon School at J-PARC MLF and JRR-3)
  - October 13- (J-PARC MLF Call for General Use Proposals (October 17 -, November 7))
  - November 14-(IUCr 2023 deadline approaching)

Asia-Oceania Neutron Scattering Association
AONSA

AONSA Prize, AONSA YRF, Others

- **AONSA Prize 2021**

  Prize Goods

  - Place 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
  - Ship the above goods to ICNS conference chair, Prof. Rolando Granada

  Monetary Prize

  - Mede remittance to the awardee (Prof. Robert A. Robinson)

  Transportation reimbursement

  - Organized transportation reimbursement for the awardee to attend the ceremony

- **AONSA Young Research Fellowship**

  - YRF2021 Dr. Indri Badria Adilina - Organized airfare(outbound) reimbursement

  - YRF2022 Dr. Naeem Muhammad – Organized airfare reimbursement

  - Receive application documents for YRF2023 and send them to the chair of the YRF selection committee

- **Others**

  Closed AONSA Prize Fund Account (MUFG Bank) as decided at the previous EC meeting

Asia-Oceania Neutron Scattering Association
AONSA

AONSA EC Meeting
Financial Report

Hsiung Chou (Treasurer of AONSA, TWNSS)

2022-11-25

EC Meeting

2021-11-15

AONSA Annual fee (JPY) - by category		
	2021/11/15 2022/06/18	2022/06/18 2022/11/15
Category	Income	Income
Previous Balance	10,972,447	12,371,691
Annual fee (KNBUA)	1,421,060	267,180
Donation	697700	
interest	48	59
Total amount	13,091,255	12,638,930
Category	Expense	Expense
AYRF Dr. NAEEM		153133
AYRF Dr. Indri		79443
Processing to Amma		200
EB & domain charge	15086	11000
Transfer to Prize Fund	697700	
Web-Renew	5238	
EC FDM (US2600)		371800
Total amount	719564	615576
Total Balance	12,371,691	12,023,354

Annual Fee ($2000)：

NSSI, ANBUG, CNSS, TWNSS, NSSI, JSNS

KNBUA, INSS, Tailand, Malaysia

Donations ($1000Xn):

ANBUG:3000; CNSS:1000; TWNSS:1000; JSNS: 1000

KNBUA:1000

~$87278 (**$91,669 last balance**) $\frac{JPY}{USD} = 137.759$

2021-11-15

AONSA Prize Fund				
Date (Y/M/D)	Item	Income (JPY)	Expense (JPY)	Balance (JPY)
2021/11/11	Previous balance in 2019	5,070,065		5,070,065
	Donation (KNBUA)	133,590		
	Handling fee		1,430	
	AONSA prize (US5000)		703,850	
	AONSA prize(AU6533.04)		642,471	
	Reimbursement to M. Amma		105,959	
	Interest	14		
	Total amount	5,203,669	1,453,710	3,749,959

AONSA prize:
Prize (US$5000)=703,850
Airtickt(AU$5414.96)
Acommodation(AU$1,118.08)
Prize Goods(¥105,959)

~$27,221

($37,567 last balance)

$$\frac{JPY}{USD} = 137.759$$

AONSA future (NEXT 6 MONTHS) budge plan

Income

AONSA Annual Fee:	$14000
Interest:	a few
Donation:	$~4000

Expense

AYRF	$4000
12th Neutron Sch	$3000
EB charge:	$ ~100
Bank Handling:	$ ~100

OFFICE～$+15000

PRIZE～$0

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 (Bank handling 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)

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

2021-06-18

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

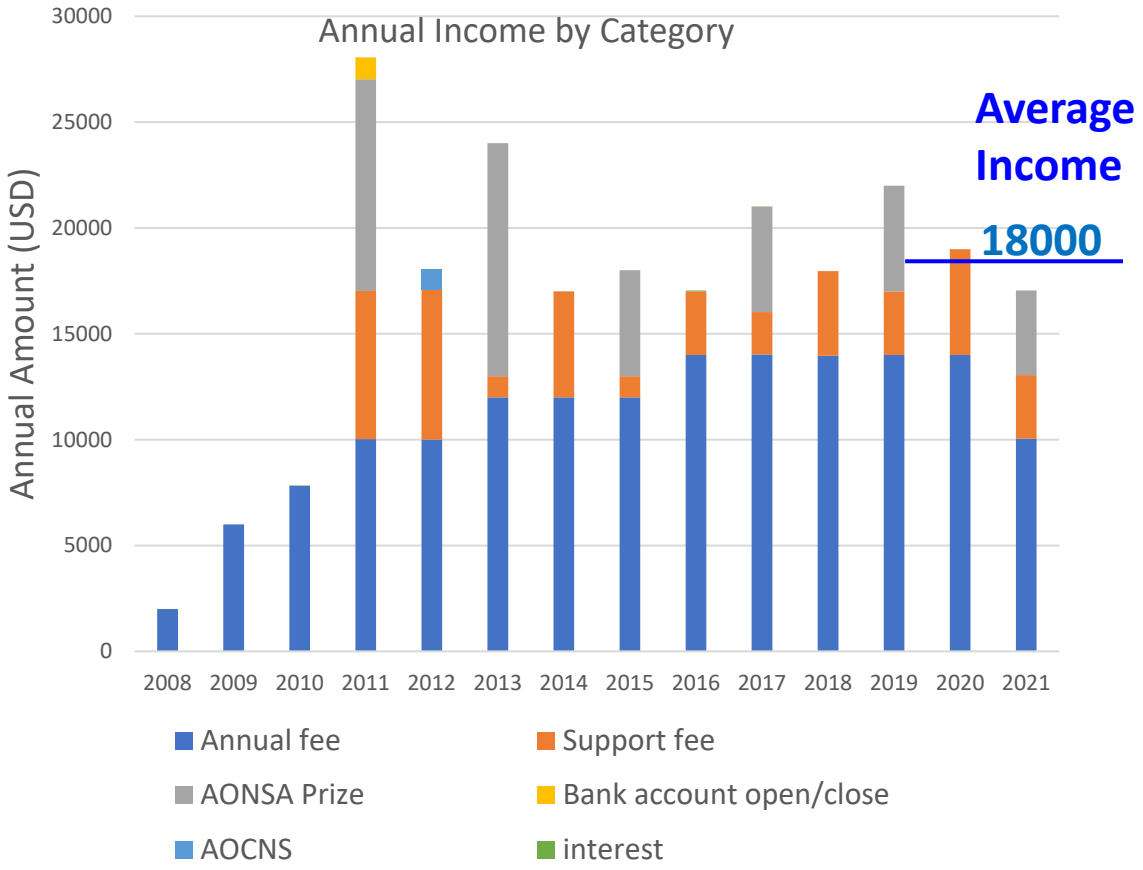
Prize expenses future plan:
Prize: $5000
Rest : max=$6000

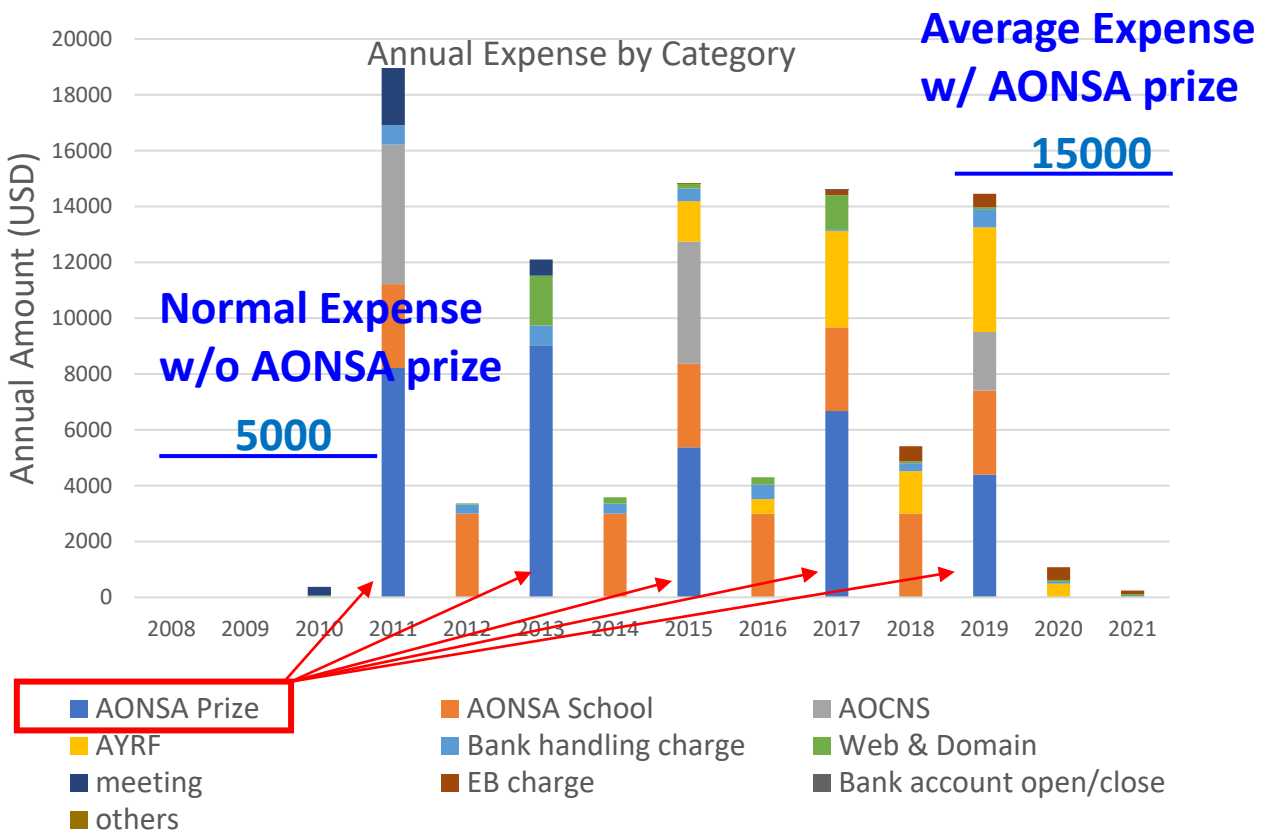
EC decision

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 Neutron School

Nov 21-23, 2022

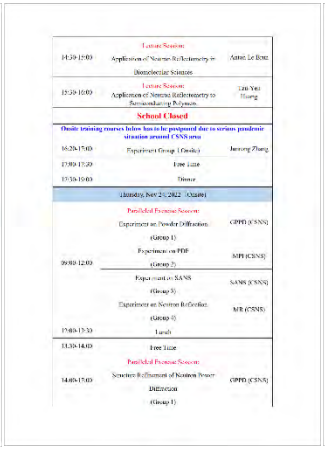
SNS
CHINESE ACADEMY OF SCIENCES

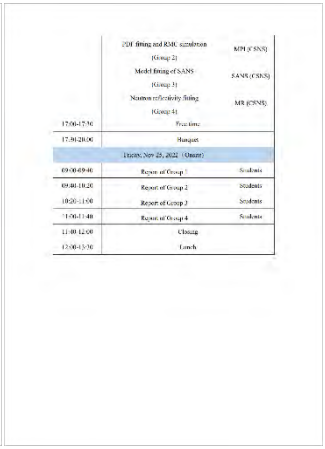
Program


AONSA Neutron School 2022 (online)

Monday, Nov 21, 2022 (Online)		
09:00-09:05	Welcome	CSNS
09:05-09:10	Opening	AONSA
09:10-10:10	Lecture Session: Fundamentals of Neutron Scattering I	Qingshan Huang
10:10-10:30	Break	
10:30-11:30	Lecture Session: Fundamentals of Neutron Scattering II	Qingshan Huang
11:30-12:00	Lecture Session: Fundamentals of Neutron Scattering III	Qingshan Huang
12:00-13:30	Break	
13:30-14:00	Introduction to CSNS	Liangyao Liang
14:00-14:30	How to Write a Proposal	Zanmeng Zhang
14:30-14:00	Free Discussion	
Tuesday, Nov 22, 2022 (Online)		
09:00-09:40	Lecture Session: Powder Diffraction I	Takashi Kamiyama
09:40-10:20	Lecture Session: Powder Diffraction II	Takashi Kamiyama
10:20-10:40	Break	
10:40-12:00	Lecture Session:	Takashi Kamiyama


	Powder Diffraction III
17:00-17:30	Break
17:30-14:10	Lecture Session: PDF method I — Martin Dove
14:10-14:50	Lecture Session: PDF method II — Martin Dove
14:50-15:30	Lecture Session: PDF method III — Martin Dove
15:30-15:50	Break
15:50-17:00	Lecture Session: Magnetic Scattering — Taku Sato
17:00-17:30	Free Time
Wednesday, Nov 23, 2022 (Online)	
09:00-09:40	Lecture Session: SANS I — Anna Sokolova & Josh Marlow
09:40-10:20	Lecture Session: SANS II — Anna Sokolova & Josh Marlow
10:20-10:40	Break
10:40-11:20	Lecture Session: SANS III — Anna Sokolova & Josh Marlow
11:20-11:40	Lecture Session: USANS — Anna Sokolova & Josh Marlow
17:00-17:30	Break
17:30-14:30	Lecture Session: Fundamentals of Neutron Reflectometry and Instrumentation — Sevdzan DOLT


14:30-15:00	Lecture Session: Application of Neutron Reflectometry in Biomolecular Sciences — Aimin Le Brun
15:30-16:00	Lecture Session: Application of Neutron Reflectometry to Semiconducting Polymers — Lin-Yen Huang
	School Closed
	Onsite training courses below has to be postponed due to serious pandemic situation around CSNS area
16:20-17:00	Experiment Group 1 (Onsite) — Jianxing Zhang
17:00-17:20	Free Time
17:30-19:00	Dinner
Thursday, Nov 24, 2022 (Onsite)	
09:00-12:00	Parallel Format Session: Experiment on Powder Diffraction (Group 1) — GPPD (CSNS); Experiment on PDF (Group 2) — MPI (CSNS); Experiment on SANS (Group 3) — SANS (CSNS); Experiment on Neutron Reflectivity (Group 4) — MR (CSNS)
12:00-13:30	Lunch
13:30-14:00	Free Time
14:00-15:00	Parallel Format Session: Sensitive Refilment of Neutron Power Diffraction (Group 1) — GPPD (CSNS)


	PDF fitting and RMC simulation (Group 2)	MPI (CSNS)
	Model fitting of SANS (Group 3)	SANS (CSNS)
	Neutron reflectivity fitting (Group 4)	MR (CSNS)
17:00-17:30	Free time	
17:30-20:00	Banquet	
Friday, Nov 25, 2022 (Onsite)		
09:00-09:40	Report of Group 1	Students
09:40-10:20	Report of Group 2	Students
10:20-11:00	Report of Group 3	Students
11:00-11:40	Report of Group 4	Students
11:40-12:00	Closing	
12:00-13:30	Lunch	

Five days in length:
Lectures(online)
+
training(onsite, two days)

- Onsite training courses has to be postponed due to serious pandemic situation around CSNS

Lecture

from different countries

cover different research area

Multi-neutron scattering techniques

- Fundamentals of neutron scattering,
- powder diffraction & PDF,
- magnetic neutron scattering,
- SANS,
- Neutron Reflectometry

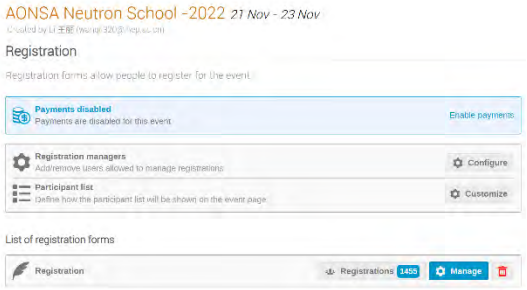
Diverse research areas

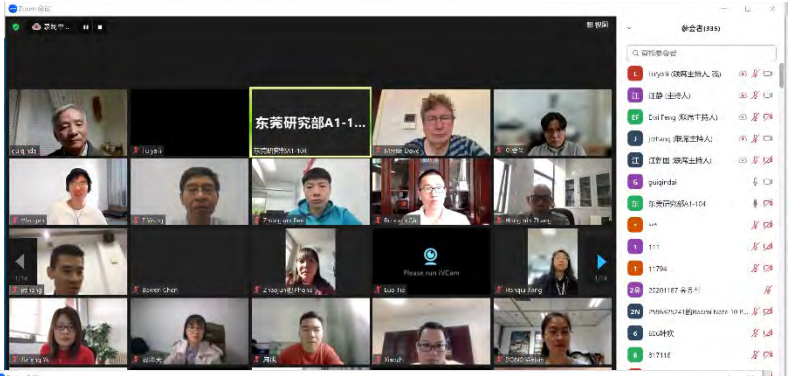
- Physics, Chemistry, Biology, Life, Food, etc.

United Kingdom
United States
China
France
Australia
Belgium
Sudan
Barbados
Sweden
Canada
Korea
Denmark
Russian Federation
Germany
Ethiopia
Christmas Island
Morocco
India
Israel
Japan

Registrants : 1455 from 20 Countries

online audieces :from 130 to 378

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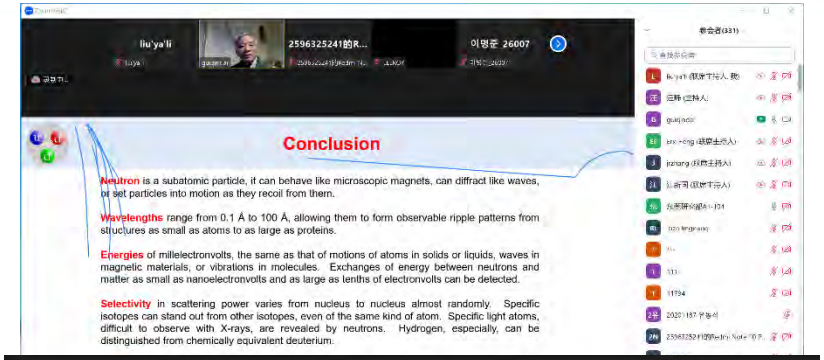
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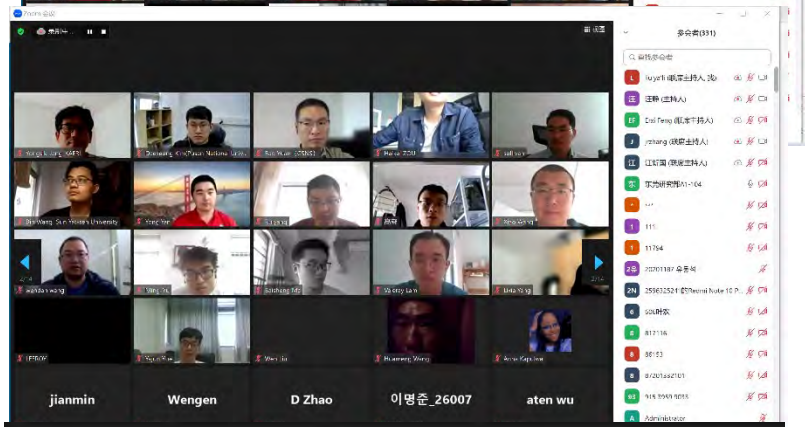
Conclusion
Neutron is a subatomic particle, it can behave like microscopic magnets, can diffract like waves, or set particles into motion as they recoil from them.
Wavelengths range from 0.1 Å to 100 Å, allowing them to form observable ripple patterns from structures as small as atoms to as large as proteins.
Energies of millielectronvolts, the same as that of motions of atoms in solids or liquids, waves in magnetic materials, or vibrations in molecules. Exchanges of energy between neutrons and matter as small as nanoelectronvolts and as large as tenths of electronvolts can be detected.
Selectivity in scattering power varies from nucleus to nucleus almost randomly. Specific isotopes can stand out from other isotopes, even of the same kind of atom. Specific light atoms, difficult to observe with X-rays, are revealed by neutrons. Hydrogen, especially, can be distinguished from chemically equivalent deuterium.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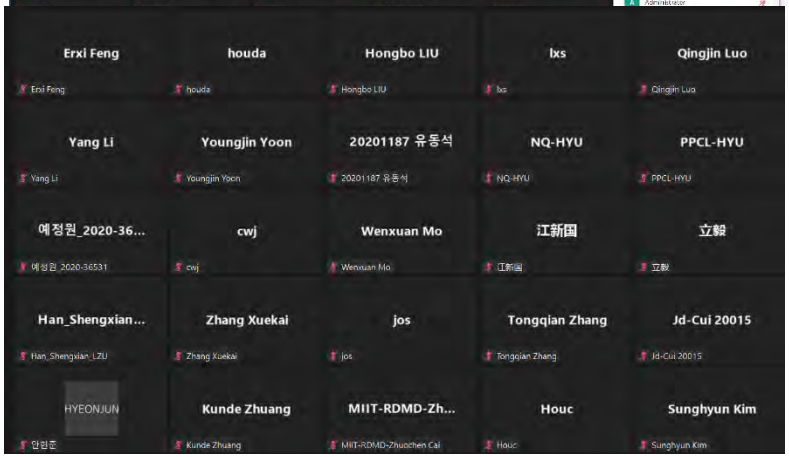
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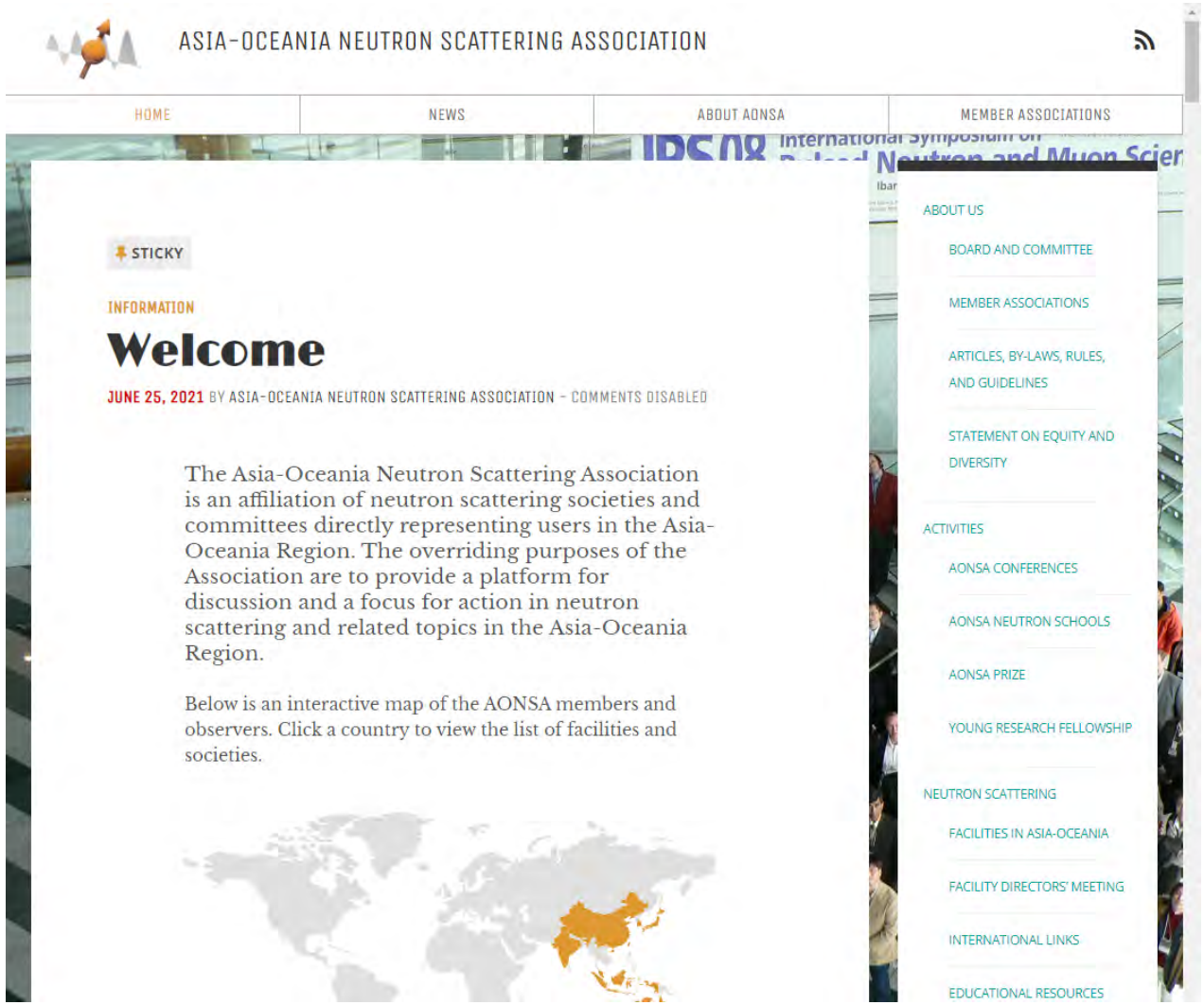
AONSA EC Meeting
Indonesia & ZOOM, 2022/11/25

Public Relations Report

Jae-Ho Chung,
Korea University / KNBUA

Updates on the AONSA website – Main

- Main page
  - Currently, there is a Welcome message with sticky at the top. It will be removed and combined with About Us.
  - Changes will soon be made to show the most upcoming subjects at the top, such as announcements of prizes, YRF's, AOCNS's, EC meetings, etc.
  - On the top menu, "News" page will be converted to news postings.



