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

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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

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

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus
prof. dr. D.C. van den Boom
ten overstaan van een door het College voor Promoties ingestelde
commissie, in het openbaar te verdedigen in de Agnietenkapel
op woensdag 1 april 2015, te 14:00 uur

door

Annemarie Nadort

geboren te Zaanstad
PROMOTIECOMMISSIE

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