

International Conference on Fast Reactors and Related Fuel Cycles:

Sustainable Clean Energy for the Future

19–22 April 2022

PROGRAMME

Organized by the
International Atomic Energy Agency (IAEA)

IAEA Headquarters Vienna, Austria

Conference General Chairs: Arun Kumar Bhaduri, India
Mikhail Chudakov, IAEA

Chairs of the International Scientific Programme Committee: Donghui Zhang, China
Aline des Cloizeaux, IAEA

International Advisory Committee: Donghui Zhang, China
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Conference Coordination: S. Padmanabhan, MTCD

Location of the Event:

International Atomic Energy Agency
Vienna International Centre (VIC)
Building C, BRC/CR2/CR3/CR4
Wagramer Strasse 5
A-1400 Vienna, Austria

Working Language: English

Resolutions: No resolutions may be submitted for consideration on any subject; no votes will be taken.

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Participate in voting during sessions



Raise questions to speakers during session



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TIMETABLE

Venue: Board Room C: Building C- 4th Floor

CR-3: C Building - 7th Floor

CR-4: C Building - 7th Floor

CR-1: C Building – 2nd Floor

TUESDAY, 19 APRIL 2022

Time	Session No.	Session Title / Break	Venue
09:30–10:20	OS	Opening Session	Board Room C
10:20–10:30		<i>Coffee/Tea Break</i>	
10:30–12:00	P1	Plenary: Member States Keynote Presentations	Board Room C
12:00–13:00		<i>Lunch</i>	
13:00–15:00		Parallel Technical Sessions	
	IAEA	- IAEA Coordinated Research Projects Sp. Session	Board Room C
	1.1	- Overviews and Fundamentals of Fast Reactors	CR-3
	4.1	- Advanced Reactor Cladding and Core Material, Coolants, and Related Chemistry	CR-4
15:00–15:10		<i>Coffee/Tea Break</i>	
15:10–17:40		Parallel Technical Sessions	
	2.1	- General Safety Approach	Board Room C
	7.1	- Sustainability: Economics, Environment, and Proliferation	CR-3
	8.1	- SFR Commissioning, Operation, and Decommissioning	CR-4

WEDNESDAY, 20 APRIL 2022

Time	Session No.	Session Title / Break	Venue
09:30–10:30	P2	Plenary: International Organizations Keynotes, Young Innovator Essay Winners	Board Room C
10:30–10:40		<i>Coffee/Tea Break</i>	
10:40–12:40		Parallel Technical Sessions	
	6.1	- Neutronics	Board Room C
	3.1	- Fuel Cycle Scenarios	CR-3
	2.2	- Safety Design and Analysis	CR-4
	4.2	- Structural, Novel, and Large Components Materials	CR-1

Time	Session No.	Session Title / Break	Venue
12:40–13:40		<i>Lunch Break</i>	
13:40–15:40		Parallel Technical Sessions	
	1.2	- Innovative Design Advances	Board Room C
	5.1	- Experimental Reactors and Facilities	CR-3
	2.3	- Accident Analysis	CR-4
	6.2	- Thermal Hydraulics	CR-1
15:40–15:50		<i>Coffee/Tea Break</i>	
15:50–17:00	PA1	Panel: Innovative Fast Reactors: Designs, Applications, and Fuel Cycles	Board Room C

THURSDAY, 21 APRIL 2022

Time	Session No.	Session Title / Break	Venue
09:30–10:30	P3	Plenary Panel: Discussion on National Programmes and Visions, Q&A	Board Room C
10:30–10:40		<i>Coffee/Tea Break</i>	
10:40–12:40		Parallel Technical Sessions	
	5.2	- Experimental Programs I	Board Room C
	3.2	- Development of Innovative Fuels: Design and Properties Irradiation	CR-3
	6.3	- Multiscale and Multiphysics Calculations	CR-4
12:40–13:40		<i>Lunch</i>	
13:40–15:40		Parallel Technical Sessions	
	3.3	- Reprocessing, Partitioning, and Transmutation	Board Room C
	9.1	- Education, Professional Development, and Knowledge Management	CR-3
	6.4	- Simulation Tools for Safety Analysis	CR-4
15:40–15:50		<i>Coffee/Tea Break</i>	
15:50–17:00	PA2	Panel: Strengthening Fast Neutron Systems' Community: Empowering the Next Generation's Professionals, Towards Gender Balance, Cross-cutting Disciplines	Board Room C

FRIDAY, 22 APRIL 2022

Time	Session No.	Session Title / Break	Venue
10:30–12:30		Parallel Technical Sessions	

Time	Session No.	Session Title / Break	Venue
	2.4	- Severe Accidents	Board Room C
	6.5	- Integrated Analysis and Digitalization	CR-3
	1.3	- System Innovations	CR-4
<i>12:30–13:30</i>		<i>Lunch Break</i>	
<i>13:30–15:30</i>		Parallel Technical Sessions	
	6.6	- Fuel Performance and Material Modelling	Board Room C
	5.3	- Experimental Programs II	CR-3
	3.4	- Advanced Fuel Development	CR-4
<i>15:30–15:40</i>		<i>Coffee/Tea Break</i>	
<i>15:40–16:20</i>	CS	Closing Session	Board Room C

TUESDAY, 19 APRIL 2022

09:30-10:20 OPENING SESSION

Board Room C

Chairperson: A. des Cloizeaux, IAEA

Time	Name	Designating Member State/Organization	Title
09:30-09:40	R. Grossi	Director General of IAEA	Welcome Address
09:40-09:50	A. K. Bhaduri	Conference General Chair	Opening Address
09:50-10:05	A. Gonzalez-Espartero	Scientific Secretary	Organizational Remarks

TUESDAY, 19 APRIL 2022

10:30-12:00 MEMBER STATE KEYNOTE ADDRESS

Board Room C

Chairperson: A. des Cloizeaux

Time	Name	Designating Member State/Organization	Keynote Address
10:30-10:42	H. Yang	China	Keynote Presentation
10:42-10:54	F. Serre	France	Keynote Presentation
10:54-11:06	B. Venkataraman	India	Keynote Presentation
11:06-11:18	H. Kamide	Japan	Keynote Presentation
11:18-11:30	L. Chae Young	Republic of Korea	Keynote Presentation
11:30-11:42	V. Pershukov	Russian Federation	Keynote Presentation
11:42-11:54	A. Caponiti	United States of America	Keynote Presentation

