

Announcement for PhD position (deadline 28 August 2022)

The research group of Prof. Paweł Moskal invites applications for a PhD position in the project entitled „Total-body Jagiellonian Positron Emission Tomography - development of image-driven biomarkers”.

The minimum requirements for candidates are:

- Experience in the work with radiation detectors, in the PET image reconstruction, in data analysis, statistics and computer programming, and master's degree in the field of Natural Sciences, Engineering, Computer Science, Mathematics or related field of science.
- Good knowledge of English (spoken and written)

The successful applicant is expected to take part in the following research tasks:

Design, construction, commissioning, performance monitoring and maintenance of the frontal detector for enhancing the sensitivity of brain imaging. Elaboration of the data acquisition synchronization system for the frontal detector enhancing the sensitivity of brain imaging and TB-J-PET scanner. Calibration of the whole detection system: TB-J-PET together with frontal detector. Elaboration, computer implementation and validation of a method for 3D static SUV image reconstruction with the total-body J-PET and frontal detector. Elaboration, computer implementation and validation of a method for whole-body multi-organ dynamical imaging with the total-body J-PET and frontal detector. Elaboration, computer implementation and validation of the method for kinetic model-based parametric imaging with the total-body J-PET and frontal detector. Elaboration of the method for positronium imaging using total-body J-PET and frontal detector. Development, computer implementation and validation of methods for (i) identification of gamma quanta originating from deexcitation and annihilation, (ii) reconstruction of the times and positions of positronium production and decay, (iii) suppression of events with accidental coincidences and scattering in the imaged object, (iv) reconstruction of positronium life-time on a voxel-by-voxel basis and selection of events originating from (a) direct annihilation of e^+e^- , (b) decay of para-positronium, (c) decay of ortho-positronium. Imaging of phantoms and humans with the total-body J-PET and frontal detector.

The candidates should submit applications containing the following documents

1. Short application including motivation letter (maximum two pages),
2. Scientific CV including list of publications
3. At least one letter of recommendation (preferentially send directly to P. Moskal via e-mail)

All documents should be submitted in the pdf format to the address: p.moskal@uj.edu.pl

The position will start on 1st October 2022
and will be available for one year,
and it may be renewed later by mutual agreement.

The stipend amounts to 3000 PLN per month (brutto-brutto).

The deadline for submission of applications is 28 August 2022.

The candidates will be informed (by email) of the result of the selection by 3rd of September 2022.