

IAEA Activities on Fast Reactors Technology Development

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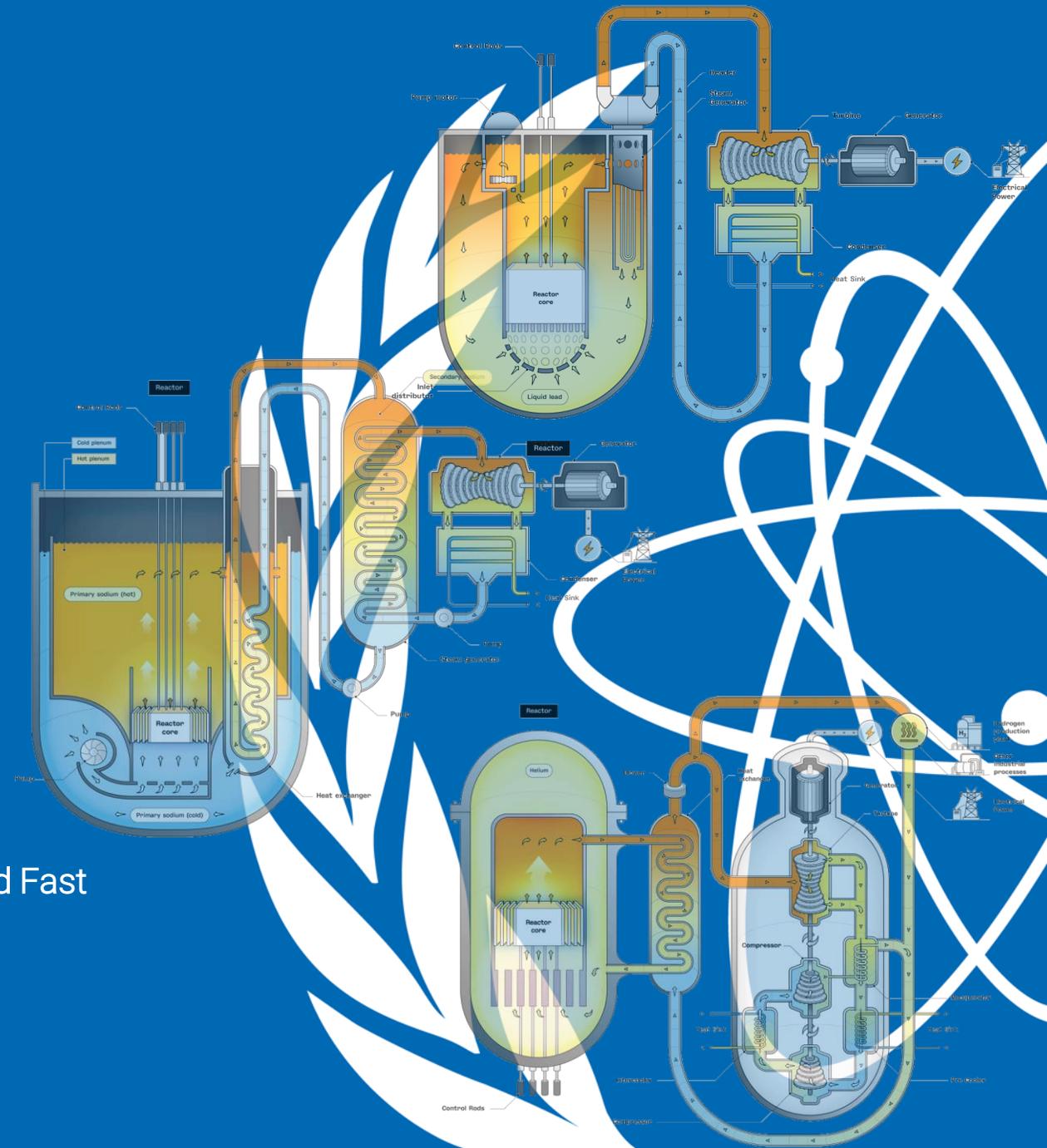
Woojin Jung

Nuclear Power Technology Development Section
Division of Nuclear Power
Department of Nuclear Energy
International Atomic Energy Agency

IAEA National training course on Heavy Liquid Metal Cooled Fast Reactors: Benefits and Challenges

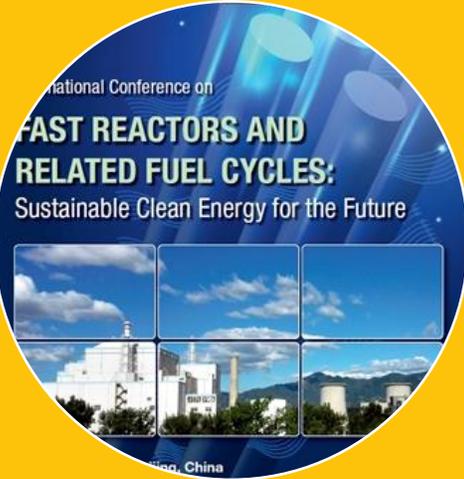
16-20 February 2026

<https://www.iaea.org/topics/fast-reactors>



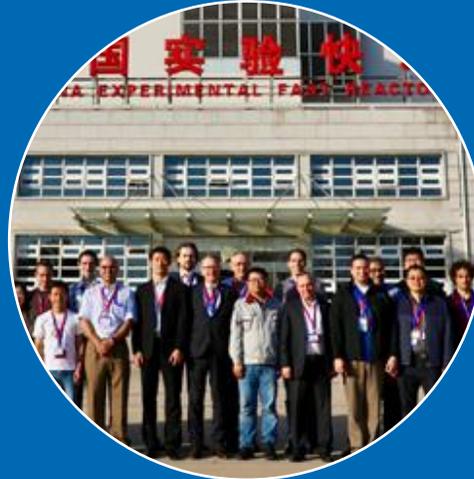
- **IAEA Activities and Events on Fast Reactor Technology**
 - Technical Working Group on Fast Reactors
 - Coordinated Research Projects
 - Technical Meetings
 - Education and Training
 - IAEA Publications on Fast Reactor Technology
 - FR26: International Conference on Fast Reactors and Related Fuel Cycles
 - 2026 Calendar

Main IAEA Activities on Innovative Reactor Technology



Knowledge Sharing

Publications
Conferences
TMs



Technology Development

Coordinated Research Projects (CRPs)



Capacity Building

Training Courses
Workshops
Webinars
e-Learning
TECDOCs



IAEA Technical Working Group on Fast Reactors



TWG-FR



Members of the IAEA Technical Working Group on Fast Reactors

Members

- | | |
|--------------------|----------------|
| Argentina | Belgium |
| China | Czech Republic |
| France | Germany |
| India | Italy |
| Japan | Kazakhstan |
| Korea, republic of | Mexico |
| Netherlands | Romania |
| Russian Federation | Sweden |
| Switzerland | UK |
| Ukraine | USA |

Observers

- | | |
|--|----------|
| European Commission/JRC | OECD/NEA |
| Generation-IV International
Forum (GIF) | |

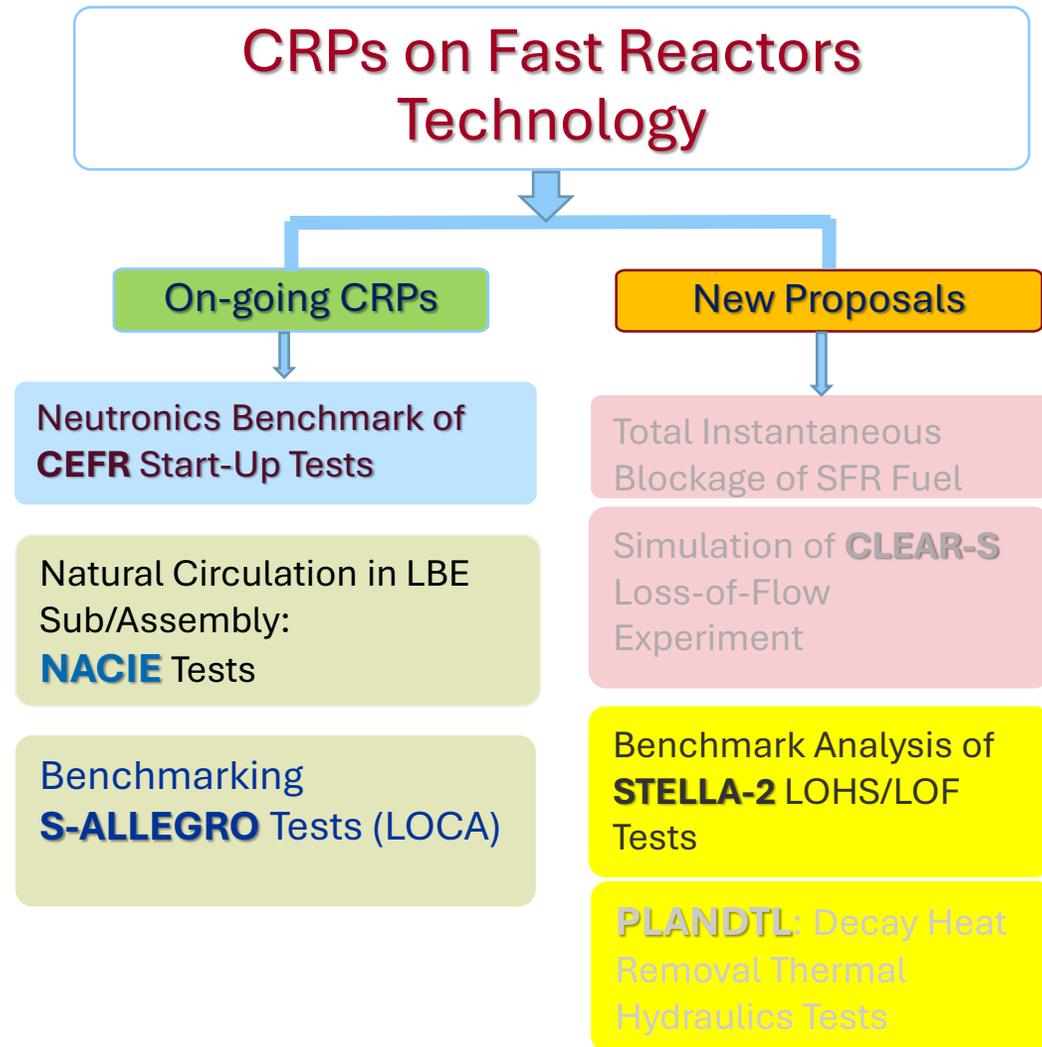
20 MSs as members; 3 IOs as observers

59th TWG-FR Meeting: **June 2026**

- Provide advice and guidance
- Forum for information exchange and knowledge sharing
- Link between IAEA activities and national communities
- Provide advice in planning and implementing of CRPs
- Develop and review selected documents
- Contribute to status report, technical meetings, topical conferences
- Identify important topics for SAGNE
- Encourage participation of young professionals in IAEA activities



