

Project offers / Expressions of Interest from Jülich

Joint Research and Education Programme "Palestinian-German Science Bridge PGSB"
Forschungszentrum Jülich GmbH & Palestine Academy for Science and Technology

Contact Details of responsible host at Forschungszentrum Jülich

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Function*		Institute and homepage of institute*	
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Initial contacts at Palestinian university/universities (if available)

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 Dr. Isam Ishaq, Al-Quds University
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Thesis candidate(s) (if available)

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Project description*

Molecular imaging with Positron Emission Tomography (PET) is used to provide images of the function of the body by visualizing the distribution of pharmacologically active substances. The hosting institute, the Institute of Neuroscience and Medicine - Molecular Organization of the Brain (INM-2) of the Research Center Jülich is devoted to the investigation of the molecular basics of different functional systems in the healthy and diseased brain as well as their organisation in neuronal networks.

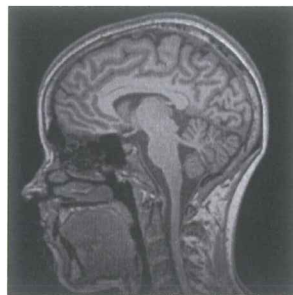
Our research interests involve the methodology for *in vivo* receptor imaging of brain function in humans and animals with PET and the combination with Computer Tomography (CT) and Magnetic Resonance Imaging (MRI), especially

- the development and validation of software algorithms and correction methods for high quality image reconstruction,
- strategies to improve image quantitation accuracy and outcome parameters of the imaging task,
- de-noising for low-count data,
- development of novel instrumentation for dedicated applications,
- simulation and modelling of PET components and systems

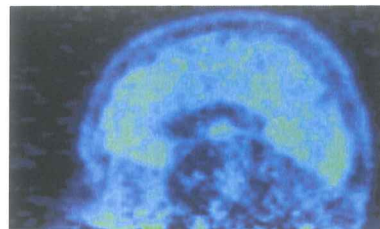
to deliver the best possible conditions for the analysis of the imaging data.

Within this portfolio there are several options for Master- and PhD-theses with a background in software development and mathematics, e.g. working with and contributing to existing open-source software packages or creating own software and algorithms.

We offer interdisciplinary education within a comprehensive scientific environment in an innovative field of biomedical research. As part of their education, PhD students are also required to participate in specified activities with a focus in the development of soft skills, e.g. how to prepare and give a talk, how to write a paper, how to write a grant application.



MRI image of the head



Corresponding PET image

Date*	Signature*
16.12.2016	

* required field