

平成25年4月26日

「もんじゅ」を活用した国際共同研究に関する 国際ワークショップの開催結果について(仮訳)

文 部 科 学 省
日 本 原 子 力 研 究 開 発 機 構

平成25年4月25日、文部科学省及び独立行政法人日本原子力研究開発機構主催の「もんじゅ」を活用した国際共同研究に関する国際ワークショップが、福井県敦賀市にて開催された。

日本からは、文部科学省、独立行政法人日本原子力研究開発機構が出席し、海外からは、米国、仏国、露国、中国、韓国、インド、IAEA、GIF の高速炉研究開発を担う関係機関が出席した。

会合において日本側からは、

- ・ 文部科学省から「日本のエネルギー政策と高速炉開発の現状及び今後の「もんじゅ」等における研究の方向性」が報告された。
- ・ 日本原子力研究開発機構から「日本原子力研究開発機構における「もんじゅ」とその関連研究開発」が報告された。

各国、各機関の参加者からは、

- ・ 各国、各機関から「各国、各機関の高速炉開発の現状と「もんじゅ」に期待すること」が報告された。
- ・ IAEA からは、2008年から2012年にかけて実施された「もんじゅ」CRPの成果と、「もんじゅ」の新しい試験データを基にした新しいIAEA CRPへの強い期待について、報告があった。
- ・ 中国からは中国におけるナトリウム冷却高速炉の開発状況について報告があった。
- ・ フランスからは、ASTRIDプログラムの現状と「もんじゅ」の共同研究への期待について報告があった。
- ・ インドからは FBTR と「もんじゅ」間の情報交換が両国にとって有益になると報告があった。
- ・ 韓国は、「もんじゅ」を活用した研究開発だけでなく、関連した分野にも関心を示した。
- ・ ロシアからは、ロシアにおけるナトリウム冷却高速炉の活動や、もんじゅ共同研究の見込みについて報告があった。

- ・ 米国からは高速炉研究開発の現状ともんじゅ共同研究の見解について報告があった。
- ・ GIFからはGIFにおけるナトリウム冷却高速炉の共同研究の現状について報告があった。

パネルディスカッションにおいては、

- ・ 「もんじゅ」の再稼働時期について、各国の関心が高く、関連した質問が多数あった。
- ・ 日本と各国、各機関との個別協力項目や、全ての参加国が参加できる共同研究の在り方について議論が交わされた。

パネルディスカッションの総括として、特に以下の点が確認された。

- いくつかの国において高速炉の新設を計画している一方で、現存するプラントは少ないことから、「もんじゅ」は、運転経験の共有の場として、非常に重要な施設であること。
- 規制組織と事業者との間で、透明性のある意見交換を実施することが高速炉の安全性を高めるために重要であること。特に、計算コードを共有することにより、実効性のある規制を策定することができる。
- 「もんじゅ」公開データを用いた解析を含む幅広い国際共同研究を実施することについて共通の認識を持つに至り、IAEAの下、もんじゅCRPの後継として新たなプログラムの構築を目指すこと。
- 「もんじゅ」の再稼働と運転は、ナトリウム冷却高速炉の安全設計クライテリア(SDC)の具体化に向けて貴重な経験を国際的なSFRのコミュニティに提供すること、今後、SDCの具体化に向けたガイドライン(SDG)の構築を目指すこと。
- AtheNaなどの関連施設を国際協力の枠組みの下で活用していくことは、各国にとっても非常に有用であること。
- 最後に、「もんじゅ」を用いた照射試験は、高速炉の特長であるアクチニド・マルチ・サイクルの実現性や廃棄物減容の有効性を確認するため、非常に有意義なデータを提供すること。

以上

25 April 2013

Monju WS Communiqué
International Workshop on International Collaborative Research Using Monju

The International Workshop on International Collaborative Research Using Monju was held on April 25, 2013, in Tsuruga-shi, Fukui Prefecture. It was cohosted by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Japan Atomic Energy Agency (JAEA).

MEXT and the JAEA attended from Japan, while agencies responsible for fast reactor-related R&D from the U.S., France, Russia, China, Republic of Korea, India, the International Atomic Energy Agency (IAEA) and Generation-IV International Forum (GIF) attended from overseas.

Reports by Japanese attendees:

- MEXT reported on the current situation of Japan's energy policy and fast reactor development as well as the direction of Monju research.
- JAEA reported on Monju and related R&D in JAEA.

Reports by participants from each country and agency:

- Each country and agency reported on the current situation for fast reactor development in each country and agency as well as expectations for Monju.
- IAEA reported the benefits of IAEA Coordinated Research Projects (CRPs) on Monju which was carried out between 2008 and 2012 and expressed strong expectations for a new IAEA CRP based on new experimental data from Monju.
- China reported that National status on Sodium-cooled Fast Reactor (SFR) development in China.
- France reported on present status of French program ASTRID and expectation of cooperation on Monju, including minor actinides transmutation R&D.
- India reported that information exchange between Fast Breeder Test Reactor (FBTR) and Monju will be beneficial for both countries.
- Republic of Korea indicated interest not only in R&D using Monju but also related areas of research, such as Advanced Technology Experiment Sodium Facility (AtheNa).
- Russia reported that status of the activities on SFR in Russia and prospects of collaboration on Monju.
- The U.S. reported on present status of Fast Reactor R&D and outlook for Monju collaborations.
- GIF reported present status of SFR collaboration in GIF and its work toward the effective use of Monju.

