PET-MRI-dedicated detector for breast cancer diagnosis and follow–up

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Abstract: Breast cancer is the most common type of cancer for women continuing to be one of the main causes of cancer death. Despite the advanced developments in modern medicine and contemporary targeted therapies, the stage of breast cancer at the time of diagnosis is still the most important driver of patient survival, which underlines the persisting need for an improved early diagnosis of this disease.

The EU H2020 project HYPMED will develop a hybrid system combining two medical imaging modalities (MRI and PET) for improved diagnosis of breast cancer and personalised therapy control. The project’s ambition is to develop an local MR-transparent PET scanner with a dedicated radiofrequency coil. The hybrid device can be connected to a regular clinical MRI scanner transforming the MRI into a high-resolution PET/MRI hybrid system. The talk will give an update on the actual developments within this project. In particular, advantages and challenges of the integration of both modalities for the targeted device will be shown.