atom indonesia

Exist for publishing the results of research and development in nuclear science and technology

EDITORIAL

Dear reader, with great pleasure we provide you the second issue of Atom Indonesia in 2016, namely Volume 42, No.2 (2016). The number of articles submitted to Atom Indonesia has significantly increased for the past years, therefore only the articles that fulfill our requirements and qualifications will become our priority. Atom Indonesia has been trying to improve its services by keeping publication on time and also providing articles in press. We have used also the Digital Object Identifier (DOI) for each article.

As previously mentioned, Atom Indonesia has been indexed by Google Scholar, DOAJ, CROSS REF, ISJD, and INIS IAEA. By this indexing, it is expected that Atom Indonesia becomes better known among the researchers from around the world and easier to access. It would also increase the impact factor of the journal. Indonesian Institute of Science (LIPI) has approved our journal as one of the international reputed journals. This information can be found in the Atom Indonesia website, http://aij.batan.go.id. A further target of our journal is to be indexed by Scopus. Therefore, we have submitted the application to Scopus at the end of November 2015. Presently, this journal is under review.

The Atom Indonesia Vol. 42 No.2 (2016) contains seven articles discussing various applications of nuclear science and technology, such as the use of the FISH technique to analyzechromosome aberration induced by ionizing radiation; estimation of reactor accident severity using computational method based onradiation doses measurement in the environment; development of a gamma ray detector with an LuAG:Pr scintillator; the effectiveness of gamma irradiation in microbial reduction; advanced materials study by neutron triple-axis spectrometer; simulation of passive safety system in the AP1000; and the investigation of ^{137}Cs contamination in the soils of Aceh after the 2004 tsunami. The contributors of those articles came not only from various national institutions and universities, but also from international institutions.

"The Investigation of ^{137}Cs Contamination in Soils of Aceh after the Tsunami" was explored by Syarbaini and G. Suhariyono. ^{137}Cs is one of the most common radionuclides used for analyzing man-made radioactive contamination in the environment beside 90Sr. The Aceh Province suffered the greatest mortality, with widespread destruction extending along more than 1000 km of coastline on 26 December 2004 due to tsunami. The disaster affected areas about 220 km long and around 5 km wide along the coastlines of Aceh and North Sumatra. The purpose of this study was to investigate the artificial radioactivity from^{137}Cs in soil samples that have been collected from various locations along the areas affected by tsunami in Aceh.

"The Effect of Gamma Radiation on Microbial Content and Curcuminoids of Curcuma amada Roxb. Rhizomes" was investigated by D. P. Rahayu, F. C. Saputri, and D. Darwis. A collaborative works between National Nuclear Energy Agency and the University of Indonesia, it explains that the microbial contamination in the rhizomes of medicinal plants including Curcuma amada rhizomes is generally high since rhizomes are bottom parts of a plant that grow within the soil. Gamma irradiation is one of the methods to reduce microbial contamination in medicinal plants. In this research, the effectiveness of gamma irradiation in microbial reduction and its effects to curcuminoid contents was determined by irradiating Curcuma amada rhizomes at doses of 5 and 10 kGy.

N. Nagara has written "ENC Measurement for ASIC Preamp Board as a Detector Module for PET System". In this article, the author has developed a gamma ray detector with an LuAG:Pr scintillator and an avalanche photodiode as a detector for a positron emission tomography (PET) system. Studies have been performed on the influences of gamma irradiation on application-specific integrated circuit (ASIC) preamp boards used as a detector module.These front-end systems must meet the requirements for standard positron emission tomography (PET) systems.

C o n t e n t s