During the general discussion:

- Each country had great interest in when Monju will be restarted.
- There was debate about individual areas of cooperation between Japan and each country and agency, and about the methodology for joint research in which all participating countries can participate.

The following particular points were confirmed in the report on the general discussion:

- First, participants agreed that Monju plays an important role as a venue to share operation experience in order to promote an innovative fast reactor, because there are few reactors now in operation all over the world. Several countries are operating, building and planning new FRs in near future.
- Participants also emphasized that open communications between regulators, designers and operators are important to enhance the safety of FRs and, in particular, benchmarking of neutronic and thermal hydraulic codes is indispensable to develop effective regulations.
- Participants reached consensus on conducting joint international research over a broad range, including analysis using data disclosed from Monju. A new project should be launched as a successor to the Monju CRP under IAEA.
- Further, the restart and operation of Monju will provide valuable experience to the international SFR community to help flesh out SFR safety design criteria (SDC), which are under development in GIF framework and now being debated under the IAEA framework. The aim will be to build safety design guidelines (SDG), now under discussion in GIF, as a first step toward fleshing out SDC.
- The use of the AtheNa and related facilities would be very beneficial to the international community.
- Last, participants emphasized irradiation tests using Monju will provide extremely meaningful data in order to confirm the feasibility of actinide multi-recycle and the effectiveness of reducing volume and the toxic level of radioactive wastes, which is a feature of fast reactors.

End



International Workshop on International Collaboration Research using Monju

April 24th and 25th, 2013, Fukui, Japan

Background:

In light of the 2011 accident at Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Plant, the Japanese government is now reviewing its nuclear and energy policies. As a part of that review, MEXT (the Ministry of Education, Culture, Sports, Science and Technology) set up an expert panel last October to develop a research plan for Monju. The expert panel prepared an interim report last December, and a detailed research plan will be completed by around this coming summer. We expect that the panel will be able to draw up a plan that incorporates the international research utilizing Monju.

Scope and objectives of the workshop:

- 1) Discussion of broader range of international cooperation items using Monju including analysis of open-sourced Monju data.
- 2) Introduction of the national policies and programs of Fast Reactor development and expectation of international cooperation taking advantage of Monju.

Participants:

Experts in the field of Fast Reactors from

China, France, Korea, India, Russia, U.S.A., IAEA and Japan etc.

Organized by:

MEXT and JAEA (Japan Atomic Energy Agency)

Date and venue for the conference:

April 24th and 25th, 2013

(24th: Monju visit, 25th: Workshop)

Atom hall, Tsuruga HQ of JAEA

65-20 Kizaki, Tsuruga, Fukui 914-0814, JAPAN

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Agenda

Wednesday, April 24th, 2013

14:00-16:50 Monju technical tour

18:00-20:00 Welcoming reception (New Sunpia Tsuruga Hotel)

Thursday, April 25th, 2013

9:00-9:05 Opening remarks

Kanji Fujiki (Japan/MEXT)

9:05-9:15 Keynote address

Masaaki Nishijo (Japan/MEXT)
"Japan's energy policy and the future direction of Monju"

9:15-9:30 Keynote address

Hiroshi Hiroi (Japan/JAEA)
"Monju and related activities in JAEA"

9:30-12:20 Presentation by overseas representatives

"Fast reactor R&D activities in each country/organization and what to expect from Monju"

Chairperson: Jun Kondo (Japan/MEXT)

9:30- 9:50 Stefano Monti (IAEA)

9:50-10:10 Yu Hong (China/CIAE)

10:10-10:30 Alain Porracchia (France/CEA)

<Break>

11:00-11:20 P.R. Vasudeva Rao (India/IGCAR)

11:20-11:40 Dohee Hahn (Korea/KAERI)

11:40-12:00 Iurii Ashurko (Russia/IPPE)

12:00-12:20 Thomas O'Connor (US/DOE)

12:20-13:30 Lunch

13:30-15:00 General discussion

Facilitator: Akira Yamaguchi (Japan/Osaka Univ.)

Participants:

Masaaki Nishijo (Japan/MEXT)

Hiroshi Hiroi (Japan/JAEA)

Stefano Monti (IAEA)

Yu Hong (China/CIAE)

Alain Porracchia (France/CEA)

Dominique Ochem (France/CEA)

P.R. Vasudeva Rao (India/IGCAR)

Dohee Hahn (Korea/KAERI)

Vladimir D. Risovanyy (Russia/JSC)

Iurii Ashurko (Russia/IPPE)

Thomas O'Connor (US/DOE)

Yutaka Sagayama (GIF)

- 15:00-15:15 Break
- 15:15-15:25 Summary of possible future collaborations using Monju
Akira Yamaguchi (Japan/Osaka Univ.)
- 15:25-15:30 Concluding remarks
Yonezo Tsujikura (Japan/JAEA)

List of Participants

MEXT

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