TUESDAY, 19 APRIL 2022

13:00–15:00 **SPECIAL SESSION:**
IAEA Coordinated Research Projects

Board Room C

Chairpersons: **V. Kriventsev, IAEA**
N. Morelová, IAEA

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:00–13:12	285	N. Morelová	IAEA	Neutronics Benchmark of CEFR Start-Up Tests: An IAEA coordinated research project
13:12–13:24	104	X. Huo	China	CEFR physical start-up tests: the core specifications and experiments
13:24–13:36	163	A. Gomez Torres	Mexico	Verification and validation of neutronic codes using the start-up fuel load and criticality tests performed in the China Experimental Fast Reactor
13:36–13:48	281	J. Choe	Korea	Neutronics Benchmark of CEFR Start-Up Tests: Temperature Coefficient, Sodium Void Worth, and Swap Reactivity
13:48–14:00	233	T. K. Kim	USA	Neutronics Benchmark of CEFR Start-Up Tests: Reaction Rates and Reactivity Coefficients
14:00–14:12	534	A. Moisseytsev	USA	Blind phase results for transient simulations of the FFTF Loss of Flow Without Scram test #13
14:12–14:24	536	N. Stauff	USA	Blind-Phase Results of the FFTF Neutronic Benchmark
14:24–14:36	90	I. Klimonov	Russia	Modelling and Simulation of Source Term for Sodium-Cooled Fast Reactor Under Hypothetical Severe Accident: Radionuclide Release to the Cover Gas
14:36–15:00		All		Open Q&A

TUESDAY, 19 APRIL 2022

13:00–15:00 **SESSION 1.1:**
Overviews and Fundamentals of Fast Reactors

CR-3

Chairpersons: **R. Hill, USA**
D. De Bruyn, Belgium

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:48–14:00	322	R. V. Kumar	India	Influence of low dose irradiation on permanent core structural materials of PFBR
14:00–14:12	537	C. Latgé	France	Sodium coolant: interaction with its environment and coolant processing
14:12–14:24	41	V. Alekseev	Russia	Investigation of sodium purification
14:24–14:36	367	H. Chien	USA	Development and demonstration of diffusion-type hydrogen meters for sodium-cooled fast reactors
14:36–15:00		All		Open Q&A

TUESDAY, 19 APRIL 2022

15:10–17:40 **SESSION 2.1:** **Board Room C**
General Safety Approach

Chairpersons: **T. Sofu, USA**
X. Yang, China
A. Moisseytsev, USA

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
15:10–15:22	306	P. Gauthé	France	Basis for the Safety Approach (BSA) for design & assessment of Generation IV nuclear systems
15:22–15:34	538	P. Calle Vives	IAEA	Examples of areas of novelty in liquid metal fast reactors to consider in the review of applicability of the IAEA safety standards: fission product retention barriers: differences between liquid metal fast reactors and light water reactors
15:34–15:46	338	A. Alemberti	EC	System Safety Assessment of the Generation IV lead fast reactor
15:46–15:58	270	S. Kubo	Japan	France-Japan collaboration on the SFR severe accident Studies: Outcomes and future work program

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
16:22-16:34	26	A. Yegorov	Russia	Comparative multi-criteria analysis of scenarios of the Russian nuclear energy development in the context of uncertainty knowledge about the future
16:34-16:46	146	E. Marova	Russia	Effective fuel supply of two-component nuclear energy system with VVER-BN reactors
16:46-16:58	71	N. Salnikova	Russia	Export potential and commercialization conditions of fast reactors considering non-proliferation items
16:58-17:10	385	O. Komlev	Russia	Technological support of the non-proliferation for SVBR-100 fuel cycles
17:10-17:22	550	A. Bychkov	IAEA	The INPRO project studies on the double-component nuclear power systems with the closed fuel cycle and fast reactors: past and future
17:22–17:40		All		Open Q&A

TUESDAY, 19 APRIL 2022

15:10–17:40 **SESSION 8.1:**
SFR Commissioning, Operation, and Decommissioning **CR-4**

Chairpersons: **M. Thangamani, India**
M. Arai, Japan

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
15:10–15:22	500	S. Joseph Winston	India	Reactor core viewing system for the pre-commissioning stage inspection of reactor core components of Prototype Fast Breeder Reactor
15:22–15:34	513	P. Rajavelu	India	Experience in Preheating of PFBR Reactor Assembly
15:34–15:46	514	S. Nishanth	India	Commissioning and operating experience for secondary sodium systems and its auxiliaries of PFBR

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
15:46–15:58	494	J. Jose	India	Advanced in-situ calibration and probe release mechanism for PFBR SG Inspection System (PSGIS)
15:58–16:10	141	D. Villani	France	Treatment of sodium of Superphenix Fast Breeder Reactor
16:10–16:22	217	M. Thangamani	India	Operating experience of FBTR
16:22-16:34	469	G. Muralitharan	India	Fuel handling Experience of FBTR
16:34-16:46	25	K. Legkikh	India	Experience of operational chemical cleaning of BN-600 steam generator evaporators from corrosion product deposits
16:46-16:58	492	V. Padmanabhan	India	Design, experimental trials and qualification of explosive welding technique for plugging of degraded PFBR steam generator tubes
16:58-17:10	131	A. Izhutov	Russia	BOR-60 reactor operating experience, work on improving safety and extending lifetime
17:10-17:22	30	V. Smykov	Russia	Problems of decommissioning fast reactors and ways of their solution on the basis of the BR-10 research reactor
17:22–17:40		All		Open Q&A

WEDNESDAY, 20 APRIL 2022

09:30-10:30 **INTERNATIONAL ORGANIZATIONS KEYNOTE ADDRESS, YOUNG INNOVATOR ESSAY WINNERS** **Board Room C**

Chairperson: **V. Kriventsev, IAEA**

Time	Name	Designating Member State/Organization	Title
9:30–9:42	M. Betti	European Commission (EC)	Keynote Presentation

Time	Name	Designating Member State/Organization	Title
9:42–9:54	R. Hill	Generation IV International Forum (GIF)	Keynote Presentation
9:54–9:06	T. Ivanova	OECD/Nuclear Energy Agency (NEA)	Keynote Presentation
10:06–10:18	A. des Cloizeaux	International Atomic Energy Agency (IAEA)	Keynote Presentation
10:18-10:23	K. Kumar Pal	India	Young Innovator Winner: Advanced functional materials for next-generation fuel reprocessing
10:23-10:28	O. Kucheryavykh	Russia	Young Innovator Winner: Production of Mo-99 isotope in the BN reactor by beryllium blocks
10:28-10:33	T. Z. Chuan	Singapore	Young Innovator Winner: Small Modular Fast Reactors for the ASEAN Region: Implementation of the TRISO fuel particle concept as a regional variant of the fast reactor

WEDNESDAY, 20 APRIL 2022

10:40–12:40 SESSION 6.1: NEUTRONICS

Board Room C

**Chairpersons: E. Fridman, Germany
 X. Huo, China**

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:40–10:52	132	M. Szieberth	Hungary	Comparison of calculation methods for lead cooled fast reactor reactivity effects
10:52–11:04	316	A. Bachchan	India	Neutronics analysis of CEFR Start-up tests at IGCAR using FARCOB and ERANOS 2.1 Code Systems

