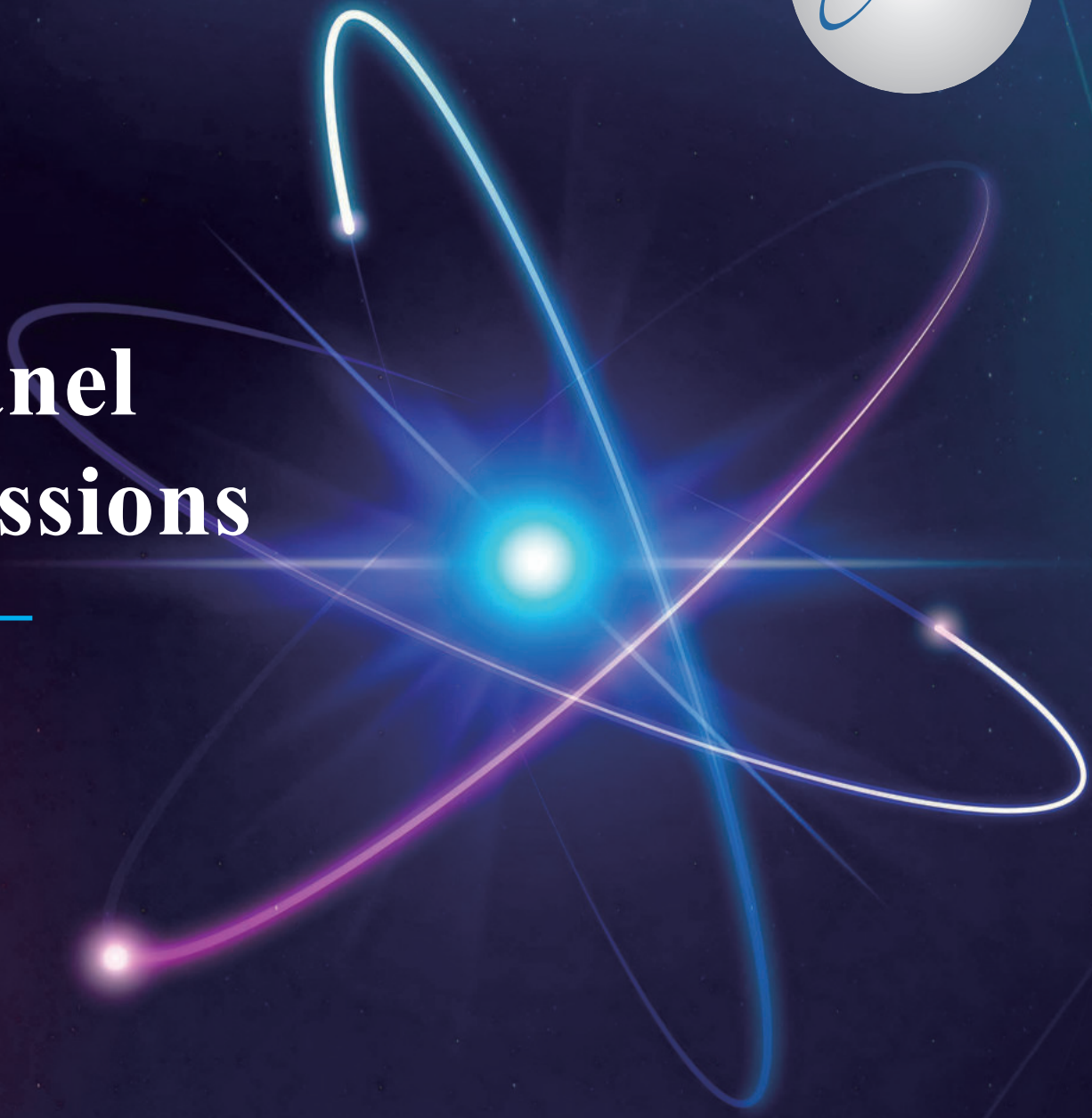




# Panel Sessions

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## Panel 1-SMRs and Advanced Reactors

1:30 pm - 3 pm, June 24

C101AB, 1F, Exchange center

Small reactors refer to small modular reactors. They are characterized by their small size and relatively low power output. Usually, they are designed with an electrical power output not exceeding 300 megawatts (MW), and there are also designs with even lower power. The main advantages of SMRs lie in the fact that they can be manufactured in a modular form, which is convenient for transportation and installation, thus reducing construction costs and shortening the construction period. In addition, due to their smaller scale, they are more flexible in site selection and can better meet the needs of different regions. Small reactors also have enhanced safety features, such as passive safety systems, which can automatically shut down and cool the reactor in case of an accident, reducing the need for human intervention. Advanced reactors, on the other hand, is a broader concept that encompasses various new nuclear reactor technologies. These technologies aim to improve the safety, economy, and sustainability of nuclear energy. Advanced reactors include, but are not limited to: Fourth-generation nuclear reactors: such as gas-cooled reactors, metal-cooled reactors, molten salt reactors, etc.

