JAGIELLONIAN UNIVERSITY IN KRAKÓW

J-PET

CENTER FOR THERANOSTICS

Jagiellonian Positron Emission Tomography
J-PET

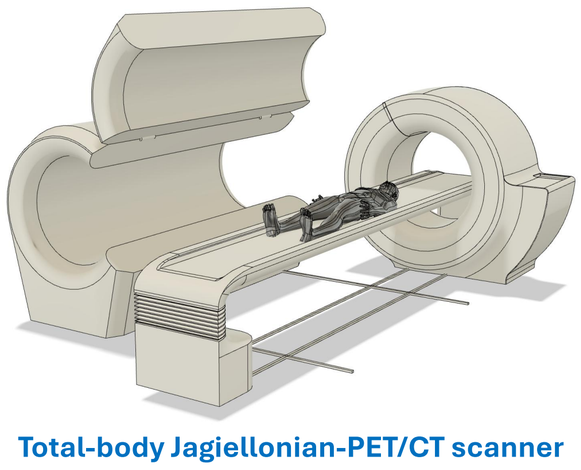
- **Research challenge:** low availability of positron emission tomography (PET) diagnostics in low- and medium-income countries.
- **Breakthrough solution:** develop a technology for cost-effective PET based on plastic scintillators, which are cheap and easy to shape. The J-PET scanner enables new PET imaging modalities:

1) total-body static and dynamic imaging
2) multi-isotope imaging
3) positronium lifetime imaging
4) quantum entanglement imaging
5) brain imaging with higher resolution
6) beam therapy monitoring.

Project development

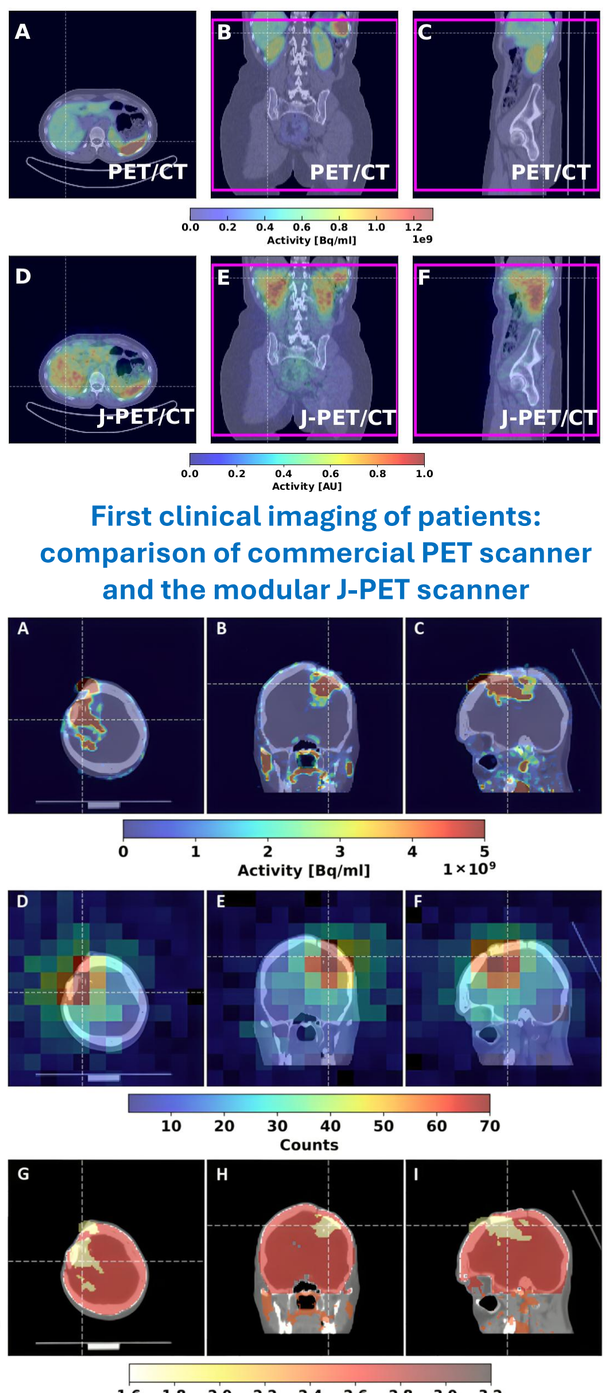
Timeline of the Jagiellonian-PET scanner