FR Technology: Main Events and Activities in 2025



IAEA Technical Meeting on Proliferation Resistance of Fast Reactors and Associated Fuel Cycles

18 – 22 August 2025

<https://conferences.iaea.org/e/PRFR>

- *Evaluation of Proliferation Resistance (PR) of Fast Reactors and Associated Fuel Cycles: Methodologies, Definitions, Assessment and Metrics*
- *Reactor Design Features for Enhancing Proliferation Resistance*
- *Proliferation Resistance Considerations for Fast Reactor Fuel Cycles*
- *Safeguardability of Fast Reactors and Associated Fuel Cycles*

IAEA Technical Meeting on Advances and Innovations in Fast Reactor Design and Technology

29 September – 2 October 2025

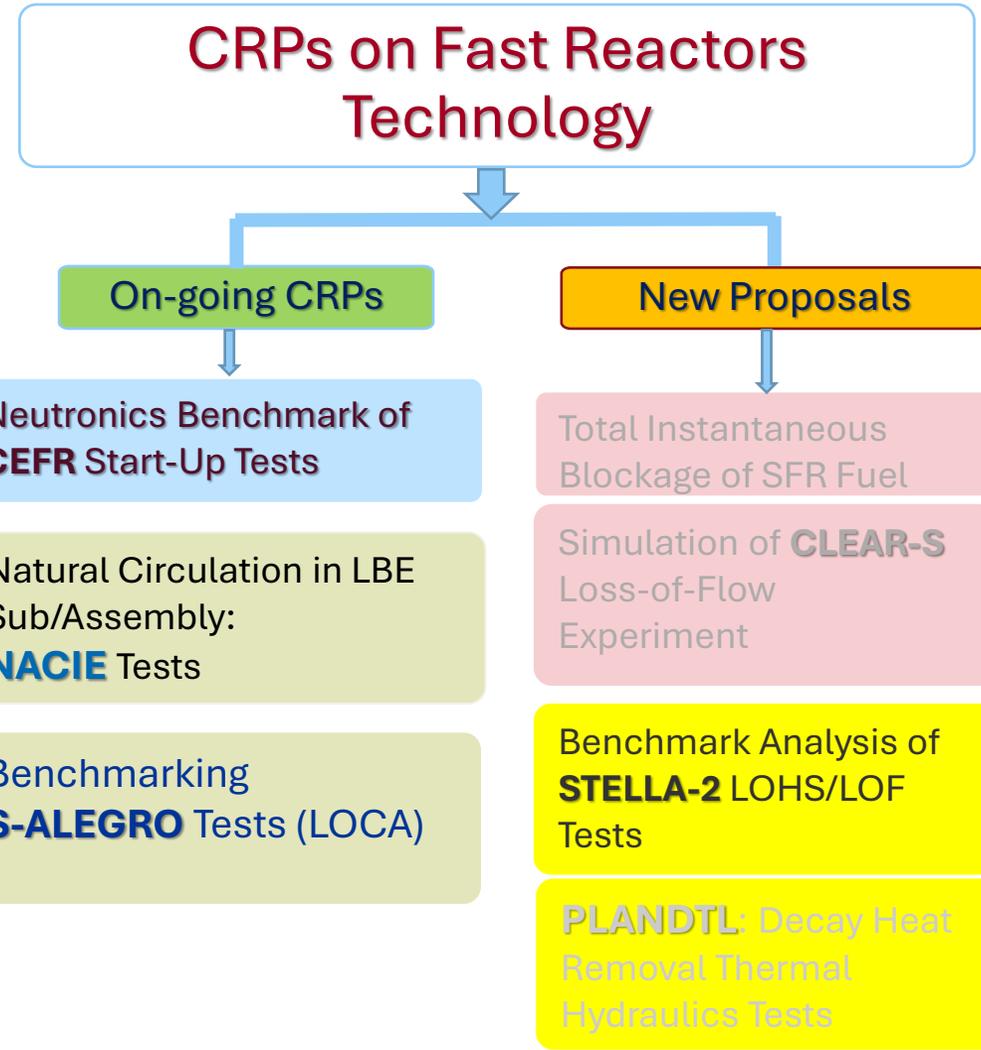
<https://conferences.iaea.org/e/FR-2025>

- *Fast Reactors in National and International Nuclear Energy Programmes*
- *Review and comparison of fast reactor designs and technology*
- *Advanced fast reactor and core designs, including SMRs*
- *Innovative systems and components*
- *Advanced Fuels and Materials*
- *Experimental facilities and databases*

IAEA Coordinated Research Projects on Fast Reactors



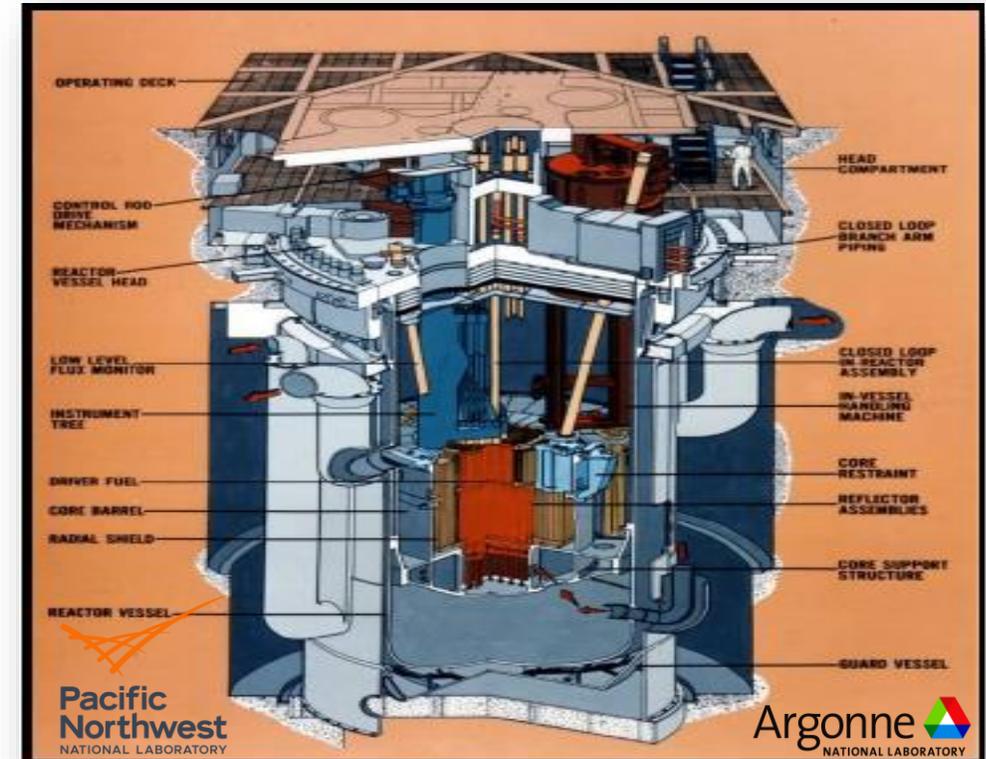
1st RCM: NACIE CRP
12-15 July 2022
Brasimone, IT



CRP: Benchmark Analysis of FFTF Loss of Flow Without Scram Test

- FFTF Reactor:
 - 400 MWth sodium cooled fast test reactor
 - Mixed UO₂-PuO₂ (MOX) fuel
 - Loop type plant, axial and radial reflectors
 - Prototypic size
 - ~1m³ core volume
 - ~91 cm high, ~120 cm diameter
 - Series of Passive Safety Tests
 - Demonstrated passive safety of SFRs
 - Demonstrated efficacy of negative reactivity insertion safety devices (GEMs)

2018 – 2023; TECDOC is in Publishing



CEFR Start-Up tests: CRP Participants



Country	Organization(s)
Belgium	SCK•CEN
China	CIAE, INEST/FDS, SNERDI, XJTU
France	CEA
Germany	KIT, HZDR, GRS
Hungary	BME, CER
India	IGCAR
Italy	NINE/UNIPI
Japan	JAEA
Rep. of Korea	KAERI, UNIST
Mexico	ININ
Romania	RATEN
Russia	IPPE, IBRAE, SSL, Kurchatov Inst.
Slovakia	VUJE
Switzerland	PSI
Ukraine	KIPT
UK	University of Cambridge
USA	ANL, NRC
17 Countries	27 in Phase 1, 12 in Phase 2