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
11:04–11:16	52	R. Lopez-Solis	Mexico	Verification of the SPL module of the neutron diffusion code AZNHEX through Neutronics Benchmark of CEFR Start-Up Tests
11:16–11:28	272	F. Bostelmann	USA	Objectives and Status of Neutronics Sub-exercises of the OECD/NEA Benchmark for Uncertainty Analysis in Modelling for Design, Operation and Safety Analysis of SFRs
11:28–11:40	422	D. Castelluccio	Italy	Realisation of an adjusted nuclear data library based on ENDF/B-VIII.0 nuclear data evaluations for the ALFRED core
11:40–11:52	36	J. Krepel	Switzerland	Spatial interdependence of safety related effects in ESFR-SMART core
11:52–12:04	166	I. Bukhtiarov	Russia	The solution of nuclide kinetic equation for fast reactor in the OpenBPS code with options of choosing calculation method and uncertainties analysis
12:04–12:16	147	L. Mesthiviers	France	Study on actinide conversion capabilities of Molten Salt Reactors (MSR)
12:16–12:40		All		Open Q&A

WEDNESDAY, 20 APRIL 2022

10:40–12:40 SESSION 3.1: FUEL CYCLE SCENARIOS CR-3

**Chairpersons: A. Constantin, IAEA
 TBD**

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:40–10:52	28	A. Gulevich	Russia	The initial stage of closing the NFC of two-component nuclear power. Challenges and solutions

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:52–11:04	361	N. Chauvin	France	Presentation of the new European project PUMMA devoted to Plutonium management in the whole fuel cycle
11:04–11:16	45	E. Rodina	Russia	Fuel cycle closure for high power fast neutron reactor
11:16–11:28	382	M. Xiao	China	Perspectives and discussions on the modes and development path of China's commercial closed nuclear fuel cycle
11:28-11:40	156	Y. Kotov	Russia	Potential Role of Fast Reactors with Heterogeneous Fuel Assembly in Development Nuclear Power Structure
11:40-11:52	406	F. Serre	France	Reference Fuel Options for Generation-IV Sodium-cooled Fast Reactors
11:52-12:04	205	Y. Karazhelevskaia	Russia	The influence of isotopic composition of plutonium in fast reactor fuel on the reactivity margin
12:04–12:16	232	P. Gantsovsky	Russia	Radiation and hygiene assessment of external exposure factors of personnel working at experimental facilities in the production of mixed nitride uranium-plutonium fuel
12:16-12:40		All		Open Q&A

WEDNESDAY, 20 APRIL 2022

10:40–12:40 SESSION 2.2: SAFETY DESIGN AND ANALYSIS CR-4

**Chairpersons: M. Demeshko, OECD/NEA
Y. Hidemasa, Japan**

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:40–10:52	240	T. Sumner	USA	Overview of the Versatile Test Reactor Safety Analysis

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:52–11:04	204	J. Droin	France	Integrating safety at the first design stages: a new methodology for safety-oriented SFR core design
11:04–11:16	461	A. Samantara	India	Thermal hydraulic assessment of the performance of secondary sodium system based decay heat removal circuit
11:16–11:28	123	A. Pantano	France	Pre-design of a passive decay heat removal system with a phase change material for SMR-SFR
11:28-11:40	258	J. Andrus	USA	Development of the Versatile Test Reactor (VTR) Probabilistic Risk Assessment
11:40-11:52	376	I. Shvetsov	Russia	Analysis of the SGTR accident for safety justification of two-circuit lead cooled reactor
11:52-12:04	488	Raghupathy S.	India	Design Studies Towards Raising FBTR to Full Power
12:04–12:16	152	T. Le Meute	France	Modelling of postulated reactivity insertion in a Generation IV Molten Salt Reactor
12:16-12:40		All		Open Q&A

WEDNESDAY, 20 APRIL 2022

10:40–12:40 **SESSION 4.2: STRUCTURAL, NOVEL, AND LARGE COMPONENTS MATERIALS** **CR-1**

Chairpersons: **M. Angiolini, Italy**
 E. Orlova, Russia

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:40–10:52	39	A. Alomari	Saudi Arabia	Creep and Creep-Fatigue Behavior of an Advanced Stainless Steel (Alloy 709) - Application to Sodium-Cooled Fast Reactors
10:52–11:04	332	R. Mythili	India	Development of Plasma Nitriding as alternate hardfacing technique for Large components of FBR and Assessment of static In-Sodium Stability of Plasma Nitrided Layer
11:04–11:16	106	K. Toyota	Japan	Material Data Acquisition Activities to Develop the Material Strength Standard for Sodium-cooled Fast Reactors
11:16–11:28	178	S. Wei	China	The δ -ferrite transformation behavior and mechanical properties of 316H weld metal during high temperature service
11:28–11:40	56	A. Orlov	Russia	State of development of lead coolant technology components for BREST-OD-300 reactor
11:40–11:52	510	R. Novotny	EC	Tensile testing of sub-sized T91 and 316L steel specimens in liquid lead
11:52–12:04	80	B. Xie	China	A novel method of manufacturing a heavy integrated support ring in fast reactor
12:04–12:40		All		Open Q&A

WEDNESDAY, 20 APRIL 2022

13:40–15:40 **SESSION 1.2: INNOVATIVE DESIGN ADVANCES** **Board Room C**

Chairpersons: **P. Ferroni, USA**
 A. Moiseev, Russia

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:40–13:52	528	P. Ferroni	USA	The Westinghouse Lead Fast Reactor: overview and progress in development
13:52–14:04	363	V. V. Lemekhov	Russia	Pilot Demonstrational Fast Reactor with Lead Coolant BREST-OD-300
14:04–14:16	387	G. Toshinskii	Russia	Choice of a coolant for a modular small power reactor SVBR-100
14:16–14:28	275	T.D.C. Nguyen	Korea	Core Design of 100MWe Advanced Nitride-fueled Simplified Liquid Metal Cooled Fast Reactor
14:28-14:40	309	L. Fiorito	Belgium	Novel neutronics design of the MYRRHA core
14:40-14:52	219	S. Dmitrii	Russia	Project of a multipurpose lead reactor with a hard neutron spectrum
14:52-15:04	360	S. Pomerouly	France	Proposal of a compact core design for the 1000 MWe French commercial Sodium Fast Reactor by means of the SDDS multi-objective optimization tool
15:04–15:16	271	S. Jang	Korea	Conceptual design of ultra-long life hybrid micro modular reactor cooled by potassium heat pipe
15:16-15:40		All		Open Q&A

WEDNESDAY, 20 APRIL 2022**13:40–15:40 SESSION 2.3: ACCIDENT ANALYSIS CR-4****Chairpersons: A. Rineiski, Germany
 K. Morita, Japan**