### Chair

**Danrong SONG**, Nuclear Power Institute of China

### Co-Chairs

**Asif Arastu**, Bechtel Power Corporation (Retired)

**Kazuaki Kito**, Hitachi GE Vernova Nuclear Energy

### Panelists

**1. Leon Cizelj**, European Nuclear Society

*SMR and AMR activities in Europe*

**2. Li KANG**, China Nuclear Engineering Consulting Co., Ltd.

*Prospects and Challenges of Small Modular Reactor (SMR) Development*

**3. Kazuaki Kito**, Hitachi GE Vernova Nuclear Energy

*Hitachi GE Vernova's Activities for Development of Small Modular Reactor BWRX-300*

**4. Yizhe LIU**, China Institute of Atomic Energy

*China Fast Reactor Development Status and Prospects*

## Panel 2-Advanced Fuel Development (Including ATF)

1:30 pm - 3 pm, June 24

C102, 1F, Exchange center

The Advanced Fuel Development (including ATF) Panel of ICONE 32 is a dedicated forum focused on nuclear fuel technology development. It focuses on innovation and advances in technologies related to nuclear fuel and materials. The panel provides an in-depth platform for experts and scholars in the nuclear energy industry to exchange topics such as ATF, small modular reactor (SMR) fuel, Generation IV reactor fuel, research reactor fuel, microreactor fuel, etc. Through guest lectures and research presentations, participants can share the latest research findings, discuss future trends, and explore challenges in nuclear fuel technology.

#### Chair

**Libing ZHU**, Shanghai Nuclear Engineering Research and Design Institute Co., Ltd.

#### Co-Chairs

**Guoqiang WANG**, PNNL

**Souichirou Yamaguchi**, Toshiba Energy Systems & Solutions Corporation

#### Panelists

**1.Ping CHEN**, Nuclear Power Institute of China

*The Progress of Advanced Fuel in PWR of CNNC*

**2.Souichirou Yamaguchi**, Toshiba Energy Systems & Solutions Corporation

*TOSHIBA ATF Development Update*

**3.Yehong LIAO**, CNPRI

*CRAFT Accident Tolerant Fuel Program Accomplishment*

**4.Buchanan Karl**, Framatome

*Framatome's PROtect Enhanced Accident Tolerant Fuel Developments*

**5.Yingwei WU**, Xi'an Jiaotong University

*Performance of Nuclear Fuel and Multi-physical Coupling*

## Panel 8-High Temperature Gas Cooled Reactor

1:30 pm - 3 pm June 24

C103, 1F, Exchange center

This panel focuses on the fourth generation of high temperature gas-cooled reactor (HTGR), and focuses on multidimensional in-depth exchanges around the design and development of HTGR, design and manufacture of key equipment, research and development of high temperature materials, installation and construction, commissioning, operation and maintenance, safety analysis, radiation emergency response, and comprehensive application. Aiming to set up a platform for technical exchanges and sharing of experiences on HTGR, so as to accelerate the development of HTGR on a large scale and in a spectral manner, and to promote the rapid implementation of comprehensive applications of HTGR.

#### Chair

**Miaomiao WANG**, Huaneng Nuclear Energy Technology Research Institute Co.,Ltd. (HNEI)

#### Co-Chairs

**Francesco Saverio D'Auria**, University of Pisa

**Shoichiro Okita**, Japan Atomic Energy Agency

#### Panelists

**1.Weiqiang XU**, Huaneng Nuclear Energy Technology Research Institute Co.,Ltd. (HNEI)

*High Temperature Gas Cooled Reactor: Practices, Challenges and Opportunities*

**2.Hiroaki Takegami**, Japan Atomic Energy Agency

*Overview of HTGR Project in Japan*

**3.Fu LI**, Institute of Nuclear Energy and New Energy Technology, Tsinghua University

*HTR-PM Safety Consideration*

**4.Imran AFGAN**, Khalifa University

*CFD For Structural Stability of Crossflow over Tandem Cylinders*

**5.Hongchun WU**, Xi'an Jiaotong University

*Introduction of the neutronics code NECP-Panda for Pebble-Bed High Temperature Gas-cooled Reactor*

**6.Chongxi CHANG**, Huaneng Shandong Shidao Bay Nuclear Power Co.,Ltd.

*Construction and Operation and Maintenance of High Temperature Gas Cooled Reactor*

## Panel 3-Advanced Equipment and Component Design and Manufacturing

1:30 pm - 3 pm, June 25

C101AB, 1F, Exchange center

The panel shows the design and advanced manufacturing technologies of the main equipment in the nuclear power of different nuclear generations, design include overall system design, system safety analysis, thermal hydraulic analysis, structural design and mechanical analysis, seismic analysis, etc; advanced manufacturing technologies include machining technology, forming technology, assembly technology, welding (such as laser welding, etc.) and heat treatment technology, surface treatment technology (such as electropolishing, etc.), non-destructive examination technology, metrology technology, digital and intelligent manufacturing, development and material of special materials, additive manufacturing technology, etc.