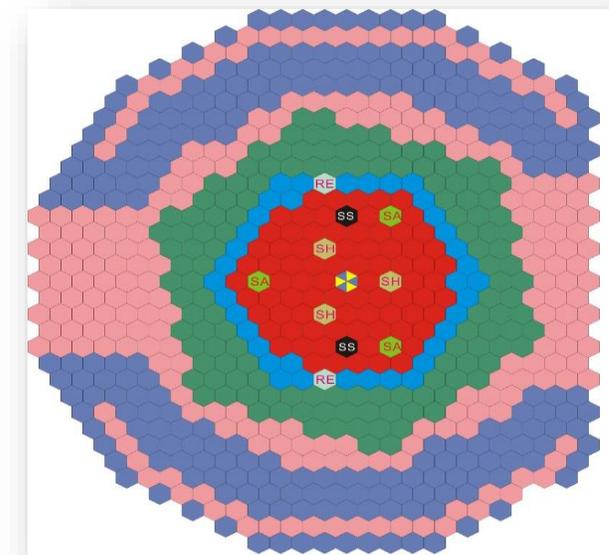
Neutronics Benchmark of CEFR Start-Up Tests



□ Reactor Core

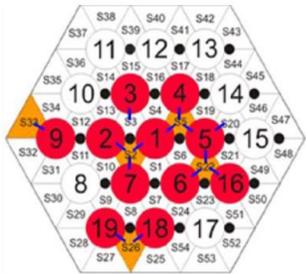
MAIN PARAMETERS:	
Name	Value
Norminal power	65 MW(th)
Fuel	UO ₂ (64.4%)
Max.neutron flux	E (Total), $3.2 \times 10^{15} \text{cm}^{-2}\text{s}^{-1}$ E > 0.1MeV, $2.5 \times 10^{15} \text{cm}^{-2}\text{s}^{-1}$
Max./Ave. burnup	60.0/44.5 MWd/kg
Core height/diameter	450/600mm
Num. of Fuel SAs	81
UO ₂ mass	428kg
Max linear power	43 kW/m
Refuelling period	80 EFPDs
Staying time in the core of fresh fuel S.A.	inner, $3T_r$; outer, $4 T_r$

Neutronics benchmark analysis of the physics start-up tests performed at the China Experimental Fast Reactor (CEFR) in 2010



NACIE CRP: Benchmark of Transition from Forced to Natural Circulation Experiment with Heavy Liquid Metal Loop

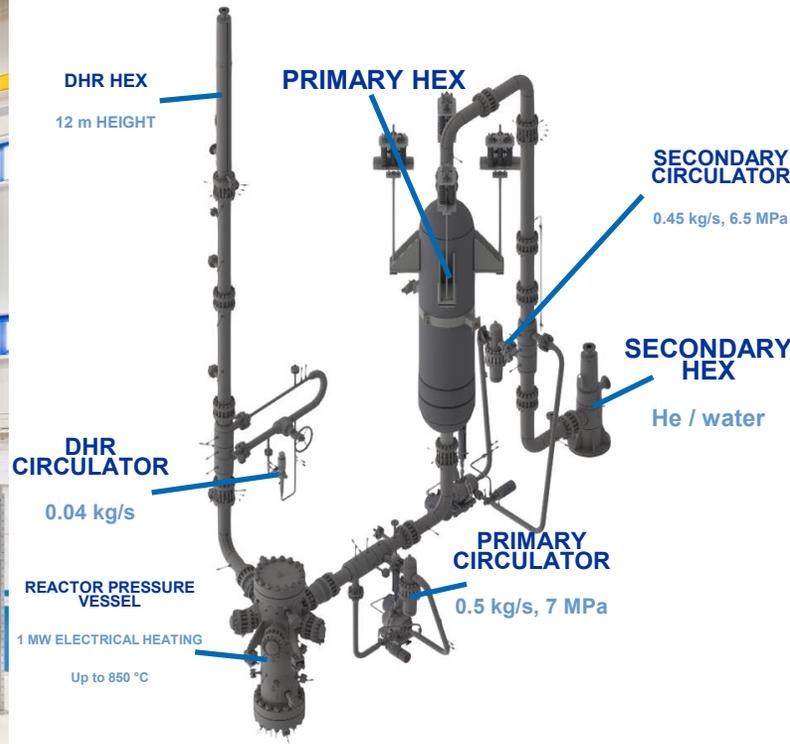
- The Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) proposed this CRP to TWG-FR 2020, launched in 2022. ENEA operates NACIE-UP facility:
 - Rectangular LBE flow loop
 - Containing a wire spaced 19 pin fuel pin simulator
 - Operating up to 250 kW for qualification and instrumentation testing.



- **Objective:** Validation of computational fluid dynamics (CFD), subchannel, and system analysis codes for heavy liquid metal systems.
- First CRP dedicated to TH of lead and LBE technology.
- 22 Organizations participated to the CRP



New CRP: S-Allegro Facility



CRP: Benchmark Exercise:
Simulation of Thermal
Hydraulic Transients

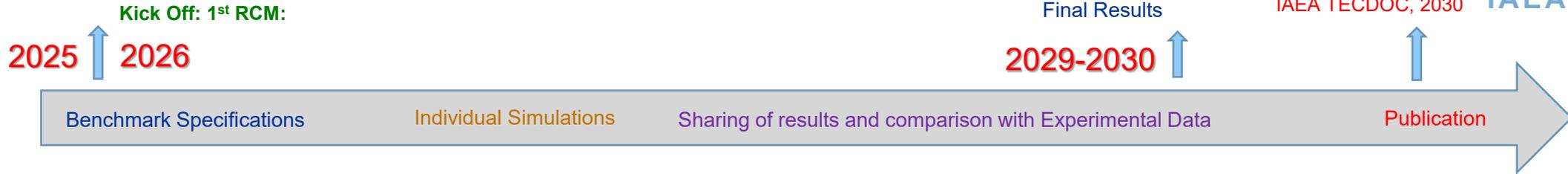
1st Research Coordinated Meeting
 3 – 5 March 2025, Vienna

Primary circuit	
Working fluid	Helium
Max. temperature	850°C
Max. pressure	7 MPa
Max. mass-flow rate	0.5 kg/s
DHR loop height	12 m
Reactor vessel	
Max. heating power	1.05 MW
Height	2.99 m
External diameter	0.62 m
N of heating assemblies	7
Secondary circuit	
Working fluid	Helium
Maximum temperature	820°C
Maximum pressure	6.5 MPa
Maximum mass-flow rate	0.45 kg/s
Tertiary circuit	
Working fluid	Water
Nominal temperature	Ambient
Maximum pressure	0.6 MPa
Maximum mass-flow rate	100 m ³ /h
Heat exchangers	
Primary HX nominal power	1.05 MW
Primary HX dimensions	D=1.4 m, H=5 m
Secondary HX nom. power	1.05 MW
Secondary HX dimensions	D=0.4 m, H=1.4 m
DHR HX nominal power	47 kW
DHR HX dimensions	D=0.25 m, H=3 m

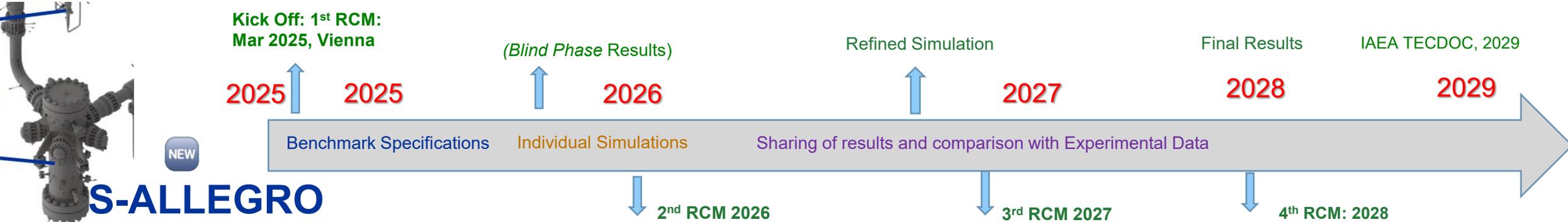
Fast Reactors: Future CRPs



NEW
STELLA-2



STELLA-2 Na Facility Tests (Thermal Hydraulics, CFD and System Codes)



Transient Tests at S-ALEGRO Helium Facility



Simulation of Transient to Natural Circulation Experiment at LBE NACIE Facility



Joint ICTP-IAEA Workshops

Physics and Technology of Innovative Nuclear Energy Systems

- *In 2016, 2018, 2022 and 2024, in ICPT Trieste, Italy; next in July 2026*
- *Contributed by NPTDS, INPRO, GIF and external experts*



Second Joint ICTP-IAEA Workshop
on Open-Source Nuclear Codes
for Reactor Analysis



