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# PET2020: a one compact and cost-efficient high resolution Body PET scanner

*Thursday, 27 June 2019 09:30 (25 minutes)*

The aim of the SphynX project is to build and explore the potential of a new unique integrated High resolution Total Body Time-of-flight Positron Emission Tomography (PET2020) scanner as a research tool for physiology in plants, large animals and humas. The system is oriented towards visualizing and understanding molecular processes in large living subjects (1-2 m length and 65 cm diameter) . This is a completely new PET system pushing the technical limits of detection and spatial resolution for in-vivo molecular imaging of large living subjects. These goals are met by switching to monolithic detector technology with excellent spatial resolution and Depth-of-Interaction.

Because of its very high sensitivity it can also be used for Ultra Low dose imaging. The system will be the first to visualize water and CO2 transport in complete plants of this size and will be used to study influence of climate change and stress factors. For veterinary research it will be used to monitor the effects of therapies like psychofarmaca and neuromodulation. Larger animals like cats, dogs, rabbits and pigs are interesting natural model for human disease as these species develops disorders comparable with human diseases.

**Primary author:** VANDENBERGHE, Stefaan

**Presenter:** VANDENBERGHE, Stefaan

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