

Experimental Benchmarks on Accelerator-Driven System at Kyoto University Critical Assembly

Song Hyun Kim^{1,*}, Masao Yamanaka¹ and Cheol Ho Pyeon¹

¹*Nuclear Engineering Science Division, Research Reactor Institute, Kyoto University,*

Asashiro-nishi, Kumatori-cho, Sennan-gun, Osaka 590-0494, Japan

**E-mail: kim@rri.kyoto-u.ac.jp*

Abstract

The accelerator-driven system (ADS) has been developed for producing energy and for transmuting minor actinides and long-lived fission products. In the Kyoto University Research Reactor Institute, for the feasibility study of ADS, various experiments and numerical analyses related to ADS have been conducted with the combined use of the Kyoto University Critical Assembly (KUCA) and two types of accelerators. In this presentation, the feasibility study on ADS is introduced as follows; (1) outline and research activity of ADS in Japan; (2) specification of KUCA ADS; (3) ²³⁵U-loaded ADS experiments with 14 MeV neutron; (4) ²³⁵U-loaded ADS experiments with 100 MeV proton; (5) ²³²Th-loaded ADS experiments with 14 MeV neutrons or 100 MeV protons; (6) uncertainty study of solid Pb-Bi with 100 MeV protons. In addition, the future plans on the ADS experimental studies at KUCA are discussed.