



March 11-13, 2015
LantarenVenster, Rotterdam

Conference Program

Day 1

08:30 *Registration and coffee*

09:00 - 09:10 **Opening**

Antonius FW van der Steen, NL - *Optics in Cardiology in 2015*

09:10 - 09:50 **Keynote 1: Netherlands Heart Foundation lecture**

Michael Hamblin, US - *Healing with light*

Chair: Evelyn Regar

09:50 - 10:45 **Live case**

OCT and NIRS-IVUS for plaque characterization

Chairs: Raimund Erbel, Giulio Guagliumi, Juan Luis Gutierrez Chico, Lorenz Raeber and Rob Wilensky

Poster break

11:15 - 12:45 **OCT news**

Gary Tearney, US - *Future technology advances in intravascular OCT*

Arjun Desai, US - *Early experiences crossing coronary CTOs with the Ocelaris Catheter: OCT guided CTO crossing device*

Tianshi Wang, NL - *Heartbeat OCT*

Hector Garcia Garcia, NL - *OCT in the core lab: putting resolution to work*

Jouke Dijkstra, NL - *Automatic bioresorbable vascular scaffold strut detection in IVOCT pullback runs*

Giulio Guagliumi, IT - *Coronary intervention guidance with OCT*

Chairs: Ton van Leeuwen and Rob Wilensky

Lunch and posters

14:00 - 15:30 **Optics in cardiac electrophysiology**

Tamas Szili Torok, NL - *Outstanding problems and therapeutic options in electrophysiology*

Emilia Entcheva, US - *Cardiac optogenetics*

Michael Jenkins, US - *Optical pacing of the heart*

Boris Schmidt, DE - *Laser-based atrial ablation*

Richard Bouchard, US - *Cardiac ablation monitoring by photoacoustic imaging*

Chairs: Hans Bosch and Natasja de Groot

Poster break

16:00 - 17:15 **25 years of intravascular imaging in Rotterdam**

Klaas Bom, NL - *The prehistory: IVUS 1971-1989*

Jurgen Ligthart, NL - *Practical imaging with IVUS and OCT*

Raimund Erbel, DE - *25 years of intravascular imaging: Clinical and scientific impact*

Chair: Antonius FW van der Steen

Day 2

09:00 - 10:30 **Optical sensing and imaging**

Chairs: Takashi Akasaka and Brett Bouma

Roberto Diletti, NL - *Optical sensing in clinical practice - Thoraxcenter experience with catheter-based FFR*

Jenny Dankelman, NL - *Optical sensors in minimally invasive instruments*

Adrien Desjardins, GB - *All-optical intracardiac echocardiography*

Seemantini Nadkarni, US - *Sensing and imaging of coagulation*

David Sampson, AU - *OCT elastography, on a catheter?*

Poster break

11:00 - 11:45 **Live case**

Chairs: Carlo Di Mario, Roberto Diletti, Nieves Gonzalo, Nicolas Meneveau and Arne Schwindt

Optics guided interventions: imaging and sensing

11:45 - 12:05 **Working Group for Intravascular OCT Standardization and Validation**

Chairs: Evelyn Regar and Gary Tearney

Takashi Akasaka, JP - *Where we are and where we are going - WG-OCT*

12:05 - 12:50 **Keynote 2: COEUR lecture**

Chair: Takashi Akasaka

Rob Wilensky, US - *2025: The end of invasive imaging and why that did not happen*

Lunch and posters

14:15 - 15:45 **Characterization of atherosclerosis**

Chairs: Carlo Di Mario and Gary Tearney

Pieter Kruizinga, NL - *Photoacoustic imaging of carotid artery atherosclerosis*

Yoshifumi Saijo, JP - *Photoacoustic microscopic imaging of gold nanorod phagocytosing macrophages*

Sean Madden, US - *Cap thickness and thrombus imaging with NIRS*

Brett Bouma, US - *Imaging the connective matrix and thrombus: PS-OFDI*

Takeyoshi Kameyama, JP - *A novel index of plaque attenuation derived from OCT compared with NIRS-IVUS*

Poster break

16:15 - 18:00 **Optics-guided interventions**

Chairs: Heleen van Beusekom and Lorenz Raeber

Arne Schwindt, DE - *Experience with the Ocelot system in peripheral vessels*

Elzbieta Pociask, PL - *The morphology of coronary saphenous vein graft stenosis – insight from OCT (OCTOPUS registry)*