22 - 26 Sept 2025 Trieste, Italy



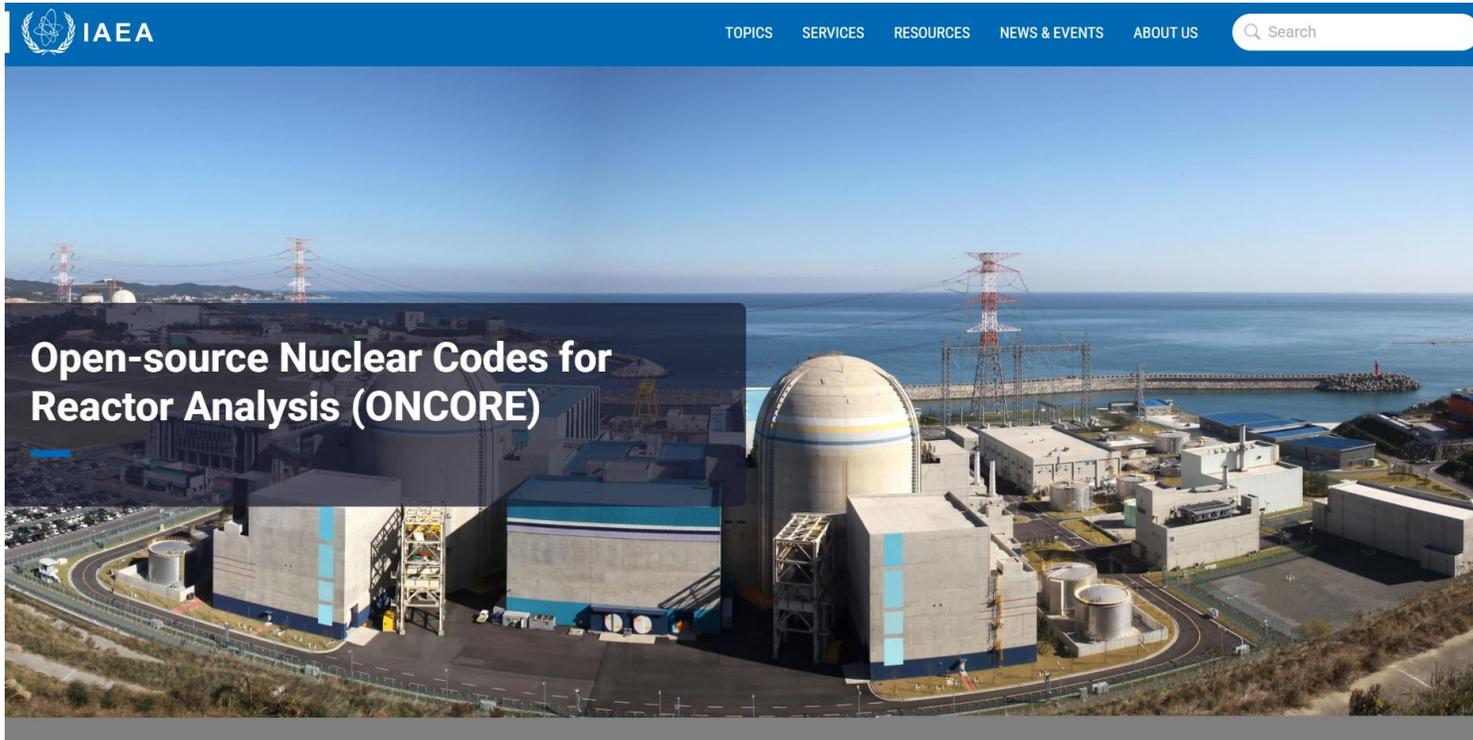
Open-Source Nuclear Codes for Reactor Analysis (2023: IAEA ONCORE)

- *OpenFOAM and its derivatives for CFD simulation of multi-physics and multi-scale problems*
- *GenFOAM for core thermal hydraulics, neutron transport and structural mechanics modelling*
- *OpenMC Monte-Carlo neutron transport*
- *ARMOR Advanced Reactor Modelling Interface*

2nd ONCORE Workshop: 22-26 September 2025:

- <https://indico.ictp.it/event/10868>

IAEA ONCORE



The Open-source Nuclear Codes for Reactor Analysis (ONCORE) initiative is an **IAEA-facilitated international collaboration framework** for the development and application of open-source multi-physics simulation tools **to support research, education and training** for the analysis of advanced nuclear power reactors.

The ONCORE initiative makes use of several tools, including a public Git repository and a public [SharePoint](#) site with a members' area to facilitate exchange of information among experts.

<https://www.iaea.org/topics/nuclear-power-reactors/open-source-nuclear-code-for-reactor-analysis-ncore>

<https://nucleus.iaea.org/sites/ncore>



IAEA ONCORE



Press centre

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Home / News / IAEA Designates Swiss Ecole Polytechnique Federale de Lausanne as Collaborating Centre

IAEA Designates Swiss Ecole Polytechnique Federale de Lausanne as Collaborating Centre

Chirayu Batra, IAEA Department of Nuclear Energy
Elisabeth Dyck, IAEA Department of Nuclear Energy

JUN
12
2019



Mikhail Chudakov, IAEA Deputy Director General and Head of the Department of Nuclear Energy (right) with EPFL's Vice President for Research, Andreas Mortensen (left) and Andreas Pautz, Head of EPFL's Laboratory for Reactor Physics and System Behaviour (middle) after signing the cooperation agreement, Vienna, 12 June 2019. (Photo: S. Krikorian/IAEA)

Related Stories



New Centre for Training Infrastructure



Argentina Collaborating Centre

Related Resources

Collaborating Centres

Ecole Polytechnique Federale de Lausanne (EPFL)

Nuclear Power Reactors

Nuclear Power Reactors Development

Division of Nuclear Energy

Department of Nuclear Energy

Key partner within ONCORE

- Cooperation agreement signed on 12 June 2019:
 - The IAEA designated the Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland, as an IAEA Collaborating Centre to support IAEA Member States in increasing their modelling and simulation capabilities in the field of advanced reactors.
 - **Extended in 2023 until 2026 during the last year GC**

“ Education and training are very important to prepare the next generation of nuclear workforce. The creation of such high performance simulation platforms with modern computational tools will attract many young professionals.

— Mikhail Chudakov, IAEA Deputy Director General, Head of the Department of Nuclear Energy

<https://www.iaea.org/topics/nuclear-power-reactors/open-source-nuclear-code-for-reactor-analysis-ncore>

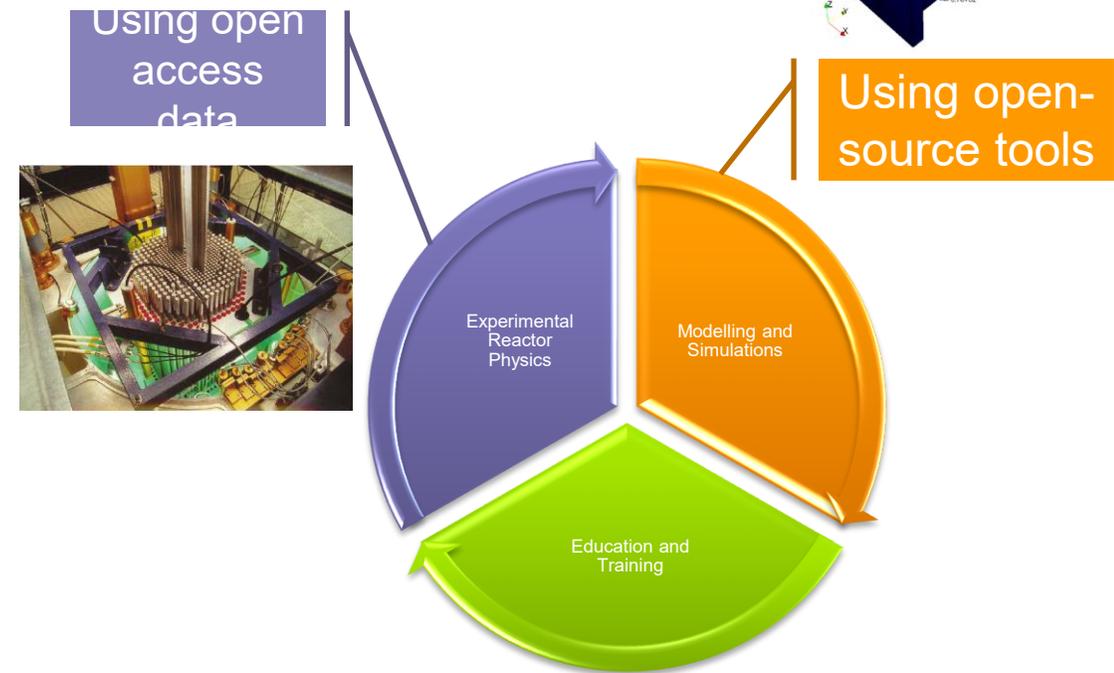
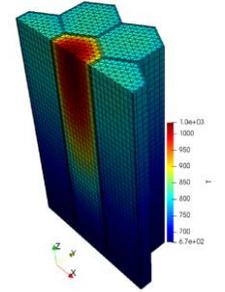


ONCORE Objectives

- **Build and maintain expertise** in open-source simulation codes and data, **fostering information exchange** in the nuclear science community
- Survey existing open-source codes and data **to enhance accessibility**
- **Establish best practices** for collaborative code development
- Identify integration opportunities and gaps in current open-source modules
- Encourage sharing of reference solutions, benchmarks, and input data
- Develop a unified open-source platform, ensuring consistency, verification, and documentation
- Promote the tools and platform **for educational and research use**
- Organize training and educational activities
- Successful contributions to the Future Global Nuclear Workforce and other IAEA initiatives

