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Glow with the flow: Quantifying blood flow and photoluminescence signal in biological tissue

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GLOW WITH THE FLOW

Glow With The Flow.

A thesis that contributes to the development of optical techniques to assess microcirculation functionality for the diagnosis, monitoring, therapy guidance and understanding of many diseases ranging from the onset of septic shock to the delivery of drugs to tumours. The first part of this thesis aims to develop a non-invasive technique to quantify microcirculatory blood flow velocity based on laser speckle flowmetry. The second part is devoted to the quantification of optical signals arising from photoluminescent upconversion nanoparticles for sensitive detection in biomedical tissues.

The combination of these techniques is particularly useful in the context of tumour therapy by providing information on tumour angiogenesis, enabling molecular contrast and delivering nanoparticle-based drugs.

GLOW WITH THE FLOW

Quantifying Blood Flow and Photoluminescence Signal in Biological Tissue

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GLOW WITH THE FLOW: QUANTIFYING BLOOD FLOW
AND PHOTOLUMINESCENCE SIGNAL IN BIOLOGICAL TISSUE

Annemarie Nadort

Glow with the flow: Quantifying blood flow and photoluminescence signal in biological tissue
PhD thesis, University of Amsterdam, The Netherlands

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GLOW WITH THE FLOW: QUANTIFYING BLOOD FLOW
AND PHOTOLUMINESCENCE SIGNAL IN BIOLOGICAL TISSUE

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aan de Universiteit van Amsterdam
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Annemarie Nadort

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