



April 6-7, 2017
LantarenVenster, Rotterdam

Conference Program

Day 1

09:00 - 09:10 *Opening of Optics in Cardiology 2017*

09:15 - 10:30 **Optical imaging and vascular biomechanics** *Chairs: Frank Gijsen and Jolanda Wentzel*

Paul Evans, GB - *Biomechanics in atherosclerosis and stents: mechanisms and clinical implications*

Steve White, GB - *Shear stress, OCT, plaque erosion and thrombus formation*

David Molony, US - *3D reconstruction of coronary arteries with OCT: how can we exclude segments corrupted by motion artifacts?*

Patrick Segers, BE - *Optimal deployment of biodegradable scaffolds*

Habib Samady, US - *Shear stress and scaffolds: clinical perspective from invasive imaging*

10:30 - 11:00 *Poster break*

11:00 - 11:45 **Dutch Heart Foundation Keynote Lecture**

Chair: Antonius FW van der Steen

Gary Mintz, US - *Intravascular imaging for plaque vulnerability - a critical appraisal*

11:45 - 13:00 **Image guided interventions**

Chairs: Brett Bouma and Evelyn Regar

Takashi Akasaka, JP - *OCT-guided PCI: insights from the OPINION trial*

Francesco Prati, IT - *OCT guided PCI: insights from the CLIO PCI trial series*

Niels Holm, DK - *Rationale and design of the OCTOBER trial*

Gary Mintz, US - *Establishing criteria for image-guided PCI: lessons from IVUS*

13:00 - 14:15 *Lunch and posters*

14:15 - 15:00 **Live case**

Chairs: Takashi Akasaka, Jacek Legutko, Jim Muller, Lorenz Raeber and Habib Samady

OCT and NIRS for plaque characterization

15:00 - 15:45 **Innovation in clinical practice**

Chairs: Takashi Akasaka and Gary Mintz

Jacek Legutko, PL - *How to implement innovation in clinical practice: professional society perspective*

Francesco Maisano, CH - *How to implement innovation in clinical practice: perspective of a head of cardiology department*

Patrick Serruys, NL - *The future of innovation in clinical practice: the Serruys fantasy: imaging, online flow and shear stress and plaque composition*

15:45 - 16:15 *Poster break*

16:15 - 17:45 **New diagnostic tools**

Chairs: Francesco Prati and Gijs van Soest

Adrien Desjardins, GB - *All-optical interventional ultrasound*

Martin van der Mark, NL - *Optical power and data for catheter-based imaging*

Juliana Hamzah, AU - *Improving diagnostic and therapeutic targeting of unstable atherosclerotic plaques (contributed talk)*

Julien Bec, US - *FLIm and IVUS see things that OCT and NIRS do not*

Brett Bouma, US - *Single-catheter OFDI-IVUS imaging: new technology for plaque and stent imaging*

Antonius FW van der Steen, NL - *Real-time in vivo intravascular photoacoustic imaging of coronary lipids*

19:00 *Conference dinner @ Prachtig*

Day 2

09:00 - 10:45 **Lipid-rich plaque imaging**

Chairs: Christine Hendon and Patrick Serruys

Jim Muller, US - *The Search for the Vulnerable Plaque - A Fool's Errand, or Success is Near*

Eric Boersma, NL - *Atheroremo-NIRS: Prognostic value for events*

Ron Waksman, US - *Prediction of coronary risk – insights from the international, multicenter LRP registry*

Tomasz Roleder, PL - *Plaque redistribution due to stenting - data from combined NIRS-IVUS imaging (contributed talk)*

Carlo Di Mario, GB - *Assessment of lipid-core plaque burden – ready for risk stratification in clinical practice*

Lorenz Raeber, CH - *PACMAN AMI, a Trial to assess vascular effects of PSCK9 Inhibition on coronary atherosclerosis by NIRS, IVUS and OCT*

10:45 - 11:15 *Poster break*

11:15 - 12:00 **Live case**

Chairs: Brian Courtney, Carlo Di Mario, Antonis Karanasos, Evelyn Regar and Ron Waksman