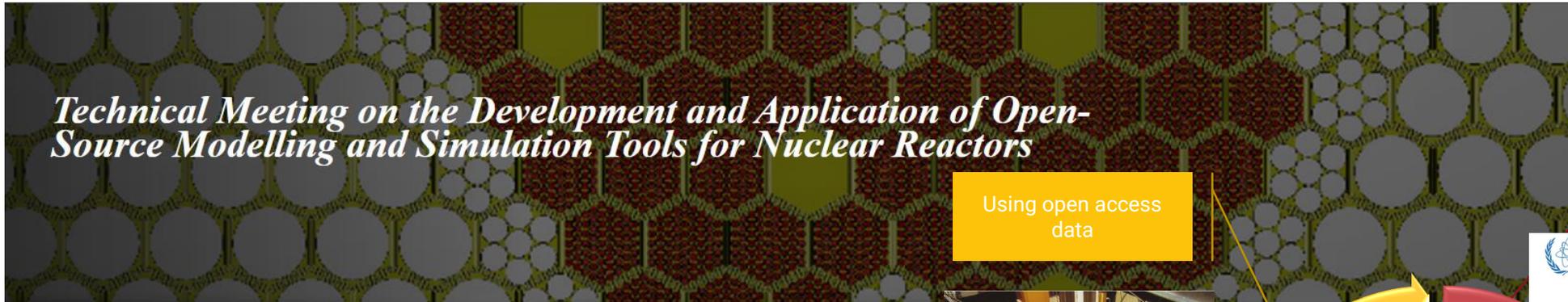
ONCORE Platform

- **Common platform** in advanced reactor experiments and high-fidelity multi-physics nuclear simulation techniques **for open-source code development and validation**
- Links to **35+ Open source tools**
 - Neutronics
 - Thermal-hydraulics, system analysis, containment
 - Structural mechanics, Fuel behavior, Materials
 - Multi-physics applications and libraries
 - Data processing, optimization, pre-post processing
 - Application frameworks
- 2 tools hosted and distributed by ONCORE
 - VSOP99/11: HTR pebble-type design and safety analysis
 - STACY: V/HTR safety analyses for the quantification of fission product release from the fuel
 - HCP: HTGR safety analysis integrated code



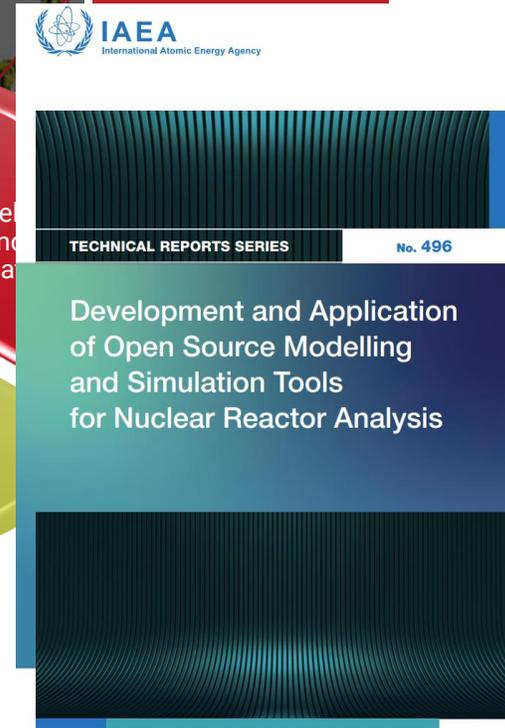
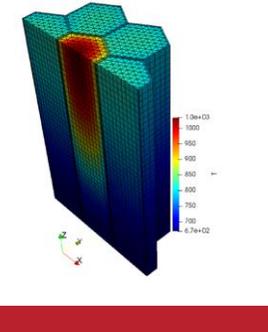
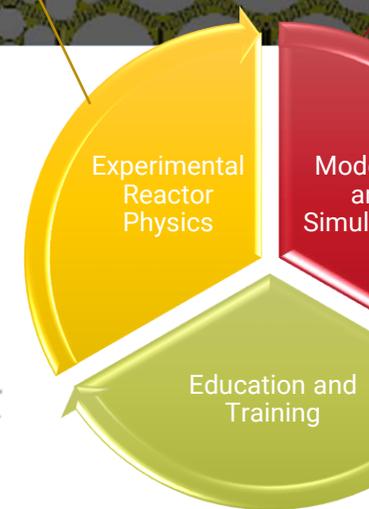
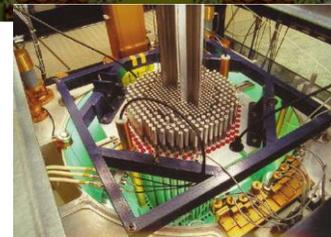
<https://nucleus.iaea.org/sites/ONCORE>

Technical Meeting on Development and Application of Open Source Modelling and Simulation Tools for Nuclear Reactors



Technical Meeting on the Development and Application of Open-Source Modelling and Simulation Tools for Nuclear Reactors

Using open access data



20-24 June 2022
Milano, Italy

Published TRS (available at the IAEA website)

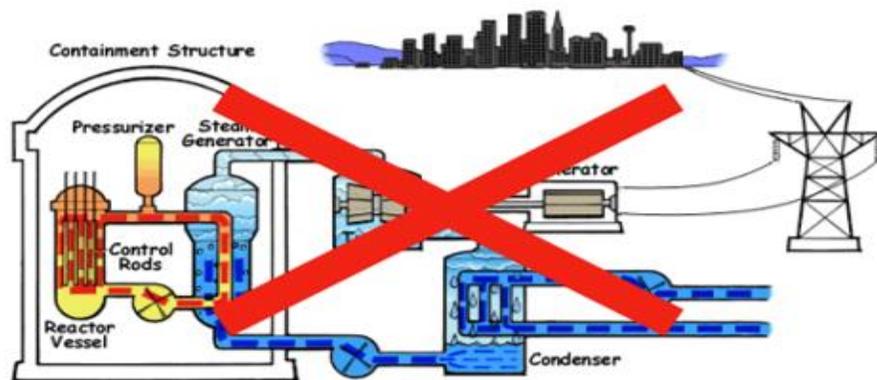
Technical Report Series (TRS)

Development and Application of Open-Source Modelling and Simulation Tools for Nuclear Reactor Analysis

Second Technical Meeting on ONCORE will be on 20-24 July 2026, EPFL in Lausanne



Modelling and simulation



Multicomponent

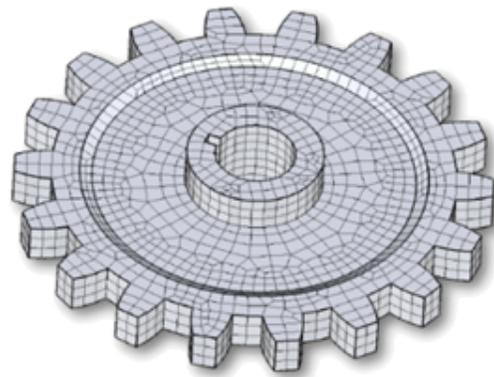
Multidisciplinary

Multiphysics

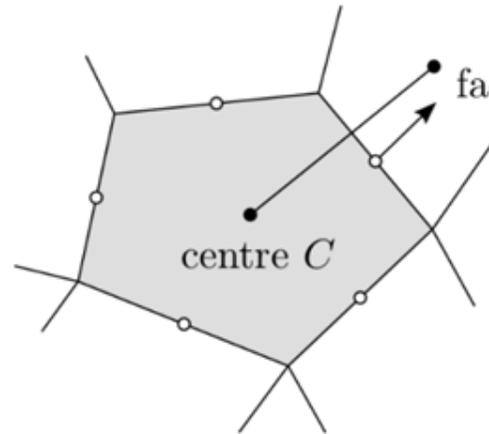
Multiscale

ONCORE Webinar Series on Multiphysics Modelling of Nuclear Reactors using OpenFOAM

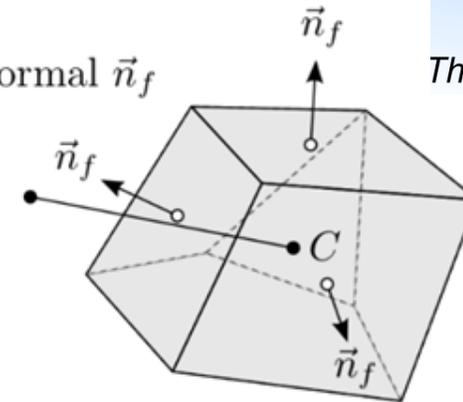
- OpenFOAM is a widely-used open-source toolbox for industrial CFD and a library for finite-volume discretization of PDEs in nuclear applications
- Supports ONSCORE initiative's education and training.
- The Webinar Series (started in 2022) provided up-to-date insights on OpenFOAM's capabilities, strengths, challenges, and guidelines, helping users make informed decisions and encouraging further independent learning.



