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Simulation of tangential collimator for new potential neutron radiography system at Triga Mark II Puspati research reactor

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A Monte Carlo simulation of neutron beam on the neutron radiography collimator utilizing at the tangential beam channel of the Reactor TRIGA MARK II PUSPATI (RTP) at Malaysian Nuclear Agency was performed using the MCNPX and SIMRESS computer code. The aim of this work is to design the best geometry and to choose the best materials selection for thermal neutron and filtering photon radiation so as to obtain a uniform neutron beam, high L/D ratio and a maximum thermal neutron flux at the object plane. This paper describes the characteristic of neutrons and photons profiles and of the newly designed tangential collimator based on the simulation result.

Keywords: MCNPX, SIMRES, neutron and photon fluxes, tangential collimator and neutron radiography

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