



March 21-22, 2013
LantarenVenster, Rotterdam

Conference Program

Day 1

08:30 *Registration and coffee*

09:00 - 09:15 **Opening**
Felix Zijlstra, NL - *Opening of Optics in Cardiology 2013*

09:15 - 09:45 **Keynote - IOP Photonic Devices lecture** *Chair: Antonius FW van der Steen*
Vasilis Ntziachristos, DE - *Going deeper than microscopy: the optical imaging frontier in biology*

09:45 - 10:15 **Live case** *Chairs: Takashi Akasaka, Yasunori Ueda and Rob Wilensky*

Coffee and posters

10:45 - 12:15 **OCT: new technology and clinical applications** *Chairs: Carlo Di Mario and Chris Petersen*
Giulio Guagliumi, IT - *New clinical insights from OCT*
Martin Villiger, US - *Polarization-sensitive OCT*
Steve Davies, US - *Development of an OCT device for CTO crossing*
Francesco Prati, IT - *Clinical outcomes of OCT vs. angiography alone: The CLI-OPCI study*
Tianshi Wang, NL - *Superfast intravascular OCT*

Lunch and posters

13:30 - 14:00 **Keynote - Netherlands Heart Foundation lecture** *Chair: Evelyn Regar*
Gary Tearney, US - *Imaging cardiovascular pathophysiology – what's new in 2013*

14:00 - 15:00 **Spectroscopy: new technology and applications** *Chairs: Stanislav Emelianov and Felix Zijlstra*
Jim Goldstein, US - *Composition of target lesions by near-infrared spectroscopy*
Javier Jo, US - *Biochemistry of atherosclerotic plaques by endogenous fluorescence*
Krista Jansen, NL - *Intravascular photoacoustic spectroscopy*

15:00 - 15:45 **Live case** *Chairs: Carlo Di Mario, Marc Feldman and William Wijns*

Coffee and posters

16:15 - 18:00 **OCT-based treatment decisions** *Chairs: Evelyn Regar and William Wijns*
William Wijns, BE - *Bringing evidence-based medicine into the cath lab - lessons from FFR*
Takashi Akasaka, JP - *OCT in acute coronary syndrome*
Junya Shite, JP - *The role of OCT to guide treatment strategy in calcified lesions*
Antonis Karanasos, NL - *Long-term follow-up imaging with OCT: stent failure and neoatherosclerosis*
Kostas Toutouzas, GR - *Can OCT predict cardiac events?*
Chris Petersen, US - *What can industry do for guideline development?*

Day 2

09:15 - 09:45 **Keynote - COEUR lecture**

Carlo Di Mario, GB - *The role of optics in intracoronary imaging*

Chair: Gijs van Soest

09:45 - 11:00 **From multimodal diagnostics to image-guided therapy**

Stanislav Emelianov, US - *Contrast agents: therapeutic potential?*

Jolanda Wentzel, NL - *Insights from 3D reconstruction of invasive imaging*

Farouc Jaffer, US - *Combined near-infrared fluorescence/optical frequency domain imaging*

Nieves Gonzalo, ES - *How to match invasive imaging modalities*

Chairs: Gijs van Soest and Rob Wilensky

Coffee and posters

11:30 - 12:00 **Live case**

Chairs: Jim Goldstein, Giulio Guagliumi and Kostas Toutouzas

12:00 - 13:00 **Emerging topics**

Marc Feldman, US - *Bright spots in OCT: calcium or macrophages?*

Victor Yang, CA - *Intravascular OCT: Doppler, speckle, and ultrasound hybrid imaging*

Andrew Rollins, US - *Imaging the cardiac wall with OCT*

Chairs: Vasilis Ntziachristos and Yasunori Ueda

Lunch and posters

14:20 - 14:30 **Poster award**

Chair: Antonius FW van der Steen

14:30 - 16:00 **Optical imaging biomarkers**

Jim Muller, US - *Optical imaging biomarkers in clinical studies*

Fumiyuki Otsuka, US - *What we cannot see with current imaging: tissue changes, cell types, and artifacts*

Yasunori Ueda, JP - *Yellow plaque and thrombus in angioscopy*

Tom Johnson, GB - *Intravascular imaging in a human cadaveric heart model*

Rob Wilensky, US - *Development of imaging markers in small and large animal models*

Chairs: Takashi Akasaka and Jolanda Wentzel

16:00 - 16:15 **Closing**

Jim Muller, US - *Closing lecture*

Chairs: Evelyn Regar and Gijs van Soest

Day 1

SC Sandker, E Hondebrink and JG Grandjean

University of Twente, Enschede

Measuring Reperfusion of the Hand of Patients Undergoing Coronary Artery Bypass Surgery Using Laser Speckle Contrast Analysis: an Objective Allen's Test