Discretized Domain



2D



3D

OpenFOAM
The Open Source CFD Toolbox

[*https://www.openfoam.com/](https://www.openfoam.com/)

ONCORE Webinar Series on Multiphysics Modelling of Nuclear Reactors using OpenFOAM

12 lectures in the series covering:

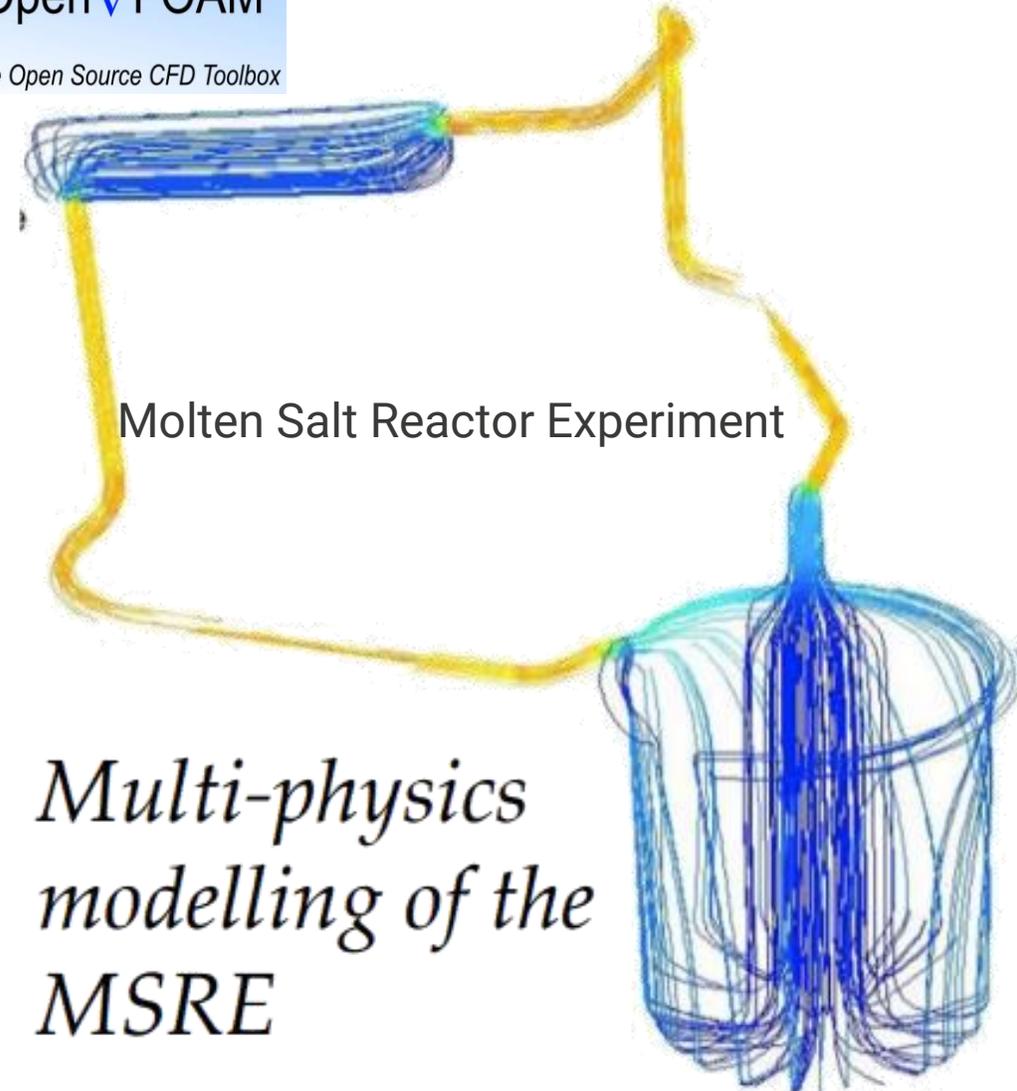
- Overview of using OpenFOAM as a multi-physics library for nuclear reactor analysis
- Brief introduction to the use of finite-volume methodologies
- Basics of Partial Differential Equations (PDEs)
- Problem definition
- Geometry and mesh generation
- Introduction to OpenFOAM's source code and object-oriented programming
- ContainmentFOAM tool for system-scale CFD analysis of containment atmosphere pressurization, H₂/CO mixing and mitigation.
- GeN-Foam tool as multi-physics solver in nuclear reactor design and safety analysis
- OFFBEAT tool, a solver for fuel behavior analysis in nuclear reactors. As a multi-dimensional code, it allows studying the evolution of the fuel in 1-D, 2-D or 3-D, and it can simulate both transient and steady-state conditions.
- GeN-ROM, a data-driven model-order reduction tool for nuclear applications based on GeN-Foam

Recordings of all lectures available here:

<https://elearning.iaea.org/m2/course/view.php?id=1286>

OpenFOAM

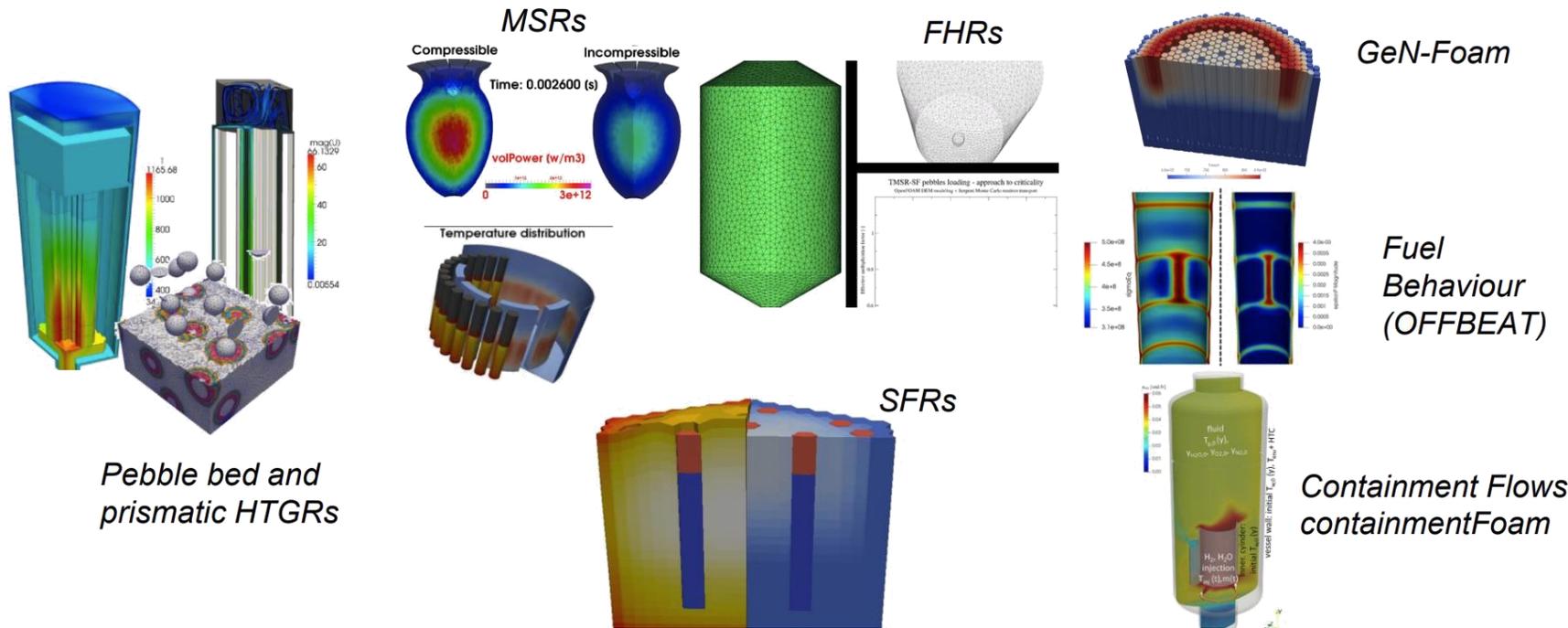
The Open Source CFD Toolbox



ONCORE OpenFOAM Webinar

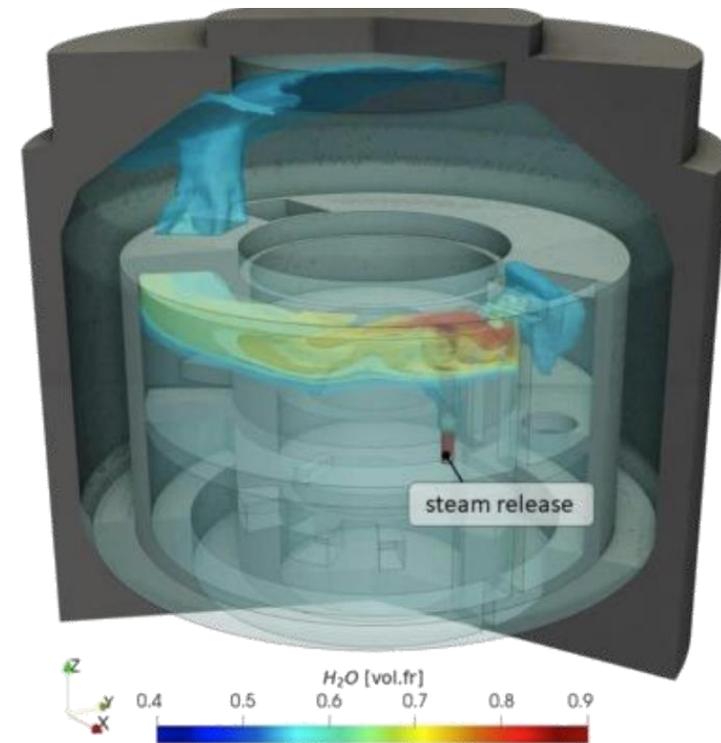
OpenFOAM: Open Field Operation and Manipulation

OpenFOAM in Nuclear Applications



Pebble bed and prismatic HTGRs

- OpenFOAM Derivatives
- containmentFoam next-generation tool for containment analysis



IAEA Webinar “Introduction to Basic Neutronic Simulations with OpenMC: Getting Started”



IAEA Webinar “Introduction to Basic Neutronic Simulations with OpenMC: Getting Started”

Wednesday 13 Aug 2025, 14:30 → 16:31 Europe/Vienna

Join online

Nicole Virgili (IAEA), Patrick Shriwise (ANL), Vladimir Kriventsev (IAEA)

Description

IAEA Webinar
**Introduction to Basic Simulations with OpenMC:
Getting Started**

Register [here](#) to attend

As part of the IAEA's ONCORE (Open Source Nuclear Codes for Reactor Analysis) initiative, we are pleased to announce an upcoming webinar [Introduction to Basic Neutronics Simulations with OpenMC: Getting Started](#). The event will be focused on the fundamentals of using OpenMC, an open-source Monte Carlo particle transport code widely used in the nuclear engineering community.