Updates on the AONSA website – menus

- *About Us*
  - Two different welcome pages were combined.
    - Link to an old president's message was removed. (It is better to have a welcome message from the current president.)
  - *Board and Committee*
    - Personal photos are moved to the sides of CVs.
    - Executive committee list was put into a single table.
    - To be updated: Historical board members (needs input!)
  - *Articles, By-laws, Rules and Guidelines of Association*
    - AONSA logo is placed to separate different sections.
  - Other pages are also modified for better visualizations.

Updates on the AONSA website – menus

- *Activities*
  - An additional page was created to show the submenus.
  - *AONSA Conferences*
    - Personal photos are moved to the sides of CVs.
    - Group photos of the past AOCNS are shown (but missing for 2015)
  - *ASONA Neutron Schools*
    - Group photos of some past schools are shown.
  - *ASONA Prize*
    - Citations and photos are shown.
  - *ASONA Young Research Fellow*
    - Not yet changed: photos and names will be shown.

Updates on the AONSA website – menus

- *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 materials needed.

Updates on the AONSA website – menus

- *AONSA News*
  - An additional page was created to show the submenus.
  - *Meeting and Events*
    - Currently, it is difficult to find each EC minute.
    - EC meetings and other events will be separated.
  - *Newsletters*
    - Good as it is, except that it is getting more difficult to collect newsletter articles.
  - *Executive Committee Meeting*
    - Minutes uploaded up to 11th EC.
- *Site map*
  - Will be updated.

Call for articles on the next AONSA Newsletter

- The newsletter V14_N1 has been postponed (was be issued in July), and may be combined with V14_N2 as a single issue.
- Deadline: December 2nd, 2022 (To be issued in December 2022)
  - 1. President's message (Taku Sato) can use the last one
  - 2. Reports on the past two AONSA EC meetings (David Cortie)
  - 3. AONSA Prize (S. M. Yusuf)
  - 4. AONSA Young Research Fellows (S. M. Yusuf)
  - 5. AONSA Neutron School (F. Wang)
  - 6. Neutron FDM report (Tianfu Li)

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) submitted
  - 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

24th Asia-Oceania Neutron Facility Directors' Meeting

Date: November 24, 2022

Time: Sydney 12:00 pm; Japan & Korea 11:00 pm; China 10:00 am; Indonesia 9:00 am; India 7:30 am.

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

Location: Indonesia & ZOOM internet


AONSA MEETING
Main Hall
Tianfu LI
Jamie Schulz (he/him) | ANSTO
TAKEDA Masayasu (JAEA)
한영수
David C
Hsiung(Sean) Chou
Chris Wensrich
Evvy Kartini
Agustinus Agung Nugroho
Abu Rivai-BRIN
R Mittal
Andrey Gubkin
Vladislav Tarnavich
Lychagin Egor
dongfeng chen
Jae-Ho Chung 2
148-Adit Tri Wiguno
Hideki Seto
Kenji Nakajima
Kazu Kakurai (JSNS)
F Wang
muhammadfirmansyah
taku j sato
Toshiya Otomo (KEK IMSS/J-PARC)

Participants(24):

[Chair]
Tianfu Li/Kai Sun (CARR/CIAE)

[FDM Members]
Young-Soo Han (HANARO)
Fangwei Wang (CSNS)
Toshiya Otomo (J-PARC/KEK)
Masayasu Takeda (JRR-3/JAEA)
Jamie Schulz (ANSTO)
R. Mittal (DHRUVA)
Abu Rivai (G. A. Siwabessy)

[FDM Guests]
Andrei Gubkin (IVV-2M)
Egor Lychagin (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]
Kazuhisa Kakurai (JSNS, CROSS)
Chris Wensrich (ANBUG)

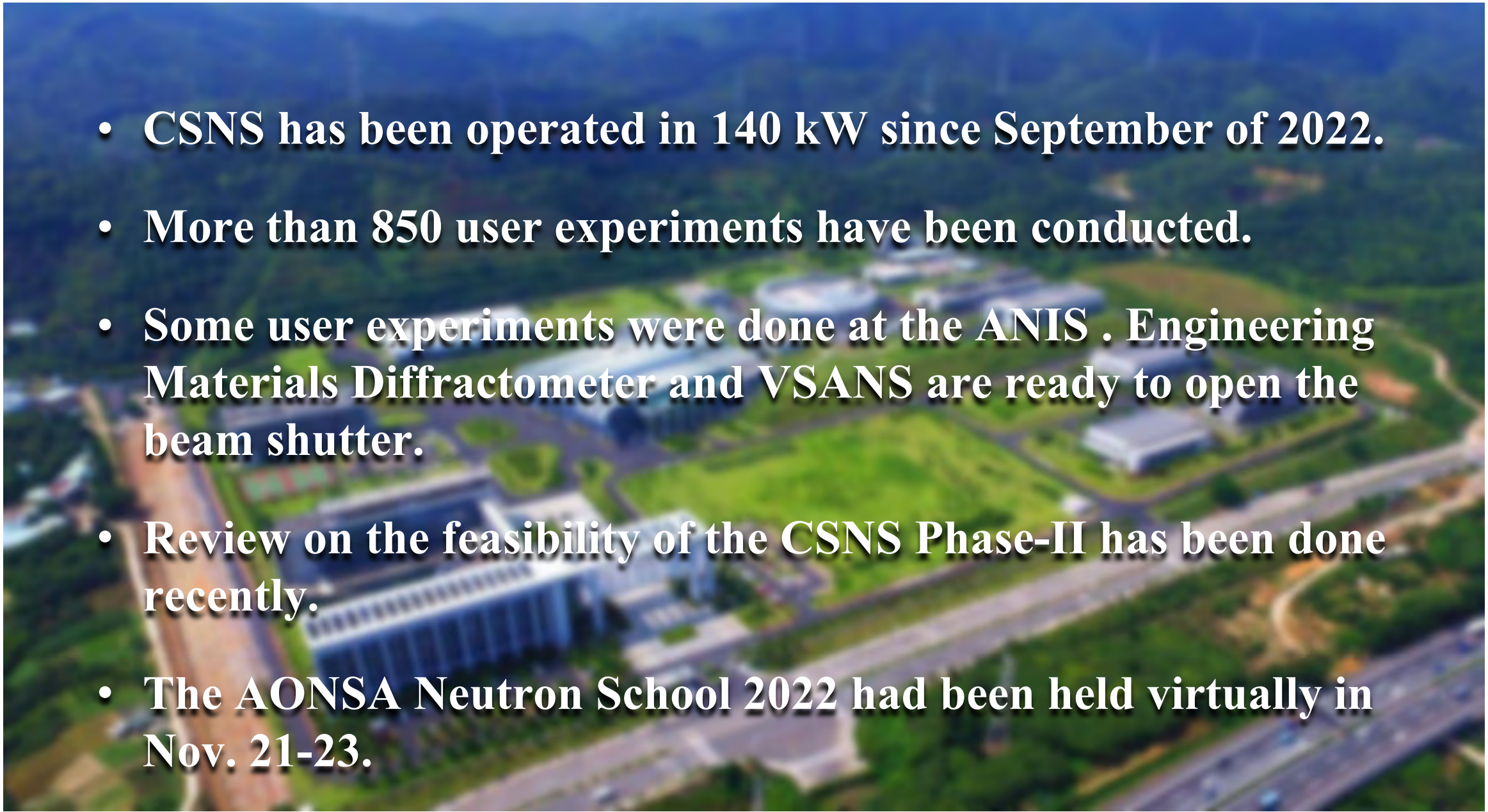
[Observer]
Kenji Nakajima

[Local Host]
Evvy Kartini
Agustinus Agung Nubroho
Abu Rivai
Muhammad Subekti
Adit Tri Wiguno

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
    ~~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. Neutron Meetings
        ICNS 2022 – Argentina
        International Facility Director's Meeting
        Short of Graphite supply
    b. Next Meeting & Chair
11. Closing remark

CSNS summary

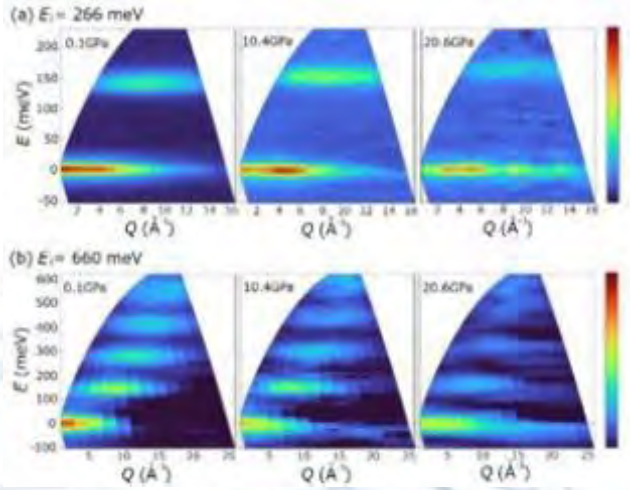


- CSNS has been operated in 140 kW since September of 2022.
- More than 850 user experiments have been conducted.
- Some user experiments were done at the ANIS . Engineering Materials Diffractometer and VSANS are ready to open the beam shutter.
- Review on the feasibility of the CSNS Phase-II has been done recently.
- The AONSA Neutron School 2022 had been held virtually in Nov. 21-23.

Summary of J-PARC MLF

- 2022B has been started on Nov. 21st as scheduled.
- Call for proposal of 2023A
  - 318 applications proposed (including muon)
- Japanese Border Measures have been relaxed
  - Almost same as before the pandemic

mlf info



S(Q,E) of ZrH1.8 under high pressure

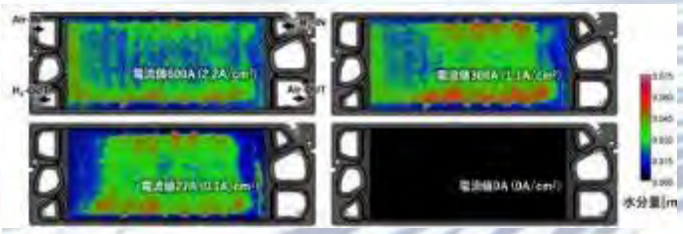
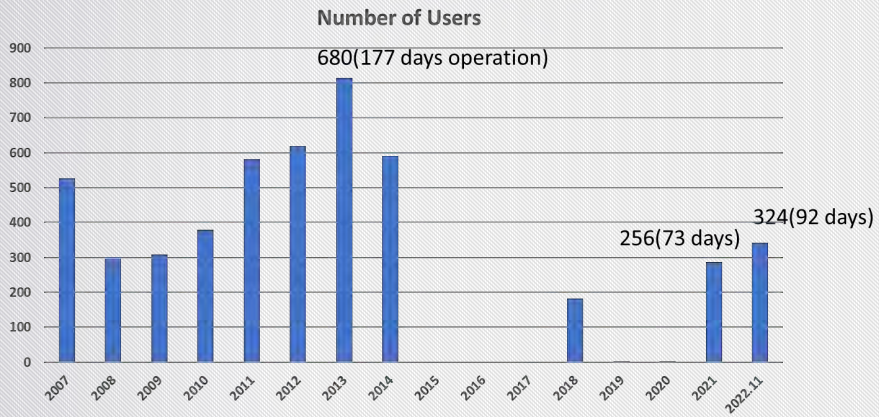


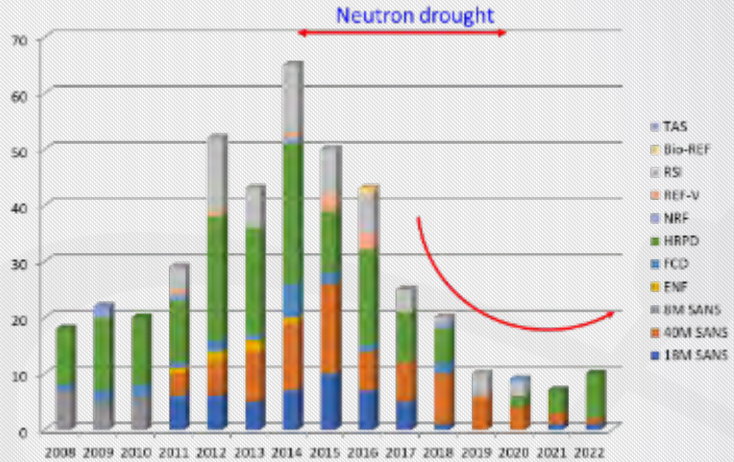
Fig. Visualized image of water behavior in a fuel cell of MIRAI (change in water distribution with current value)

User Program, Publications and Plans

User Statistics



Number of Publications



Plans for next year

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

Status and Activities of JRR-3

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

JAEA

- JRR-3 was scheduled to be operated for 170 days (7 cycles) this year, but 18 days were canceled by malfunction of an alarm signal
- On-line proposal submission system (JRR-3 RING) for the 1st proposal round of 2023 opens from 1st to the end of November
- Several new sample environments with the dry refrigerator were introduced to prevent difficulty to purchase liquid He in Japan
- SANS-J and the prompt gamma-ray analysis instrument were upgraded

ISSP

- No special news this time

BRIN's Neutron Facility *Recent Activities 2022*

BerAKHLAK
Berorientasi Pelayanan Akuntabel Kompeten Harmonis Loyal Adaptif Kolaboratif

BRIN
Badan Riset dan Inovasi Nasional

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

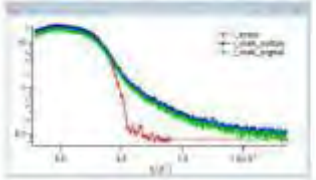
2022 International Collaboration

Dr. Mehul Khimani Shivani University - INDIA

Prof. Aleks Nikoloski Murdoch University - AUSTRALIA

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

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

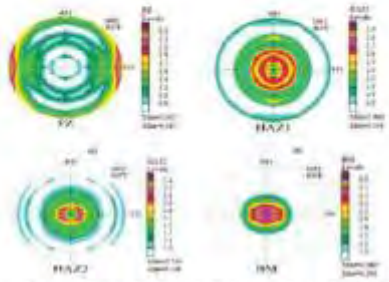
DN 3 High Resolution Powder Diffractometer

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

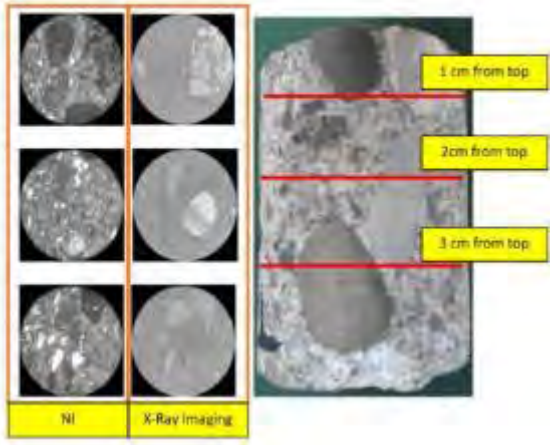
Texture Diffractometer (DN2)

FSW of dissimilar metal Al-Mg



Pole figures of dissimilar metal Al_Mg

RN Radiography/Tomography Neutron



NAA Neutron Activation Analysis

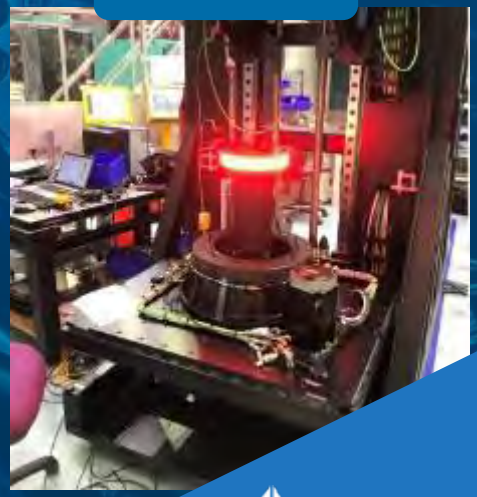
Recent Activity

The NAA equipment functions properly, used for analysis of samples of sediment, water and aquatic biota of Saguling Dam; obsidian rock samples and IAEA proficiency test program samples.

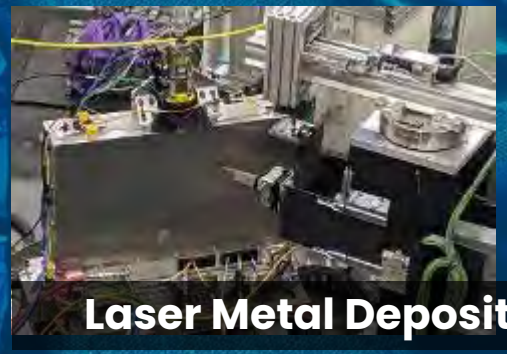
Status Report – November 2022 – Jamie

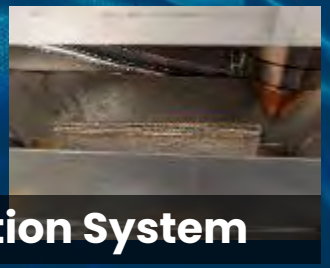
- Reactor & Cold Source both have run well
- 2023-1 Proposal Round
  - 270 proposals received
- User schools & workshops – in-person
- New Capabilities
  - Laser Metal Deposition System
  - Koala shutdown to be replaced with Koala 2.0
  - Replacing Wombat detector
- AONSA Young Research Fellows visit ANSTO
  - Jungju Ryu – Hanyang University, South Korea (Aug to Nov 2022)
  - Indri Adilina, Indonesian Institute of Sciences, Indonesia (Oct22 to Sep23)

Koala 2.0



Wombat Detector

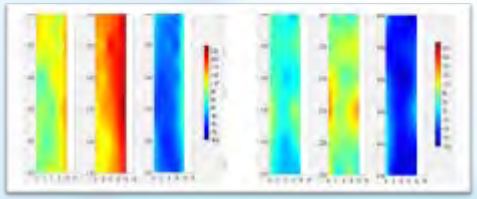




Laser Metal Deposition System

CARR Facility Report

- Neutron guide installation of CNGC is undergoing
- Cold neutron imaging facility construction is making progress
- 8 days neutron beamtime in June，some novel research applications have been carried out

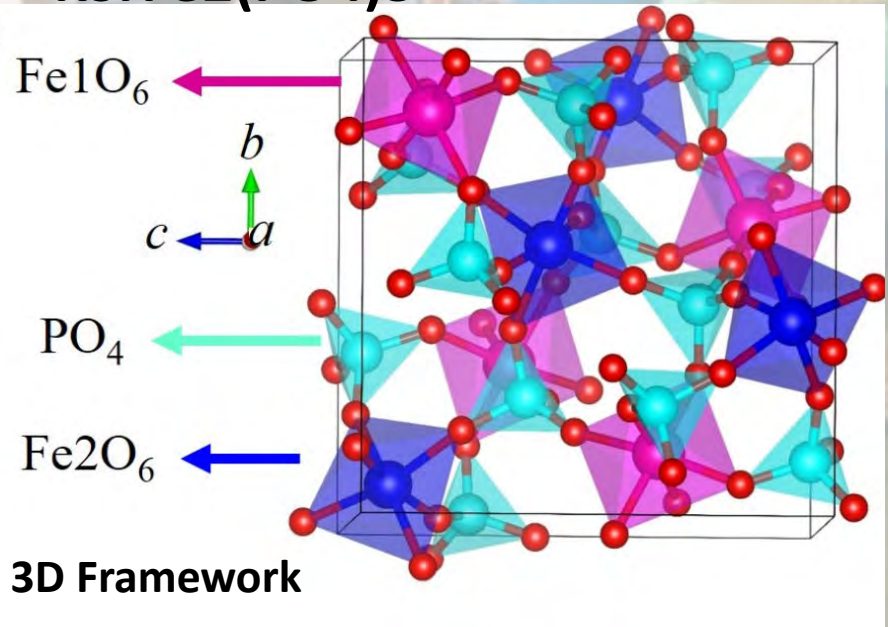


Neutron Scattering Facilities, Bhabha Atomic Research Centre, Mumbai, India

Publications ~ 25 in last 5 months in 2022

Signatures of spin-liquid state in a 3D frustrated lattice with S = 5/2

KSrFe2(PO4)3



3D Framework

XIX School on Neutron as Probes of Condensed Matter (NPCM-2022)
(Venue: TSH, Anushaktinagar & BARC Mumbai)

November 14 - 19, 2022

12 instruments are operational, 2 under development (TOF, TAS) (in Hall + GTL)

24th AONSA FDM meeting

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

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

INM
ROSATOM

Operator of NMSF:
M.N. Mikheev Institute of metal physics

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

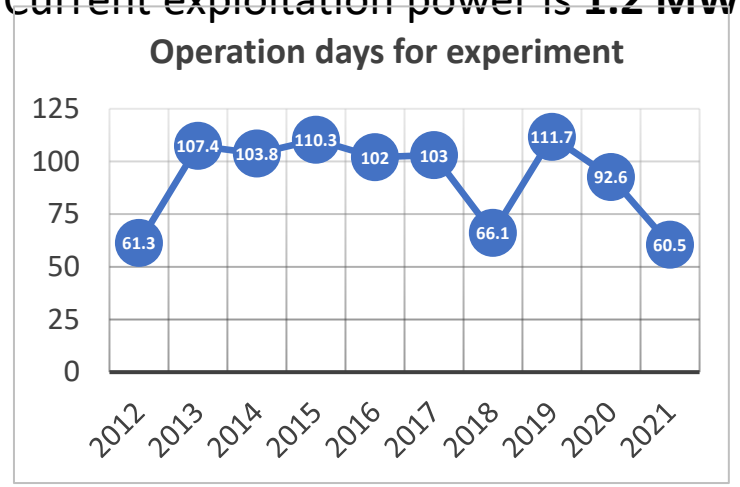
1. NMSF was out of operation since June 2022 because of service work on the horizontal experimental channels of IVV-2M.