Xiaosong Bai, Jiaxiang Zheng, Riqiang Lin, Xiaojing Gong and Liang Song

Shenzhen Institutes of Advanced Technology

Intravascular Optical-resolution Photoacoustic Microscopy

Stylianos A. Pyxaras, Shengxian Tu, Emanuele Barbato, Eric Wyffels, Johan H.C. Reiber and William Wijns

Cardiovascular Center Aalst

Co-registration of Fractional Flow Reserve and Optical Coherence Tomography with the use of a Three-Dimensional Angiographic roadmap: an opportunity for optimization of complex percutaneous coronary interventions

Jiawen Li, Xiang Li, Dilbahar Mohar, Aidan Raney, Joseph Jing, Abbey Johnston, Matthew Brenner, Qifa Zhou, Pranav M. Patel and Zhongping Chen

Beckman laser institute

Fully integrated ultrasound and optical coherence tomography system for in vivo intracoronary imaging

Pieter Kruizinga, Frits Mastik, Nico de Jong, Antonius FW van der Steen and Gijs van Soest

Erasmus MC

Parameter study for photoacoustic imaging of the human carotid artery

Christos V. Bourantas, Michail I. Papafaklis, Lambros Athanasiou, Fanis G. Kalatzis, Katerina K. Naka, Panagiotis K. Siogkas, Dimitrios I. Fotiadis, Charles L. Feldman, Peter H. Stone and Lampros K. Michalis

Erasmus MC

Simplified and Geometrically Accurate Three-Dimensional Coronary Artery Reconstruction Using Intravascular Ultrasound based imaging and Angiographic Data: Implications for Widespread Assessment of Endothelial Shear Stress in Humans

Christian Matthäus, Sebastian Dochow, Norbert Bergner, Annika Lattermann, Christoph Krafft, Bernhard R. Brehm and Jürgen Popp

Institute of Photonich Technology

In vivo Characterization of Atherosclerotic Plaque-Depositions by Raman Probe Spectroscopy

A. Wang, J. Eggermont, N. Dekker, J.H.C. Reiber and J. Dijkstra

LUMC

Semi-automatic assessment of the stent cell size in IVOCT images

Jurgen Ligthart, Felix Zijlstra and Karen Witberg

Erasmus MC

Stentdeformation visualized with OCT

Javier Jo, Jesung Park, Paritosh Pande, Sebina Shrestha, Brian Walton and Brian Applegate

Texas A&M University

Simultaneous High-Resolution Morphological And Biochemical Optical Imaging Of Atherosclerosis

Wenjuan Qi, Rui Li, Ruimin Chen, Lidek Chou, Gangjun Liu, Jun Zhang, Qifa Zhou and Zhongping Chen

University of California

Dynamic Phase-Resolved Acoustic Radiation Force Optical Coherence Elastography

Masanori Taniwaki, Sandro Baumgartner, Aris Moschovitis, Peter Wenaweser, Bernhard Meier, Stephan Windecker and Lorenz Räber

Bern University Hospital

Frequency and Type of Neoatherosclerosis Five Years After Drug-Eluting Stent Implantation: an Optical Coherence Tomography Study

Javaid Iqbal, Lorenz Räber, Maria Radu, Jouke Dijkstra, Henning Kelbaek, Masanori Taniwaki, Bindu Kalesan, Patrick W. Serruys, Stephan Windecker and Hector M. Garcia-Garcia

Erasmus MC

Software based quantitative assessment of fibrous cap thickness using optical frequency domain optical coherence tomography

M Gnanadesigan, S White, S Scotlock, G Ughi, T W Johnson, Antonius FW van der Steen and Gijs van Soest

Erasmus MC

Validation of an ex-vivo whole heart model for temperature and fixation effects using optical coherence tomography for atherosclerotic tissue characterization

N.S. van Ditzhuijzen, H.M.M. van Beusekom, O. Sorop, M. van den Heuvel, J. Ligthart, K. Witberg, F. Zijlstra, D.J. Duncker and E. Regar

Erasmus MC

Optical coherence tomography analysis of atherosclerosis development in swine fed a high-cholesterol diet

Day 2

G. J. Ughi, C. J. Van Dyck, T. Adriaenssens, V. Y. Hoymans, W. Desmet, C. J. Vrints and J. D'hooge

University Hospitals Leuven

Automatic quantification of stent neointimal coverage by intravascular optical coherence tomography

Stylianos A. Pyxaras, Shengxian Tu, Giulia Barbatì, Emanuele Barbato, Luigi Di Serafino, Frederic De Vroey, Gabor Toth, Fabio Mangiacapra, Gianfranco Sinagra, Bernard De Bruyne, Johan HC Reiber and William Wijns

Cardiovascular Center Aalst

Quantitative angiography and optical coherence tomography for the functional assessment of mild-to-moderate coronary stenoses: comparison with fractional flow reserve