The webinar will be conducted by Mr Patrick Shriwise, a scientist at Argonne National Laboratory and adjunct professor at the University of

[IAEA Webinar “Introduction to Basic Neutronic Simulations with OpenMC: Getting Started” \(13 August 2025\): Overview · Indico for IAEA Conferences](#)

The screenshot shows the registration page for the IAEA Webinar on "Introduction to Basic Simulations with OpenMC: Getting Started". The page is dark-themed with white text. At the top, it says "webex" and "English". The main title is "IAEA Webinar on Introduction to Basic Simulations with OpenMC: Getting Started". Below the title, it shows the date and time: "Wednesday, August 13, 2025 2:30 PM - 4:30 PM (UTC+02:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna". The host is listed as "Host: VIRGILI, Nicole". The webinar speaker is "Mr Patrick Shriwise, ANL, USA", with a small portrait photo. There is a "Register for webinar" button in the top right corner. Below the speaker information, there is an "Agenda" section with a paragraph of text: "The International Atomic Energy Agency (IAEA) is hosting a webinar 'Introduction to Basic Simulations with OpenMC: Getting Started'. This webinar will provide a hands-on introduction to OpenMC, a modern open-source tool for Monte Carlo neutron transport simulations. Participants will learn how to set up and run simple neutronics calculations, interpret results, and become familiar with OpenMC's workflow and user interface. The session is designed to enable newcomers to approach more advanced topics with confidence." Below the agenda, there is a link to check the agenda: "Check the Agenda: https://conferences.iaea.org/event/430/timetable/". At the bottom, it lists the speaker "Mr Patrick Shriwise (ANL)", the moderators "Ms Nicole Virgili (IAEA) and Mr Vladimir Kriventsev (IAEA)", and the technical support "Ms Panashe Ndilalambi (IAEA)".



Second Technical Meeting on the Development and Application of Open-Source Modelling and Simulation Tools for Nuclear Reactors



Topic 1: Open-Source Software: Experiences, Challenges and Opportunities for Nuclear Engineering

Topic 2: Application of open-source tools to nuclear engineering problems

Topic 3: Recent developments of OSS and collaborative initiatives

Topic 4: OSS and AI

Panel 1: AI Application within OSS Workflow: Source Code Generation, Input Preparation, Documentation, User Guides

Panel 2: Deployment of OSS on High Performance and Cloud Computing Platforms

IAEA Second Technical Meeting on the Development and Application of Open-Source Modelling and Simulation Tools for Nuclear Reactors

20–24 Jul 2026
Europe/Vienna timezone

Enter your search term

Announcement in progress

Overview

Call for Abstracts

Timetable

Contact

✉ oncore@iaea.org

✉ fr@iaea.org

✉ v.kriventsev@iaea.org

The purpose of the event is to promote and facilitate the exchange of information regarding open-source software, open-access data, and ongoing collaborations in support of research and development, as well as education and training, in nuclear science and technology. You can read more about the ONCORE initiative [here](#).

Please read the Information Sheet for more details.

The meeting will take place in Lausanne, Switzerland. You can find more information about the venue [here](#).

🕒 **Starts** 20 Jul 2026, 09:00
Ends 24 Jul 2026, 18:00
Europe/Vienna

📎 [ONCORE 26 Extended Abstract Template P...](#)

IAEA Contacts

Scientific Secretaries:

Mr Vladimir Kriventsev

*Nuclear Power Technology Development Section | Division of Nuclear Power
Department of Nuclear Energy | International Atomic Energy Agency*

Ms Nicole Virgili

*Nuclear Power Technology Development Section | Division of Nuclear Power
Department of Nuclear Energy | International Atomic Energy Agency*

20-24 July 2026

EPFL, Lausanne, Switzerland

Extended Abstract: 2-4 pages
preferable (max 6)

<https://conferences.iaea.org/event/458/>



IAEA ONCORE: Publications and Online Tools

- [2022 Technical Meeting on the Development and Application of Open-Source Modelling and Simulation Tools for Nuclear Reactors](#)
- IAEA Technical Report Series (published):
 - [*Development and Application of Open-Source Modelling and Simulation Tool*](#)
- IAEA Training Course Series (in printing):
 - *Fundamentals of neutronics simulations of a fast reactor based on IAEA's benchmark of CEFR start-up tests*
- [ONCORE Webinar Series on Multiphysics Modelling of Nuclear Reactors using OpenFOAM](#)
- [2023 Joint ICTP-IAEA Workshop on Open-Source Nuclear Codes for Reactor Analysis](#)
- [2025 IAEA Webinar "Introduction to Basic Neutronic Simulations with OpenMC: Getting Started" \(13 August 2025\): Overview · Indico for IAEA Conferences](#)

LMFNS Experimental Facilities Catalogue

Experimental Facilities in support of Development and Deployment of Liquid Metal cooled Fast Neutron Systems

Includes an overview as well as detailed information on **153** experimental facilities under design, construction or operation

19 institutions from 14 IAEA Member States contributed

Freely Available at iaea.org:
Search for “**IAEA LMFNS**”



IAEA.org NUCLEUS

IAEA Catalogue of Facilities in Support of LMFNS

Home LMFNS Facilities Database Overview of SFR Overview of LFR LMFNS Compendium

Catalogue of Facilities in Support of Liquid Metal-cooled Fast Neutron Systems (LMFNS Catalogue)

MYRRHABELLE facility - Belgium

This LMFNS catalogue is a living database, which is, in its current form, presents an electronic version of section 4 of the IAEA Nuclear Energy Series publication (in progress) "Experimental Facilities in Support of Liquid Metal Cooled Fast Neutron Systems. A Compendium".

LMFNS Compendium. Summary of the IAEA publication

To overview the potential capabilities of 150 experimental facilities in 14 IAEA Member States to support the development and deployment of the innovative Liquid Metal cooled Fast Neutron Systems (LMFNS) and navigate yourself through the LMFNS Facilities Database" click on the below buttons:

Overview of SFR Overview of LFR

For detailed information on these facilities 1) click on the below button "LMFNS Facilities Database" (also on top of this page), 2) select the Coolant technology - SFR, LFR or both in the search box, 3) use other search and filtering tools as appropriate, 4) click on the Facility Profile you are interested in.

LMFNS Facilities Database

- A comprehensive Catalogue providing detailed information on experimental facilities currently designed, under construction or operating
- Facilities Designed to support the development and deployment of innovative liquid metal-cooled (sodium, lead and lead-bismuth) fast neutron systems (LMFNS), both critical and subcritical
- Identifies existing or future operational experimental facilities able to support innovative LMFNS
- Expected to facilitate cooperation using existing and planned experimental facilities for LMFNS, and enhance their utilization by providing end-users with detailed information
- Encourages international collaborations

Integration of LMFNS Experimental Facilities and NEXSHARE



SharePoint

NEXSHARE

Home Experimental Facilities Code

IAEA

NEXSHARE Network

Experimental Testing and Validation
for Design and Safety Analysis
Computer Codes for SMRs

EXPLORE THE EXPERIMENTAL FACILITIES >

6B: IPPE, Russia

- Inputs received from 14 countries and EU
- 153 facilities reviewed and accepted:
 - Na-based facilities: 79
 - Pb-based facilities: 74
- NES document – 50 pages overview published in 2018
 - online since 2016
 - main upgrade in 2019
 - last updated in 2024; +2 from UK:
 - Versatile Loop Facility (VLF)
 - Passive Heat Removal Facility (PHRF)
- Included in IAEA [NEXSHARE](#) (Nuclear Harmonization and Standardization Initiative)

Advanced Reactors Information System (ARIS)

Designs in ARIS

127

Design Organizations

> 75

Countries

~25

Web accessible database and a tool for Member States at various stages of nuclear power development, offering standardized, impartial data on reactor designs, including evolutionary and innovative concepts, to support informed reactor technology assessments



[Access online: Advanced Reactor Information System | Aris](#)

TM on Structural Materials for Heavy Liquid Metal Cooled Fast Reactors

Country	Participants/Papers
Belgium	2/1
China	7/4
Czech Rep.	3/1
Germany	1/1
Italy	5/3
Korea, Rep. of	4/1
Luxembourg	1/0
Netherlands	1/0
Romania	2/2
Russia	3/3
Slovakia	1/1
Sweden	2/1
UK	1/0
Ukraine	1/1
EC/JRC	1/1
Total: 14	34/20

Three Technical Sessions:

- HLM Compatibility with Structural Materials
- Corrosion Mitigation Measures
- Qualification Programmes of Structural Materials

Three Group Discussions:

