

Meet the NOCI Twente PhD candidates

Optical coherence tomography as an imaging tool to evaluate organ-on-chip properties



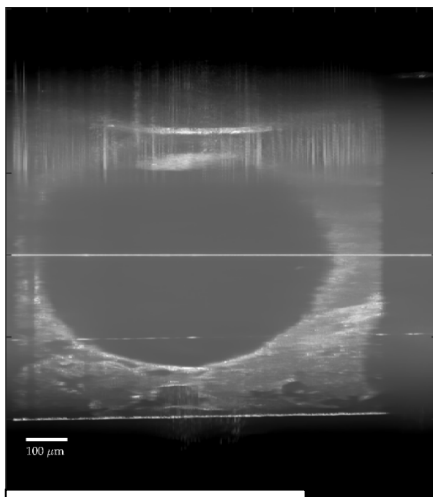
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Assessment of organ-on-chips (OoC) still requires the development of novel, non-invasive qualitative and quantitative techniques. Optical coherence tomography (OCT) is a medical imaging technique used to evaluate and monitor different pathologies in the human body. OCT has the advantage of being a non-invasive 3D imaging technique, meaning that it requires no prior pigmentation of the cells and is capable of producing volumetric tomograms with high-speed. Due to its non-invasive nature, OCT may provide a useful tool for monitoring the development of OoC. Therefore, the application of OCT for imaging OoC may provide deeper insights into biological cell behaviour through in-vivo imaging. Additionally, many extensions for OCT have been developed, increasing its use for functional imaging. Those extensions include structural imaging, oxygen saturation mapping, blood flow and haemoglobin quantification. The main focus of my research is, therefore, the application of OCT for analyzing the behaviour of organ-on-chips.

Find below a picture of an OoC imaged by OCT and a picture of a typical OCT system, similar to the one that used for the image.



OoC imaged by OCT