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:40–13:52	194	K. Mikityuk	Switzerland	Coupled neutronic/thermal-hydraulic simulation of Unprotected Loss of Flow Test at Fast Flux Test Facility
13:52–14:04	68	Parthkumar Rajendrabhai P.	India	Mechanistic modelling of aerosol evolution and thermal loadings in an SFR containment during a hypothetical severe accident
14:04–14:16	18	Y. Onoda	Japan	Modelling and Simulation of Source Term for Sodium-Cooled Fast Reactor under Hypothetical Severe Accident: Primary System/Containment System Interface Source Term Estimation
14:16–14:28	277	J. Chang	USA	Modeling and Simulation of Source Term for Sodium-Cooled Fast Reactor under Hypothetical Severe Accident: Sodium Fire and Radionuclide Transport in Containment
14:28-14:40	59	I. Pakhomov	Russia	The Severe Accident Management of the high-power SFR with loss of the heat removal from the core
14:40-14:52	509	S. Rajagopalan	India	Over three decades of radiological protection experience at Fast Breeder Test Reactor (FBTR)
14:52-15:04	70	X. Jin	China	Safety Analysis of Small Modular Sodium Fast Reactors in Anticipated Transients Without Scram Scenarios
15:04–15:16	351	M. Bucknor	USA	The Versatile Test Reactor (VTR) Approach to Sodium Fire Hazards Analysis and Protection System Methodology
15:16-15:40		All		Open Q&A

WEDNESDAY, 20 APRIL 2022

13:40–15:40 **SESSION 6.2: THERMAL HYDRAULICS** **CR-1**

Chairpersons: **N. Mosunova, Russia**
V. Kriventsev, IAEA

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:40–13:52	200	D. Uralov	Russia	Possibility of Simulating Natural Circulation in Fast Neutron Reactors Using a Light Water Test Facility
13:52–14:04	199	B. Kvizda	Slovakia	Recent thermal hydraulic studies of Gas Fast Reactor demonstrator ALLEGRO
14:04–14:16	107	N. Pribaturin	Russia	Experimental modeling of a fuel element simulator vibration in a coolant flow
14:16–14:28	464	D. Ganatra	India	Development of coolant voiding model for fast reactor core
14:28–14:40	369	I. Piazza	Italy	ALFRED flow blockage analysis
14:40–14:52	370	O. Bovati	USA	CFD Simulations on a hexagonal 61-pin wire-wrapped fuel bundle with STARCCM+ and comparison with experimental data
14:52–15:04	91	A. Palagin	Russia	Progress in system thermohydraulic code HYDRA-IBRAE/LM models development for fast reactor simulation
15:04–15:40		All		Open Q&A

WEDNESDAY, 20 APRIL 2022

15:50-17:00 Panel: Innovative Fast Reactors: Designs, Applications, and Fuel Cycles

Board Room C

Moderator: V. Kriventsev, IAEA

Time	Name	Designating Member State/Organization	Title (as applicable: Opening Address; Welcome Address; Keynote Address or Title)
15:50-17:00	Paul Gauthé	France	Head of Innovative Fast Reactor Sketch Project
	Sundararajan Raghupathy	India	Director, Reactor Design & Technology Group, IGCAR Kalpakkam
	Jeffrey Latowski	USA	Senior Vice President, Innovation, TerraPower
	Nastasya Mosunova	Russia	Head of department, Nuclear Safety Institute of the Russian Academy of Sciences
	Xingkai Huo	China	Senior Engineer, China Institute of Atomic Energy

THURSDAY, 21 APRIL 2022

09:30-10:30 Plenary Panel: Discussion on National Programmes and Visions, Q&A

Board Room C

Moderator: A.Gonzales-Espartero, IAEA

Time	Name	Designating Member State/Organization
09:30-10:30	D. Zhang	China
	E. Abonneau	France
	B. Venkataraman	India
	H. Kamide	Japan
	L. Chae Young	Korea, Republic of
	V. Pershukov	Russian Federation
	A. Caponiti	United States of America
	M. Betti	EC
	R. Hill	GIF

Time	Name	Designating Member State/Organization
	T. Ivanova	NEA
	A. des Cloizeaux	IAEA

THURSDAY, 21 APRIL 2022

10:40–12:40 **SESSION 5.2: EXPERIMENTAL PROGRAMS I** **Board Room C**

Chairpersons: **D. Gugiu, Romania**
Y. Wu, China

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:40–10:52	466	A. Kumar	India	Estimation of mean charge on sodium metal aerosol in the argon and nitrogen gas environment during external gamma irradiation
10:52–11:04	148	A. Mikheev	Russia	Thermohydraulic tests in justification of design characteristics of the BREST-OD-300 RP steam generator
11:04–11:16	187	A. Sorokin	Russia	Experimental and computational studies of heat exchange for liquid metals boiling in fuel assembly models at accidental conditions
11:16–11:28	19	K. Aizawa	Japan	Investigation on natural circulation for decay heat removal in reactor vessel of sodium-cooled fast reactor
11:28-11:40	12	N. Krauter	Germany	Coolant flow monitoring with an Eddy Current Flow Meter at a mock-up of a liquid metal cooled fast reactor
11:40-11:52	379	Y. Sokolov	Russia	Overview of critical experiments with fast metal cores held on assembly machine FKBN-2
11:52-12:04	476	S. P. Pathak	India	An experimental study on secondary sodium system based decay heat removal circuit of a sodium cooled fast reactor
12:04-12:40		All		Open Q&A

THURSDAY, 21 APRIL 2022

10:40–12:40 **SESSION 3.2: DEVELOPMENT OF
INNOVATIVE FUELS: DESIGN AND
PROPERTIES IRRADIATION**

CR-3

Chairpersons: **N. Chauvin, France**
 M. Xiao, China

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:40–10:52	8	S. Hirooka	Japan	Recent studies on fuel properties and irradiation behaviors of Am/Np-bearing MOX
10:52–11:04	47	Z. Hózer	Hungary	Selection, testing and development of qualification procedure for ALLEGRO gas-cooled fast reactor fuel
11:04–11:16	503	R. Thirunavukkarasu	India	Design of metal fuel pin for test irradiation in FBTR and for future reactors
11:16–11:28	10	T. Segawa	Japan	Development of simplified fuel fabrication technologies for fast reactors
11:28–11:40	150	C. Jensen	USA	Advanced Reactor Experiments for Sodium Fast Reactor Fuels (ARES) Project: Transient Irradiation Experiments for Metallic and MOX Fuels
11:40–11:52	399	V. Blanc	France	Towards design guidelines for fast reactor oxide fuel pins with high Pu content: driving post irradiation examination by benchmarking European fuel performance codes
11:52–12:04	504	N. S. Dudala	India	Root cause analysis of FBTR failed fuel pin
12:04–12:16	124	M. Krivov	Russia	Uranium and mixed uranium-plutonium nitrides thermal stability
12:16–12:40		All		Open Q&A

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10:40–12:40 **SESSION 6.3: MULTISCALE AND
MULTIPHYSICS CALCULATIONS**