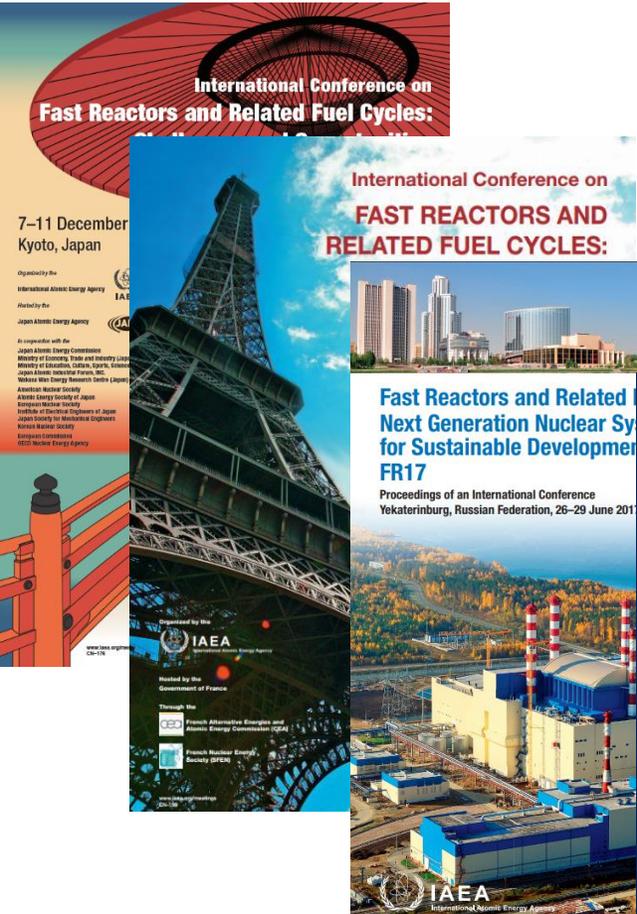
- Outstanding Research Challenges
- New Materials and Coating Techniques
- Technology Readiness

15-17 October 2019, Vienna



TECDOC Proceedings published in September 2021
Free download

IAEA Conferences on Fast Reactors and Related Fuel Cycles



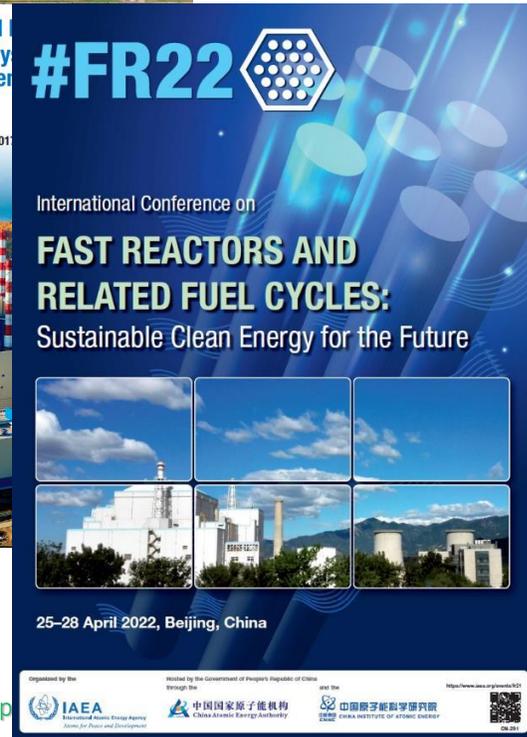
FR22



DG Grossi opens FR22



Mr Bhaduri, FR22 General Chair



FR26 in Beijing

- Hosted by CIAE
- 18 - 21 May 2026

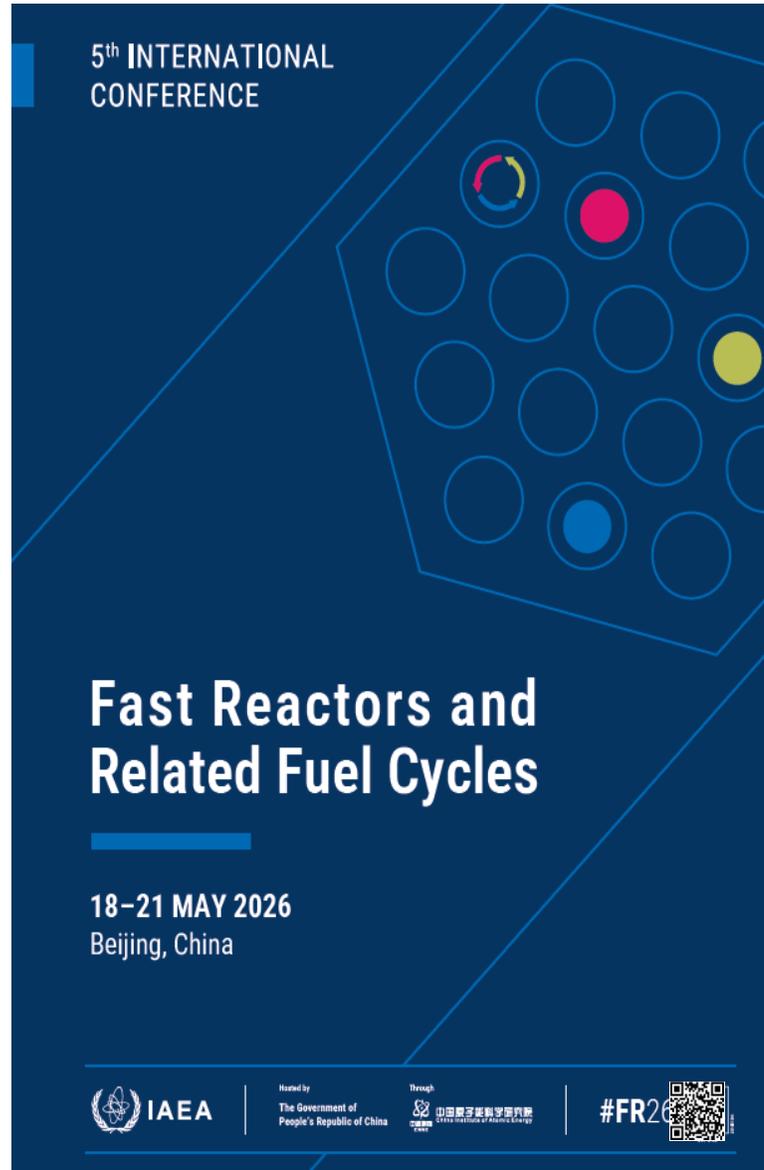
IAEA Conference on Fast Reactors and Related Fuel Cycles



Conference Topics

- Track 1: Innovative Fast Reactor Designs
- Track 2: Fast Reactor Safety and Licensing
- Track 3: Fuel Cycle Technologies and Sustainability
- Track 4: Fast Reactor Fuels and Materials
- Track 5: Test Facilities and Experiments
- Track 6: Modelling and Simulation
- Track 7: Economics, Integrated Systems, and Non-Electric Applications
- Track 8: Commissioning, Operation, and Decommissioning
- Track 9: Public Engagement, Knowledge Management, and Education and Training

Abstracts submitted: 575



FR26 in
Beijing
Hosted by CIAE
18 - 21 May 2026

<https://conferences.iaea.org/event/436/>



Publications on Fast Reactor Technology



Title	Status	Year
Sodium Coolant Handbook: Thermal Hydraulic Correlations	<i>Published</i>	2024
TECDOC: Benchmark Analysis of FFTF Loss-of-Flow Without Scram Test	<i>Final editing</i>	2025
TCS: Fundamentals of Neutronics Simulations of a Fast Reactor Based on IAEA's Benchmark of CEFR Start-Up Tests	<i>In publishing; waiting for main CEFR TECDOC</i>	2025
TECDOC: Natural Circulation in LBE Sub/Assembly: NACIE Tests	<i>In drafting</i>	2027
TECDOC: Neutronics Benchmark of CEFR Start-Up Tests	<i>Under internal Review</i>	2025
TRS: Development and Application of Open-Source Modelling and Simulation Tools for Nuclear Reactor Analysis	<i>Published</i>	2025
TRS: State-of-the-art Review of Thermal Hydraulics of Fast Reactors	<i>Preprint</i>	2025
Proceedings of FR22 Conference	<i>Published</i>	2025



Activities and Events on Fast Reactor Technology



Date	IAEA Events on Fast Reactors in 2025	Location
24 - 26 Jun 2025	58 th Meeting of TWG-FR	Vienna
26 - 27 June	Joint IAEA-GIF Interface Meeting	Vienna
30 Jun – 4 Jul	Workshop on Fuel Performance Assessment and Behaviour for LMFRs	Vienna
30 Jun – 4 Jul	IAEA-GIF Joint Workshop on the safety of non-WCR	Vienna
18 - 22 Aug	TM on Proliferation Resistant Features of FRs and Advanced Fuel Cycles	Vienna
29 Sep - 2 Oct	TM on Advances and Innovations in Fast Reactor Design and Technology	Vienna
22 - 26 Sep	Joint ICTP–IAEA Workshop on Computational Tools for Simulation of FRs	Trieste
20 - 24 Oct	4 th RCM of NACIE CRP	Vienna
3 – 7 Nov 2025	IAEA TC Workshop on Modelling and Simulation of Advanced Gen-IV SMRs	Moscow
16 - 20 Feb 2026	IAEA TC National training course on Heavy Liquid Metal Cooled Fast Reactors: Benefits and Challenges,	Pitesti
9 – 13 March 2026	2 nd RCM on S-Allegro CRP	Prague
18 – 21 May	FR26: IAEA Conference on Fast Reactors and Related Fuel Cycles	Beijing
22 – 25 June	59 th Meeting of TWG-FR	Vienna
18 – 19 June	20 th IAEA-GIF Interface Meeting	Vienna
13 – 17 July	5 th Joint ICTP–IAEA Workshop on the Physics and Technology of Innovative Nuclear Energy Systems	Trieste
20 – 24 July	2 nd TM on Development and Application of Open-Source Modelling and Simulation Tools for Nuclear Reactors (ONCORE Initiative)	Lausanne



Atoms for Peace and Development...

Thank You!

email: FR@IAEA.ORG