Live case: PCI guided by imaging and FFR

12:00 - 12:45 **COEUR Keynote Lecture**

Chair: Jim Muller

Wiro Niessen, NL - *Population imaging: how to make predictions when nobody is normal*

12:45 - 14:00 *Lunch and posters*

14:00 - 15:15 **Optics of the heart and muscle**

Chairs: Adrien Desjardins and Natasja de Groot

Daniel Razansky, DE - *Whole-animal imaging of cardiovascular disease models in vivo*

Christine Hendon, US - *Spectroscopy of intact and ablated myocardium*

Emilia Entcheva, US - *OptoDyCE as an automated system for high-throughput all-optical dynamic cardiac electrophysiology*

Daniël Pijnappels, NL - *Optogenetic control of cardiac electrical function*

Arif Elvan, NL - *Laser-balloon ablation for pulmonary vein isolation: steps to large-scale application*

15:15 - 15:45 *Poster break*

15:45 - 16:45 **OCT innovations**

Chairs: Brett Bouma and Niels Holm

Brian Courtney, CA - *Combined OCT-IVUS in vivo: new image contrast*

Antonis Karanasos, NL - *Polarization-sensitive OFDI first-in-human study*

Jouke Dijkstra, NL - *Attenuation and backscattering based tissue characterization in intravascular OCT pullback runs (contributed talk)*

Gijs van Soest, NL - *OCT tissue type imaging for plaque vulnerability*

16:45 - 17:15 **Closing lecture**

Chairs: Heleen van Beusekom and Gijs van Soest

Evelyn Regar, NL - *2001-2017: Intravascular OCT at sixteen*

17:15 *Adjourn and drinks*

Tianshi Wang, Tom Pfeiffer, Min Wu, Wolfgang Wieser, Gaetano Amenta, Wolfgang Draxinger, Antonius FW van der Steen, Robert Huber and Gijs van Soest

Erasmus MC

Thermo-elastic deformation imaging

Ayla Hoogendoorn, Annette M Kok, Eline MJ Hartman, Lorena Casadonte, Ilona Peters, Maaïke Visser-te Lintel Hekkert, Dirk-Jan Duncker, Antonius FW van der Steen, Frank J Gijsen and Jolanda J Wentzel

Erasmus MC

A pig model for advanced atherosclerosis: serial (non)invasive imaging, biomechanics and histology

Jovana Janjic, Frits Mastik, Merel Leistikow, Johan G Bosch, Antonius FW van der Steen and Gijs van Soest

Erasmus MC

Imaging with a single-element forward-looking steerable IVUS catheter using optical shape sensing

Kyohei Yamaji, Raffaella Maldonado, Alexios Karagiannis, Maria D Radu, Henning Kelbaek, Marco Roffi, Giovanni Pedrazzini, Lene Holmvang, Masanori Taniwaki, Patrick W Serruys, Hector M. García-García, Stephan Windecker and Lorenz Räber

Bern University Hospital

Optical Coherence Tomography versus Virtual Histology Intravascular Ultrasound for the Assessment of Thin-cap Fibroatheroma

Bu-Chun Zhang, Antonios Karanasos, Muthukaruppan Gnanadesigan, Gijs van Soest and Evelyn Regar

Xuzhou Medical University

Qualitative and quantitative evaluation of dynamic changes in non-culprit coronary atherosclerotic lesion morphology by optical coherence tomography

Shengnan Liu, Boudewijn PF Lelieveldt and Jouke Dijkstra

LKEB, Leiden University

The detection of guide-wire with 3D volume of depth-resolved attenuation and backscattering coefficients in the intravascular optical coherence tomography

Aleksandra Blachut, Maciej Pruski Jr, Adam Janas, Magdalena Michalak, Krzysztof Milewski, Piotr Buszman and Pawel Buszman

Center for Cardiovascular Research and Development American Heart of Poland

Characterization of restenotic tissue depending on the prevalence of neovascularization evaluated by optical coherence tomography in porcine artery model

Krzysztof P Malinowski, Elżbieta Pociask, Klaudia Proniewska, Kamila Kosińska, Magdalena Ślęzak, Jacek Jąkała, Wojciech Zasada, Łukasz Partyka and Grzegorz L Kaluza

Department of Automatics and Biomedical Engineering, AGH University of Science and Technology

Is there an advantage in analyzing every frame of the intracoronary OCT over the routine approach?