CR-4

Chairpersons: **A. Gomez Torres, Mexico**
C. Batra, IAEA

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:40–10:52	79	N. Mosunova	Russia	Codes of new generation – sustainable platform for numerical modeling of installations in the Proryv project
10:52–11:04	62	F. Roelofs	Netherlands	Dutch thermal hydraulic design and safety support for LMFBRs
11:04–11:16	67	X. Jia	China	Verification of SARAX Code for the transient analysis of Sodium-cooled Fast Reactor
11:16–11:28	116	B. Forno	France	Phénix Control Rod Withdrawal test analysis using a Multiphysics methodology
11:28–11:40	14	A. Moiseyev	USA	Simulation of FFTF Individual Reactivity Feedback Tests with SAS4A/SASSYS-1 Code
11:40–11:52	84	V. Chudanov	Russia	Current status of development of 3D DNS CONV-3D code: one- and two-phase flow models
11:52–12:04	24	N. Doda	Japan	Development of multi-level simulation system for core thermal-hydraulics coupled with plant dynamics analysis - prediction of transient temperature distribution in a subassembly under inter-subassembly heat transfer effect
12:04–12:16	325	E. Martin Lopez	France	Development of SFR core degradation simulation code SIMMER-V and its validation & verification studies
12:16–12:40		All		Open Q&A

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13:40–15:40 **SESSION 3.3: REPROCESSING,
PARTITIONING, AND TRANSMUTATION**

Board Room C

Chairpersons: **A. Yamaguchi, Japan**
A. Gonzalez-Espadero, IAEA

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:40–13:52	61	E. Dzugkoeva	Russia	Feasibility study of heterogeneous transmutation of americium in fast reactors
13:52–14:04	138	M. Edmondson	UK	The role of pyrochemical processing in a NetZero economy in the UK
14:04–14:16	63	A. Shadrin	Russia	Fabrication and reprocessing of mixed uranium-plutonium nitride fuel for reactor BREST
14:16–14:28	119	A. Tuzov	Russia	Heterogeneous burning of minor actinides in a fast reactor
14:28–14:40	493	N. Desigan	India	Advanced flow-sheet for partitioning of trivalent actinides from fast reactor high active waste
14:40–14:52	134	S. Kviatkovskii	Russia	Multi-criteria comparison of the efficiency of minor actinides burning in different nuclear reactors based on the INPRO/IAEA KIND approach
14:52–15:04	262	Y. Khomyakov	Russia	Physical feasibility of MA transmutation in a two-component nuclear energy system in Russia
15:04–15:16	544	A. Dedyukhin	Russia	Investigation of the anodic processes on the ceramic anode in the oxide-chloride melts
15:16–15:40		All		Open Q&A

THURSDAY, 21 APRIL 2022

13:40–15:40 **SESSION 9.1: EDUCATION, PROFESSIONAL DEVELOPMENT, AND KNOWLEDGE MANAGEMENT** **CR-3**

Chairpersons: **A. Di Trapani, OECD/NEA**

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:40–13:52	167	G. Tikhomirov	Russia	Training of new generation specialists in the field of fast neutron reactors and nuclear fuel cycle closure
13:52–14:04	516	N. Barron	UK	An e-learning tool on Fast Reactors and their Fuel Cycles
14:04–14:16	437	P. Paviet	USA	GEN IV international forum webinars initiative
14:16–14:28	201	A. Nakhabov	Russia	Preserving and transferring knowledge in the field of fast reactor technologies. Experience of the Obninsk Institute of Nuclear Power Engineering MEPhI
14:28–14:40	424	M. Apostol	Romania	Investigation on Human Resources Needs and Competences Building for ALFRED Implementation in Romania
14:40–14:52	540	J. Mahanes	IAEA	Overview of IAEA Fast Reactor Related Technology Development Activities
14:52–15:40		All		Open Q&A

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13:40–15:40 **SESSION 6.4: SIMULATION TOOLS FOR SAFETY ANALYSIS** **CR-4**

Chairpersons: **E. Ivanov, France**
I. Hill, OECD/NEA

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:40–13:52	85	E. Usov	Russia	Models of the integral EUCLID/V2 code for numerical simulation of severe accidents in a sodium-cooled fast reactor with MOX and MNUP fuels

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:52–14:04	21	A. Uchibori	Japan	Development of Integrated Severe Accident Analysis Code, SPECTRA for Sodium-cooled Fast Reactor
14:04–14:16	95	A. Sorokin	Russia	Aerosol module for modeling of the fission product behavior in FR cooling circuits and NPP compartments
14:16–14:28	415	Y. Liu	China	Analysis of the natural circulation capacity of decay heat removal system in pool-type sodium-cooled fast reactor
14:28-14:40	350	W. Klein-Hessling	Germany	Regulatory Perspectives on Analytical Codes and Methods for Advanced Reactors
14:40-14:52	97	D. Veprev	Russia	Models of the integral EUCLID/V2 code for numerical modeling of different regimes of lead-cooled fast reactor
14:52-15:04	440	E. Ivanov	France	Target Accuracy Requirements and an evidence-based background for MSFR safety assessment
15:04–15:16	93	R. Chalyy	Russia	SOCRAT-BN integral code: Development, validation and current status
15:16-15:40		All		Open Q&A

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15:50-17:00 Panel: Strengthening Fast Neutron Systems' Community: Empowering the Next Generation's Professionals, Towards Gender Balance, Cross-cutting Disciplines **Board Room C**

Moderator: J. Mahanes, IAEA

Time	Name	Designating Member State/Organization	Title
15:50–17:00	Andrea Bachrata	France	Researcher at CEA; Lead of WiN Global Young Generation Group

Time	Name	Designating Member State/Organization	Title
15:50–17:00	Jagruti Ramesh Mote	India	Reactor Design & Technology Group, IGCAR Kalpakkam
	Erina Hamase	Japan	Reactor Core and Plant System Evaluation Group Fast Reactor Cycle System Research and Development Center
	Antonella Di Trapani	OECD/NEA	Head of the NEST and Global Forum Secretariat and Senior Analyst for Education, Outreach and Knowledge Management
	Aleshia Duncan	USA	Deputy Assistant Secretary for International Nuclear Energy Policy and Cooperation

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10:30–12:30 SESSION 2.4: SEVERE ACCIDENTS Board Room C

**Chairpersons: F. Serre, France
S. Kubo, Japan**

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:30–10:42	126	A. Bachrata	France	Development of methodology to evaluate mechanical consequences of vapor expansion in SFR severe accident transients: lessons learned from previous France-Japan collaboration and future objectives and milestones
10:42–10:54	395	X. Chen	Germany	Simulation of ULOF initiation phase in ESRF-SMART with SIMMER-III
10:54–11:06	155	F. Payot	France	The SAIGA in-pile experimental program to qualify the SIMMER calculation tool in SFR severe accident conditions

