

# Seminar „Between physics, biology and medicine”

Organized by Department of Medical Physics  
and Department of Experimental Particle Physics and Applications, Institute of Physics JU

**Prof. Volkmar Schulz**

Institute for Experimental Molecular Imaging, RWTH-Aachen University

**„Future Directions of Combining Positron Emission Tomography  
and Magnetic Resonance Imaging”**

## Abstract

The combination of positron emission tomography (PET) with magnetic resonance imaging (MRI) is a promising tool due to the high complementarity of these two imaging techniques. Commercial hybrid whole body scanners have been introduced during the last decade by nearly all big vendors. Technical challenges such as attenuation correction and MR-compatible detector technology have been an active area of research for the last decades. The overall system design of PET and MRI was motivated by an earlier combination of PET with Computed Tomography (CT) as a whole-body imaging modality. In typical clinical practice, however, MRI is mostly used to image specific organs rather the entire body. In addition, unlike CT, MRI offers a wide range of very special contrasts for almost all organs. In order to take advantage of this diversity of MRI, we have developed a new MR-compatible PET-detector platform with which we will initiate a paradigm shift from full-body to special PET/MRT scanners. The development and application of this technology will be presented during the presentation.

**when: 10<sup>th</sup> December 2019, 4:15 p.m.**

**where: A 1-08 (Aula), FAIS, Łojasiewicza 11**