2. Reactor resumed its operation in the mid of November 2022. NMSF will resume its operation since December 1st 2022.

3. Ongoing work on the scientific program of the Ural research reactor to be commissioned after 2035.

Pulsed Reactor IBR-2 Summary

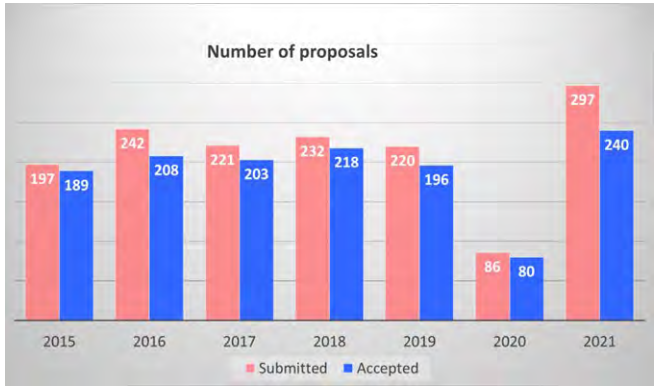
Current exploitation power is **1.2 MW**



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
Termal 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

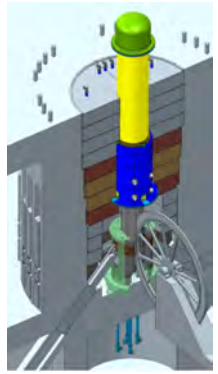
* at reactor power 2MW

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 (**Done on October 26 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



AONSA Young Research Fellows

- 2020 :

not yet

Tingting Song China ANBUG

CSNS

Completed

Jungju Ryu Republic of Korea KNBUA

ANSTO

not yet

Taisen ZUO China CNSS

J-PARC

- 2021 :

not yet

Lu, Teng
J-PARC AMATERAS

In progress

Adilina, Badria, Indri
ANSTO QUOKKA/ PELICAN/EMU

not yet

Haque, Rezwanul
CSNS SANS/MPR

1 people completed

1 people in progress

4 people not started yet

2023 AONSA Young Research Fellows (Discussion results of the 23rd FDM)

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

AONSA Neutron School

- Host by CSNS in this week
- Online due to COVID situation
- ~1400 people

- Next host

Indonesia or India, Indonesia in 2025, India propose in 2024 together with AONSA EC

to be discussed at the EC meeting

Discussions items

- COVID-19

  Getting better

- Neutron facilities in other regions

  Short of neutrons worldwide (ILL maintenance outage in 2022, ESS 2027 online, FRM2 cold source repair 2024, ORNL STS, HIFR refresh, Argentine going well)

- Compact neutron source

  Taiwan start progress, Japan, China, Canada, Germany, two kinds of source

Other business

- ICNS 2022 – Argentina

  Next meeting by ENSA in 2025

- International Facility Director's Meeting

  Next one with ECNS in Germany, hybrid.

- Suppliers for graphite crystals (Panasonic in Japan will cease production later this year)

  Short of production, with need from different facilities(ANSTO, CSNS…)

  No information for other qualified suppliers, GE warry about quality

  Propose to the company about this from all facilities. From the FDM, draft by Jamie and send around to the directors.

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	Indonesia & Zoom	24th November 2022	Kai Sun/Tianfu LI (CARR/CIAE)
25th	Discussion at EC meeting	2023	Tianfu LI(CARR/ CIAE)

Australian Neutron Beam Users' Group

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

ANBUG Executive Committee report for AONSA 2022

November 25, 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/UoW

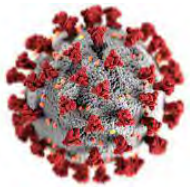
Secretary
Dr Leonie van't Hag
Monash University

Website and Comms
Dr Karyn Jarvis
Swinburne University

ECR member
Dr Teng Lu
ANU

NZ Member
Dr Ben Mallett
Victoria University of Wellington

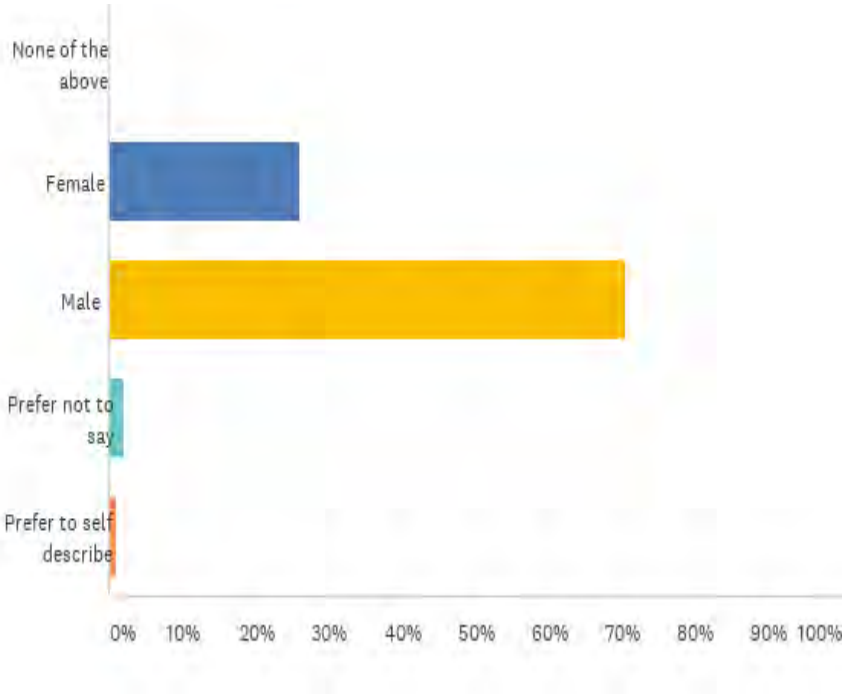
Achievements 2022



THE CHALLENGE

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

AANSS 2022



ANBUG Surveys

ANBUG Awards

‘Town Hall’ meetings and workshops

- ANBUG response to ANSTO Decadal Plan in Dec 2021
- A survey for the blind grant application review, 2022
- Response to the consulting on the New Terms and Conditions for users, 2022

Events

‘Town Hall’ meetings and workshops: Organising group for 2022

ANBUG

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

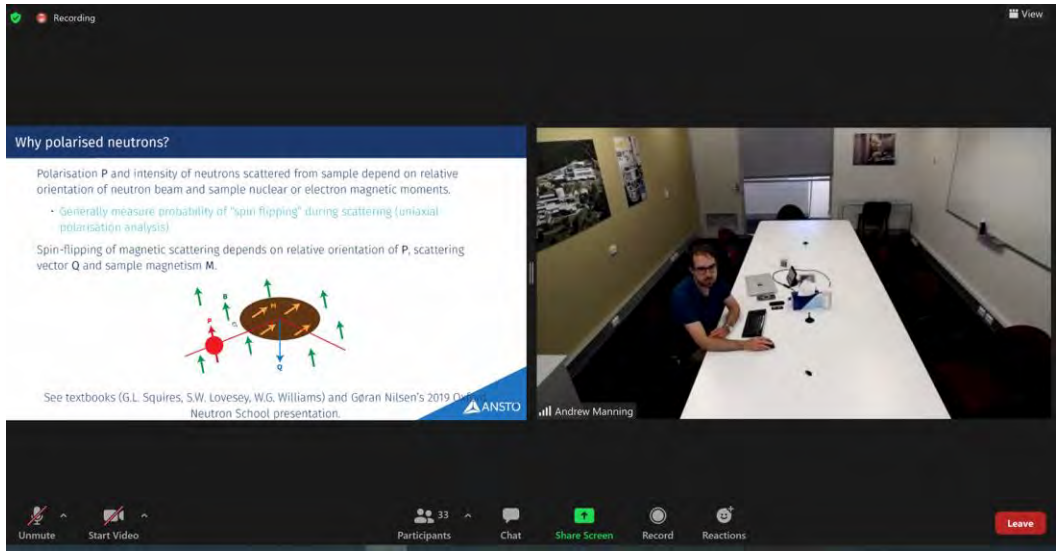
webmaster@anbug.net

Evens
ts

Introduction to polarised neutron scattering on April 2022

Over 34 participants

Host: Drs David Cortie and Teng Lu
Lecturer: Drs Andrew Manning

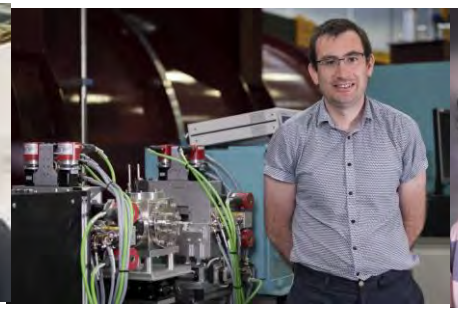


ANBUG workshop: Introduction to polarised neutron scattering
Date: 29 April, 2022, 14:00 – 15:00
Lecturer: Dr Andrew Manning (ACNS)

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!

Evens

A crash course in neutron reflectometry and polarised reflectometry on August 2022

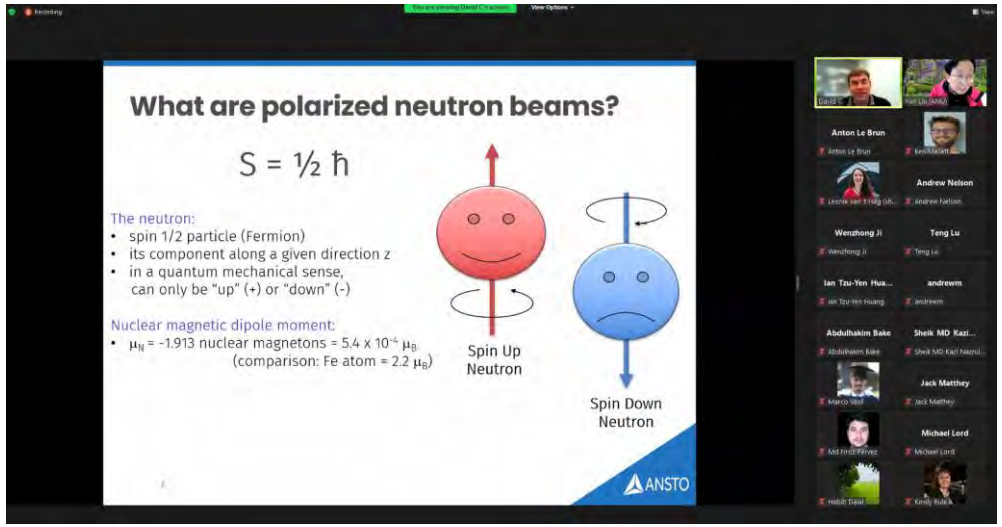

Host: David Cortie and Yun Liu
Lecturers: : Dr Anton Le Brun / Dr David Cortie

Over 19 participants

ANBUG

ANBUG seminar: **A crash course in neutron reflectometry and polarized reflectometry**
Date: August 12, 2022, 14:00 – 15:00
Host: Dr Anton Le Brun / Dr David Cortie (ACNS)
Zoom link: https://uow au.zoom.us/j/82116615361?pwd=TE83SHp3dlFRSEZ3b29GV1Q5MXZEQT09

Abstract: The ability to reflect neutrons from mirror-like surfaces and thin films is the basis of a powerful technique to probe the nanoscale matter. Neutron reflectometry is routinely used to solve the structure of thin film materials with thicknesses between 1-100 nm. In this talk, we will introduce the basic principles of neutron reflectometry, and overview its broad applications in chemistry, surface science, physics and biology. We will highlight a few Australian/New Zealand and international examples of reflectometry, including recent work studying model membranes, drug attachment behaviour on surfaces, deciphering features of the COVID-19 structure and novel materials such as magnetic topological insulators for quantum computing.
We will also demonstrate a free online simulator that you can use to learn to align samples for reflectometry, using the same commands and interface used on instruments on the ACNS to simulate a “hands-on experience” before your real experiment starts.
During the main part of the talk (14:00-14:40), Anton Le Brun will introduce the principles of reflectometry and discuss the instruments and sample environments available for this at the Australian Centre of Neutron Scattering.
After a short break, for those that are interested, David Cortie will deliver second part of the talk (14:40-15:00) will discuss how polarized neutrons can be used to study quantum materials including magnetic and superconducting films.



Events

AANSS 2022: 9-11 November 2022

ANBUG

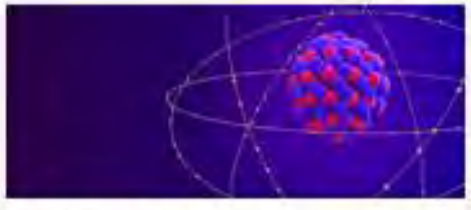
Topics


Advanced Materials


Manufacturing, Engineering & Industry


Earth, Environment & Cultural Heritage


Chemistry & Crystallography


Deuteration for neutrons


Biological Systems & Soft Matter


Neutron instruments & Techniques


Magnetism & Condensed Matter

Organising committee, 2022


Chair - Karyn **Wilde**
ANSTO


Kelly **Cubbin**
ANSTO


Elliot Paul **Gilbert**
ANSTO


Hsin-Hui **Shen**
Monash University


Wei Kong **Pang**
University of Wollongong


Olivia **Kendall**
Monash University


Joshua **Marlow**
ANSTO


Grace **Causer**
Technical University of Munich


Michael **Rose**
AINSE


Charlie **Wu**
NSRRC

AANSS 2022
Sydney, Australia
9-11 November

ANBUG Promotion of Women in Neutron Scattering Program

Applications are OPEN!

Support female PhDs & ECRs

- **Registration**
- **childcare**

Events

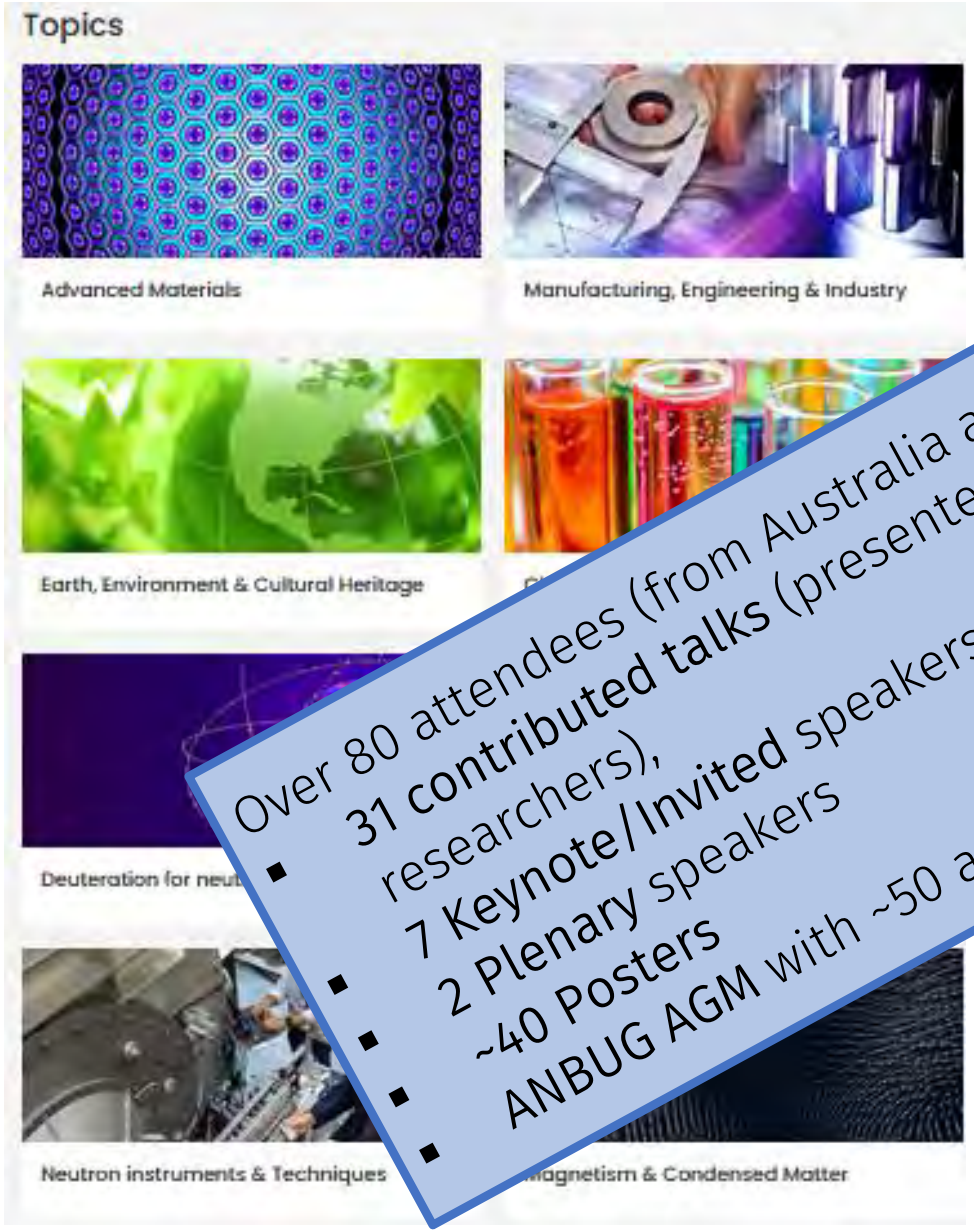
AANSS 2022: 9-11 November 2022

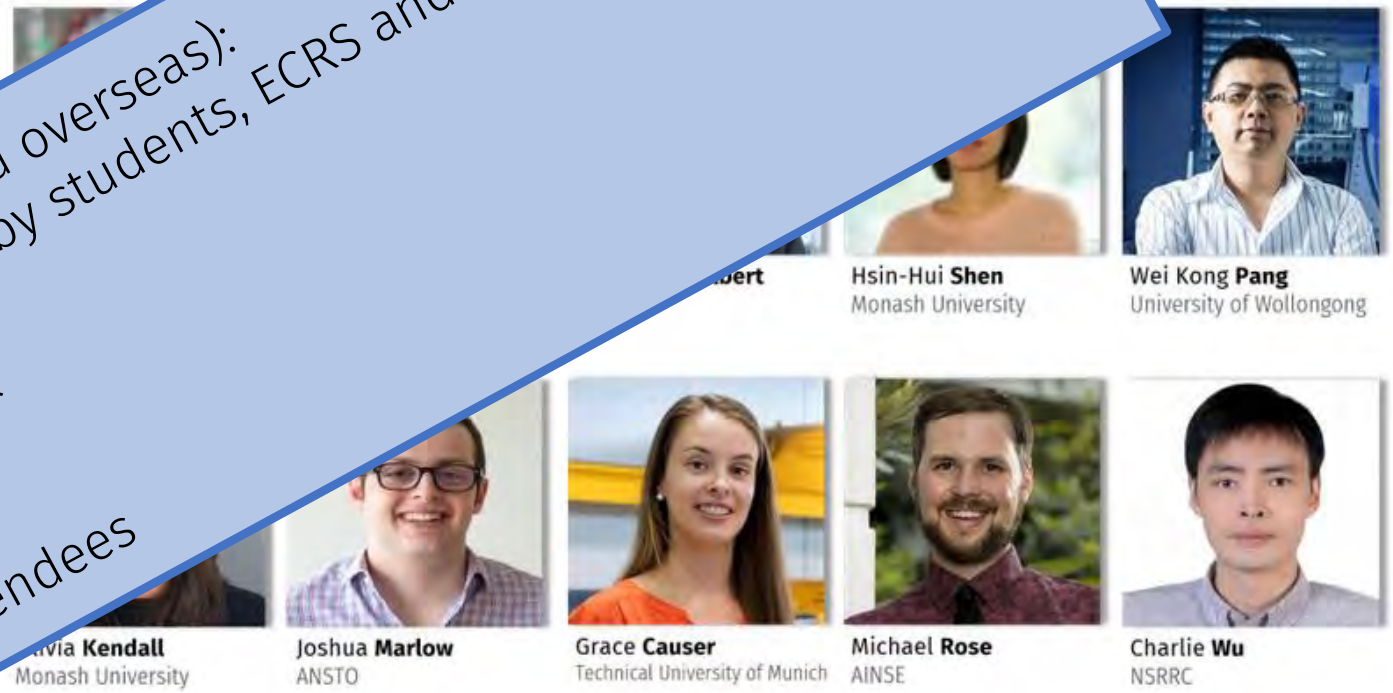
ANBUG

Organising

Over 80 attendees (from Australia and overseas):

- **31 contributed talks** (presented by students, ECRS and experienced researchers),
- **7 Keynote/Invited** speakers &
- **2 Plenary** speakers
- ~40 Posters
- ANBUG AGM with ~50 attendees





AANSS 2022
Sydney, Australia
9-11 November

ANBUG Promotion of Women in Neutron Scattering Program

Applications are OPEN!

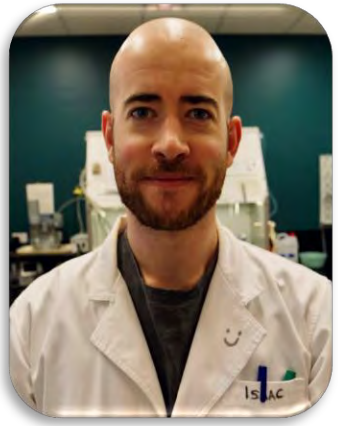
Support female PhDs & ECRs

- **Registration**
- **childcare**

Awards

ANBUG Awards 2022

Outstanding PhD Prize



Dr Isaac Gresham, University of Sydney

Neutron Award

Dr Kirrily Rule, ANSTO

Career Award

Professor Emeritus Jill Trewhella
University of Sydney

Technical Award

Dr Andrew Nelson, ANSTO

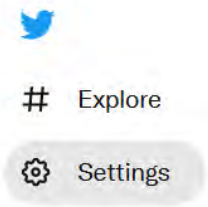
Young Scientist Award

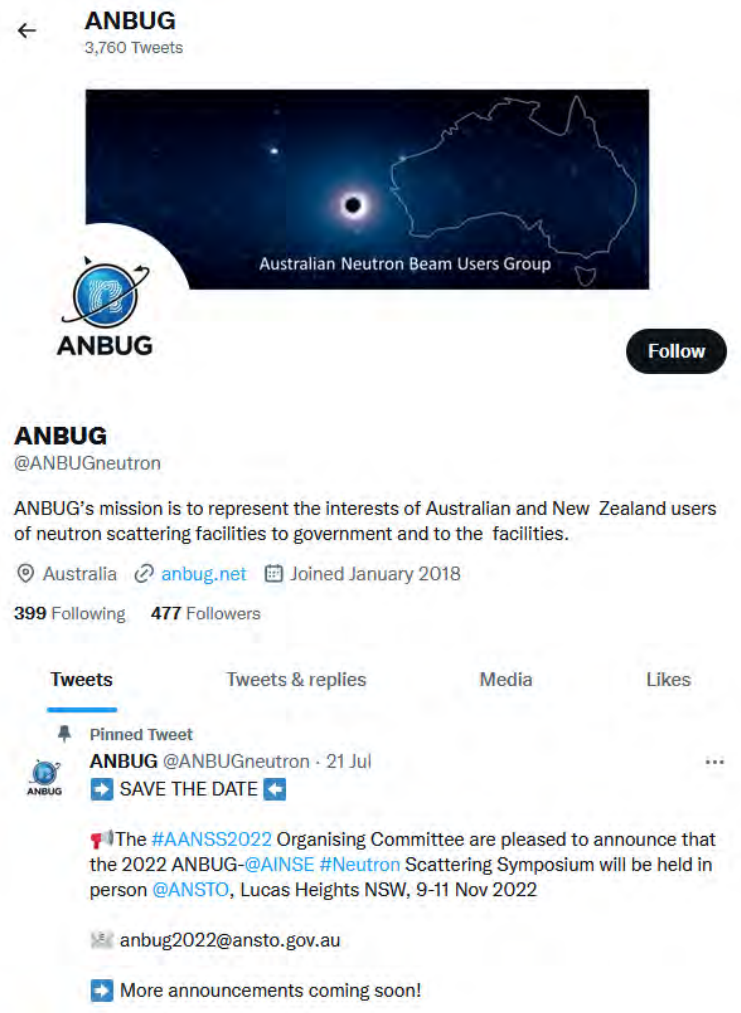
Dr Teng Lu, Australian National University

Web & Comm

ANBUG's Communication in 2022

- Users' email
- Twitter: ANBUGneutron (≈477 followers)
- ANBUG Newsletter (≈377)
  - Quarterly update – Call for user success, research stories or promotion of neutron related events
  - Used in conjunction with website
  - Send to Karyn: (kljarvis@swin.edu.au)
- ACNS Scatter Matters





Actions

Summary of ANBUG survey on ACNS/NDF Double Blind Trial and New Portal

Number of responses: 26

ANBUG

Question 1: What are your opinions on the 2022-1 submission process from the point of view of writing and submitted a proposal? What are your opinions on writing a blind proposal? What are your opinions on the submission portal?