Antonis Karanasos, NL - *Renal denervation - observations with OCT*

Carlo Di Mario, GB - *NIRS-IVUS imaging to optimize PCI outcomes*

Antonis Karanasos, NL - *Expanding the indications for bioresorbable scaffolds - lessons from OCT*

Nieves Gonzalo, ES - *OCT in acute coronary syndromes*

Day 3

09:00 - 09:45 **Keynote lecture 3**

Ron Heeren, NL - *Molecular pathology with imaging mass spectrometry*

Chair: Gijs van Soest

09:45 - 10:45 **Molecular and spectroscopic imaging**

Heleen van Beusekom, NL - *Pharmacokinetics of stent-borne drugs*

Christian Matthäus, DE - *In vivo characterization of atherosclerotic plaque-depositions by raman probe spectroscopy and OCT*

Verya Daechin, NL - *Intravascular photoacoustic imaging: acoustic and optical spectroscopy of plaque*

Giovanni Ughi, US - *First-in-human simultaneous microstructural/molecular imaging of coronary artery disease using dual-modality OCT and near-infrared autofluorescence (NIRAF)*

Chairs: Tom Johnson and Gijs van Soest

Poster break

11:15 - 12:45 **New clinical data – how do we show efficacy?**

Juan Luis Gutierrez Chico, ES - *How to get from images to statistics?*

Nicolas Meneveau, FR - *The DOCTORS trial*

Lorenz Raeber, CH - *High-intensity statin mediated vessel wall effects beyond atheroma burden reduction? Insights from a serial three-vessel OCT/IVUS study in STEMI patients (IBIS-4)*

Tom Adriaenssens, BE - *Very late stent thrombosis - OCT insights from a European Multi-center registry*

Jors van der Sijde, NL - *OCT safety in clinical practice*

Kilic Dogu, GB - *The Lipid-Rich Plaque study*

Chairs: Robert-Jan van Geuns and Jolanda Wentzel

12:45 - 13:00 **Poster awards, closing and adjourn**

Day 1

Ayla Hoogendoorn, Muthukaruppan Gnanadesigan, Nienke S. van Ditzhuijzen, Gijs van Soest, Jolanda J. Wentzel and Evelyn Regar

Thoraxcenter Dept. of Biomedical Engineering, Erasmus MC

OCT measured plaque free wall angle is indicative for plaque burden: a comparative study with IVUS

Yan Li, Xiaojing Gong, Chengbo Liu and Liang Song

Research Laboratory for Biomedical Optics and Molecular Imaging, Shenzhen Key Laboratory for Molecular Imaging, Institute of Biomedical and Health Engineering Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences

High-speed intravascular spectroscopic photoacoustic imaging at two spectral bands

Jiawen Li, Teng Ma, Earl Steward, Joseph Jing, Dilbahar Mohar, Qifa Zhou, Pranav M. Patel and Zhongping Chen

University of California, Irvine, USA

Ultrahigh speed IVUS-OCT for clinical use

Takeyoshi Kameyama, Muthukaruppan Gnanadesigan, Antonius FW van der Steen, Karen Witberg, Jurgen M. Ligthart, Antonios Karanasos, Nienke S van Ditzhuijzen, Evelyn Regar and Gijs van Soest

Sendai south hospital / Erasmus MC

A novel index of plaque attenuation derived from OCT compared with NIRS-IVUS

Xiaojing Gong, Yan Li, Delong Min, Yaqi Zhang, Riqiang Lin and Liang Song

Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences

Towards the development of intravascular photoacoustic/ultrasound/OCT tri-modality imaging technology with a 0.9-mm diameter catheter

Shengnan Liu, Jeroen Eggermont, Ron Wolterbeek and Jouke Dijkstra

Leiden University Medical Center

Factors which affect image intensities in IVOCT pullback runs

Hrebesh Subhash and Martin Leahy

TOMI, NBIPI, Physics Department, NUIG

Integration of photothermal imaging with intravascular optical coherence tomography

S.Koganti, A.Karanasos, I.Mazzanti, N. Patel, CD.Loder, T.Lockie, E.Regar and RD.Rakhit

