optics in cardiology

December 1-2, 2011
LantarenVenster, Rotterdam

Conference program

Day 1
09:00-09:30: Registration and coffee

Opening
09:30 Felix Zijlstra, NL – Welcome address

Keynote lecture 1 *Chair: Gijs van Soest*
09:40 Patrick Serruys, NL – *3D OCT: an indispensable guide for percutaneous coronary intervention*

Session 1: Imaging basics *Chairs: Jim Muller and Joe Schmitt*
10:15 Ton van Leeuwen, NL – *Tissue optics*
10:30 Francesco Prati, Italy –*OCT in clinical practice*
10:45 Coffee break
11:15 Nico Bruining, NL – *Techniques for automated image analysis*
COEUR lecture:
11:30 Renu Virmani, USA – *Atherosclerosis: what imagers need to know*

11:45 **Live case transmission from the Thoraxcenter, Erasmus MC**
Panel: Marco Costa, Francesco Prati, Ulf Landmesser, Ik-Kyung Jang

12:30 Lunch and posters

Session 2: OCT in clinical studies *Chairs: Felix Zijlstra and Takashi Akasaka*
13:30 Marco Costa, USA – *OCT in clinical studies – an American perspective*
13:45 Ik-Kyung Jang, USA – *Creation of a large OCT registry: a tool for research and teaching*
14.00 Giulio Guagliumi, Italy – *What do we learn from OCT stent coverage?*
14.15 Evelyn Regar, NL – *The Terumo OFDI first in man trial*
14:30 Ulf Landmesser, Switzerland – *Terumo OFDI compared to EM and histology*

OCT state-of-the-art session *Chair: Jim Fujimoto*
14:45 Nate Kemp, USA – *What's cool in my console*
14:55 Joe Schmitt, USA – *Why my rig rocks*
15:05 Isao Mori, Japan – *The magic in my machine*

15:15 Coffee break

15:45 **Live case transmission from the Thoraxcenter, Erasmus MC**
Panel: Jim Goldstein, Johannes Rieber, Giulio Guagliumi, Renu Virmani

Session 3: Spectroscopy for detection of vulnerable plaque *Chairs: Brett Bouma and Sergio Waxman*
16:30 Gary Tearney, USA – *Raman spectroscopy*
16:45 Farouc Jaffer, USA – *Fluorescence spectroscopy*
17:00 Jim Goldstein, USA – *Clinical evaluation of Lipiscan*

Session 4: Non-coronary OCT *Chairs: Ik-Kyung Jang and Renu Virmani*
17:15 Johannes Rieber, Germany – *Imaging of veins and peripheral circulation*
17:30 Guy Lamouche, Canada – *Intravascular OCT phantoms*
17:45 Francesco Versaci, Italy – *Carotid OCT*
18:00 Patrick Brouwer, NL – *OCT in the cranial circulation*

20:00 Dinner at the Inntel Hotel, Panoramazaal

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Day 2

Keynote lecture 2 – Dutch Heart Foundation lecture *Chair: Evelyn Regar*

09:00 Jim Fujimoto, USA – *Past, present and future of OCT*

Session 5: Imaging technology at the frontier *Chairs: Ton van der Steen and Ton van Leeuwen*

09:30 Robert Huber, Germany – *Super high speed OCT*
09:45 Gert 't Hooft, NL – *Fiber-optic shape sensing for 3D catheter localization*
10:00 Brett Bouma, USA – *Polarization sensitive intracoronary OCT*
10:15 Seemantini Nadkarni, USA – *Intravascular laser speckle imaging*
10:30 Krista Jansen, NL – *IVPA/IVUS imaging of human coronary atherosclerosis*

10:45 Coffee break

Session 6: Tissue characterization *Chairs: Patrick Serruys and Heleen van Beusekom*