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
11:06–11:18	22	K. Kamiyama	Japan	A status of experimental program to achieve In-Vessel retention during Core Disruptive Accidents of Sodium-Cooled Fast Reactors
11:18-11:30	475	Sathiysasheela T.	India	Comparisons of feedback under UTOPA with In pin fuel motion dynamics in Fast Reactors
11:30-11:42	302	C. Journeau	France	French-Japanese experimental collaboration on fuel-coolant interactions in sodium-cooled fast reactors
11:42-11:54	449	S. Gianfelici	Germany	Transient 3D simulations for the ASTRID reactor: preliminary results for the ULOF initiation phase
11:54-12:06	336	X. Gaus-Liu	France	Experiment and numerical simulations on SFR core-catcher safety analysis after relocation of corium
12:06-12:30		All		Open Q&A

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10:30–12:30 **SESSION 6.5: INTEGRATED ANALYSIS AND DIGITALIZATION** **CR-3**

Chairpersons: **Y. Zheng, China**
A. Fedorovskiy, Russia

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:30–10:42	88	A. Fedorovskiy	Russia	Digital technologies for project development ODEC and PEC and digital twins
10:42–10:54	46	A. Jiménez-Carrascosa	Switzerland	Development of an artificial neural network for predicting spatial interdependencies of reactivity effects in Sodium Fast Reactors
10:54–11:06	129	A. Ushatikov	Russia	Application of digital twin of fast reactor plant for control system algorithm testing
11:06-11:18	364	A.V. Moiseev	Russia	Computational studies of advantages of lead-cooled fast reactor core

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
11:18-11:30	521	D. Wise	USA	Passive heat removal system analysis for the Westinghouse Lead fast reactor
11:30-11:42	208	S. Belov	Russia	Approaches to form the BN 1200 core start loading using MOX-fuel and MNUP-fuel
11:42-11:54	209	S. Belov	Russia	Distinctive features of the BN-800 core in the course of transition to complete MOX-fuel loading
11:54-12:30		All		Open Q&A

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10:30–12:30 SESSION 1.3: SYSTEM INNOVATIONS CR-4

Chairpersons: **S. Raghupathy, India**
R. El-Emam, Canada

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
10:30–10:42	6	T. Beck	France	Sketch Design of Fuel Sub-Assemblies for a SFR-150 MWe
10:42–10:54	190	S. Rukhlin	Russia	Optimization of built-in primary sodium purification system for advanced BN reactor plant
10:54–11:06	477	J. Mote	India	Design & analysis of a novel arrangement for coupling and decoupling of rotatable plugs in PFBR
11:06–11:18	207	J. Guidez	France	Optimization of the secondary loops on the ESFR SMART project
11:18-11:30	502	P. K. Patel	India	Design of secondary sodium based decay heat removal system for future fast breeder reactors
11:30-11:42	343	M. Caramello	Italy	Integration of small modular lead fast reactor with energy storage for load-following operation in high V-RES penetration electricity markets
11:42-11:54	365	S. Fomin	Ukraine	Power control of the fast nuclear-burning-wave reactor

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
11:54-12:06	341	D. Gérardin	France	Evaluation of an increase of the power density for the French commercial Sodium Fast Reactor and optimization study at 1100 MWe with the SDDS tool
12:06-12:18	127	B. Merk	UK	iMAGINE - a Breakthrough Technology for Closing the Fuel Cycle without Reprocessing
12:18-12:30		All		Open Q&A

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13:30–15:30 **SESSION 6.6: FUEL PERFORMANCE AND MATERIAL MODELLING** **Board Room C**

Chairpersons: **C. Fiorina, Switzerland**
A. Khaperskaia, IAEA

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:30–13:42	51	C. Fiorina	Switzerland	Simulation of fission gas release in the 3-D fuel performance code OFFBEAT
13:42–13:54	83	J. Genin	France	First fully adjusted set of parameters for the corrosion product contamination code OSCAR-Na
13:54–14:06	34	J. Dietz	Switzerland	MSR Fuel Cycle and Thermo-Dynamics Simulations
14:06–14:18	151	Y. Liu	China	The fluid structure interaction of narrow gaps between thin-wall coaxial structures in fast reactors
14:18-14:30	50	M. Messner	USA	A statistical design method for steady state creep applied to Grade 91 components
14:30-14:42	94	A. Zadorozhnyi	Russia	Mechanistic code BERKUT-U: self-consistent modeling of fuel rods thermomechanical behavior and processes in the fuel of fast breeder reactors
14:42-14:54	459	R. K. Maity	India	Computational fluid dynamics study for estimation of dilution for failed fuel location system
14:54-15:30		All		Open Q&A

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13:30–15:30 **SESSION 5.3: EXPERIMENTAL PROGRAMS II**

CR-3

Chairpersons: **C. Latgé, France**
 I. Kuzina, Russia

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:30–13:42	345	G. Firpo	Italy	ALFRED High priority R&D Needs
13:42–13:54	324	M. Caramello	Italy	Preliminary testing of ALFRED DHR system
13:54–14:06	465	S.C.S.P.K. Krovvidi	India	Design, manufacturing, and in-sodium testing of AM350-welded disc bellows for FBTR control rod drive mechanism
14:06–14:18	112	D. Gugiu	Romania	Implementation of LFR experimental infrastructures in Romania
14:18–14:30	197	M. Grushko	Russia	Experimental test facility to test a prototype of the air heat exchanger gate for the advanced BN reactor plant. Design and construction items
14:30–14:42	86	A. Quaini	France	France-Japan collaboration on thermodynamic and kinetic studies of core material mixture in severe accidents of sodium-cooled fast reactors
14:42–14:54	423	K. Weaver	USA	Versatile Test Reactor (VTR) experimental capabilities
14:54–15:06	468	M. Tarantino	Italy	LFR design and technologies development at ENEA: Status and perspectives
15:06–15:30		All		Open Q&A

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13:30–15:30 **SESSION 3.4: ADVANCED FUEL DEVELOPMENT**

CR-4

Chairpersons: **TBD**
 D. Crawford, USA

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
13:30–13:42	143	A. Gulevich	Russia	On the possibility to change the isotopic composition of plutonium from the spent MOX fuel of PWRs in fast reactors
13:42–13:54	164	L. Capriotti	USA	Postirradiation characterization of AFC metallic fuel alloys concepts
13:54–14:06	213	A. Belyaeva	Russia	Results of post-irradiations examinations of mixed nitride pins with gas and liquid metal sub-layers
14:06–14:18	412	A. B. Maqbool	Pakistan	Nuclear Fuels for Fast Reactors-A Review
14:18-14:30	319	A. Bakhin	Belarus	Low enrichment nuclear fuel based on uranium-zirconium carbonitride: reactor tests and preparation for studies at critical assemblies
14:30-14:42	239	A. Komarov	Russia	Types of chemical compounds in the assessment of radiation and hygienic hazards when working with irradiated nitride fuel
14:42-14:54	300	M. Khramtsov	Russia	Research and development of nuclear fuel for fast neutron reactor
14:54-15:06	11	M. A. Ibrahim	Egypt	Analysis of fuel burnup and safety parameters of gas cooled fast breeder reactors
15:06-15:30		All		Open Q&A