Peter Hausinger, Gyula Szanto, Imre Ungi and Attila Thury

University of Szeged

Severe, persistent variant angina caused by intracoronary thrombus detected by optical coherence tomography

Christos V. Bourantas, Yaojun Zhang, Vasim Farooq, Roberto Diletti, Alexander Sheehy, Leif Thuesen, Dougal McClean, Bernard Chevalier, Stephan Windecker, Jacques Koolen, John Ormiston, Robert Whitbourn, Cecile Dorange, Richard Rapoza, Susan Veldhof, Yoshinobu Onuma, Hector M. Garcia-Garcia, and Patrick W. Serruys

Erasmus MC

Implication of the superficial plaque on neointimal formation after a bioresorbable vascular scaffold implantation. A serial optical coherence tomography study

Christopher D. Loder, David Dobarro, John G. Coghlan, Benjamin E. Schreiber, Clive Handler, Thomas Wagner, Jamanda Haddock and Chris P. Denton

Royal Free London NHS Foundation Trust

OCT as a rule out test for thromboembolism in pulmonary arterial hypertension: Insights from a OCT study of the pulmonary vascular tree

A. Wang, J. Eggermont, N. Dekker, J.H.C. Reiber, H. M. Garcia-Garcia and J. Dijkstra

LUMC

An automatic method for stent strut detection in IVOCCT images

A. Wang, J. Eggermont, J.H.C. Reiber, N. Dekker, P.J.H. de Koning and J. Dijkstra

LUMC

Semi-automatic assessment of side-branch coverage from stents in IVOCCT images

Masanori Taniwaki, Lorenz Räber, Hector M. Garcia-Garcia, Kari Saumanäki, Lene Holmvang, Aris Moschovitis, Robert Bonvini, Giovanni Pedrazzini, Maria D. Radu, Giulio G. Stefanini, Ulf Landmesser, Peter Wenaweser, Marco Roffi, Henning Kelbæk and Stephan Windecker

Bern University Hospital

Safety & feasibility of three-vessel multimodality imaging in patients with acute ST-elevation myocardial infarction

Christos V. Bourantas, Michail I. Papafaklis, Anna Kotsia, Vasim Farooq, Takashi Muramatsu, Josep Gomez-Lara, Fanis Kalatzis, Katerina, K. Naka, Dimitrios I. Fotiadis, Cecile Dorange, Richard Rapoza, Hector M. Garcia Garcia, Yoshinobu Onuma and Lampros K. Mi

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Effect of the Endothelial Shear Stress on Neointimal formation following a Bioresorbable Vascular Scaffold Implantation: an Optical Coherence Tomography Study

Arjo J. Loeve, Jenny Dankelman and Paddy French

Delft University of Technology

Opto-mechanical couplings for fast rotational OCT-scanning for sub-millimeter size applications

Jianan Li, Fabio Feroldi, Jianhua Mo, Mattijs de Groot, Frank Helderma and Johannes F. de Boer

VU University Amsterdam

High Speed 3D Endoscopic Optical Frequency Domain Imaging Probe

W.J. Westerveld, S.M. Leinders, J. Pozo, K.W.A. van Dongen, M. Yousefi, N. de Jong, M.D. Verweij and H.P. Urbach

TU Delft

All-Optical Ultrasound Receiver in Silicon-on-Insulator Technology

Maria Radu, Lorenz Räber, Bindu Kalesan, Takashi Muramatsu, Henning Kelbæk, Jungho Heo, Erik Jørgensen, Steffen Helqvist, Vasim Farooq, Salvatore Brugaletta, Hector M. Garcia-Garcia, Peter Jüni, Kari Saunamäki, Stephan Windecker and Patrick W. Serruys

Erasmus MC

Coronary Evaginations Are Caused By Positive Vessel Remodeling And Are Nearly Absent Following Implantation Of Newer-Generation Drug-Eluting Stents: An Optical Coherence Tomography And Intravascular Ultrasound Study

H.M.M. van Beusekom, F. Zijlstra, E. Regar, K. Witberg, D.J. Duncker, N.S. van Ditzhuijzen, O. Sorop, J. Ligthart and N. Bruining

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Bioresorbable stent: serial measurements using optical coherence tomography - the impact of respiratory and cardiac movement

Jolanda Wentzel, Hans Schuurbiers, Heleen van Beusekom, Evelyn Regar and Frank Gijsen

Erasmus MC

Is fusion of OCT and MSCT suitable for 3D coronary artery reconstruction?

Takashi Muramatsu, Hector M. García-García, Il Soo Lee, Nico Bruining, Yoshinobu Onuma and Patrick W. Serruys

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Quantitative OFDI assessment of in-stent structures in STEMI patients: impact of imaging sampling rate

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