Collated comments:

1. Hard to justify research without referring to past work
2. Hassle to write proposal that 'hides' that it is part of an ongoing research program
3. Hard to demonstrate preliminary work to justify need for neutrons
4. Difficult to justify work when cannot refer to previous proposals
5. Difficult to obscure identity given self-citation
6. Admirable effort to address unconscious bias
7. New portal was easier to use
8. Portal had some missing functionality i.e. sample environment
9. Combining neutron and deuteration proposals is a good innovation
10. Instructions could be clearer

Suggestions:

1. Anonymised proposal reviewed by external assessors with a separate section reviewed by technical committee where proposers can demonstrate their capacity to undertake experiment
2. Having multiple people able to edit same proposal
3. Creating separate proposal scheme to nurture diversity and assist ECRs

Actions

Summary of ANBUG survey on ACNS/NDF Double Blind Trial and New Portal

Number of responses: 26

Question 2: What are your opinions on the 2022-1 submission process from the point of view of reviewing a proposal? What are your opinions on reviewing a blind proposal? What are your opinions on the submission portal?

Collated comments:

1. Neutron world is small, so not difficult for reviewers to work out the authors. Many could work out the authors of every proposal.
2. Reviewing is now more difficult as no longer know if proposer has appropriate background, track record capabilities and skills to conduct the proposed work.
3. For new users, hiding their identity could be detrimental as their proposals are typically lower quality. If reviewer knew they were knew, they could be judged based on that.
4. Blind proposal lack context that is important in justifying their work. Important to know if its part of a larger project of PhD.
5. 'Personal' information leaked through the 'blind process': filenames, blackout dates, sample details etc.
6. Better email communication to reviewers, looked like spam. Not clear they actually were being asked to review. Also to include information such as number of reviews and proposal numbers. Reminders coming up to due date.
7. No way to download proposal as single file to include figures.
8. Good proportion of proposals did not satisfy the criteria of 'blind' proposals
9. Great! Definitely reviewed based on proposal merits rather than history of proposal/s

Suggestions:

1. Increase proposal length to 3 pages and include figures, rather than separate figure upload

Actions

ANSTO Facility Access Terms and Conditions

ANSTO will be implementing Facility Access Terms and Conditions for all institutions with researchers and students accessing our facilities. These Terms and Conditions will apply to all non-commercial ANSTO access modes unless an over-riding Agreement is in place.

Why is ANSTO updating its Facility Access Terms and Conditions?

- Formalising our Terms and Conditions will strengthen and codify practices that have been in place for many years with our user institutions. There will now be a single Terms and Conditions that applies to access for all ANSTO facilities which will provide consistency for users.
- The Terms and Conditions clarify intellectual property and data retention policies, set out indemnity and minimum insurance conditions for access to ANSTO research infrastructure and expectations around publication and acknowledgements.
- This step aligns with best practices undertaken in international scientific infrastructure institutions.

When will the updated Terms and Conditions need to be in place?

We aim to have formal institutional agreements to the Facility Access Terms and Conditions by 31 March 2023. The Institutional Agreement to the Terms and Conditions requirement will come into effect in the next available round after 31 March 2023.

Table 1: Ownership of Intellectual Property Rights

Type of IPR	What is the IPR	Who owns this IPR
ANSTO IPR	IPR in all works, inventions, discoveries, methods or analyses made or employed by ANSTO relating to the methodology, methods, techniques or processes used to analyse or measure materials or relating to the use of ANSTO's Facilities	ANSTO
Joint IPR	IPR which is developed or created in connection with the Permitted Research which incorporates significant contributions from ANSTO employees or contractors (excluding ANSTO IPR)	You and ANSTO as tenants-in-common in proportion to respective contributions
Research IP	All other IPR developed or created in connection with the Permitted Research which is not ANSTO IPR or Joint IPR	You

EC Team

EC Retirements: Thank you David Cortie and Karyn Jarvis!

ANBUG

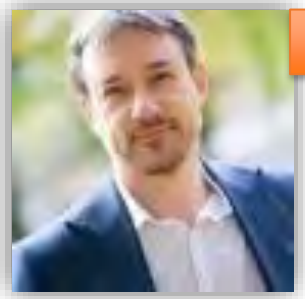
Treasurer
Dr David Cortie,
ANSTO/UoW

Website and Comms
Dr Karyn Jarvis
Swinburne University

EC Team

2023-2024 ANBUG executive committee

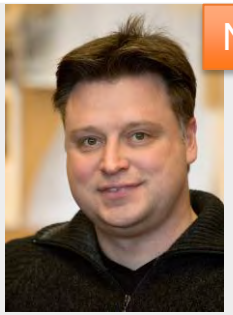
President
A/Prof Chris Wensrich,
University of Newcastle



Vice-President
Prof Michael Preuss,
Monash University

Past-President
Prof Yun Liu
ANU

Prof Tracy Rushmer
Macquarie University



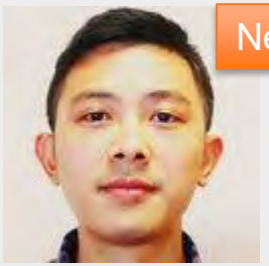
Treasurer
Clemens Ulrich
UNSW

Secretary
Dr Leonie van't Hag
Monash University

Website and Comms
Grace Causer
Monash University

Dr Kirrily Rule
ANSTO

Dr Teng Lu
ANU



Dr Lu Jiang
Deakin University

NZ Member
Dr Ben Mallett
Victoria University of Wellington

Report from China Neutron Scattering Society

Hesheng CHEN

AONSA EC Meeting November 25, 2022

Outline

1 CNSS activities overview

2 Status of CARR,CMRR and CSNS

3 AOCNS-2023

4 Summary

Outline

1 CNSS activities overview

2 Status of CARR,CMRR and CSNS

3 AOCNS-2023

4 Summary

CNSS focus and plan for 2022

- **Coordination of the research and application of neutron scattering in China**
  - **User community > 4200 and expands quickly**
  - **Develop neutron scattering technology(**detector，neutron guide， neutron polarizer **)……**
  - **Training users and students(**AONSA Neutron School 2022 held online Nov. 21- 23**)**
  - **Promote International cooperation and exchanges ……**

- **Promotion of the work of 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
  - Lithium Battery Technology
  - Deuterium Technology

- **Preparation for international and domestic conferences**
  - **Asia-Oceania Conference on Neutron Scattering -2023**
  - **The 9th national conference on neutron scattering & workshop on applications of national neutron facilities (**was delayed by the pandemic control**)……**

4

CSNS Fifth Annual Conference

- From September 5 to 6,2022, the CSNS Fifth Annual Conference was held simultaneously in Beijing and Foshan, Guangdong.
- More than 250 experts joined the event both online and offline. Academicians Yifang Wang, Senyu Chen and Hesheng Chen were invited to attend the meeting.
- This conference mainly focused on the application of the instruments at CSNS, and the progress of CSNS-II accelerator.

2022 SANS and VSANS user meeting

- On August 14, 2022, the SANS and VSANS user meeting was held in Dongguan.
- The meeting focused on the experiment planning of SANS and VSANS , the data processing (for SANS offline), the analysis and fitting of biological experiment data, etc.

Meetings and exchanges——CMRR

- ✓ **Due to the impact of the COVID-19 epidemic situation, the meeting had to be postponed, including the 9th National Conference on Neutron Scattering & Workshop on Applications of National Neutron Facilities - 2022.**
- ✓ **The neutron scattering progress has been reported in symposium for advanced Characterization Technology for Materials 2022 in on-line national material conference.**

Symposium AA03

Advanced Characterization Technology for Materials

Main Topics:

Progress on the development of large scientific facilities; Advanced characterization techniques/instruments and in-situ devices; Application of diffraction, scattering and imaging techniques in the study of structural and functional materials; Advanced methods and techniques for high-throughput characterization of material composition, microstructures, and properties; Multi-scale methods and techniques for evaluating the usage performance of engineering materials and components; Other advanced characterization techniques for materials

Chairs:

Dongbai Sun (Sun Yat-Sen University)
Weidong Zhang (University of Science and Technology Beijing)
Yandong Wang (University of Science and Technology Beijing)
Yunhai Jia (NCS Testing Technology Co., Ltd.)
Xiaodong Han (Beijing University of Technology)
Jincang Zhang(Shanghai University)
Ulf Karlsson(KTH Royal Institute of Technology)

Afternoon, May 30, 2022(Monday)

13:00-15:00 SessionVII（Zoom 账号：845 5989 8513，密码：774773）

Chair:Jincang Zhang、Yandong Wang

13:00-13:25（AA03-33）

题目待定(*Keynote*) **（联络人：李时磊 13552727287）**
刘蕴韬，*中国原子能科学研究院，中国*

13:25-13:50（AA03-34）**（联络人：李时磊 13552727287）**
绵阳堆中子表征平台与技术应用进展*(Keynote)*
孙光爱，*中国工程物理研究院核物理与化学研究所，中国*

13:50-14:10（AA03-35）**（联络人：李时磊 13552727287）**
Development of General Purpose Power Diffractometer (GPPD) at China Spalla Neutron Source (CSNS) *(Invited)*
何伦华，*中国科学院物理研究所/中国散裂中子源，中国*

14:10-14:30（AA03-36）**（联络人：蒋立武 13488684414）**
Effect of surface scratch on stress corrosion behavior of Alloy 690TT steam gener tube *(Invited)*
Yonghao Lu, *National Center for Materials Service Safety, University of Science Technology Beijing, China*

14:30-14:50（AA03-37）**（联络人：李时磊 13552727287）**
先进残余应力表征技术在失效分析中的应用*(Invited)*
李楠，*中国航发北京航空材料研究院，中国*

第九届全国中子散射会议

暨国家中子源多学科应用研讨会—2022

The 9th National Conference on Neutron Scattering &

Workshop on Applications of National Neutron Facilities—2022

2022 年 11 月 2—5 日，四川 绵阳

（第三轮通知）

尊敬的女士/先生：

为了推动我国中子散射研究及其应用、发展用户，中国物理学会中子散射专业委员会会同中国散裂中子源、中国原子能科学研究院、中国工程物理研究院核物理与化学研究所共同主办第九届全国中子散射会议暨国家中子源多学科应用研讨会-2022。会议拟于 2022 年 11 月 2 日—5 日在四川省绵阳市召开，承办及当地负责单位为中国工程物理研究院核物理与化学研究所和中物院中子物理学重点实验室。

今年的研讨会除了向用户报告主要国家中子源项目的总体进展外，还包括以下几项主要内容：（1）中子散射多学科应用的学术交流和讨论；（2）吸收广大用户参与建设和规划，听取广大用户对中子源应用的建议；（3）由中国物理学会中子散射专业委员会组织评议青年优秀论文奖。

一、会议组织机构

主席： 陈和生（中国科学院高能物理研究所）

核物理与化学研究所
INSTITUTE OF NUCLEAR PHYSICS AND CHEMISTRY

CARR Neutron Facilities

- Reactor run 8 days in June at 30MW
- Neutron Experiments by users from 18 institutes
- Progress on construction of neutron guide and instrument

Outline

1 CNSS activities overview

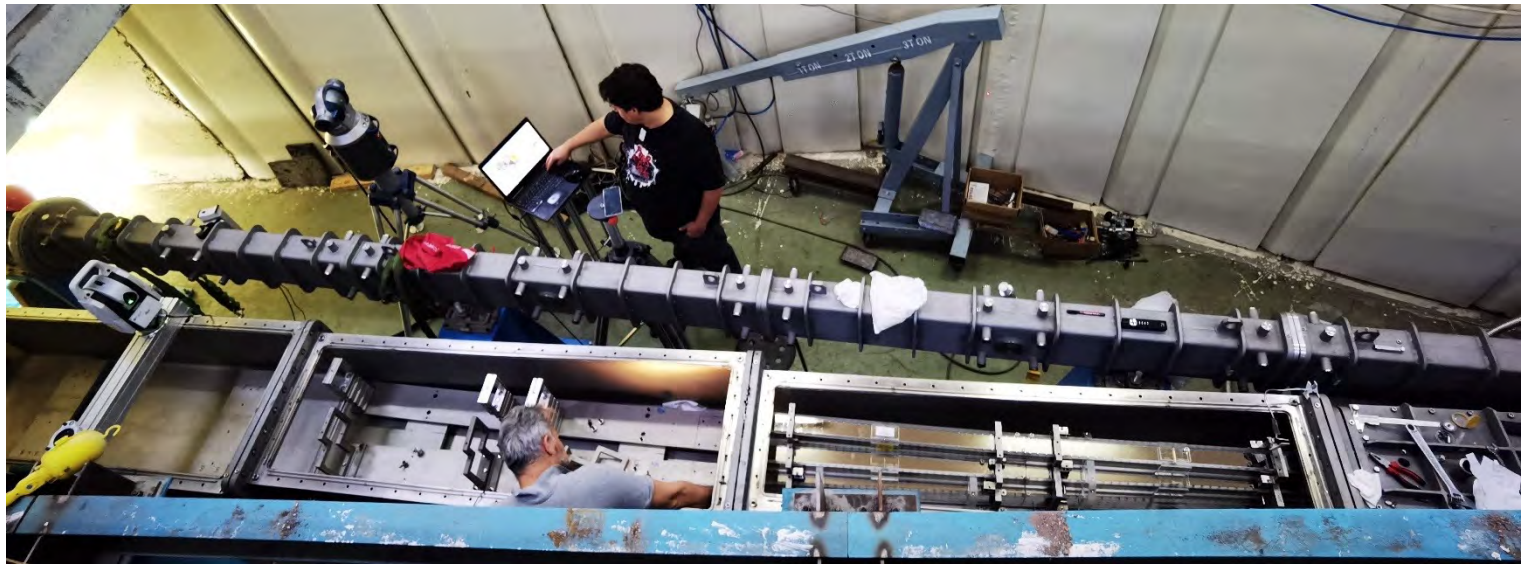
2 **Status of CARR,CMRR and CSNS**

3 AOCNS-2023

4 Summary

Neutron Guide Installation——CARR

Installation of the neutron guide CNGC in this two months.

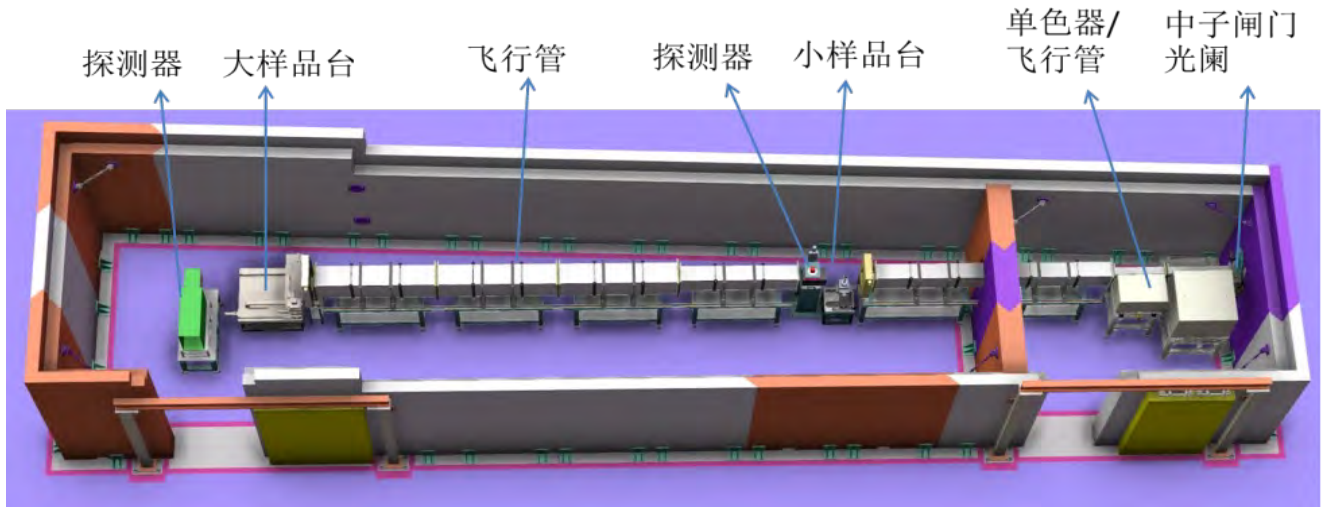


Progress Cold Neutron Imaging——CARR

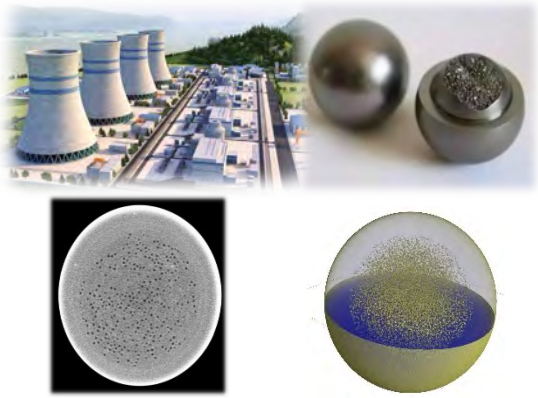
Cold Neutron Imaging Under Construction

Big Shielding House is ready.

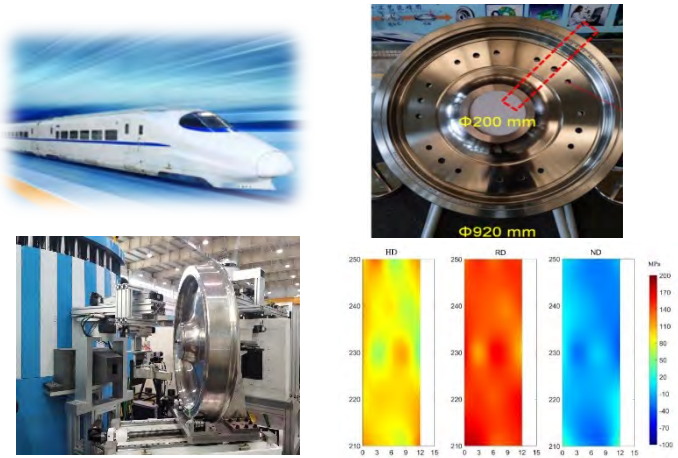
Whole instrument to be aligned right after the installation of neutron guide.



