

International Conference on
ASTRONOMY, ASTROPHYSICS AND ASTROBIOLOGY
May 30-31, 2018 Osaka, Japan

Radiological protection for newly built experimental setup with low energy X-ray beams

Joanna Czub¹, Janusz Braziewicz¹, Adam Wasilewski², Anna Wysocka-Rabin² and Andrzej Wójcik³

¹Jan Kochanowski University, Poland

²National Centre for Nuclear Research, Poland

³Stockholm University, Sweden

The new experimental setup for radiobiological studies using low energy X-ray beams emitted by diffraction X-ray tube (C-tech tube, no. 9430 922 00291, PANalytical, Holland) created at Jan Kochanowski University, Institute of Physics, Kielce, Poland. Radiological protection for this system was determined, thanks to simulation and measurements. Monte-Carlo (MC) calculation was performed using Fluka 2011 version 2c.4 code. Measurements were done using data registered by semiconductor microspectrometer SPEC500 (Ritec Ltd., Latvia). MC calculation and measurements, showed effective dose values around experimental setup. The registered total effective dose was equal to 3.4 mSv per year. This value is lower than 6 mSv per year which means that new experimental system fulfills expectations for radiological devices in Poland.

Biography

Joanna Czub works as a Physicist at Jan Kochanowski University in Kielce, Poland. She has experience in interdisciplinary research on the borderline of physics and biology, particularly in radiobiology.

czub@ujk.edu.pl

Notes: