KAESAZ-1: BNCT at Tehran Research Reactor

Y. Kasesaz, M. Golshanian, E. Bavarnegin, A. Haeri, M.S. Hosseinipanah, S. Baradaran, A. Ezzati

Nuclear Science and Technology Research Institute, Atomic Energy Organization of Iran, End of North Karegar Avenue, Tehran, IRAN.
ykasesaz@aeoi.org.ir

This paper presents all current research activities that were performed during recent years as well as the prospective of BNCT research at Tehran Research Reactor (TRR) including neutron beam design base on TRR thermal column, the construction of medical head phantom, and some simulations about biological dose during BNCT. The theoretical and experimental investigations show that TRR has a very good potential to consider it as a pilot facility for BNCT research in the Middle East and could be facilitated for clinical applications. In this way, there are two different approaches which are using fission convertor method in the thermal column or facilitating the TRR medical room. Each of these two approaches have its benefits and challenges which should be analyzed carefully. Also there are some efforts about the synthesis of Boron drugs which is presented in this paper. We hope to start the first biological experiment in this year.