Modular Jagiellonian-PET scanner with 500 mm field-of-view



Total-body Jagiellonian-PET/CT scanner with 2000 mm field-of-view

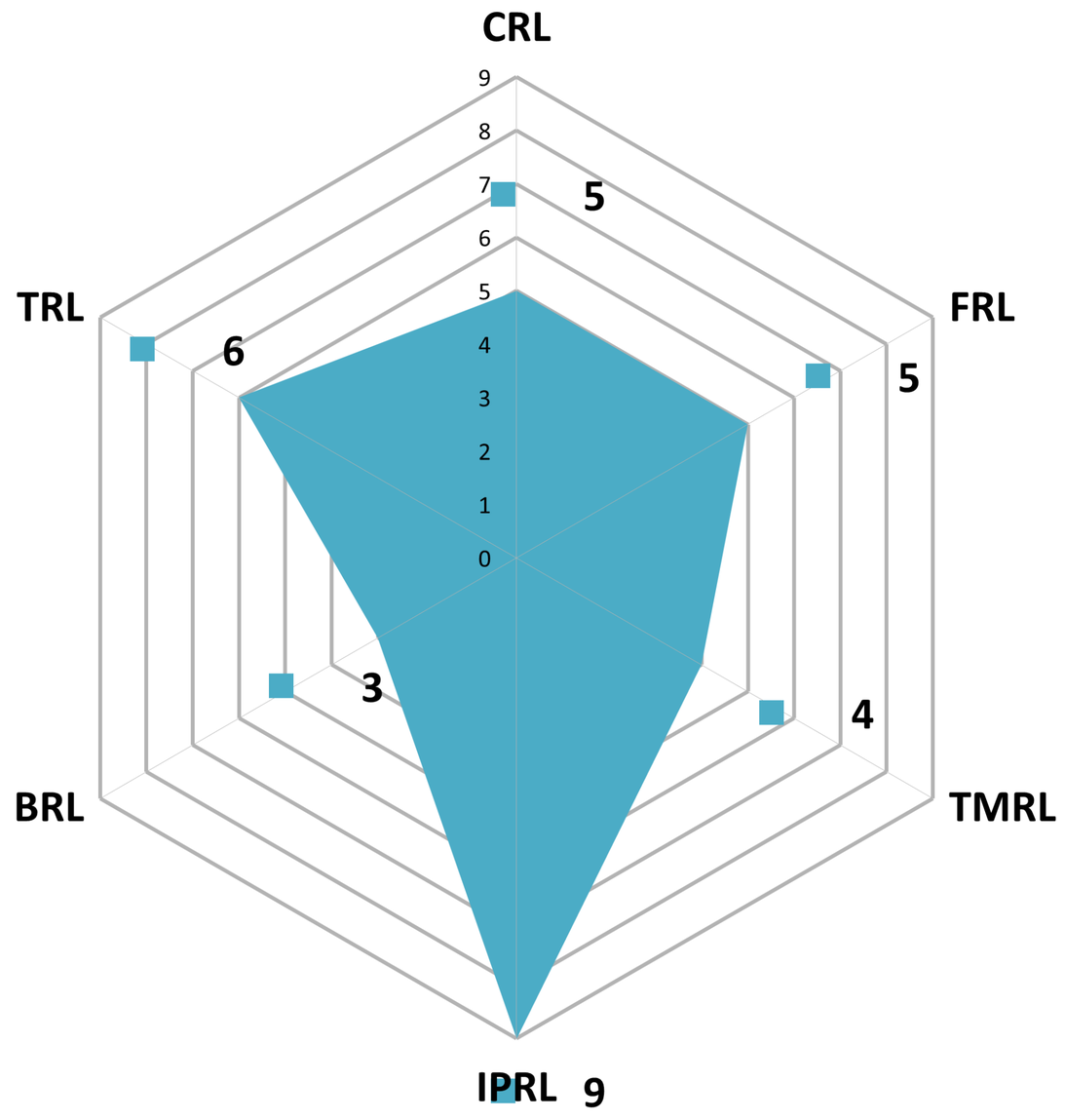
Validation and results



First clinical imaging of patients: comparison of commercial PET scanner and the modular J-PET scanner

Standard PET/CT images of the head of a patient with glioblastoma obtained with commercial PET scanner (A-C); Positron annihilation images acquired with the J-PET tomograph (D-F); Positronium images from the J-PET shown in transverse (G), coronal (H), and sagittal (I) planes

Readiness Levels



We are looking for:

- **Academic cooperation**: common research, projects and publications in the field of nuclear medicine, medical physics and Theranostics.
- **Partnership**: industry validation with companies developing medical scanners.
- **Commercialization**: license, co-development, or investment.

Core Team: expertise in medical physics, electronic engineering, radiation detector assembling, image reconstruction.

IP Status: patents US 8,859,973; US 8,969,817; US 9,798,021; US 9,804,206; US 9,804,274; US 9,804,279; US 9,851,456; US 10,007,011; US 10,042,058; US 10,088,581; US 10,329,481; US 10,339,676; US 10,520,568; US 10,670,737; US 11,137,505; US 12,186,124.

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POLAND IN SILICON VALLEY CENTER

TOP 1000 INNNOVATORS of POLAND in SILICON VALLEY
December 2025

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Ministry of Science and Higher Education Republic of Poland

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https://koza.if.uj.edu.pl/pet/