11:00 Renu Virmani, USA – *Matching intravascular imaging with histology*
11:15 Takashi Akasaka, Japan – *How to measure fibrous cap thickness and what does that teach us?*
11:30 Evelyn Regar, NL – *OCT findings in bioresorbable stents*
11:45 Yasunori Ueda, Japan – *Acute Coronary Syndrome: Insight From Angioscopy*
12:00 Gary Tearney, USA – *OCT image interpretation – what we can and cannot see*
12:15 Gijs van Soest, NL – *Quantitative OCT tissue characterization*
12:30 Akiko Maehara, USA – *Plaque progression & other unresolved questions from IVUS*
12:45 Stanislav Emelianov USA – *Photo-acoustics for arterial tissue characterization*

13:00 Lunch and posters

Session 7: Multimodality diagnostics *Chairs: Stanislav Emelianov and Gary Tearney*

14:00 Tom Adriaenssens, Belgium –*FFR/OCT to optimize revascularization*
14:15 Jim Muller, USA – *The integration of optical with acoustic imaging*
14:30 Zhongping Chen, USA – *IVUS/OCT combination catheter design*
14:45 Brian Courtney, Canada – *IVUS/OCT in human coronary arteries*
15:00 Laura Marcu, USA – *Fluorescence lifetime imaging + IVUS*
15:15 Carl Schultz, NL – *The SAVOIR Trial*
15:30 Heleen van Beusekom, NL – *Intravascular imaging in a diabetic atherosclerotic animal model*
15:45 Sergio Waxman, USA – *Different technologies, different questions, different answers?*

16:00 Coffee break

Session 8: Image analysis and processing *Chairs: Giulio Guagliumi and Akiko Maehara*

16:15 Jouke Dijkstra, NL – *Advanced cardiovascular image analysis*
16:30 Olivier Ecabert, Switzerland – *Co-registration between angiography and intravascular imaging: focus on IVUS*
16:45 Hector García García, NL – *OCT analysis in the core lab*
17:00 Jurgen Ligthart, NL – *Integration of imaging technologies in the cath lab work flow*

Closing lecture *Chairs: Evelyn Regar and Gijs van Soest*

17:15 Ton van der Steen, NL – *Quo vadis intravascular imaging?*

Final remarks, announcement of OiC-II

Drinks

Erasmus MC
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Posters

Benjamin Samson, Nicolas Verrier and Michael Atlan
INSERM U 979 - ESPCI ParisTech, Paris, France
Holographic laser Doppler imaging for microangiography

Pieter Kruizinga, Frits Mastik, Nico de Jong, Antonius FW van der Steen and Gijs van Soest
Erasmus MC – Thorax center, Biomedical Engineering, Rotterdam, The Netherlands
Ultrasound guided photoacoustic image reconstruction

Paritosh Pande , Jesung Park, Sebina Shrestha, Fred Clubb, Javier A. Jo and Brian E. Applegate
Texas A&M University – Biomedical Engineering, College Station, USA
Simultaneous high-resolution morphological and biochemical optical imaging of atherosclerosis

Alexander Sheehy, Laura Perkins, Derek Mortisen, James Oberhauser, Yoshinobu Onuma, Roberto Diletti, Susan Veldhof, Richard Rapoza and Patrick Serruys
Abbott Vascular, Santa Clara, USA
OCT interpretation of ABSORB BVS: integration of in vitro, preclinical, and clinical images

S. Otto, D. Muehlstaedt, B. Goebel, C. Jung S., Bischoff, H. R. Figulla and T. C. Poerner
University Clinic of Jena - 1st Department of Medicine, Division of Cardiology, Jena - Germany
A Novel Polymer-Free Ciglitazone-Eluting Stent Inhibits Neointimal Proliferation Stronger than Sirolimus-Eluting Stents: An Experimental Study using optical coherence tomography in rabbit iliacal arteries

Tianshi Wang, Gijs van Soest and Antonius van der Steen
Erasmus MC – Biomedical Engineering, Rotterdam, The Netherlands
Micromotor based intravascular probe for optical coherence tomography imaging

Daniel M de Bruin, Ton G van Leeuwen and Dirk J Faber
Academisch Medisch Centrum – Biomedical Engineering and Physics, Amsterdam, The Netherlands
Optical phantoms of varying geometry based on thin building blocks with controlled optical properties

Daniel M de Bruin, Ton G van Leeuwen and Dirk J Faber
Academisch Medisch Centrum – Biomedical Engineering and Physics, Amsterdam, The Netherlands
Can functional optical coherence tomography determine the age of thrombus specimens?