### Chair

**Cailin JIANG**, Shanghai Electric Nuclear Power Group Co.,Ltd.

### Co-Chairs

**Mohammad Syed Sohaib**, Canadian Nuclea Laboratories

**Toshitake Kurahige**, Mitsubishi Heavy Industries, Ltd.

### Panelists

**1.Mohammad Syed Sohaib**, Canadian Nuclea Laboratories

*Standpipe and Bunker Waste Retrieval System*

**2.Gelin HE**, Nuclear Power Institute of China

*Current Status and Future Prospects of Additive Manufacturing Technology in the Nuclear Energy Field*

**3.Yasutaka Banno**, Mitsubishi Heavy Industries, Ltd.

*Development of high-precision wire and laser additive manufacturing technology for stainless steel*

**4. Zhuguo LI**, Shanghai Jiao Tong University

*The Development of Ultra-High-Power Laser Welding Technology and Its Application in Nuclear Energy Equipment Manufacturing*

**5.Paul Cheng**, FuseRing

*Changing the Dynamics of Residual Stress and Embrittlement Using Solid State*

**6.Zhijun LI**, Shanghai Institute of Applied Physics, Chinese Academy of Sciences

*Research Progress of Molten Salt Reactor (MSR) Materials and Equipment*

## Panel 4-Women in Nuclear Engineering

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1:30 pm - 3 pm, June 25

C102, 1F, Exchange center

In the panel session of Women in Nuclear Engineering, female engineers, scientists, teachers and other experts will talk and discuss their roles in the nuclear industry and nuclear education and training. They are working in nuclear energy and technology fields and helping to empower the next-generation nuclear workforce around the world.

### Chair

**Puzhen GAO**, Harbin Engineering University

### Co-Chairs

**Rosa Lo Frano**, University of Pisa

**Chikako Iwaki**, JSME President, Toshiba ESS

### Panelists

**1.Xiaoyun ZHANG**, Haiyang NPP, Shandong Nuclear Power Company Ltd.

*Her Power, Nuclear Future: Young Women Breaking Barriers in Nuclear Power Plants*

**2.Rosa Lo Frano**, University of Pisa

*Women Pioneering in Nuclear Engineering*

**3.Beissen Nurzada**, Al-Farabi Kazakh National University

*Training of Specialists at Al-Farabi Kazakh National University as a Key Element of State Policy in the Field of Energy and Nuclear Technologies*

**4.Wei LIU**, Kyushu University

*Career, Family, and Change: A Woman Nuclear Engineer's Perspective from Japan*

**5.Leon Cizelj**, Jožef Stefan Institute and University of Ljubljana

*Mobility of nuclear students in the European ENEN2Plus project: the gender dimension*

**6.Puzhen GAO**, Harbin Engineering University

*Women in Nuclear Education at HEU, China*

## Panel 5-Diversified Applications of Nuclear Power

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1:30 pm - 3 pm, June 25

C103, 1F, Exchange center

This panel aims to explore the innovative and forward-thinking potential of nuclear power beyond its traditional role in land-based electricity generation. This panel will delve into how nuclear energy can be harnessed for space exploration, polar exploration, ocean exploration and other non-traditional applications, showcasing its versatility and importance in addressing global energy challenges. By examining these diverse applications, the panel will identify synergies and shared challenges across different domains, fostering a collaborative approach to nuclear technology development. Participants will gain insights into how nuclear power can be adapted to meet the unique demands of different application scenarios, while also contributing to global energy security and environmental sustainability.

#### Chair

**Dalin ZHANG**, Xi'an Jiaotong University

#### Co-Chairs

**Kenji Nishihara**, Japan Atomic Energy Agency

**Shripad Revankar**, Purdue University

#### Panelists

1. **Lei SHI**, Tsinghua University

*Development and prospect of nuclear thermal propulsion technology*

2. **Shripad Revankar**, Purdue University

*Space and Other Applications of Nuclear Energy*

3. **Kenji Nishihara**, Japan Atomic Energy Agency

*Recent and past R&D activities in Japan regarding the use of nuclear power in marine and space applications*

4. **Simao GUO**, China Academy of Engineering Physics

*Research Progress on Mobile Nuclear Power Systems Coupling Heat Pipe Reactors with Supercritical CO<sub>2</sub> Brayton Cycles*

5. **Asif Arastu**, Bechtel Power Corporation

*Nuclear Energy for SPACE APPLICATION*

6. **Dalin ZHANG**, Xi'an Jiaotong University

*Design and Thermo-electrical Characteristics Analysis on Lunar Surface Thermionic Reactor Power System*

