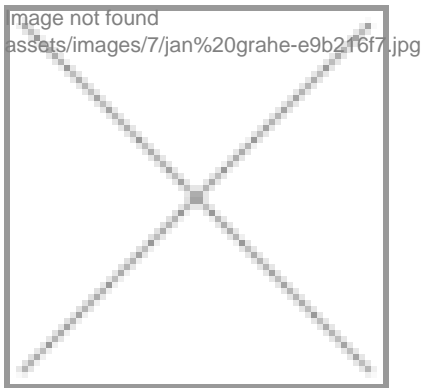


Fully-quantitative PET for improved diagnosis and therapy response monitoring in breast cancer

HOST INSTITUTION: *Philips Electronics Nederland B.V.*

Philips Research is one of the largest industrial Research organisations in the world, focusing on the area of Health Technologies. The mission of the Oncology Solutions department is to develop innovative concepts, systems, and solutions in oncology with focus on precision diagnostics, image-guided therapy, and information management solutions. In Oncology Solutions, the ESR works as part of a multi-disciplinary research team, collaborating with other functions in the markets and businesses.



DESCRIPTION OF THE PROJECT (ESR3 - Jan Grahe)

In this project, the ESR will develop a reconstruction framework, which expands an existing static reconstruction framework towards dynamic PET reconstruction. The proposed methodology will serve as a proof-of-concept for a scheduled product development of a next generation 4-dimensional reconstruction architecture with a specific focus on breast cancer diagnosis and therapy response monitoring. The development of the method will be done using Monte-Carlo(MC) simulation with final evaluations using phantom data, clinical breast cancer data (PET/CT), and simultaneously acquired PET/MRI data from HYBRID partners using dynamic FES- and FDG-TOF-PET.

The research fellow appointed at Philips Healthcare (B10) will graduate from Rheinisch-Westfaelische Technische Hochschule (RWTH, PO11) Aachen under the formal supervision of Prof. Volkmar Schulz. With the beneficiary's offices being in Eindhoven (NL) close to Aachen, regular visits are easy to organise, to maintain sufficient information exchange and supervision/mentoring.