Ajeethkumar Patil, Tom Devasya, Annamma Kurien, V.B. Kartha and Santhosh Chidangil
Manipal University - Centre for Atomic and Molecular Physics, Manipal, India
Ultra sensitive detection of marker proteins in serum for acute coronary sydrome by laser induced fluorescence

Jesung Park, Paritosh Pande, Sebina Shrestha, Fred Clubb, Brian E. Applegate and Javier A. Jo
Texas A&M University – Biomedical Engineering, College Station, USA
Biochemical characterization of atherosclerotic plaques by endogenous multispectral fluorescence lifetime imaging microscopy

S. White, H. Bourenane, M. Gnanadesigan, N.-J. Russell, J. W. Strange, A. C. Newby, A. Baumbach, G. van Soest and T. W. Johnson
Bristol Heart Institute - Cardiology, Bristol, UK
Validation of an ex-vivo 'whole human heart model' for optical coherence tomography-derived light attenuation analysis

Kirsten R. Henken, John J. van den Dobbelsteen and Jenny Dankelman
Delft University of Technology, Delft, The Netherlands
Measure the shape of an instrument with fiber Bragg gratings

Giovanni Jacopo Ughi, Tom Adriaenssens, Walter Desmet and Jan D'hooge
Catholic University Leuven - Dept. of Cardiovascular Diseases, Leuven, Belgium
Application of optical coherence tomography to automated intra-coronary stent analysis

Tianyi Wang, Jennifer E. Phipps, Marc D. Feldman, and Thomas E. Milner
Division of Cardiology, University of Texas Health Science Center, San Antonio, Texas, USA
Dual-wavelength multi-frequency photothermal wave imaging combined with OCT for macrophage and lipid detectionin atherosclerotic plaques using gold nanoparticles

Maria D. Radu, Lorenz Räber, Jung Ho Heo, Erik Jørgensen, Henning S. Kelbæk, Steffen Helqvist, Bill D. Gogas, Vasim Farooq, Hector M. Garcia-Garcia, Stephan Windecker, Kari I. Saunamäki, Patrick W. Serruys
Thoraxcenter, Erasmus University Medical Centre, Rotterdam, Netherlands
Natural history of Optical Coherence Tomography detected edge dissections 12 months following drug-eluting stent implantation

Lorenz Räber, Bindu Kalesan, Sandro Baumgartner, Hector M. Garcia Garcia, Thomas Pilgrim, Jörn Justiz, Peter Wenaweser, Giulio G. Stefanini, Aris Moschovitis, Bernhard Meier, Peter Jüni, Patrick W. Serruys, Stephan Windecker
Cardiology Department Inselspital, Bern University Hospital, Bern, Switzerland
Differential Healing Response in Acute Coronary Syndrome Versus Stable Coronary Artery Disease Patients 5 Years Following Early Generation DES Implantation: An Optical Coherence Tomography Study

N.S. van Ditzhuijzen, O. Sorop, M. van den Heuvel, J.M.R. Ligthart, K.Th. Witberg, R. van Duin, I. Krabbendam-Peters, D. Follett, N. Ramesh, R. Rapoza, D.J. Duncker, E. Regar, H.M.M. van Beusekom, H.M. Garcia-Garcia, W.J. van der Giessen†
Erasmus MC – Thorax center, Experimental Cardiology, Rotterdam, The Netherlands
Quantitative OCT Analysis of In-stent Tissue Growth after Implantation of ABSORB™ BVS in a Diabetic Animal Model.

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