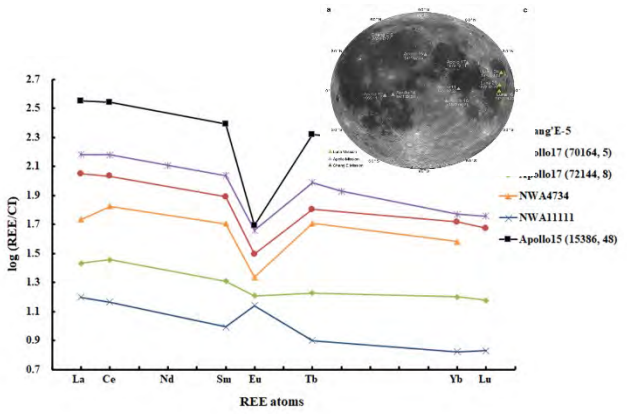
Some New Experimental Results——CARR



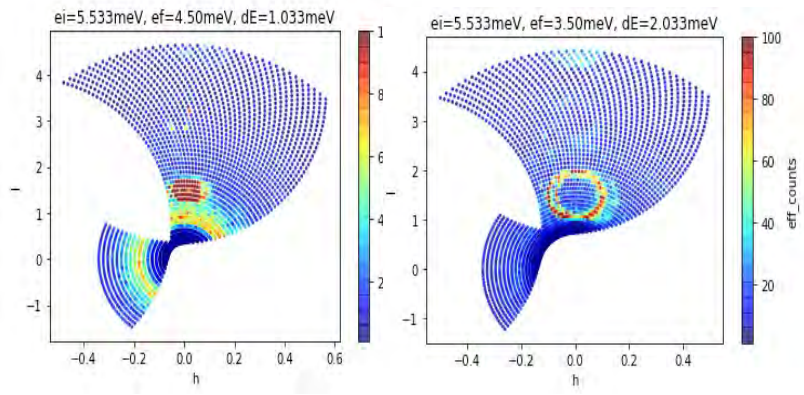
Neutron Imaging on Nuclear Fuel Materials



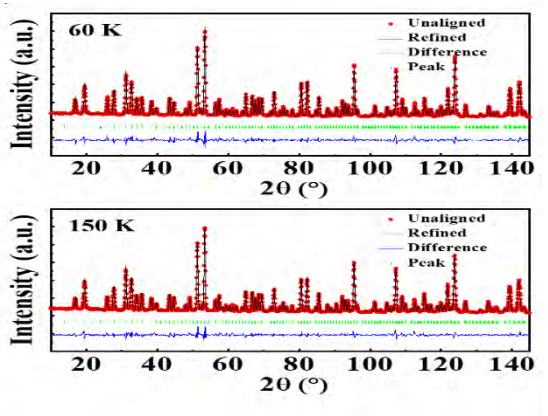
Residual Stress in Wheel for High Speed Train



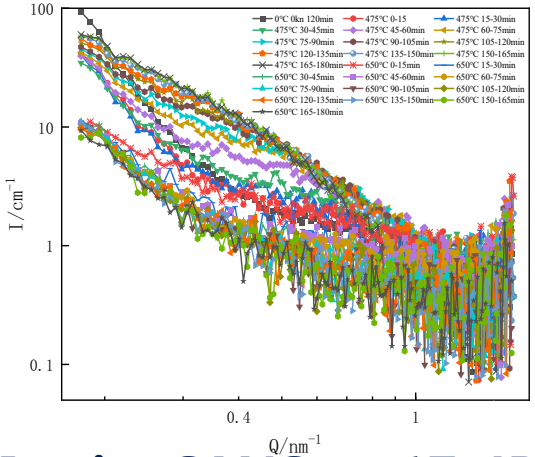
Neutron Activation Analysis on Lunar Samples



MCAS on Magnetic Excitation



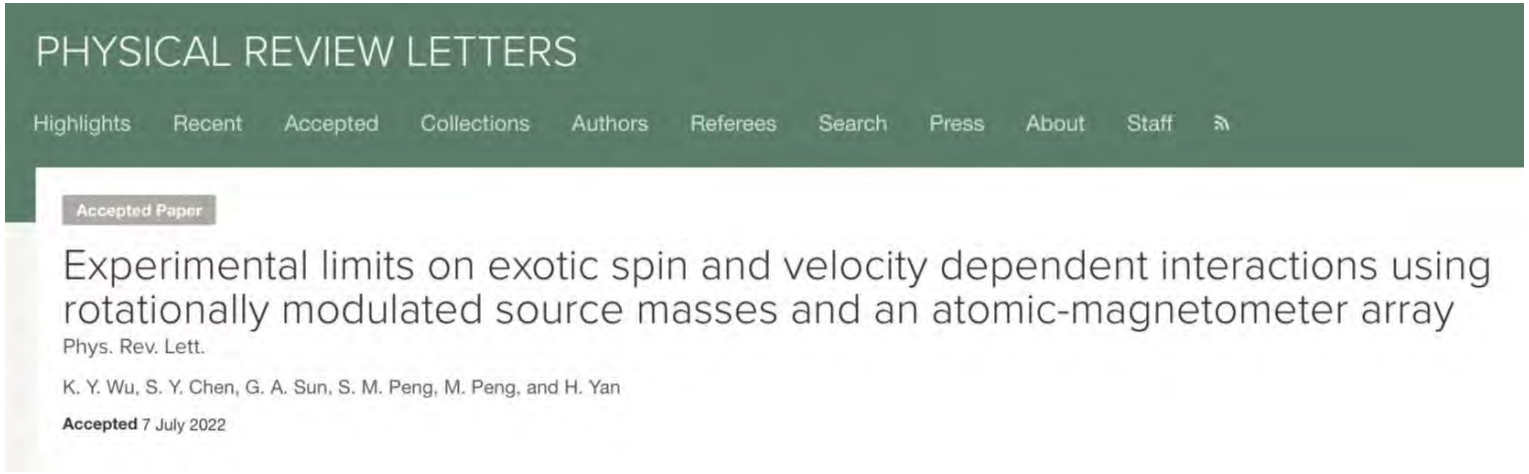
Powder Diffraction on Magnetic Material



In-situ SANS on 17-4PH Stainless Steel

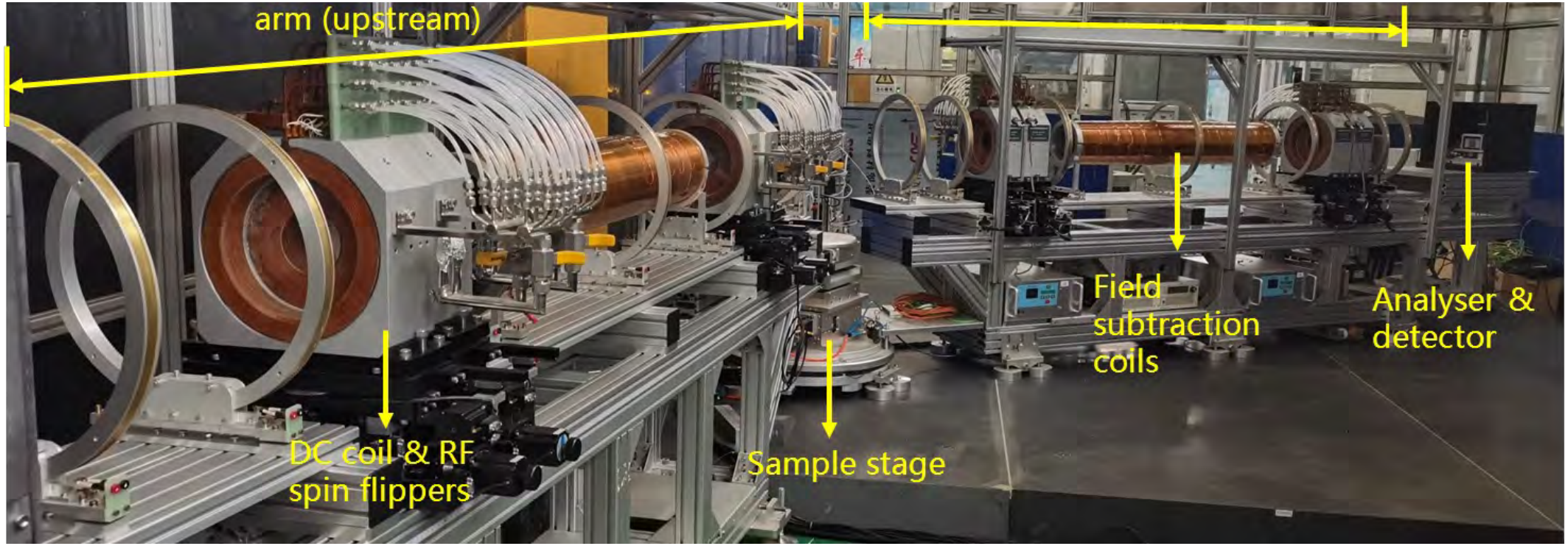
New polarized 3He neutron analytical ability——CMRR

- ✓ A ^{3}He system for polarized neutrons has developed and has been equipped on the neutron spin echo spectrometer.
- ✓ We conducted laboratory searching for the exotic spin- and velocity-dependent new interactions. The experiment method has noise reduction features, and new constraints for Vector-Axial and Axial-Axial were obtained. The new constraints on VA improved by as much as more than four orders, on AA by as much as two orders in the corresponding force range, respectively. The paper has been published in Phys. Rev. Lett. 129 (2022) 5, 051802



New spin echo quasi elastic spectrometer——CMRR

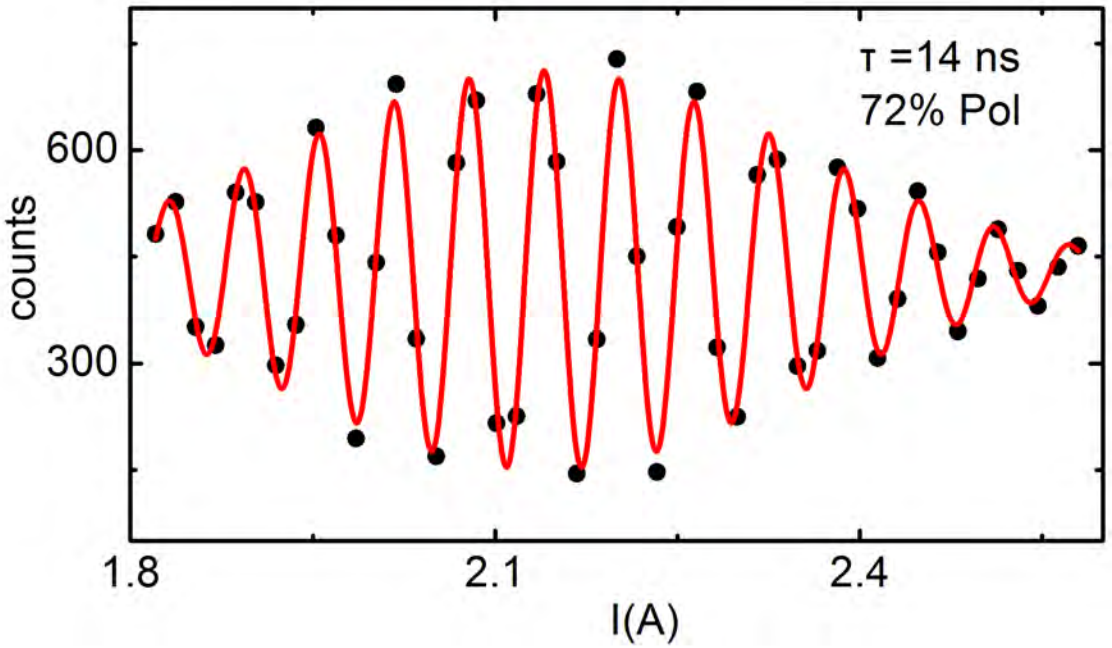
- ✓ The first neutron spin echo quasi elastic spectrometer was developed in China, which achieved energy resolution better than 100 neV. Only one instrument named RESEDA has the similar mode at FRMII, Germany in whole world.



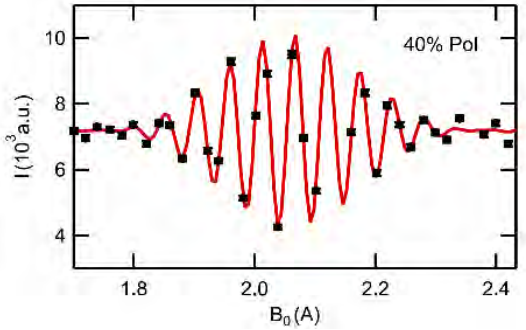
New spin echo quasi elastic spectrometer——CMRR

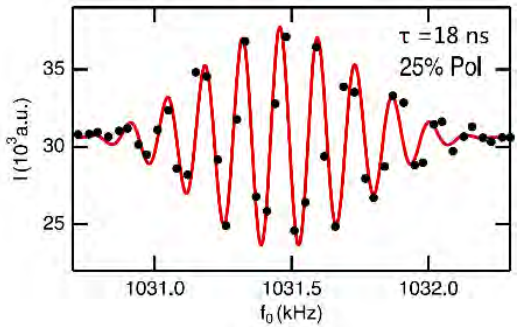
✓The testing result at CMRR: the spin echo time τ is 14ns; neutron polarizability is 72% .

✓ The RESEDA main specifications: the spin echo time τ is 18ns; neutron polarizability is 25% .



The spin echo signal at CMRR





The first result at RESEDA

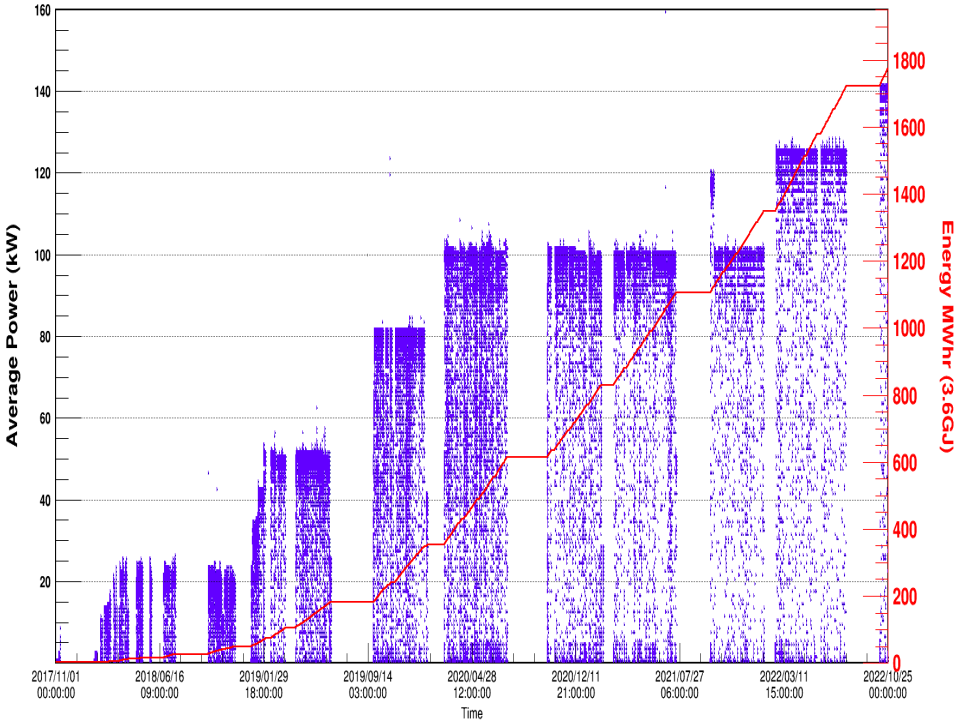
The optimized signal of RESEDA τ=18ns, polarizability 25%

[1] Nuclear Inst. and Methods in Physics Research, A 939 (2019) 22–29

核物理与化学研究所
INSTITUTE OF NUCLEAR PHYSICS AND CHEMISTRY

China Spallation Neutron Source（CSNS）

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. In the operation year between 2021 and 2022 , 5262 hours of effective target beam time were achieved and the beam availability was 97.1%.



Commissioning of Atmospheric Neutron Irradiation Spectrometer —some user experiments have been completed

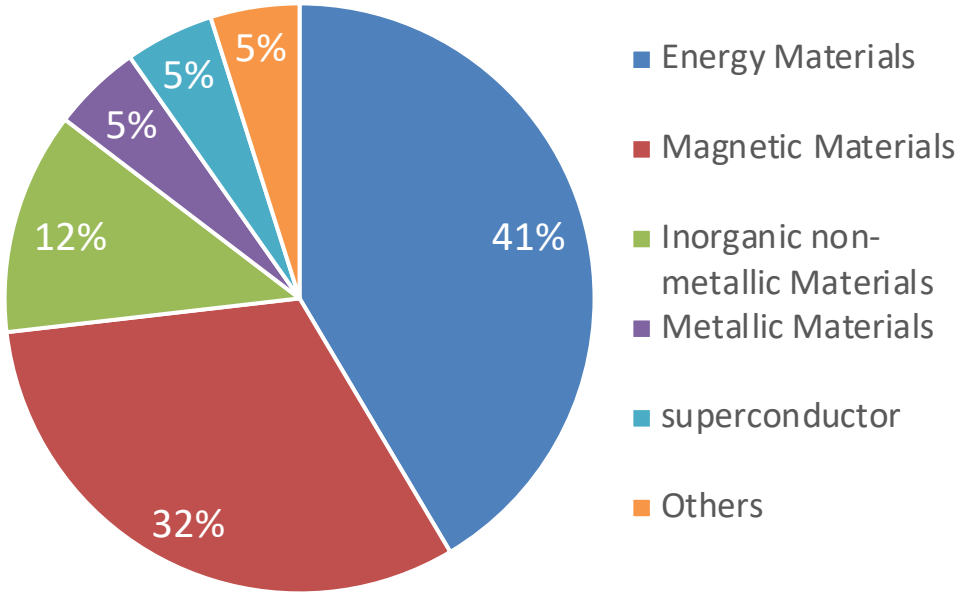
中国南方电网
CHINA SOUTHERN POWER GRID

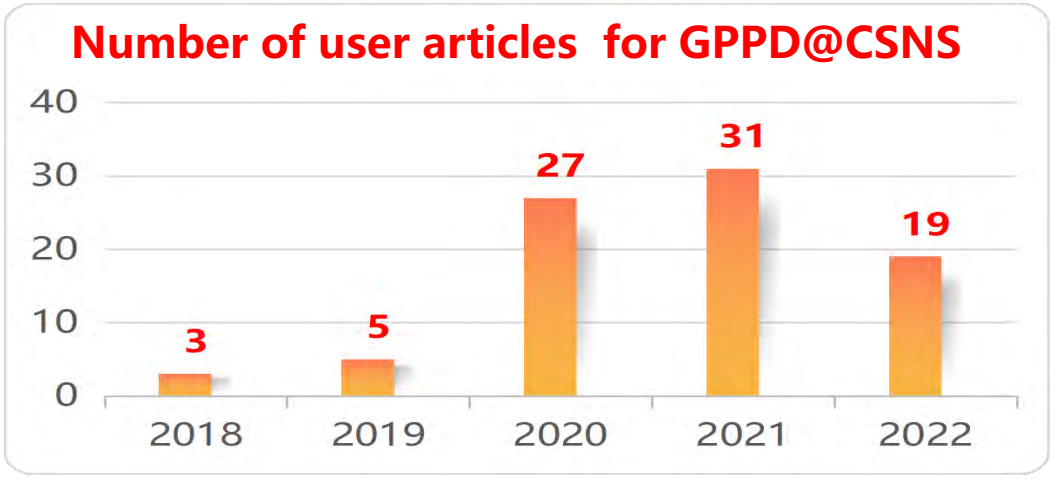
NARI
国电南瑞
NARI-TECH

西安交通大学
XI'AN JIAOTONG UNIVERSITY

XIHARI
西安高压电器研究院股份有限公司
Xi'an High Voltage Apparatus Research Institute Co.,Ltd.

GPPD—Publications





Highlight works

1. ***Science***, 2021, 373, 315-320. IF=63.713
2. ***Science***, 2020, 368, 1347-1352. IF=63.713
3. ***Nature Nanotechnology***, 2021,16,331–336. IF=39.213
4. ***Nature Communication***, 2022, 13, 3784. IF=17.694
5. ***Nano Energy***, 2022, 94, 106958. IF=19.069
6. ***Nano Energy***, 2022, 97, 107119. IF=19.069
7. ***Journal of Materials Chemistry A,*** 2022, 10, 16697-16703. IF=14.511
8. ***NPG Asia Materials***, 2022, 14:50.IF=10.761
9. **Acta Materialia,** 2022, 232,117975.IF=9.209

.....

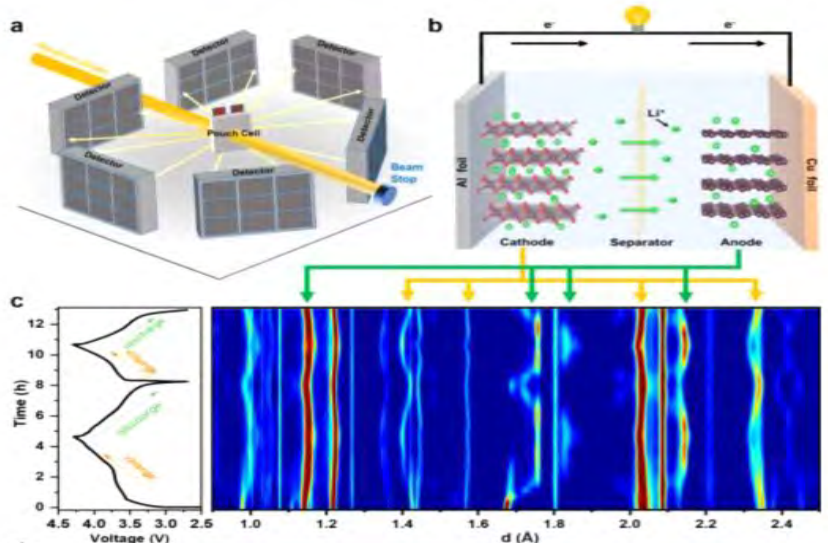
As of October 2022, GPPD has produced a total of 85 research papers, including research papers published in top international journals such as *Science*, *Nature Communications*, *Advanced Materials*, *Materials Horizons*, etc. The total impact factor reached 1062.7, the average impact factor is 12.5.

18

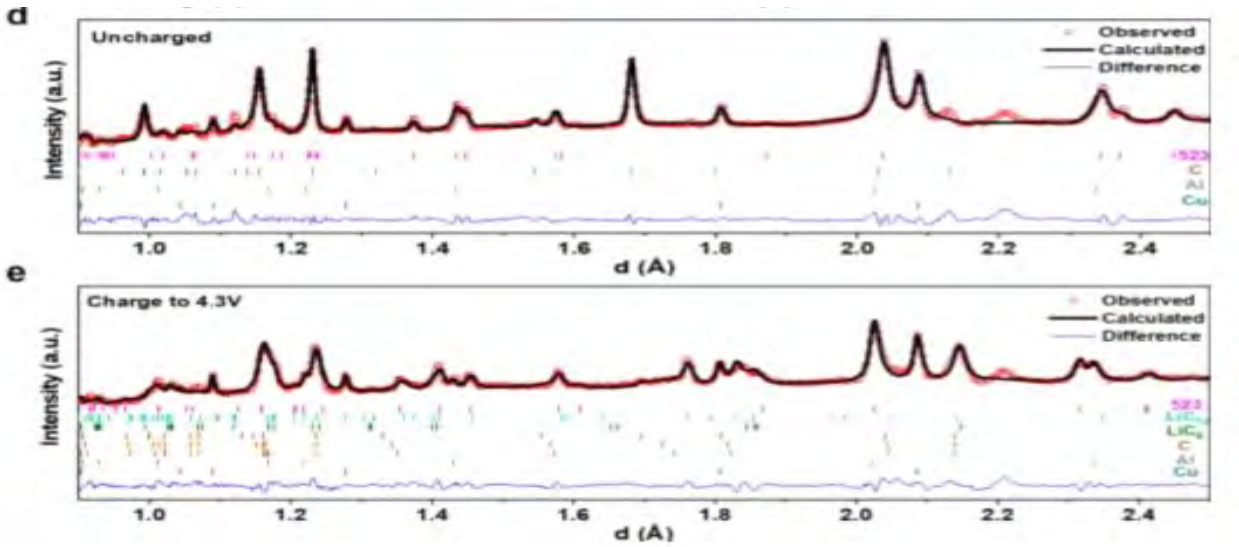
GPPD——Research on New Energy Materials - Lithium Ion Battery

- Based on the excellent high-resolution performance, high sensitivity to light elements (Li), high penetrability and nondestructive detection of GPPD, the user conducted neutron diffraction tests on the LiNi0.5Co0.2Mn0.3O2/graphite full cell.

- They revealed the migration path of Li ions, and finally obtained a high-performance lithium ion battery.



