





WELCOME TO LÜBECK

We are happy to cordially invite you to participate in our 8th annual workshop on "Low Flows in Medical Technology".

This year's workshop is a very specific one, because our partners from the EURAMET-project "Metrology for Drug Delivery" will present their results during the morning sessions. In the afternoon we will have several presentations from industry as well as from academia.

As during the previous years we invite you to submit posters. Companies are also invited to present.

Do not hesitate to contact us.

Stephan Klein

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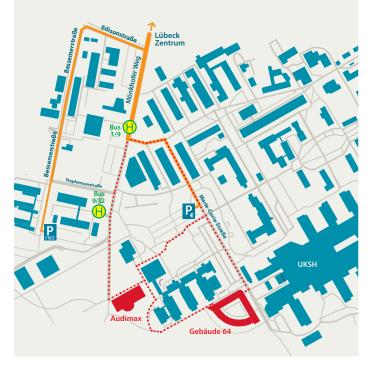
REGISTRATION

www.msgt.fh-luebeck.de

Please register for "Module 3" of Lübeck 2014 Summer Academy on Medical Technology. The workshop fee is 50,- EUR and includes all refreshments and a reception on September 23rd, 18:30.

DIRECTIONS

Building 65 "Audimax" Mönkhofer Weg 239, Lübeck



DGBMT DEUTSCHE GESELLSCHAFT FÜR BIOMEDIZINISCHE TECHNIK IM VDE



MedTec

senschaftscampus

Medisert Technologie- und Wissenstransfer BioMedTec Wissenschaftscampus



8th Workshop Low Flows in Medical Technology

incl. 3rd Progress Meeting of EURAMET-Project "Metrology for Drug Delivery"

Module 3 of Lübeck 2014 Summer Academy on Medical Technology

September 23rd / 24th 2014 BioMedTec Sciencecampus Lübeck





PROGRAM

SEPTEMBER 23rd

18:30 Welcome Reception

SEPTEMBER 24th

08:30 Registration, coffee, exhibition

Plenary Session

- 09:00 Opening / Welcome
- 09:20 Introductory Key Note: From Innovation to Market Ron Kikinis

Focus Session: Metrology for Drug Delivery, part 1

- 10:00 Overview 'Metrology for Drug Delivery' Peter Lucas
- 10:20 Motivation and Clinical Relevance 'Metrology for Drug Delivery' Annemoon Timmermann
- 10:40 Primary Standards for Flow Rates from 100 nL/min to 1 mL/min – Gravimetric Principle Hugo Bissig
- 11:00 Refreshments, exhibition

Focus Session: Metrology for Drug Delivery, part 2

- 11:30 Flow Source Based on Expansion Principle as Primary Standard for Flow Rates above 10 nL/min Peter Lucas
- 11:55 An Optical Measurement Method for Flow Rates above 10 nL/min Martin Ahrens

- 12:15 Assessment of Flow Meters and Drug Delivery Devices Elsa Batista
- 12:35 Dosing Errors in Multi-Infusion Roland Snijder
- 13:00 Lunch, exhibition

Application, part 1

- 14:00 Effects of Applying Flow on Stem Cell Differentiation and Function Martin Duvfa
- 14:30 Fast Techniques for Measuring Small Flows in Mass Production Niklaus Schneeberger
- 15:00 Microfluidics for Electrical Biochip Technology Lars Blohm
- 15:30 Refreshments, exhibition

Application, part 2

- 16:00 Metrological Methods for Low Volume Liquid Handling in Drug Delivery and In-Vitro Diagnostics Peter Koltay
- 16:30 Microfluids in Chemical and Biochemical Engineering Applications Ulrich Krühne
- 17:00 Flow Measurement for the Double-Actuator Pump mp6 Frank Bartels
- 17:30 Get-together, refreshments, exhibition

PRESENTERS

Ron Kikinis, Harvard Medical School, Boston and Fraunhofer Institute for Medical Image Computing MEVIS, Bremen and Lübeck

Peter Lucas, Dutch Metrology Institute, VSL, Delft, Netherlands

Annemoon Timmermann, University Medical Center, Utrecht, Netherlands

Hugo Bissig, Swiss Metrology Institute, METAS, Bern, Switzerland

Martin Ahrens, FH Lübeck, Germany

Elsa Batista, IPQ-Instituto Português da Qualidade, Caparica, Portugal

Roland Snijder, University Medical Center, Utrecht, Netherlands

Martin Dufva, Technical University of Denmark, DTU, Kongens Lyngby, Denmark

Nikolaus Schneeberger, Helbling Technik Bern AG, Bern, Switzerland

Lars Blohm, Fraunhofer-Institut für Siliziumtechnologie – ISIT, Itzehoe, Germany

Peter Koltay, Albert-Ludwigs-Universität, Institut für Mikrosystemtechnik, IMTEK, Freiburg

Ulrich Krühne, Technical University of Denmark, DTU, Kongens Lyngby, Denmark

Frank Bartels, Bartels Mikrotechnik GmbH, Düsseldorf, Germany