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15:40-16:20 CLOSING SESSION

Board Room C

Time	Name	Designating Member State/Organization	Title
15:40–16:00	A. Bhaduri	India, Chair of the International Advisory Committee	Summary Report
16:00–16:20	M. Chudakov	IAEA, Conference General Chair	Closing Remarks

Virtual Only Poster Presentations

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9:00–17:00

POSTER PRESENTATIONS

Virtual

Paper No.	Author	Designating Member State/Organization	Title of Paper
9	M. Nishina	Japan	Development of density control technologies for MOX pellet using dry recycled powders
13	G. Gerbeth	Germany	Eddy Current Flow Meter flow rate measurements in liquid Sodium at the SUPERFENNEC loop
16	Y. Zhang	China	The neutronic study of the nitride fuel loaded CiADS core
29	V. Smykov	Russia	Corrosion hydrogen mass transfer in fast reactor steam generators of the sodium-water type
33	J. Krepel	Switzerland	Characterization of the Molten Chloride Fast Reactor fuel cycle options
37	V. Ivanov	Russia	Next generation nuclear power: radiological sustainability and ecological advantages
38	X. Hu	China	Design of experimental scheme for activation method of China demonstration fast reactor
53	R. Lopez-Solis	Mexico	Verification and validation of the CEFRR Serpent model for the generation of reference solutions and Cross Sections database for the deterministic code AZNHEX
54	Tomoko Ishizu	Japan	Model validation of the ASTERIA-SFR code related to freezing phenomena of liquid and liquid/particle mixtures based on THEFIS experimental results
55	D. Obukhov	Russia	Development of submerged electromagnetic pump for liquid lead
57	R. Askhadullin	Russia	Current state and issues of the heavy liquid metal coolant technology development (Pb, Pb-Bi)
58	O. Miazdrikova	Russia	Modeling of water leak into sodium in the BN-600 steam generator

Paper No.	Author	Designating Member State/Organization	Title of Paper
64	V. Vidanov	Russia	R&D on recovery and separation of americium and curium under "Proryv" project
66	E. Kinev	Russia	The working capacity analysis of boron carbide after two-year operation as an emergency protection material of the fast reactor
69	P. Parthkumar rajendrabhai	India	Modelling of the in-vessel source term during a hypothetical severe accident in an SFR
82	N. Loginov	Russia	On measurement of oxygen concentration in sodium by means of plug indicator
96	A. Belov	Russia	Calculation of the materials activation with BPSD code
98	V. Bereznev	Russia	Integral code COMPLEX for radiation safety assessment of reactor and nuclear fuel cycle facilities
102	Q. CHEN	China	Irradiation-Thermo-Mechanical Coupling Analysis and Calculation of Fast Neutron Oxide Fuel Element
108	R. Pineda	China	Simple Design Comparison of uranium nitride pin cell assembly and matrix fuel assembly for a Lithium Cooled Fast Reactor
110	A. Leshchenko	Russia	Experience of Using CFD Models for Development of High-Temperature Furnace Equipment for Fabrication of Mixed Nitride Uranium-Plutonium Fuel Pellets
122	I. Drobyshv	Russia	Hybrid high power fast breeder reactor with metallic fuel and additives consisting with lightweight atoms
133	M. Roslaya	Russia	Two-Component Energy Industry under Conditions of Closed Nuclear Fuel Cycle: Economic Benefits
135	A. Moise	Romania	Neutronic Calculation of CEFR Core using Different Nuclear Data Libraries
140	S. Kviatkovskii	Russia	Sustainability of nuclear and non-nuclear power generation options under Russian conditions: a comparative evaluation study
157	E. Kulikov	Russia	Controlled thermonuclear fusion: potential role of a joint (Th-U-Pu) nuclear fuel cycle

Paper No.	Author	Designating Member State/Organization	Title of Paper
158	E. Kulikov	Russia	On substantial slowing down of the kinetics of fast transient processes in fast reactor
159	E. Kulikov	Russia	Investigation of characteristics of fast power reactor with an additional function of large-scale production of plutonium-238
161	O. Ashraf	Russia	Transmutation efficiency of minor actinides in fast-and thermal-spectrum molten salt reactors
162	A. Savelev	Russia	Revealing the dependencies of partitioning americium-241 and uranium using sorption technology based on solid-phase extractant TODGA
165	A. Ali	Egypt	ADS for Energy Production and ²³³ U breeding in HEU-Thorium Oxide system
168	A. Terekhova	Russia	Transmutation of minor actinides in a fast reactor with uranium-corium fuel
174	J. WANG	China	Study on Sodium Fire PSA Methodology for Pool-Type Sodium cooled Fast Reactor
179	I. Fadeev	Russia	Elaboration of the thermal-hydraulic characteristics of the reactor plant based on the operation experience of the power unit with BN-800 reactor
180	H. Sonoda	Japan	Development of in-vessel source term evaluation method for ULOF events in sodium-cooled fast reactor
196	D. Lesiukov	Russia	Ultrasonoscopy system "VIZUS" for sodium-cooled BN-type reactors
203	Y. Du	China	Experimental and Numerical Study on Temperature Fluctuation in The Upper Plenum of Fast Reactor
216	S. Rogozhkin	Russia	Development of the technical approach for research of the sodium coolant current in the integral type reactor
223	E. Metlyaev	Russia	Integrated radiation and hygienic approach to production safety. Assessment of the impact on public health
226	Oleg Parinov	Russia	Risk factors of complex radiation and non-radiation effects on the health of personnel in assessing the impact of the production of innovative fuel for fast reactors

Paper No.	Author	Designating Member State/Organization	Title of Paper
227	V. Mishin	Russia	Comparative analysis of calculational and experimental differences of the neutron-physical characteristics of the BN-800 reactor
231	A. Samoylov	Russia	Complex radiation and hygiene studies of radiation impact factors on production personnel, mixed nitride uranium-plutonium fuel for fast neutron reactors
234	M. Belonogov	Russia	Comparative analysis of minor actinides transmutation in a molten-salt burner reactor based on LiF-NaF-KF and LiF-BeF ₂ salts
235	A. Karev	Russia	Radiation-hygienic assessment of internal exposure factors of personnel working at experimental facilities in the production of mixed nitride uranium-plutonium fuel
236	D. Wu	China	Influence of preheating temperature on delta-ferrite formation and mechanical properties of 12%Cr steel weld metals
244	D. Duan	China	Experimental investigation of the fluid-structure interaction effect between adjacent equipment supports in a fast reactor
245	E. Seleznev	Russia	Some results of using partial equations for calculations of transient processes in fast breeder reactors
248	J. Yang	China	Analysis of sodium fire accident after upgrade of ventilation system of primary loop's corridor
255	M. Trapeznikov	Russia	Justification of critical experiments on stand FKBN-2 to verify neutron-physical software for calculations of the molten-salt reactor
259	D. Grabaskas	USA	Development of the Simplified Radionuclide Transport (SRT) Code Version 2.0 for Versatile Test Reactor (VTR) Mechanistic Source Term Calculations
260	E. Orlova	Russia	Increase of nuclear power plant hydrogen safety using zirconium accumulator
264	O. Golosov	Russia	Non-destructive method for determining steel corrosion coefficients in lead
265	T. Fei	USA	Preliminary Shielding Analysis for the Versatile Test Reactor