全电池中子衍射研究示意图



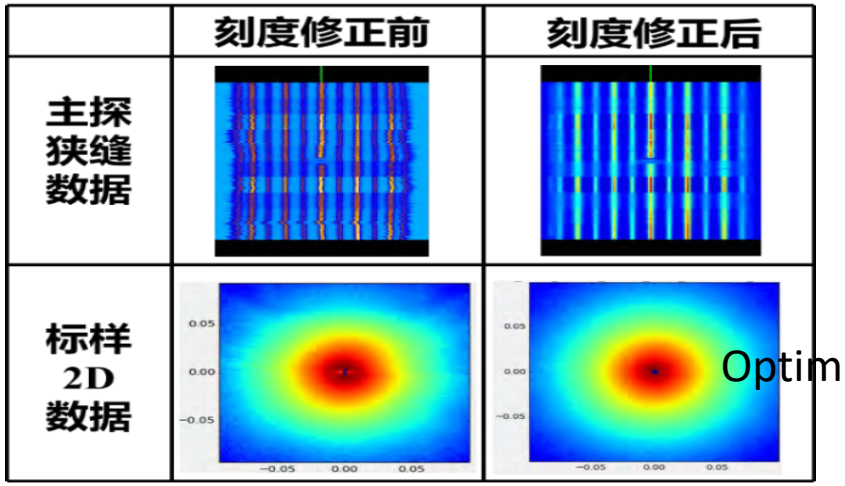
中子衍射数据精修谱

Prof. Yinguo Xiao
Peking University ShenZhen Graduate School

Energy Storage Materials, 2022, 44, 1-9

SANS—performance optimization and upgrade

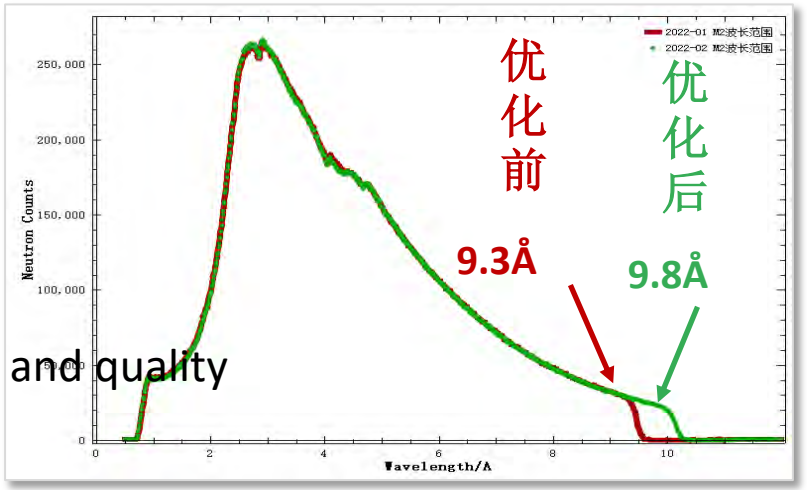
- Detector calibration optimization



- ✓ New calibration algorithm to reduce dead area
- ✓ Edge Mask Range Correction

Optimize low-Q data statistics and quality

- Wavelength range optimization



- ✓ Optimize chopper parameters, and increase the full pass wavelength range by0.5Å
- ✓ Optimize low-Q data statistics and quality

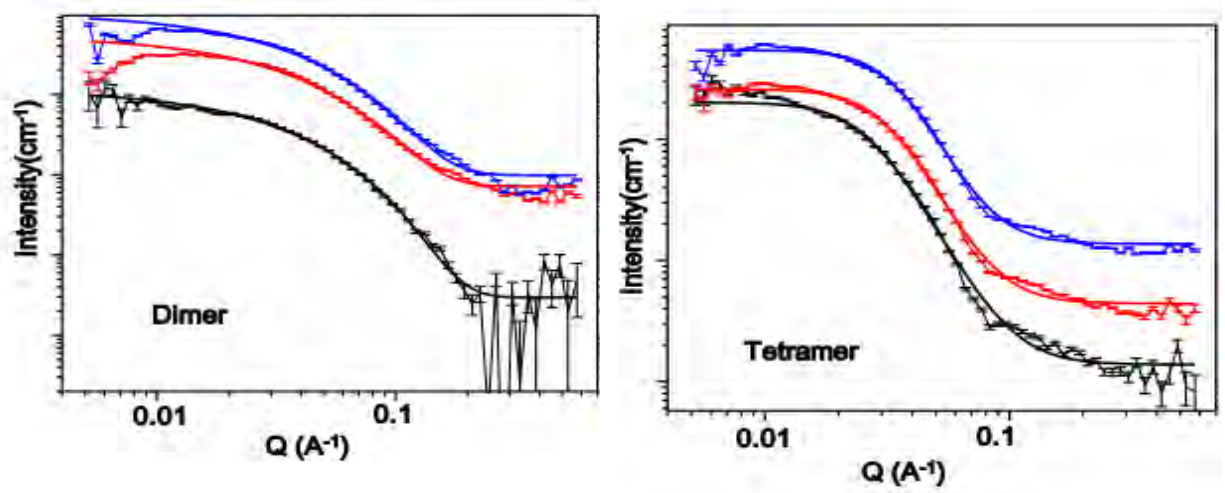
A single measurement —— wide range of Q values

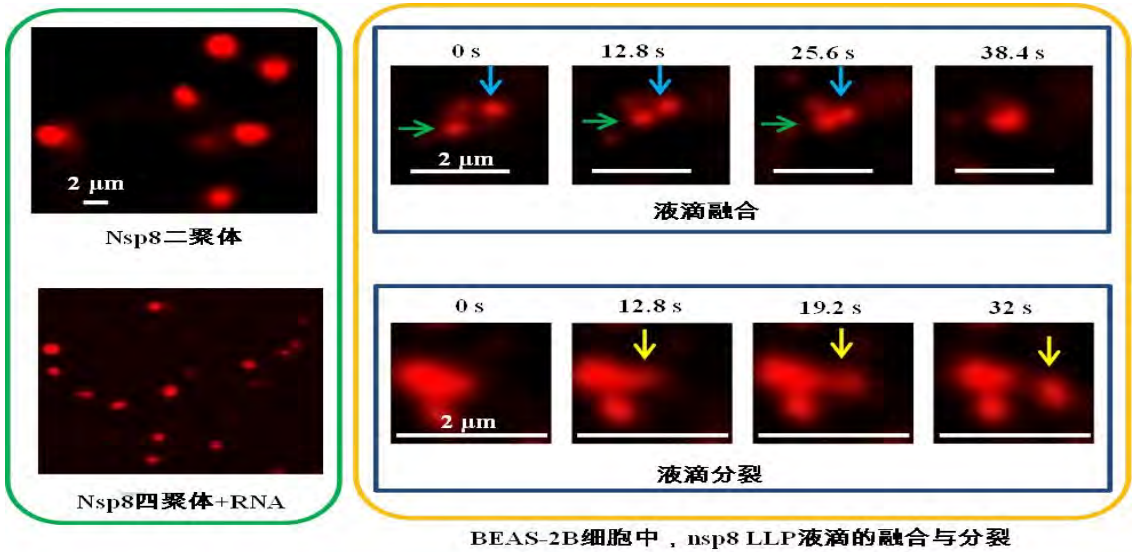
0.005~0.8 Å^{-1}@16m

0.008~1.4 Å^{-1}@14m

SANS—Biomacromolecules and Pharmaceuticals

1000mM, 500mM, 500mM NaCl



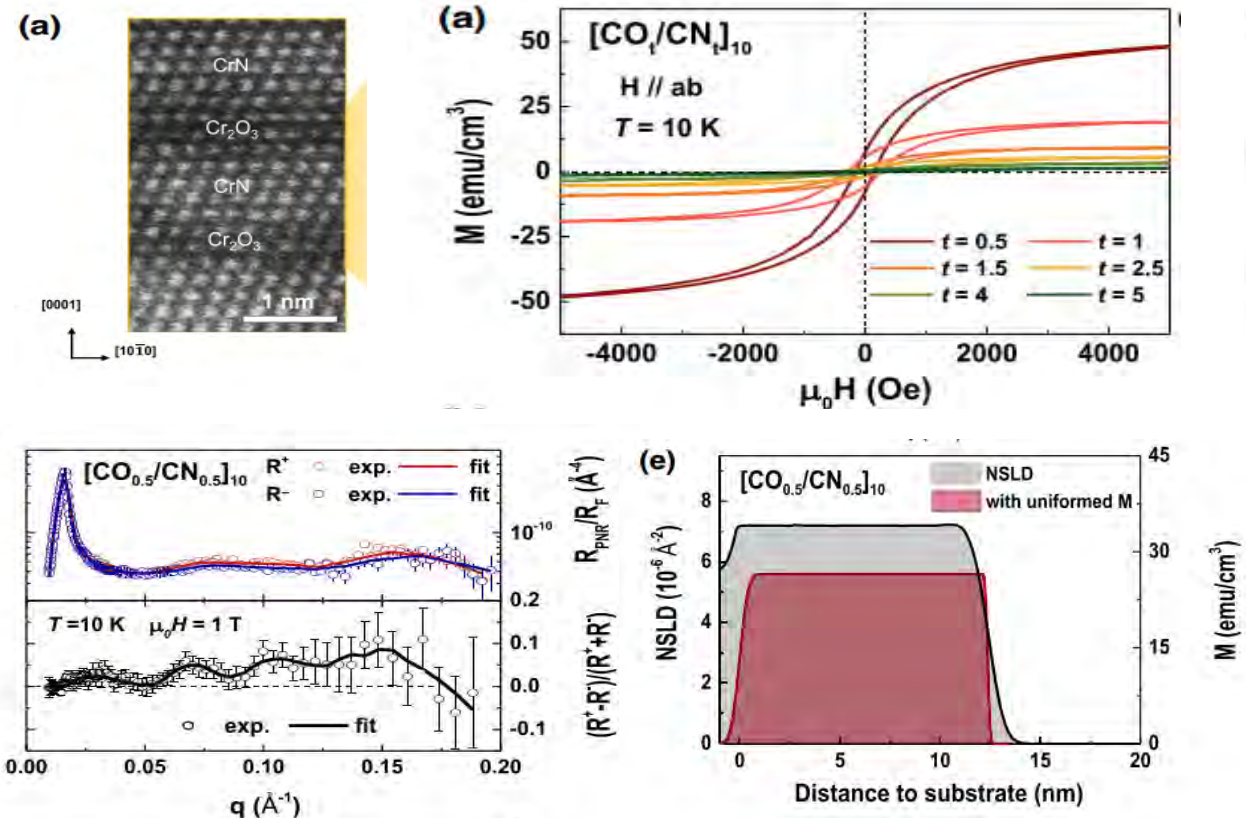


Communication Biology 2022, 925，5

- **The liquid-liquid separation characteristics of the novel coronavirus primer enzyme nsp8, and the stability of the dimer and tetramer of nsp8 decreased with the decrease of salt concentration in the buffer solution**

Multi-purpose Reflectometer

Oxide film

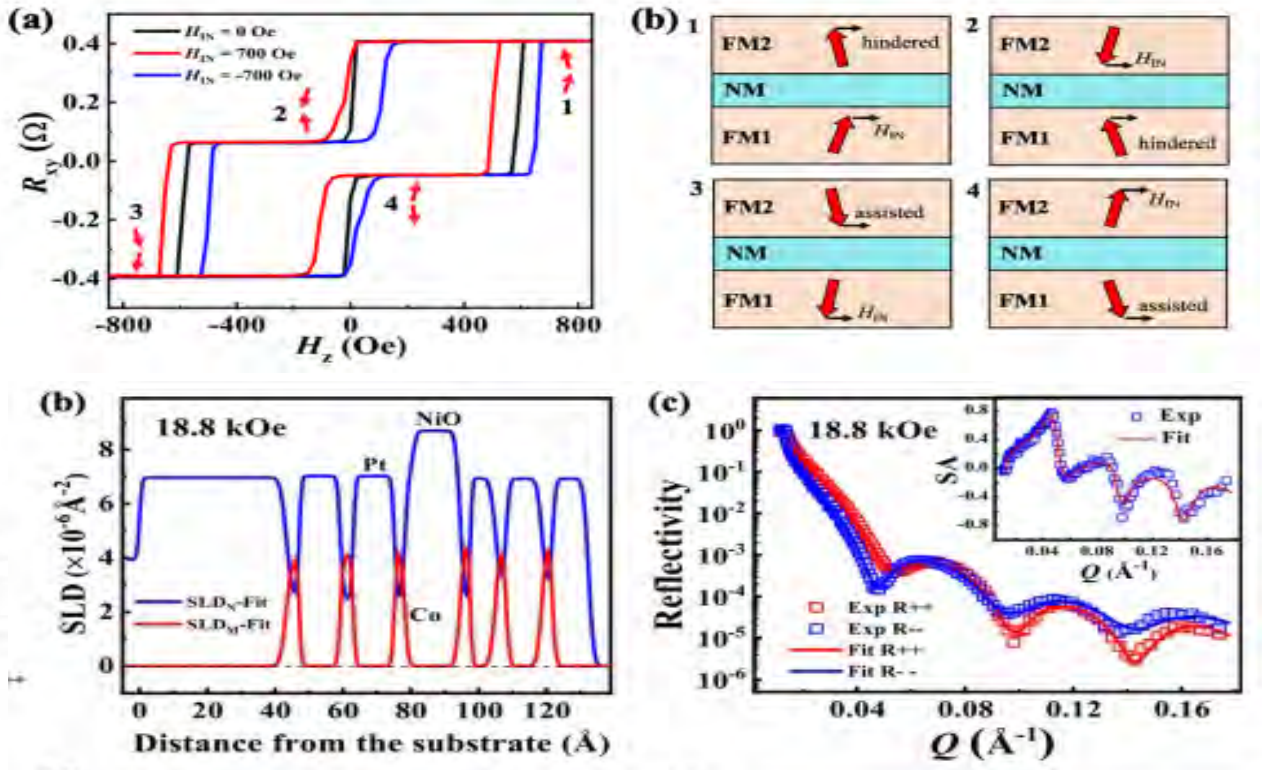


Room-temperature ferromagnetic spin ordering is achieved at the interfaces between these two antiferromagnets. PNR was used to quantitatively determine the magnetization depth profile across the film.

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

Institute of Physics CAS，Prof. Erjia Guo team

Spintronic Materials



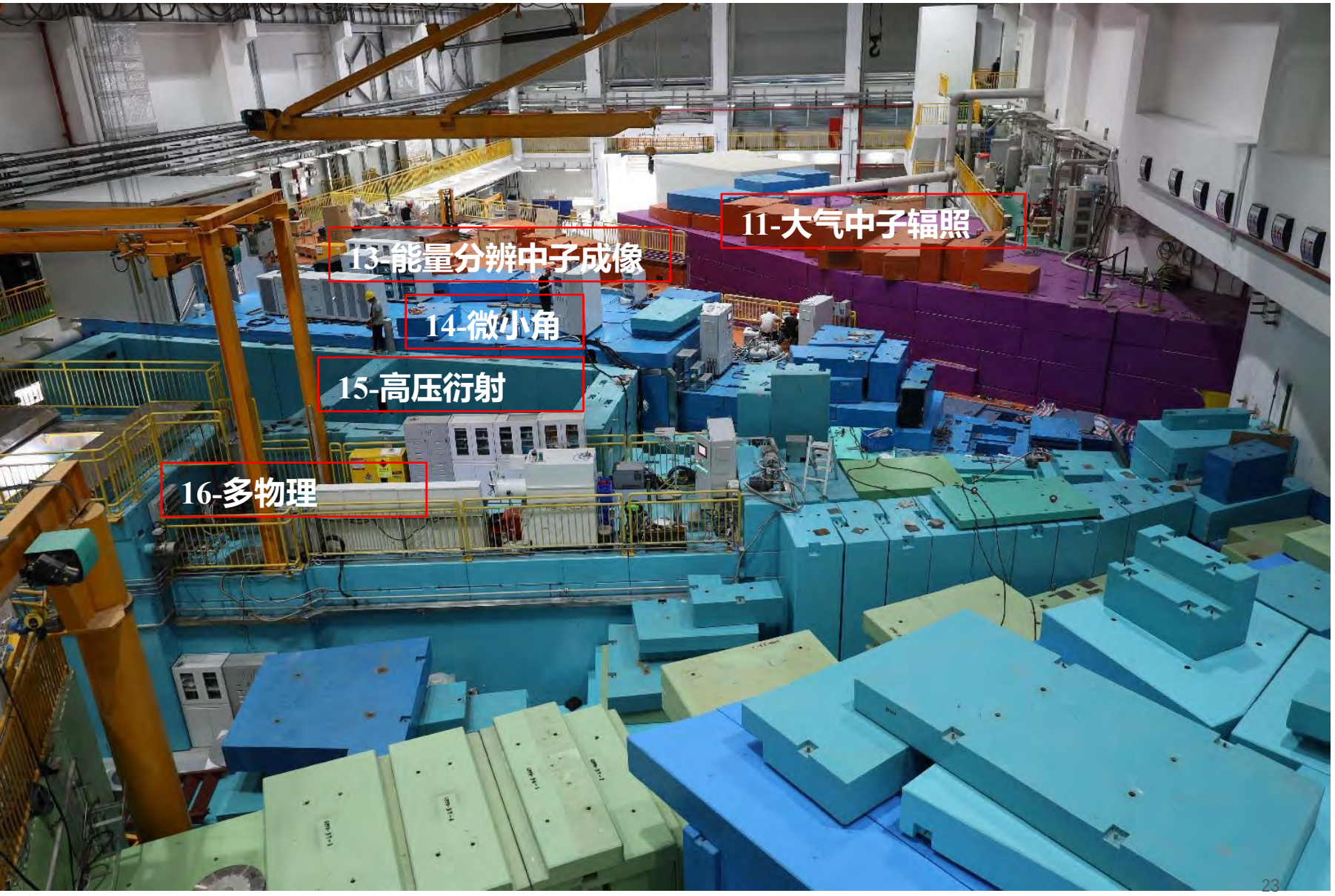
The direct evidence of the interlayer DMI was observed at room temperature leading to chiral EB hall loops. The spin structure of asymmetric canted moments was well determined by PNR.

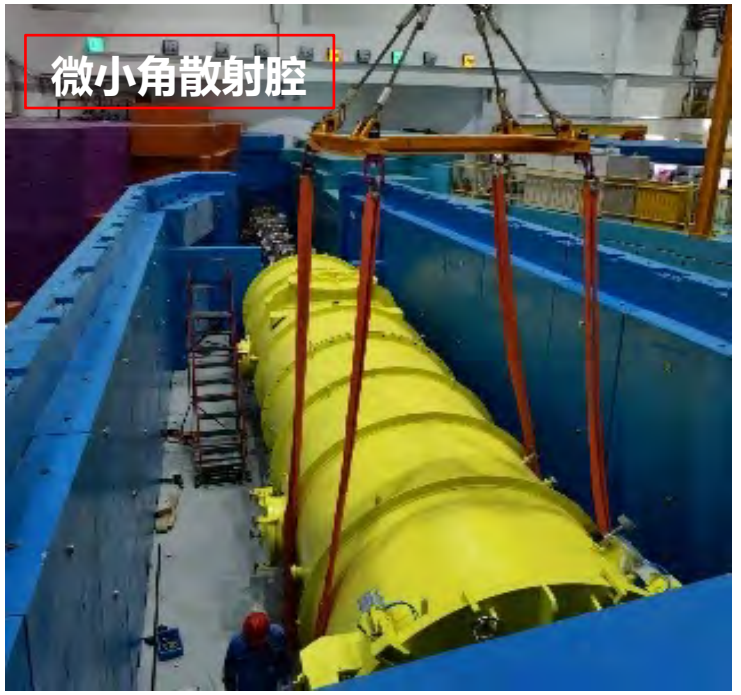
Phys. Rev. B 105, 184405 (2022)

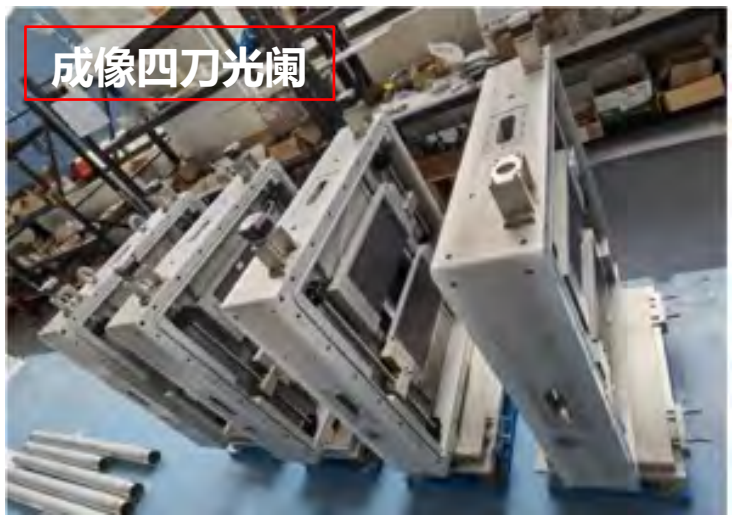
University of Science and Technology Beijing, Prof. Shouguo Wang team

22
22

Progress of user instruments



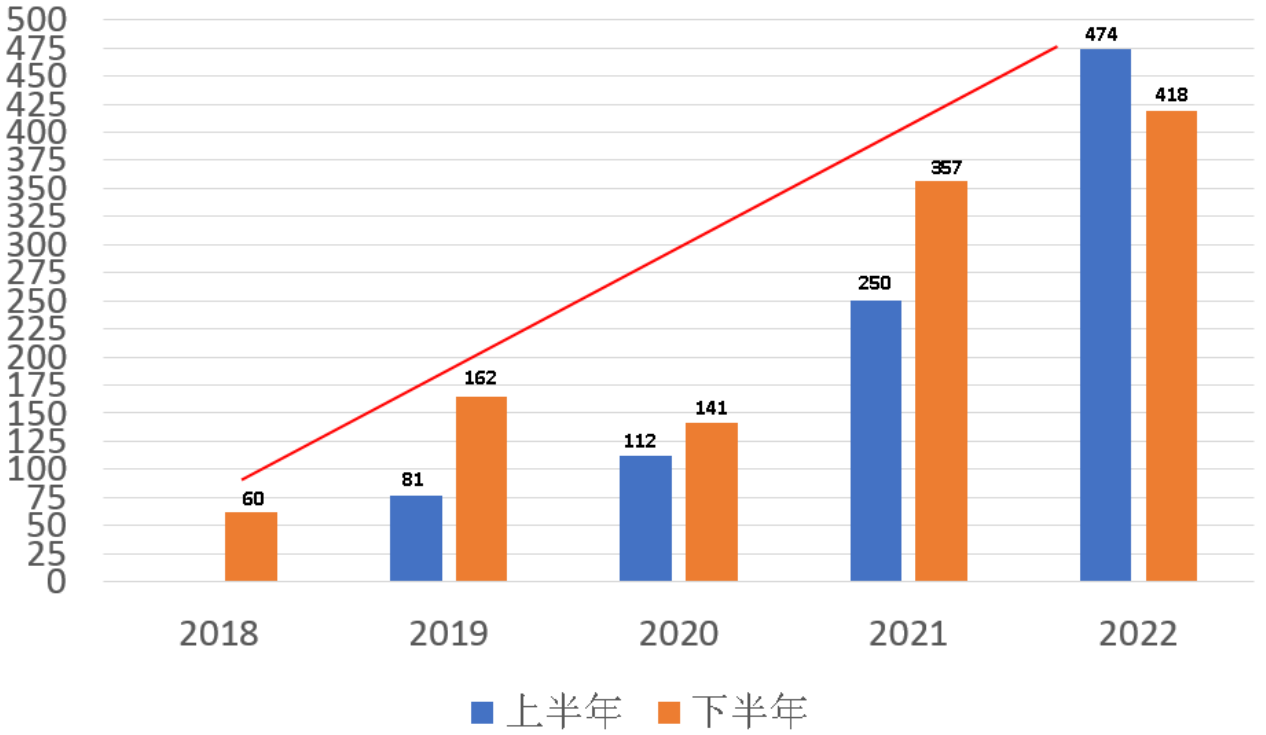




CSNS User Community and Achievements

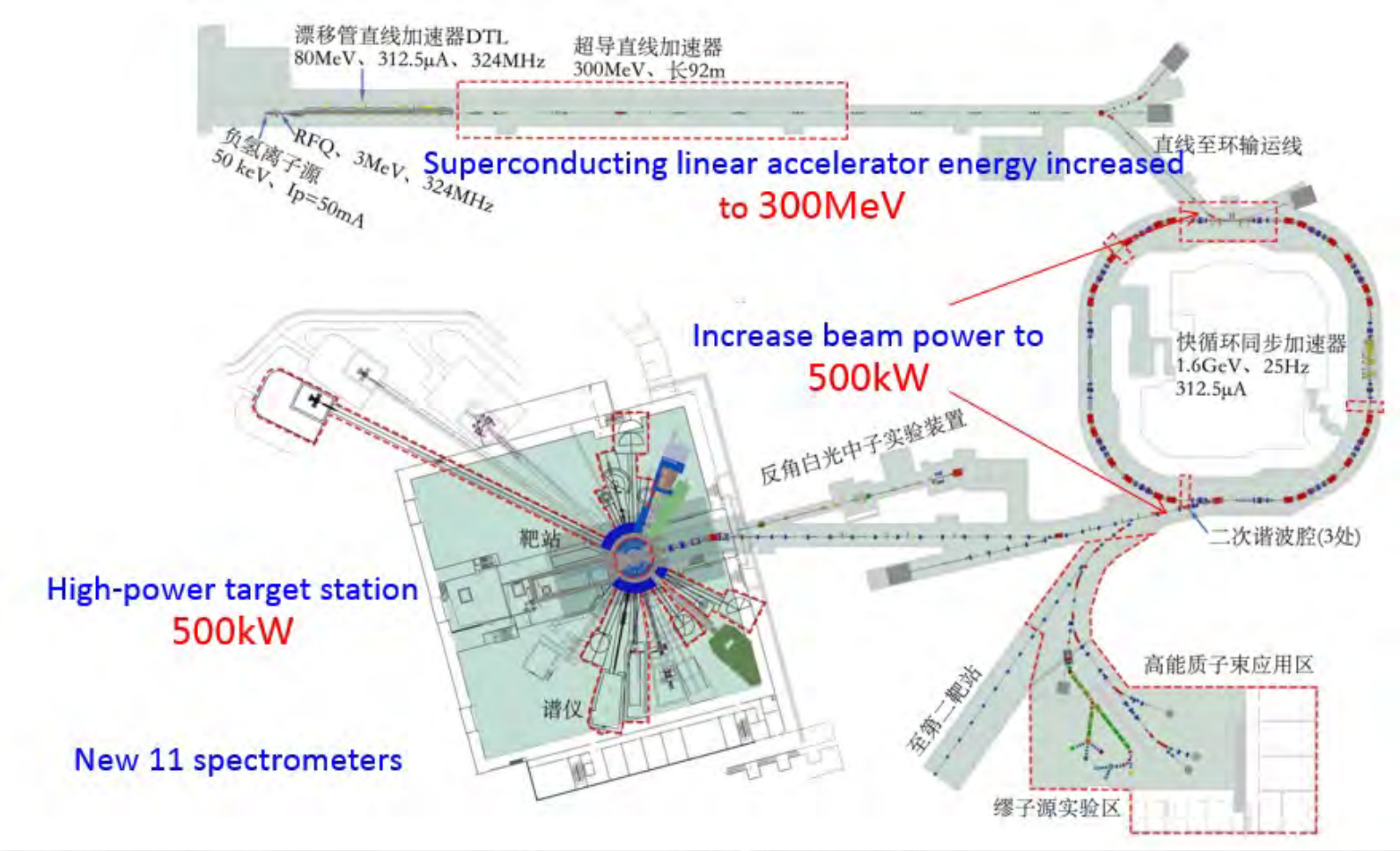
In the nigh-round runs of CSNS, more than 4100 users registered in the CSNS User Service System, more than 850 user proposals have been completed, and more than 180 articles have been published in journals such as Science, Nature Nanotechnology, Nature Communication, Advanced Materials, and JACS, etc.

