

Int. Conf. on Advances in Nuclear Science and Engineering, ICANSE2007 出張報告

期間：2007年 11月 12日～2007年 11月 16日

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出張先：バンドン，インドネシア

International Conference on Advances in Nuclear Science and Engineering (ICANSE 2007) was held at Grand Aquila Hotel, Bandung, Indonesia. This conference was organized by Department of Physics, Bandung Institute of Technology (ITB) and National Nuclear Energy Agency of Indonesia (BATAN). The scope of this conference covers innovative nuclear energy systems, nuclear utilization systems based on fuel cycle, simultaneous solution for safety, radioactive wastes and proliferation problems, advanced small reactors without on-site refueling, innovative transmutation systems, innovative separation and fuel cycles/radioactive wastes, nuclear non-proliferation issues, innovative energy systems, hydrogen energy system, cogeneration system, thermal energy utilization system, material and process for innovative energy systems, radiation physics, nuclear data, theoretical and computational nuclear physics, nuclear education, and energy policy.

In the first day of 13 November, after opening ceremony, plenary talks were presented as follows:

1. Professor Hiroshi Sekimoto (Tokyo Tech): “Activities on Tokyo Tech Center of Excellence Innovative Nuclear Energy System (COE-INES)”
2. Dr. Vladimir. V. Kuznetsov (IAEA): “Opportunities, Challenges, and Common Design Objectives for Innovative SMRs”.

After this plenary session and short break, parallel session was started. There were 4 parallel sessions: Computation/Instrumentation (A), Innovative Nuclear Energy System (B), Fuel Cycle and Transmutation (C), and Material (D).

My presentation was in the morning session of Material (D). The presentation time



Photo 1 Author's presentation.

was 15 minutes and discussion about 5 minutes. In this presentation, I explained my study entitled “Corrosion Resistance of Alloy-Sputtering-Coated Steels and High Chromium Steels in Pb-Bi at Transient Temperature Conditions”. Corrosion resistance of alloy-sputtering-coated steels and high chromium steels in Pb-Bi at transient temperature conditions up to 800°C has been investigated. The purpose of this study is to investigate the corrosion resistance of the materials when an accident or an abnormal condition is occurred in the reactor. Surface-treated

steel materials in this study were FeAl-sputtering-coated SUS430 and TiAlN-sputtering-coated SUS430. High chromium steel materials in this study were SUS430, Recloy10 and NTK04L. There were three scenario cases in this study. At beginning, the temperature of Pb-Bi went up to 550°C and maintained for 12 h, and then the temperature rose to 800°C. The temperature of Pb-Bi was kept 800°C for 2.5 h (scenario case-1), 6 h (scenario case-2) and 8 h (scenario case-3). The results showed that there was no penetration of Pb-Bi into all specimens for all scenario cases. However, corrosion traces were found for all high chromium specimens in the cases of scenario case-2 and scenario case-3. Otherwise, the surface of FeAl-sputtering-coated SUS430 and TiAlN-sputtering-coated SUS430 was quite smooth and no traces of corrosion were found.

In the second day of 14 November, there were 4 parallel session in the morning: Computation (A), Innovative Nuclear Energy System (B), Nuclear Education and Related Topic (C), and Structural and Fluid Analysis (D). In the parallel session C, I was in charge of chairperson of the morning session.

After lunch break, there was Panel Discussion with a theme: “Nuclear Education Current Situation Path Forward”. A lot of fruitful discussion was performed in this interesting session. The panelists of this session were:

1. Prof. Hiroshi Sekimoto (Tokyo Tech),
2. Prof. Yoichiro Shimazu (Hokkaido University),
3. Prof. Zaki Su`ud (ITB),
4. Dr. Alexande Agung (Gadjah Mada University - UGM),
5. Dr. P.D. Krishhnani (BARC-India).



Photo 2 Panel discussion of ICANSE2007.

After panel discussion and short break, the meeting continued to plenary session. In the plenary session, Dr. Hudi Hastowo, head of National Nuclear Energy Agency of Indonesia (BATAN) presented “The Status of Nuclear Energy Program in Indonesia”. In this presentation, he explained that utilization of NPP is a part of solution on energy

problem in Indonesia through diversification or primary energy source. The NPP will be used as a base load for Java-Bali Grid starting on beyond 2017. In order to prepare the first NPP Project, BATAN is responsible as TSO (technical supporting office) and preparing infrastructure of the NPP, as well as site preparation activities until the operating organization of the NPP is settled. BATAN is responsible as a R&D institution to conduct development of reactor technology in Indonesia. R&D on reactor technology will cover short-term goal to support construction of the first series of NPPs as well as long-term goal on utilization of the future NPPs possibly adopted in Indonesia. There was a lot of fruitful discussion in this session related to this topic.

Finally, after plenary session the conference was closed with closing ceremony.



Photo 3 Presentation by Dr. Hudi Hastowo (BATAN).

As my impressions, this conference was well and successfully conducted, at least from three points: the event (organizer), quantities of conference's contents, and the international networking target. Firstly, event organizer could arrange and manage good and nice the event not only for the meeting (plenary, parallel, and panel session) but also others support things such as accommodation, room, consumption, etc. Secondly, the quantities of researches contribution in this conference cover various frontier researches in the field of nuclear science and engineering. Even we could not attend all of session (parallel) but we could see the quantities and qualities of conference's contents from the CD of conference that distributed in the first day. Finally, from the viewpoint of international networking target as the common target of international conference, it was reached in general. Various interesting and frontier researches were performed by invited and contribution speakers from many countries included IAEA and a lot of fruitful discussions were performed. In addition, as my opinion for this conference, the relation of Japan-Indonesia in the field of nuclear science and engineering becomes tighter because most invited and contribution speakers from outside of Indonesia were from Japan. In general, I satisfied and had positive impression with this ICANSE 2007.