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Monte Carlo simulation of an upgraded PGNAA shielding at TRR-1/M1

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This paper describes the upgraded collimator and shielding design principle for the prompt gamma neutron activation analysis (PGNAA) facility at Thai research reactor. The neutronic calculations with different geometry and material conditions are simulated using the Monte Carlo code. Then, the optimal parameters to maximize the thermal neutrons and minimize background radiations are obtained. The good results obtained here will be used for the upgraded PGNAA facility. It provides significant contribution to the system to be available in various applications.

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