User proposal application status



24

CSNS Phase II Project has been approved to be included in the 14th 5-Year Plan of China. The visibility study report has been reviewed. The construction will be started earlier next year.



	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 approved by Chinese Government

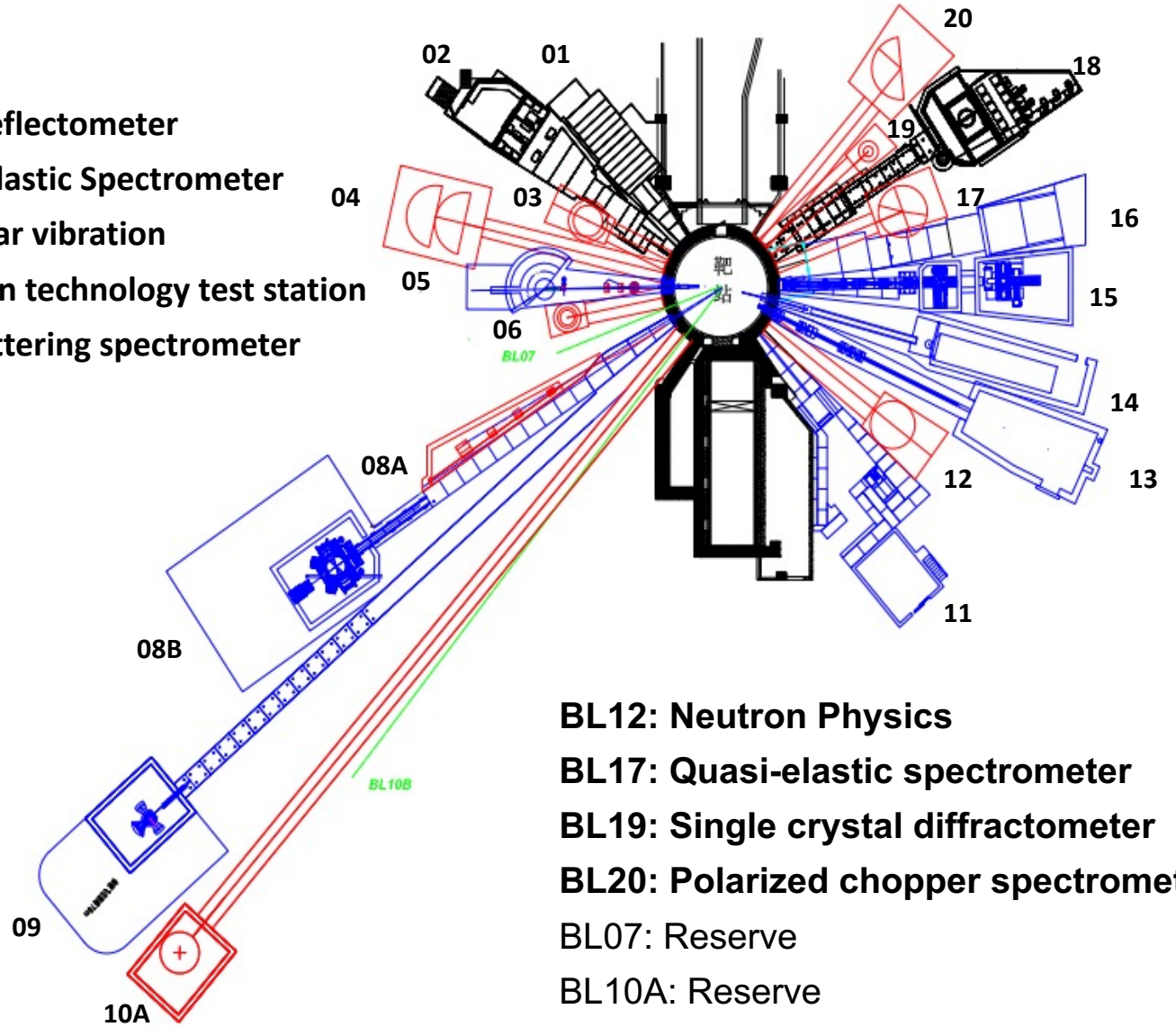
BL03: Liquid reflectometer

BL04: Cold inelastic Spectrometer

BL06: molecular vibration

BL08A: neutron technology test station

BL10: Backscattering spectrometer



BL12: Neutron Physics

BL17: Quasi-elastic spectrometer

BL19: Single crystal diffractometer

BL20: Polarized chopper spectrometer

BL07: Reserve

BL10A: Reserve

- 9 instruments
- Muon Beam
- Proton test beam
- 500 kW upgrade

- In operation : GPPD , SANS , MR , MPI, ANIS
- Commissioning :
- Under construction:
  - 4 user instruments
  - Guangdong province instruments
- CSNS II: 9+2

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CSNS Instruments and Future Plan

- **The phase-I instruments: GPPD, MR, SANS**
- **The 8 user instruments: All are built by CSNS (turn key).**

  Multiple Physics Instrument by Dongguan Inst. of Technology, and CityU (HK) In operation
  Engineering Diffractometer by Center for Excellent Adv. Materials (Dongguan) ready for commissioning
  High Pressure Diffractometer by South China Univ. of Sciences and Technology to be completed by 2023
  High-resolution neutron powder diffractometer by Peking Univ. to be completed by 2023
  High energy chopper spectrometer by SUN YAT-SEN Univ. to be completed by the end of 2022
  Atmospheric Neutron Irradiation Spectrometer by Inst. of industry and information tech. In operation

Guangdong Province Government Donation:

Very small angle neutron scattering to be completed by the end of 2022
Energy resolved neutron imaging to be completed by the end of 2022

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Outline

1 CNSS activities overview

2 Status of CARR,CMRR and CSNS

3 **AOCNS-2023**

4 Summary

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

Date: Dec. 2-8, 2023

Venue(will be determined in June 2023), Candidate hotels:

Dongguan Exhibition International Hotel,
Dongguan Dongrong Business Hotel,
Songhu Yingbin Li Hotel ……

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)
Dongguan Exhibition International Hotel	~900	70-85
Dongguan Dongrong Business Hotel	~200	50-70
Songhu Yingbin Li Hotel	~170	65-80

Dongguan Exhibition International Hotel
900 Rooms

Other hotels nearby:
Dongguan Dongrong Business Hotel
200 Rooms

Songhu Yingbin Li Hotel
170 Rooms

Candidate Hotel Traffic

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

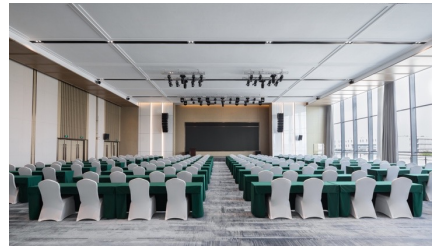
Hong Kong – Dongguan
➢by bus~ 2.5 hrs

Guangzhou – Dongguan
➢by bus ~1.5 hrs

Shenzhen – Dongguan
➢by Bus ~1.0 hrs

Executive Committee

Parallel Sessions X4



Plenary Hall

Reception & Banquet

Progress in AOCNS-2023 preparation

Work Schedule of AOCNS-2023					
	Publish	open	close	date	Abstracts and Exhibitions review
Website Publishes	July 2022 (completed)				
Call for Abstracts and Call for Exhibitions		December 2022 (ready for open)	July 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		February 2023	August 2023		
Standard registration		February 2023	October 2023		
Call for pre-workshop and Call for satellite Meetings		April 2023	September 2023		
Conference				2-8 Dec., 2023	

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

Date: Dec. 2-8, 2023

Website was Published: July 2022

http://aocns2023.ihep.ac.cn/

Call for Abstracts and Call for Exhibitions: ready for open in December 2022

The conference is being prepared on schedule ……

INSTRUMENT SCIENTIST WORKSHOP

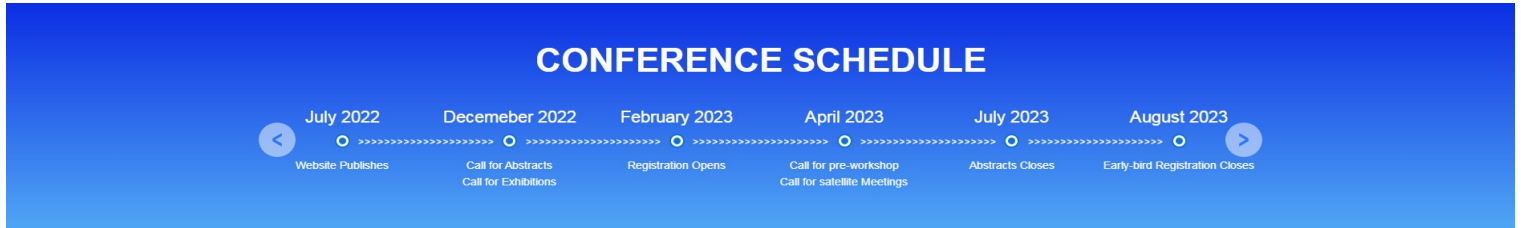
1. Diffractometer
2. SANS
3. Reflectometry
4. Inelastic Scattering
5. Imaging
6. Others

SCIENTIFIC PROGRAMS

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

	DAY 0	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
	Registration	Openning	Plenary Lecture	Plenary Lecture	Plenary Lecture	Scientific Sessions(4,5,6)
		Plenat ry Lecture				
		Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
		Scientific Sessions(1,2,3)	Scientific Sessions(4,5,6)	Scientific Sessions(1,2,3)	Scientific Sessions(1,2,3)	Scientific Sessions(4,5,6)
		Lunch	Lunch	Lunch	Lunch	Lunch
	Executive Committe Meeting	Scientific Sessions(1,2,3)	Scientific Sessions(4,5,6)	CSNS Tour	Scientific Sessions(1,2,3)	AONSA Prize
	Instrument Scientist Workshop (1,2,3,4,5,6)	Scientific Sessions(1,2,3)	Scientific Sessions(4,5,6)		Scientific Sessions(4,5,6)	Closing
		Poster	Poster	Banquet	Poster	

PROGRAM



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

Date: Dec. 2-8, 2023

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

Local Organizing Committee

Instrument Scientist Workshop

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

Scientific Programs

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

Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Registration	Openning	Plenary Lecture	Plenary Lecture	Plenary Lecture	Scientific Sessions(4,5,6)
	Plenary Lecture				
	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
	Scientific Sessions(1,2,3)	Scientific Sessions(4,5,6)	Scientific Sessions(1,2,3)	Scientific Sessions(1,2,3)	Scientific Sessions(4,5,6)
	Lunch	Lunch	Lunch	Lunch	Lunch
Executive Committe Meeting	Scientific Sessions(1,2,3)	Scientific Sessions(4,5,6)	CSNS Tour	Scientific Sessions(1,2,3)	AONSA Prize
Instrument Scientist Workshop (1,2,3,4,5,6)	Scientific Sessions(1,2,3)	Scientific Sessions(4,5,6)		Scientific Sessions(4,5,6)	Closing
	Poster	Poster	Banquet	Poster	

AOCNS-2023

Date: Dec. 2-8, 2023

Songshan lake Cruise

Featured Food

Dongguan

City Flower:

White magnolia

Nature

Tradition

History

Culture

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. The physical simulation and design of the 11 experimental terminals have been completed.
- The NS user community are increasing year by year, neutron spectrometers supply are in short supply.
- 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 from Japanese Society for Neutron Science

K. Kakurai

CROSS

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

President: Kazuhisa Kakurai (CROSS)

Green color: Industry
Red color: Lady

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)

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.)

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)

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)

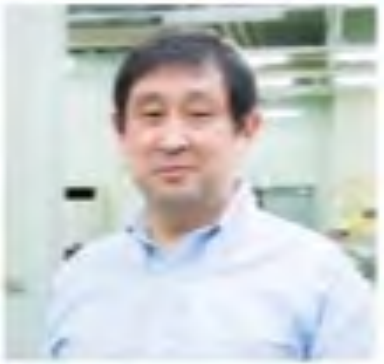
‘ Application and development of neutron scattering techniques for soft matter science research ’

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 ^{3}He 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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(in planning)

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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

By courtesy of Prof. H. Seto

SCHOOL

KEK-IINAS School
The 5th Neutron and Muon School

https://mlfinfo.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)
Hirotoshi 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 Kiyanagi (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		

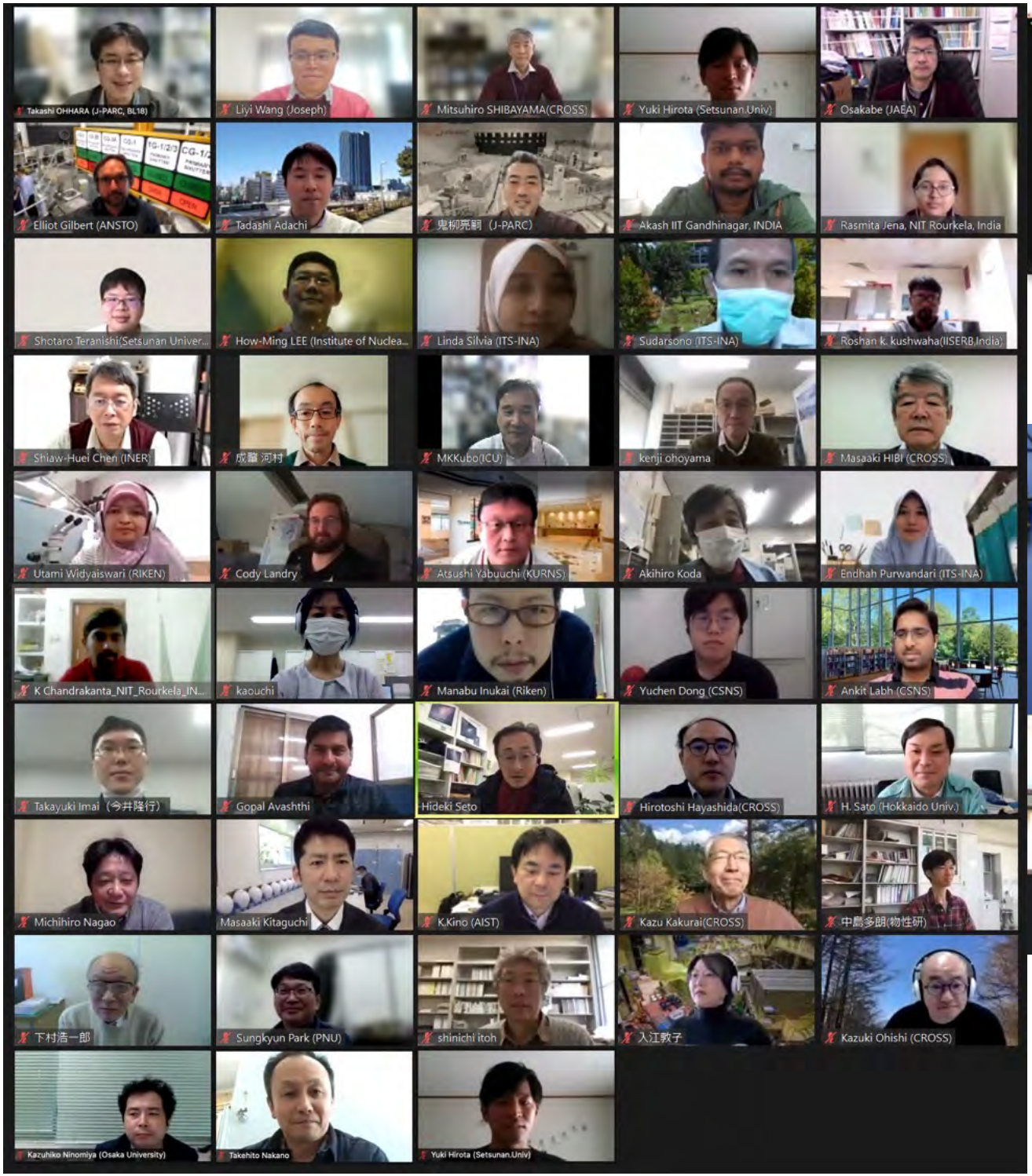
School Statistics

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))

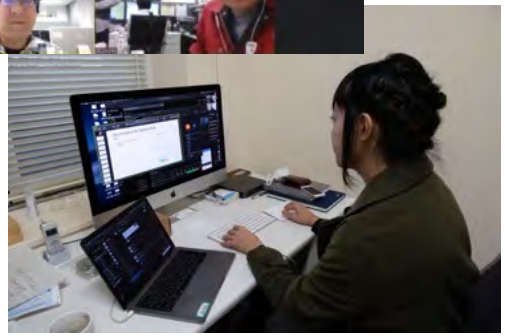
Applicants for the Hands-on Training: 55
(India(24), Japan(11), China(7), Indonesia(5), Taiwan(4), Canada(2), UK(1), USA(1)
for the instruments:
HRC (27), PLANET (6), SENJU (6), NOVA (4), ARTEMIS (12)

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.


Takashi OHHARA (J-PARC, BL18)
Liyi Wang (Joseph)
Mitsuhiro SHIBAYAMA(CROSS)
Yuki Hirota (Setsunan Univ)
Osakabe (JAEA)
Elliot Gilbert (ANSTO)
Tadashi Adachi
鬼柳亮嗣（J-PARC）
Akash IIT Gandhinagar, INDIA
Rasmita Jena, NIT Rourkela, India
Shotaro Teranishi(Setsunan Univer...
How-Ming LEE (Institute of Nuclea...
Linda Silvia (ITS-INA)
Sudarsono (ITS-INA)
Roshan k. kushwaha(IISERB,India)
Shiaw-Huei Chen (INER)
成瀧 河村
MKKubo(ICU)
kenji ohoyama
Masaaki HIBI (CROSS)
Utami Widyaiswari (RIKEN)
Cody Landry
Atsushi Yabuuchi (KURNS)
Akihiro Koda
Endhah Purwandari (ITS-INA)
K Chandrakanta_NIT_Rourkela_IN...
kaouchi
Manabu Inukai (Riken)
Yuchen Dong (CSNS)
Ankit Labh (CSNS)
Takayuki Imai（今井隆行）
Gopal Avashthi
Hideki Seto
Hirotoshi Hayashida(CROSS)
H. Sato (Hokkaido Univ.)
Michihiro Nagao
Masaaki Kitaguchi
K.Kino (AIST)
Kazu Kakurai(CROSS)
中島多朗(物性研)
下村浩一郎
Sungkyun Park (PNU)
shinichi itoh
入江敦子
Kazuki Ohishi (CROSS)
Kazuhiko Ninomiya (Osaka University)
Takehito Nakano
Yuki Hirota (Setsunan.Univ)



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 29th AONSA EC meeting
Online via ZOOM
2022/11/25

KNBUA
The Korean Neutron Beam Users Association

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

Korean Neutron Beam Users Association

◆ KNBUA General Assembly (2022. 09. 29)

- ❑ President: Jae-Ho Chung (Korea U)
- ❑ Secretary: Soo-Hyung Choi (Hongik U)
- ❑ HANARO representative: Young Soo Han (KAERI)
- ❑ Presidential Election:
  - **President: Sungkyun Park (Pusan Nat'l U)**
  - Secretary: Soo Yeol Lee (Chungnam Nat'l U)
- ❑ Discussion
  - Updates of HANARO status
  - Budget status and spendings (funded by KAERI)

Korean Neutron Beam Users Association

◆ HANARO Symposium 2022 (2022. 09. 29)

- ❑ Two plenary lectures, 27 oral talk, and 69 posters
- ❑ > 200 participants

HANARO SYMPOSIUM 2022
OFFLINE CONFERENCE
2022. 09. 29 (목) 10:00~18:00
한국원자력연구원 국제원자력교육훈련센터 (INTEC)

KNBUA

Korean Neutron Beam Users Association

◆ KNBUA EC Workshop (2022. 07. 01~02)

❑ Discussion

- Updates of HANARO status
- Research updates from KNBUA and HANARO
- Budget status and spendings (funded by KAERI)
- Internal discussion about the relationship with Korea Multi-Purpose Accelerator Complex

Neutron Summer School

- **Cold Neutron Summer School (SANS & REF)**
  - Aug. 16-17, KAERI
  - 30 participants
- **Neutron Diffraction Summer School (HRPD)**
  - Aug. 24-26, KAERI
  - 30 participants

Travel support for neutron scattering from Korea

Travel support program for students/scientists from South Korea performing neutron scattering experiments at oversea facilities (~2023/06/30)

Dear ANSTO/ACNS User Office,

We are pleased to announce the travel support program for neutron beam users visiting your facility from South Korea. As part of the "Center for Materials Research using Neutron Beam (No. 2020K1A3A7A09077712)" supported through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, we provide travel support to students and scientists affiliated with South Korean universities or institutions for their neutron scattering experiments at oversea facilities. We would appreciate it if you could distribute this information to those who may benefit from the program. Please see the details below.