The Royal Free Hospital and Institute of Child Health (UCL partners)

Culprit coronary arteries in stable and unstable coronary artery disease have more vulnerable features when compared to non-culprit arteries. A three-vessel Optical Coherence Tomography study

Ambereen Ahmed

A&M AssortedTherapy.LLC

Safety and efficacy of Regadenoson in myocardial perfusion imaging stress tests: A review

M.U. Arabul, H.M. Heres, M.C.M Rutten, F. N. van de Vosse and R.G.P. Lopata

Eindhoven Technical University

Optical absorbance measurements and photoacoustic evaluation of freeze-thawed polyvinyl-alcohol vessel phantoms

Day 2

Tianyi Wang, Austin McElroy, David Halaney, Deborah Vela, Edmund Fung, Shafat Hossain, Jennifer Phipps, Bingqing Wang, Biwei Yin, Marc D. Feldman and Thomas E. Milner

University of Texas at Austin

Dual-modality Fiber-based OCT-TPL Imaging System for Simultaneous Analysis of Plaque Structure and Composition

K.D. Egodage, S. Dochow, O. Chernavskaia, C. Matthäus, M. Schmitt and J. Popp

Leibniz Institute for Photonic Technology

Optical coherence tomography and Raman spectroscopy for better characterization of atherosclerotic plaque formation

Jennifer E. Phipps, Taylor Hoyt, Deborah Vela, Maximilian Buja, Thomas E. Milner and Marc D. Feldman

University of Texas Health Science Center San Antonio

Effects of light scattering on the diagnosis of thin-capped fibroatheromas in optical coherence tomography images

Trine Ørhøj, Troels Munck Nielsen, Maria Radu, Michael Maeng, Kari Saunamäki, Sanven Tu, Erik Jørgensen, Henning Kelbæk, Thomas Engstrøm, Jouke Dijkstra, Bettina Løjmand, Hans Henrik Tilsted, Jens F. Lassen, Evald H. Christiansen and Niels Ramsing Holm

Department of Cardiology, Aarhus University Hospital

Comparison of intravascular optical coherence tomography systems for assessment of coronary tissue, metallic stents, and bioresorbable vascular scaffolds. The Does Optical Coherence Tomography Optimize Revascularization (DOCTOR) Compare study

S Joseph and D Adlam

DEPARTMENT OF CARDIOVASCULAR SCIENCES

Development of cross-correlation analysis technique for microvascular flow imaging using clinical intravascular optical coherence tomography system

Johan W. Verjans, Eric A. Osborn, Giovanni J. Ughi, Marcella A. Calfon Press, Ehsan Hamidi, Antonios P. Antoniadis, Michail I. Papafaklis, Mark F. Conrad, Peter Libby, Peter H. Stone, Richard P. Cambria, Guillermo J. Tearney and Farouc A. Jaffer

Department of Cardiology, University Medical Center Utrecht

First clinical and intracoronary evaluation of indocyanine green for targeted near-infrared fluorescence imaging of high-risk atherosclerosis

G. Antonacci, R. Pedrigi, C. Paterson, R. Krams and P. Török

Department of Bioengineering, Imperial College London,

Confocal Brillouin microscopy for arterial mechanical imaging

H.M. Heres, M.Ü. Arabul, F.N. Van de Vosse, M.C.M. Rutten and R.G.P. Lopata

Eindhoven Technical University

Photoacoustics at the bedside

Guillaume Zahnd, Antonios Karanasos, Gijs van Soest, Evelyn Regar, Wiro Niessen, Frank Gijzen and Theo van Walsum

Biomedical Imaging Group Rotterdam, Departments of Radiology and Medical Informatics, Erasmus MC

Fibrous cap thickness quantification in intracoronary optical coherence tomography with dynamic programming segmentation

Min Wu, Krista Jansen, Ton van der Steen and Gijs van Soest

Erasmus MC

Two-wavelength identification of lipid in atherosclerotic plaques by intravascular photoacoustic imaging at 1.7 μ m

Jelle Schrauwen, Guillaume Zahnd, Jolanda Wentzel, Evelyn Regar, Theo van Walsum and Frank Gijzen

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Fusion of shear stress mapping and OCT for prediction of plaque rupture in human coronary arteries

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