## Panel 7-Nuclear and Integrated Energy System

1:30 pm - 3 pm, June 25

C104A, 1F, Exchange center

Nuclear reactor is used to provide heat or radiation with zero carbon emissions. This heat could be used to produce electricity, steam, hydrogen, fresh water, etc. In addition, as a baseload energy, nuclear reactor could also combine with solar or wind energy, which are periodic stable, to build a totally clean energy system. This panel focuses on nuclear heat for non-electricity generation, to present the state-of-the-art of research or practice from both academy and industry communities. In this panel, new findings, new methods and new technologies will be discussed on how to use nuclear heat for hydrogen production, steam production, fresh water production, or any other applications that could improve the utilizations of nuclear heat. Additionally, concept designs about nuclear-renewable integrated energy system are highly welcome to show the potential deployment of nuclear reactor in the future energy networks over the world.

#### Chair

**Huang ZHANG**, Institute of Nuclear and new Energy Technology (INET), Tsinghua University

#### Co-Chairs

**Shripad Revankar**, Purdue University

**Hidemasa Yamano**, Japan Atomic Energy Agency

#### Panelists

1. **Shanfang HUANG**, Tsinghua University

*Multiphysics coupling study of nuclear energy system based on Monte Carlo method*



**2. Shripad Revankar**, Purdue University

*Recent developments in Integrated Nuclear Hydrogen Systems*

**3. Changlei SHAO**, Shanghai Nuclear Engineering Research and Design Institute Co., Ltd.

*Comprehensive Utilization of Nuclear Energy: SPIC's Practice in Cultivating New Quality Productive Forces*

**4. Hidemasa Yamano**, Japan Atomic Energy Agency

*R&D for Sodium-Cooled Fast Reactor (SFR) Coupled to Thermal Energy Storage(TES) System with Sodium-Molten Salt Heat Exchanger*

**5. Shengwei TANG**, Sichuan University

*A novel method about hydrogen production for Small Modular Reactor—A practice for ACP100*

## Panel 6-Challenges in the Deployment of New Nuclear Energy System

1:30 pm - 3 pm, June 26

C101AB, 1F, Exchange center

The panel shows inter-disciplinary challenges for all nodes in a chain of deployment of new nuclear energy system, including the development, design, regulation and licensing, construction, equipment supply, operation experiences of new nuclear energy system, as well as the strategy of nuclear energy roles in energy transformation and climate change.

### Chair

**Yuxiang WU**, China Nuclear Engineering Co. Ltd

### Co-Chairs

**Imran Afgan**, Khalifa University

**Lixin SHEN**, Chinese Nuclear Society

### Panelists

**1. Furui XIONG**, Nuclear Power Institute of China

*Hualong and beyond—perspectives of China's next generation commercial PWR*

**2. Imran Afgan**, Khalifa University

*Dynamic Assessment and Optimization of Thermal Energy Storage Integration with Nuclear Power Plants Using Machine Learning and Computational Fluid Dynamics*

**3. Jiaoshen XU**, State Key Laboratory of Nuclear Power Safety Technology and Equipment

*Challenges in the R&D of Multi-Energy Utilization of Nuclear Energy under the New Power System*

**4. Wenming WANG**, China National Nuclear Corporation

*Key Factors Toward a Success Deployment: from CNNC perspectives*

## Panel 9-Lessons learned from Fukushima Daiichi Accident and the passive and/or active safety system of innovative reactors

1:30 pm - 3 pm, June 26

C103, 1F, Exchange center

The severe accident at the Fukushima Daiichi Nuclear Power Station was extremely unfortunate and unbearable, but the knowledge obtained through the investigation of the causes of the accidents and the decommissioning work has been used to develop safety

measures for existing nuclear power plants, innovative reactors, and development of SMR. It is useful and important for development, and mankind is entering the era of utilizing nuclear energy again. In this session, analysis of the current situation, remaining issues, and safety measures to be discussed.

**Chair**

**Tadashi Narabayashi**, Institute of Science Tokyo

**Co-Chair**

**Guoqiang WANG**, Pacific Northwest National Laboratory

**Panelists**

**1. Tadashi Narabayashi**, Institute of Science Tokyo

*Cause of the Fukushima Daiichi accident and the requirements for the safety system*

**2. Leon Cizelj**, Jozef Stefan Institute

*Severe Accidents Research in EU after Fukushima Dai-ichi*

**3. Li FAN**, Beijing Institute of Nuclear Engineering, CNPE

*Safety Design Concept and Active&Passive Safety Systems of HPR1000*

**4. Asif Arastu**, Bechtel Power Corporation (Retired)

*Passive Safety System Design to Prevent Fukushima Type Accidents*