- **What will be supported?** A round-trip economy airfare from South Korea to the country where the neutron scattering experiment will be performed, plus local expenses for the duration of the experiment based on the NRF regulations.
- **Who can apply for support?** Students and scientists who are affiliated with South Korean universities or institutions (regardless of nationality) at the time of supported experiment and are not prohibited by law from participating in NRF-funded research. Students and junior scientists will be given priority while senior scientists may also be considered.
- **When is the support available?** Apply as soon as the beamtime schedule is fixed. The support is available for travels finishing no later than June 30, 2023. Please note that the program may end earlier if the funding runs out.
- **How to apply for support?** Contact Prof. Jae-Ho Chung and ask for details at jaehc@korea.ac.kr.
- **What needs to be done?** A short (~3 pages) report is mandatory right after the supported experiment is completed.

Sincerely,

Jae-Ho Chung, Korea University

Principal Investigator

Center for Materials Research using Neutron Beam

Center for Materials Research Using Neutron Beams
2020/06/17 – 2022/12/31
extended until 2023/06/30
https://sites.google.com/view/mrunbf/home

Letters sent to the User Offices of ANSTO, J-PARC, ISIS, NCNR, PSI & SNS

- **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

  <u>Extend to 2023/06/31!!!</u>
- **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

KNBUA

NSSI Report for AONSA EC Meeting-Nov. 25-2022

Presented by Prof Dhananjai Pandey, President NSSI

Website: http://nssi.org.in

Email : neutron@barc.gov.in

Total number of members: 273

Decisions taken at the NSSI Managing Committee Meeting on 27th August 2022

- Neutron School to be organized in November 2022 with physical participation
- The 2nd NSSI Special Lecture to be delivered during the Neutron School-2022
- NSSI Newsletter to be published regularly, at least once in a year if not twice.
- Two NSSI Webinars to be organized biannually
- NSSI Membership drive for inducting more neutron users as members

XIX School on

Neutrons as Probes of Condensed Matter

Organized by

UGC-DAE Consortium for Scientific Research, Mumbai Centre

&

Solid State Physics Division, Bhabha Atomic Research Centre, Mumbai

November 14- 19, 2022

Venue: **Training School Hostel (BARC), Mumbai - 400085**

UGC-DAE Consortium for Scientific Research (CSR) and Bhabha Atomic Research Centre (BARC) have been regularly organizing schools on neutron scattering in condensed matter research to enhance awareness about the technique and to create a dedicated group of trained researchers for utilizing these methods. The present school (NPCM-2022) is nineteenth in this series and will be held at BARC, Mumbai during November 14 – 19, 2022 in association with Neutron Scattering Society of India (NSSI).

The school will comprise of **lectures and hands on training** on various aspects of neutron scattering technique comprising of basics of neutron scattering, structural studies of crystalline, amorphous and magnetic materials using neutron diffraction, studies of dynamics in condensed matter using neutron inelastic and quasi-elastic scattering, applications of small angle neutron scattering to soft condensed matter, porous materials, nanomaterials etc., and surface and interface studies on thin films and multilayers using neutron reflectometry, among others.

Coordinators

Dr. Sudhindra Rayaprol
UGC-DAE Consortium for Scientific Research
Mumbai Centre, 246C-CFB, BARC

Dr. Mayanak K Gupta
Solid State Physics Division
Bhabha Atomic Research Centre

XIX-School on Neutrons as Probes of Condensed Matter (NPCM-2022)

Venue: Multipurpose Hall, Training School Hostel, Anushaktinagar

November 14 – 19, 2022

Schedule

Time / Date	09:30 – 10:15	10:15 - 11:30	11:30 - 12:00	12:00 - 12.30	12:30 - 13:15	13:15 - 14:00	14:00 - 14:45	14:45 - 15:30	15:30 – 16:00	16:00 - 16:45	16:45 - 17:30	17:30 - 18:15
14th November Monday	Registration	Introduction and Interactions with Participants & Opportunities for Collaborative Research (SM)	TEA	Inauguration	Overview of NFNBR (MNR)	LUNCH	Basics of Neutron Scattering (PDB)	Complimentary Techniques (DP)	TEA	Crystallography & Phase Transition (DB)	Powder Diffraction: Chemical Structure (SDK)	Magnetic Neutron Diffraction and Depolarization (AJ)

Time / Date	09:30 – 10:15	10:15 - 11:00	11:00 - 11.30	11:30 - 12:15	12:15 - 13:00	13:00 - 14:00	14:00 - 14:45	14:45 - 15:30	15:30 - 16:00	16:00 - 16:45	16:45 - 17:30
15th November Tuesday	Inelastic Neutron Scattering (MKG)	Neutron Diffraction under extreme conditions (SR)	TEA	Diffraction: High Q (SW)	Neutron Imaging (YK)	LUNCH	SANS-I (SK)	Powder Diffraction: Magnetic Structure (AB)	TEA	QENS (VKS)	Tutorial - 1 SANS Analysis (AD)
16th November Wednesday	Diffraction: Single Crystal (RC)	SANS-II (JB)		Neutron Detectors (SSD)	Basics of Neutron Reflectivity (SSN)		NSSI Special Lecture + AGM Followed by TEA			Preparation for Dhruva Visit	
17th November Thursday	Health Physics Lecture	TEA	Experiments @ Dhruva				Experiments @ Dhruva			Experiments @ Dhruva (Departure for TSH from Dhruva @ 17:30 hrs.)	
18th November Friday	Lecture on Research Reactors		Experiments @ Dhruva				Experiments @ Dhruva			Experiments @ Dhruva (Departure for TSH from Dhruva @ 17:30 hrs.)	
19th November Saturday	Applications of Neutron Reflectivity (MG)	Applications of Diffraction (VM)	TEA	Tutorial - 2 Crystallography (SKM)	Tutorial - 3 Rietveld: Nuclear Structure (SDK)		Tutorial - 4 Rietveld: Magnetic Structure (SDK)	Feedback from Participants & Concluding Session followed by TEA			

*Registration and Collection of Kits for participants:

- 14th November 2022: From 09:30 hrs. to 10:15 hrs. outside the Multipurpose Hall (Mezzanine floor).

300 + Applications received

63 Participants selected

60 Participants attended

20+ Lecturers/ Tutors

Hands on Experiments at Dhruva Reactor

XIX School on Neutron as Probes of Condensed Matter (NPCM-2022)
(Venue: TSH, Anushaktinagar & BARC Mumbai)

November 14 - 19, 2022

Dates for Hands on Experiments at Dhruva: November 17-18, 2022

Schedule of Experiments

Group No.	Instrument	Instrument Scientist	Groups on Day 1 17-11-2022	Groups on Day 2 18-11-2022
1	Powder Diffractometer - II (PD-II)	Dr. Anup Bera	Group 1	Group 6
2	Powder Diffractometer - III (PD-III)	Dr. S. D. Kaushik / Dr. Yogesh Kumar	Group 2	Group 7
3	Single Crystal Diffractometer (SCD)	Dr. R. Chitra / Dr. Rajul Chaudhary	Group 10	Group 5
4	Polarized Neutron Spectrometer (PNS)	Dr. Anil Jain	Group 8	Group 3
5	Quasi Elastic Neutron Scattering (QENS)	Dr. S. Mitra / Dr. Virendra Sharma	Group 7	Group 2
6	Inelastic Neutron Scattering (INS)	Dr. Prabha / Dr. Mayanak K. Gupta	Group 6	Group 1
7	Small Angle Neutron Scattering (SANS - I)	Dr. S. Abbas / Dr. Sugam Kumar	Group 3	Group 8
8	Small Angle Neutron Scattering (SANS - II)	Dr. D. Sen / Dr. J. Bahadur	Group 9	Group 4
9	Neutron Reflectometry (PNR)	Dr. Surendra Singh / Harsh Bhat	Group 5	Group 10
10	Neutron Imaging Beamline (NIB)	Dr. Yogesh Kashyap	Group 4	Group 9

60 Participants divided in 10 groups

XIX School on Neutron as Probes of Condensed Matter (NPCM-2022)
(Venue: TSH, Anushaktinagar & BARC Mumbai)

November 14 - 19, 2022

Group - 1			
Sl. #	**Participants**	**Instruments / Dates**	
1.	Dr. Vandana Shinde	Day 1: Thursday 17/11/2022	Instrument: PD-II
2.	Manshi Rani		
3.	Reshma K		
4.	Bhagyashree S Pol	Day 2: Friday 18/11/2022	Instrument: INS
5.	Smita Gohil		
6.	Smita B Borole		

Group – 10			
Sl. #	**Participants**	**Instruments / Dates**	
1.	Kartik Iyer	Day 1: Thursday 17/11/2022	Instrument: SCD
2.	C. Dhanashekhar		
3.	Gourav Dwari		
4.	Bishal Baran Maity	Day 2: Friday 18/11/2022	Instrument: PNR
5.	Akshay Suresh Kamble		
6.	Nitin Kumar		

XIX School on Neutrons as Probes of Condensed Matter

Gimpses of the Inaugural Session

XIX School on Neutron as Probes of Condensed Matter (NPCM-2022)

(Venue: TSH, Anushaktinagar & BARC Mumbai)

November 14 - 19, 2022

Group Photograph of the Participants with some of the Lecturers and Organisers

2nd NSSI Lecture on Neutron Scatteing-2022

The first NSSI Special Lecture was delivered by **Dr. B.A. Dasannachaya**, former Director of the Solid State & Spectroscopy Group, BARC and UGC-DAE-CSR, Indore, and recipient of AONSA Prize 2013, at the 7th Conference on Neutron Scattering (CNS-2021), held at Bhabha Atomic Research Centre, Mumbai, India, during 25-27 November, 2021.

Looking at the response to this Special Lecture, the Managing Committee of NSSI decided to expand its scope to consider scientists from other member-countries of AONSA also from this year.

The second NSSI Special Lecture was delivered by **Prof. Brendan Kennedy**, The University of Sydney, Australia on Nov. 16, 2022.

Prof. Brendan Kennedy has made pioneering contributions using neutron scattering along with other complementary techniques for unravelling the subtle aspects of Phase Transitions in Oxides. He played a leading role in the design of the powder diffractometers at both the OPAL reactor and at the Australian Synchrotron and has been a major user of both the facilities. He has served as President of the Asia Oceania Neutron Scattering Association (AONSA) and of the Australian Neutron Beam Users Group (ANBUG).

Prof. Brendan Kennedy
The University of Sydney, Australia

NSSI Special Lecture on Neutron Scattering-2022

Speaker: Prof. Brendan Kennedy, The University of Sydney, Australia.

Title of Lecture: Phase Transitions in Oxides: Using neutron scattering to observe both the obvious and not-so-obvious changes

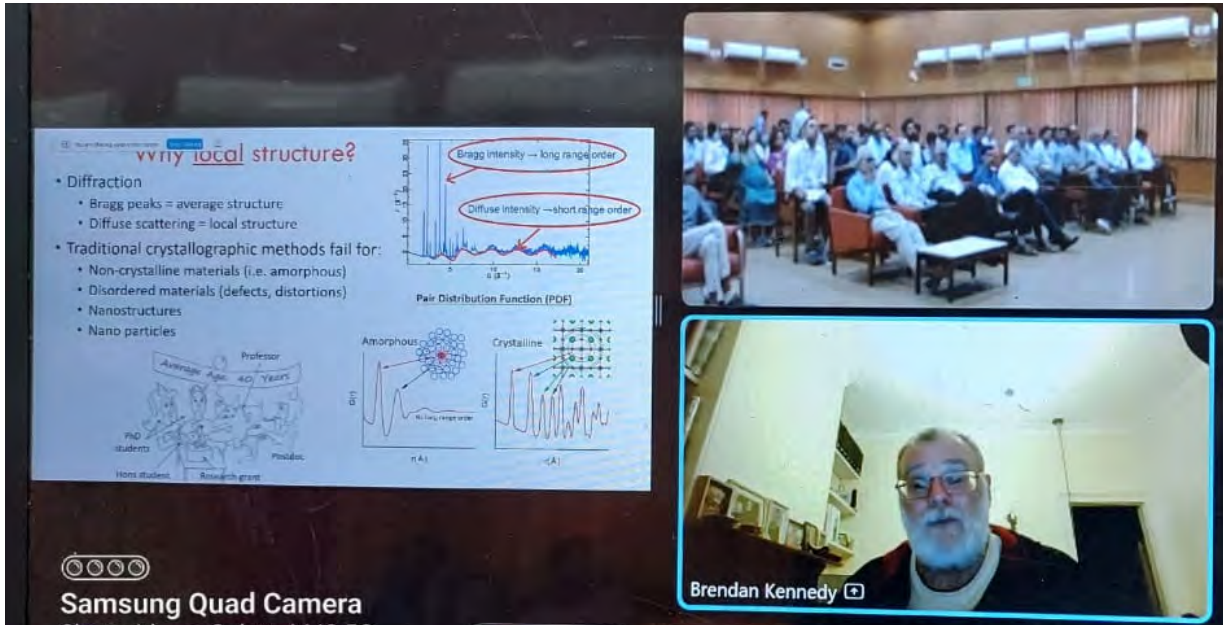
Date: 16 November, 2022

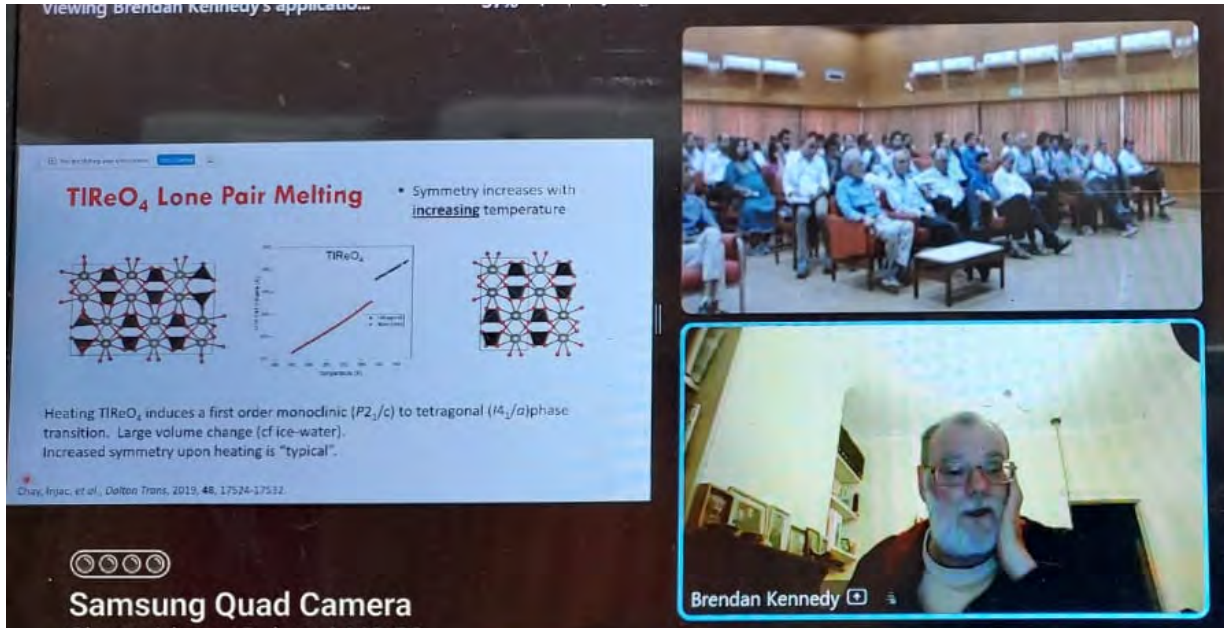
Time: 14:00 Hrs (IST)/19:30 Hrs (AEDT)

Venue: Multipurpose Hall, Training School Hostel, Anushaktinagar, Mumbai

The above certificate along with the medal was presented to Prof Kennedy by Prof. D. Pandey, President, NSSI, who Chaired the session.

Glimpses of the NSSI Special Lecture-2022



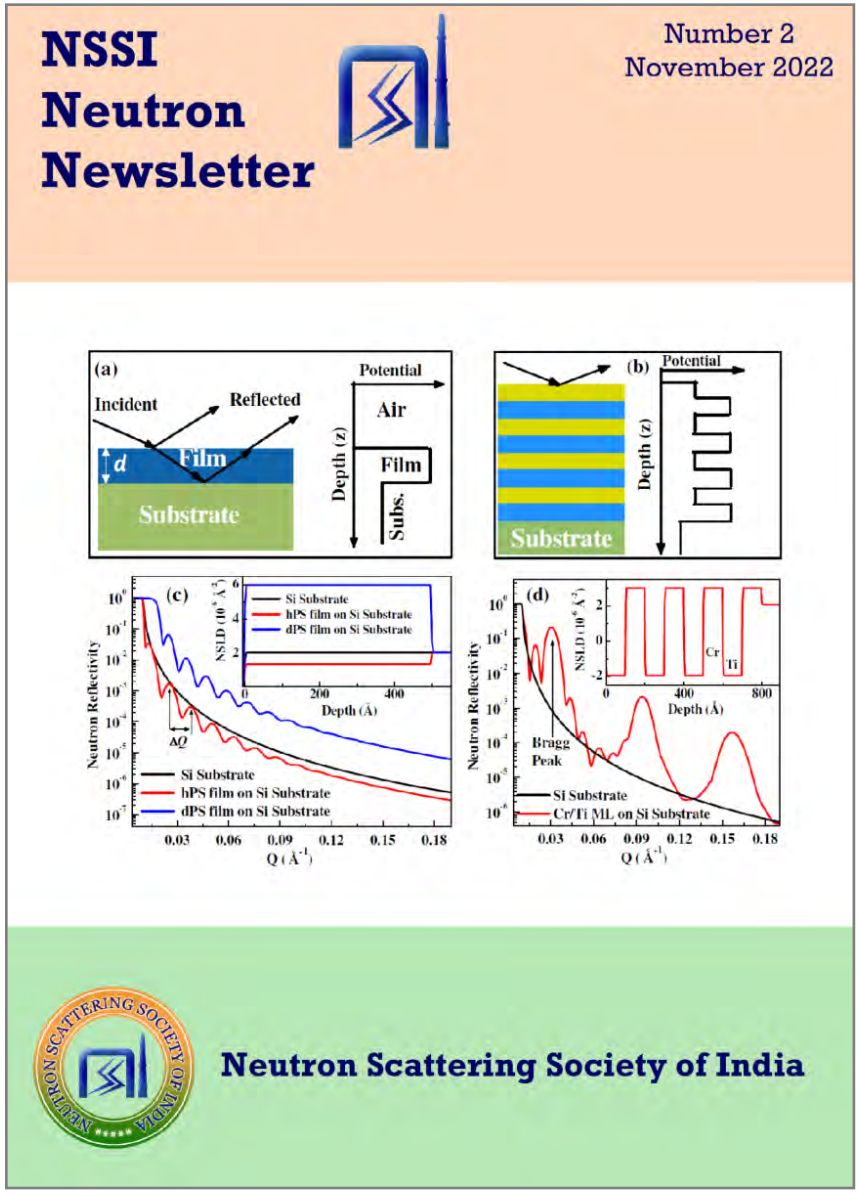


NSSI Newsletter, November 2022

Editor: Dr. S.L. Chaplot

Managing Editor: Dr. V.K. Aswal

CONTENT



Released during NSSI AGM on 16th November 2022 by Dr P S Goyal and Dr S L Chaplot

NSSI Newsletter: Highlights of Neutron Research-2022

Magnetism

1. *Neutron-Irradiation Induced Magnetization and Persistent Defects at High Temperatures in Graphite*, R. Mittal, M. K. Gupta, S. K. Mishra, S.Wajhal, P. D. Babu, M. Mohapatra, B. Singh, A. B. Shinde, P. S. R. Krishna, R. M. Kadam, R. K. Singhal, R. Ranjan and S. L. Chaplot, **Phys. Rev. B 105, 104106 (2022)**
2. *Correlated negative magnetization, exchange bias, and electrical properties in La1-xPrxCrO3*, Deepak, Amit Kumar, A. K. Bera, and S. M. Yusuf, **Phys. Rev. Mater. 6, 074405, 2022**
3. *Emergent many-body composite excitations of interacting spin-1/2 trimers*, A. K. Bera, S. M. Yusuf, S. K. Saha, M. Kumar, D. Voneshen, Y. Skourski, and S. A. Zvyagin, **Nat. Commun 13, 6888 (2022)**
4. *Correlation of Magnetic and Superconducting Properties with the Strength of the Magnetic Proximity Effect La0.67Sr0. 33MnO3/SrTiO3/YBa2Cu3O7-δ Heterostructures*, H. Bhatt, Y. Kumar, C. L. Prajapat, C. J Kinane, A. Caruana, S. Langridge, S. Basu, and S. Singh, **ACS Appl. Mat. Inter. 14, 8565 (2022)**
5. *Nonmonotonic Magnetic Field Dependence of RemnantFerroelectric Polarization in Reduced Graphene Oxide–BiFeO3 Nanocomposite,* T. Chatterjee, A. Mukherjee, P. Pal, S. D. Kaushik, V. Siruguri,S. Mandal, S. Hazra, S. Bhattacharjee,C. K.Ghosh, and D. Bhattacharya, Physica Status Solidi **RRL 130, 184101 (2022)**

Soft Matter

1. *Jamming of Nano-Ellipsoids in a Microsphere: A Quantitative Analysis of Packing Fraction by Small-Angle Scattering*, Avik Das, Ranajit Mondal, Debasis Sen, Jitendra Bahadur, D. K. Satapathy and M. G. Basavaraj, **Langmuir 38, 3832 (2022)**
2. *Modifications in surfactant-dependent phase behavior of colloidal nanoparticles under charge reversal*, D. Ray, S. Kumar, D. Saha and V. K. Aswal, **Chem. Phys. Lett. 799, 139635 (2022)**
3. *Broadband dielectric spectroscopy and small-angle neutron scattering investigations of chitosan-graphene-silver metacomposites*, Swathi Somanathan, V. K. Aswal and R. P. Ramasamy. **J Mater Sci: Mater Electron 33, 217 (2022).**
4. *Curcumin Accelerates the Lateral Motion of DPPC Membranes*, V. K. Sharma, J. Gupta, H. Srinivasan, H. Bhatt, S. García Sakai, and S. Mitra, **Langmuir 38, 9649 (2022)**
5. *Structure-Correlated Magnetic Resonance Transverse Relaxivity Enhancement in Superparamagnetic Ensembles with Complex Anisotropy Landscape*, K. Konwar, N. Sharma, P. Pranjali, A. Guleria, S. D. Kaushik, A. Dutta, R. Mukhopadhyay, D. Sen, W. Gao, and P. Deb, ***Langmuir* 38, 11087 (2022)**

NSSI Webinar

First Webinar to be delivered in January 2023

- NSSI Webinar would be a popular lecture in neutron based research
- To be arranged half yearly
- Widely circulated and to be held on a Saturday during 3 - 5 pm (IST)

Coordinators: Dr. R. Mittal and Dr. S.M. Yusuf

Thank You