

Design of a Coupling of a PADC Detector and a PE Radiator for Neutron Radiography

Vendula Filová ^{1, a)}, Branislav Vrbán ^{1, b)}, Pavol Blahušíak ^{2, c)}, Štefan Čerba ^{1, d)},
Jakub Lúley ^{1, e)}, Otto Glavo, ^{1, f)} and Vladimír Nečas ^{1, g)}

¹*Slovak University of Technology in Bratislava, Faculty of Electrical Engineering and Information Technology,
Institute of Nuclear and Physical Engineering, Ilkovičova 3, 81219 Bratislava, Slovakia.*

²*Slovak Institute of Metrology, Karloveská 63, 842 55 Bratislava, Slovakia.*

^{a)} Corresponding author: vendula.filova@stuba.sk

^{b)} branislav.vrbán@stuba.sk, ^{c)} blahusiak@smu.gov.sk, ^{d)} stefan.cerba@stuba.sk, ^{e)} jakub.luley@stuba.sk,

^{e)} otto.glavo@stuba.sk, ^{f)} vladimir.necas@stuba.sk

Abstract. Fast neutron radiography is a technique with high potential in the inspecting of large industrial components. The PADC material with its high sensitivity to fast neutrons and light ions could be a promising imaging technique. This work is focused on the study of the combination of PADC detectors with radiators of various material and thickness. The results of Monte Carlo simulations are compared to the experimental results. The findings will be applied in the follow up experiments, aiming to demonstrate the PADC material usage in fast neutron radiography.