Paper No.	Author	Designating Member State/Organization	Title of Paper
283	Q. Zhou	China	A Study on the Development of a Procedure Complexity Evaluation and Optimization for Operating Procedures of China Experimental Fast Reactor
286	T. Kim	Korea, Republic of	Leak-Before-Break Design of Double-Walled Once-Through Steam Generators for Lead Cooled Fast Reactor
293	N. Maksimov	Russia	Cognitive Information Retrieval Based on Ontological Model of Knowledge Representation
298	V. Federiaeva	Russia	Heat transfer calculation and service life time estimation of submerged electromagnetic pump for liquid lead
308	G. Yujie	China	Application of Model Based System Engineering in Design of Digital Fast Reactor Nuclear Power Plant
311	J. Bousquet	Germany	New Finite Element Neutron Kinetics Code System FENNECS/ATHLET for Coupled Safety Assessment of (Very) Small and Micro Reactors
312	R.Ganapathy	India	Conceptual Core configuration for increasing Power of Fast Breeder Reactor to 40 MWt
313	Jin Wang	China	Research on the Impact of Advanced Rule Design System on the Digitization of Reactor Building Model
348	M. Caramello	Italy	ALFRED DHR system scaling verification and numerical pre-test analysis
353	I. Popov	Russia	Software for Simulation of Fast Reactor Operation in a Closed Nuclear Fuel Cycle (SC RTM-2)
356	I. Makeeva	Russia	The Code Complex for Computational Evaluation of Technical Solutions and Optimization of Processes Parameters of CNFC
366	A. Nelson	USA	Versatile test reactor: core system design requirements to support advanced reactor development
368	B. Hollrah	USA	Simulation of the Fast Flux Test Facility loss-of-flow without scram accident scenario using the SAM computer code
374	J. LI	China	Irradiation Effects of T91 Ferritic/Martensitic Steel

Paper No.	Author	Designating Member State/Organization	Title of Paper
375	K. Chaturvedi	India	Numerical Investigation of Cellular Convection in the Cover Gas space of Fast Breeder Test Reactor
378	A. Petrenko	Russia	Industrial energy complex with fast neutron reactor
380	S. Andreev	Russia	Experiment-calculated method for determination of prompt neutron lifetime in fast metal cores intended for verification of neutron transfer simulation codes
381	I. Iordache	Romania	Nuclear Hydrogen and Fast Reactors
384	P. Sannikova	Russia	Investigation of the solubility of actinide fluorides for the choice of a salt solvent for a molten-salt reactor-burner of minor actinides
391	S. Shahbazi	USA	Fast Reactor Source Term Modeling and Simulation Functional Requirements and Gap Assessment
393	O. Sambuu	Mongolia	Impact of Core Materials on The Fuel cladding Irradiation Damage in Breed-and-Burn Fast Reactors
397	T. Obara	Japan	Impact of Cladding Material on Neutronic Balance in Breed-and-Burn fast reactors
398	K. Hoang Van	Viet Nam	Development of Burnup Analysis System for rotational and Spiral Fuel Shuffling scheme in Breed-and-Burn Fast Reactors
411	B. Wilcox	Nigeria	New Concepts and Methodologies for the Effective Deployment of Gen IV reactors
414	D. Visser	Netherlands	CFD analyses of the ALFRED hot plenum
416	R. Pergreff	Italy	Modeling of the coolant region in the ALFRED core in case of thermal expansion
421	D. Castelluccio,	Italy	ENDF/B-VIII.0 nuclear data sensitivity and uncertainty (S/U) analysis of key safety-relevant reactivity coefficients for the ALFRED core
428	A. Kumari	India	Removal of Radiocesium from High-Level Liquid Waste using Inorganic Ion-exchangers
434	F. Lodi	Italy	The "ALFRED White Book": a business card of the project

Paper No.	Author	Designating Member State/Organization	Title of Paper
438	J. C. Fiel	Brazil	Criticality sensitivity analysis in relation to empties of a fast regenerator nuclear reactor
445	B. Venkatraman	India	Experimental study on sodium insulation interaction and its effect on structural material
451	X. Jia	China	Study on the Method of Correction of Fast Reactor Power Distribution by MCNP
460	R. K. Maity	India	Integrated thermal hydraulic analysis of Hot and Cold Pools of a liquid sodium cooled 600 MWe fast reactor
462	V. Govindarajan	India	Thermal Hydraulic Simulation of Loss of Flow Without Scram Test in FFTF using DYANA-P code
481	A. Krishnamurthy	India	Optimization of Ruthenium concentration in PUREX Process during Fast reactor fuel Reprocessing
484	P. Sivakumar	India	Assay of Waste drum based on Passive Neutron Counting Technique
487	A. Krishnamurthy	India	Mitigation of Sloshing Effects in High level Liquid Waste (HLW) Storage Tank for Nuclear Spent Fuel Applications
490	K. Dhananjeya	India	Design, manufacturing and transportation of high capacity High Level Liquid Waste Storage tanks
491	A. Krishnamurthy	India	Evaluation of EPDM and Silicone rubber compounds for application in Reprocessing Plant
495	A. Krishnamurthy	India	Development of Artificial Intelligence through PLC & SCADA to predict process related failure and abnormality in a Reprocessing Plant
498	D. Jagadishan	India	Development of a 15 kg servo manipulator for remote handling applications
499	P. Bhanu	India	Novel Electrical, Electronics and Instrumentation systems for Fast Reactor Fuel Reprocessing Plants
501	S. Aithal	India	Design & development of custom shaped back-up seal in silicone for PFBR
541	A. Potapov	Russia	Reprocessing of nitride and metallic spent nuclear fuel using molten salts
542	A. Potapov	Russia	Thermodynamic simulation of the oxidation processes at the

Paper No.	Author	Designating Member State/Organization	Title of Paper
			reprocessing of spent nuclear fuel in the LiCl-KCl melt
543	A. Potapov	Russia	Electrical conductivity of multicomponent chloride melts, containing ions of mono-, di-, and trivalent metals
545	Y. Zaikov	Russia	Determination of the metallic and oxide compounds in models based on metallic uranium containing uranium dioxide, metallic neodymium, cerium as well as neodymium and cerium oxides
546	A. Dedyukhin	Russia	Electrolytic reduction of the simulated oxide spent nuclear fuel in LiCl-Li ₂ O melt
548	V. Kuchinov	Russia	Export of RBN with SNCD and nuclear proliferation risks
551	R. El-Emam	Canada	Large-scale hydrogen production; fast-neutron reactors coupled to thermochemical copper-chlorine hydrogen plant

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