

**Seminarium Studium Doktoranckiego NCBJ**  
**Poniedziałek, 8 października, godzina 9:00, Sala 22 w NCBJ, Hoża 69**

**Speaker: Paweł Kowalski (Studium Doktoranckie NCBJ)**

**Title: Design and optimization of the strip PET scanner based on plastic scintillators**

Abstract: The novel whole-body PET system based on plastic scintillators is developed by the J-PET Collaboration. It consists of plastic scintillator strips arranged axially in the form of a cylinder, allowing the cost-effective construction of the total-body PET. In order to determine properties of the scanner prototype and optimize its geometry, advanced computer simulations using the GATE software were performed.

The spatial resolution, the sensitivity, the scatter fraction and the noise equivalent count rate were estimated according to the NEMA norm as a function of the length of the tomograph, number of the detection layers, diameter of the tomographic chamber and for various types of the applied readout. Results of simulations of these characteristics will be presented during the talk.