Shengnan Liu, Jeroen Eggermont, Ron Wolterbeek, Alexander Broersen, Carol AGR Busk, Helle Precht, Boudewijn PF Lelieveldt and Jouke Dijkstra

Leiden University Medical Center

Improved Bioresorbable Vascular Scaffold Detection by Compensating for the Effect of the Catheter Position on Image Intensities

Callum Little, Richard J Colchester, Tushar Kotecha, Malcolm C Finlay, Charles A Mosse, Sacha Noimark, Edward Z Zhang, Sebastien Ourselin, Paul C Beard, Ivan P Parkin, Ioannis Papakonstantinou, Christopher D Loder, Roby D Rakhit and Adrien E Desjardins

Royal Free Hospital

Vascular Imaging with All-Optical Ultrasound Imaging: A Preliminary Comparison with Optical Coherence Tomography and Electronic Intravascular Ultrasound

M Umit Arabal, Maarten Heres, Marcel Rutten, Marc van Sambeek, Frans van de Vosse and Richard Lopata

Eindhoven University of Technology

Characterization of plaque composition using multi-wavelength photoacoustic imaging

S Koganti, A Karanasos, D Eleftheriou, P Brogan, E Regar and RD Rakhit

Barts Heart Centre, Royal Free Hospital & UCL Institute of Cardiovascular Science

Association between circulating microparticles and optical coherence tomography derived coronary atherosclerotic plaque characteristics

S Koganti, A Karanasos, CD Loder, E Regar and RD Rakhit

Barts Heart Centre, Royal Free Hospital & UCL Institute of Cardiovascular Science

OCT characterisation of coronary atherosclerosis in a cohort of patients with non-ST elevation acute coronary syndrome and stable angina: Analysis on patient and artery level

S Latus, M Lutz, T Saathoff, N Frey and A Schlaefer

Hamburg University of Technology, Institute of Medical Technology

The quantitative effect of catheter bending on artery volume estimation for IVOCT

Nandini Bhattacharya, Mahsa Nemati and Paul Urbach

Delft University of Technology, Imaging Physics

Detection of heart rate in the presence of motion artifacts using dynamic laser speckle an in-vitro and in-vivo study

Martin Pekař, Martin B van der Mark and Jeannet van Rens

Philips Research & Erasmus MC

Optical Power and Data for Catheter-Based Imaging

Takeyoshi Kameyama, T Kubo and T Akasaka

Wakayama Medical University

NIRS-IVUS guided PCI: Successful and unsuccessful cases

Sophinose Iskander-Rizk, Pieter Kruizinga, Min Wu, Antonius FW van der Steen and Gijs van Soest

Erasmus MC

Visualization of ex-vivo RF ablation lesions using photoacoustic imaging.

Soren Aasmul, Yanlu Li, Matthieu Duperron, Ralf Schuler, Jinghao Zhu, Lee Carroll, Roel Baets and Mirko De Melis

Medtronic Bakken Research Center

Towards a compact multi-laser-beam device for cardiovascular screening

Nicolas Foin, Jaryl Ng, Shengjie Lu, Renick Lee, John Allen, Ivy Ang, Winston Shim, Ryo Torii, Heeraj Bulluck, Derek Hausenloy, Renu Virmani, Michael Joner and Philip Wong

National Heart Research Institute, National Heart Centre Singapore, Singapore

Evidence of the Impact of Stent Apposition and Strut Characteristic on the Neointimal Healing Process and Risk of Stent Thrombosis

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