

HELMHOLTZ SYMPOSIUM AACHEN 2015

May 29th, 2015

RWTH Aachen University Hospital
Pauwelsstrasse 30, Aachen, Germany

Invited Lectures and Poster Presentations
on Biomedical Engineering and Related Fields:

Stem Cells Medical Robotics Molecular Imaging
Biomaterials Medical Shockwaves
Organ Support Systems Medical Image Processing Sensors
Personalized Biomedical Engineering
Automation in Medicine Personal Health Care Nanomedicines
Human Technology Interaction Biomechanics
Cardiovascular Engineering Computer Assisted Surgery
Biohybrid Medical Systems Risk Management

CALL FOR POSTERS:

PDF-Versions (max. 1 Mbyte) of camera ready posters on related work can be submitted by authors affiliated to RWTH institutions to: bme2015@hia.rwth-aachen.de

Poster submission deadline: April 10th 2015

Notification to authors: April 24th 2015

Meeting registration deadline: April 30th 2015

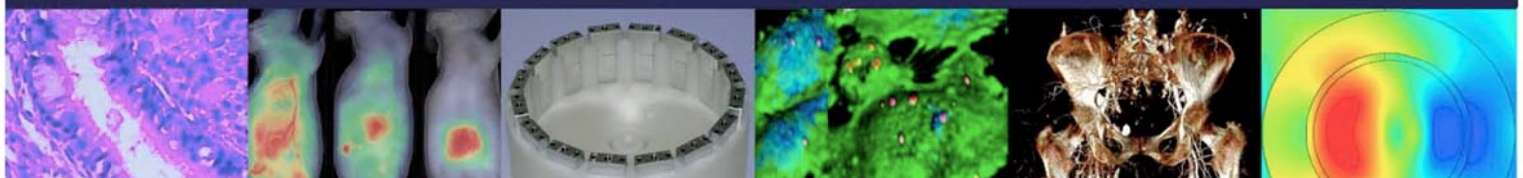
Registration via: www.hia.rwth-aachen.de

Registration fee: 25,- Euro

Program Chairs:

Lothar Elling, PhD, Willi Jahnen-Dechent, PhD, Fabian Kießling, MD, Steffen Leonhardt, MD, PhD, Klaus Radermacher, PhD, Thomas Schmitz-Rode, MD, Martin Zenke, PhD
Helmholtz Institute for Biomedical Engineering, RWTH Aachen University

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HELMHOLTZ-SYMPOSIUM AACHEN 2015

ON BIOMEDICAL ENGINEERING AND RELATED FIELDS

May 29th, 2015

Location:

RWTH Aachen University Hospital, Pauwelsstrasse 30, Aachen, Germany

- **All lectures:** Lecture Hall 3 (Session I-VII)

- **Poster Exhibition Area, Coffee Breaks, Lunch Break & Get Together:**

Seminar Room (Ground Floor / Corridor D/46 / Room 04).

FINAL PROGRAM

8:30-9:00 On-site Registration and Welcome

9:00-10:00

Session I: Biomaterials

(Chair: Prof. Dr. rer. nat. Lothar Elling, Biomaterials Laboratory, Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University FB1)

- Prof. Dr. Rüdiger Horstkorte, Institute for Physiological Chemistry, Martin-Luther-University Halle-Wittenberg: "Sialic Acid Metabolic Engineering: A Potential Strategy for Cancer Therapy"
- Dr. Alexander Kühne, DWI – Leibniz-Institut für Interaktive Materialien e.V.: "Fluorescent colloids for bioinspired photonics and biomedical imaging"
- Ruben R. Rosencrantz, M.Sc. Biology and M.Sc. Chemistry, Laboratory for Biomaterials, Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University: "Brushes, spheres and particles - Multivalent glyco-biomaterials and their applications"

10:00-11:00

Session II: Technical Innovations in Medical Engineering 1

(Chair: Prof. Dr. Ing. Dr. med. Steffen Leonhardt, Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University, Chair of Medical Information Technology, FB6)

- Sybo Dijkstra, Senior Director Philips Research UK, 101 Cambridge Science Park, Milton Road, Cambridge CB4 0FY, UK: "Chronic Condition Management: an overview of different research angles to the challenge"
- Prof. Dr. med. Hans-Christoph Pape, Klinik für Unfall- und Wiederherstellungschirurgie, UK Aachen: "Gerontotraumatology"
- Dr.-Ing. Marian Walter, Philips Chair for Medical Information Technology, RWTH Aachen University: "Closed-Loop Control of Extracorporeal Circulation"

11:00-11:30

Coffee Break &

Poster Exhibition "Biomedical Engineering @ RWTH Aachen University"

11.30-12.30 **Session III Imaging: Understand Biology, Individualize Therapy**
(Chair: Prof. Dr. med. Fabian Kiessling, Chair of Experimental Molecular Imaging, Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University, FB10)

- Prof. Dr. Bernd Pichler Chair of the Department of Preclinical Imaging and Radiopharmacy, Clinic of Radiology of the Eberhard-Karls-Universität Tübingen: "Advanced applications of PET-MRI"
- Prof. Dr. Ing. Volkmar Schulz (ExMI/PMI, Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University: "PET-MRI and MPI instrumentation"
- Prof. Dr. Felix Mottaghy (Department of Nuclear Medicine, University Hospital Aachen): "New Radiotracers for molecular medicine"

12.30-13:30 **Session IV Biomedical applications of nanoparticles**
(Chair: Prof. Dr. Thomas Schmitz-Rode, Helmholtz Institute for Biomedical Engineering, RWTH Aachen University, Chair of Applied Medical Engineering, FB10)

- Ulrich Simon, Professor and Chair of Inorganic Chemistry and Electrochemistry, Institute of Inorganic Chemistry, RWTH Aachen University: „ Synthesis and biofunctionalization of metal nanoparticles. “
- Lutz Trahms, Director and Professor, Dept. of Biosignals, Physikalisch-Technische Bundesanstalt, Berlin: "How magnetic measurements support biomedical applications of magnetic nanoparticles"
- Ioana Slabu, Dept. of Biophysical & Education Engineering, Institute of Applied Medical Engineering, Helmholtz Institute for Biomedical Engineering, RWTH Aachen University, and Dept. of Biosignals, Physikalisch-Technische Bundesanstalt, Berlin: „Biomedical applications of magnetic nanoparticles in diagnostics and therapy”

13:30-14:30 **Lunch Break &**
Poster Exhibition “Biomedical Engineering @ RWTH Aachen University”

14.30-15:30 **Session V: Biointerface Science**
(Chair: Prof. Dr. rer. nat. Willi Jahnen-Dechent, Helmholtz-Institute for Biomedical Engineering - Biointerface Laboratory, RWTH Aachen University, FB10)

- Dr. rer. nat. Marietta Herrmann, AO Foundation Davos, Schweiz: "Tissue Engineering of Vascularized Bone Implants"
- Univ.-Prof. Dr. rer. nat. Andrij Pich, DWI - Leibnitz-Institut für Interaktive Materialien: "Polymer Nanogels for Functionalisation of Biointerfaces"
- Univ.-Prof. Dr. rer. nat. Willi Jahnen-Dechent, Helmholtz-Institute for Biomedical Engineering - Biointerface Laboratory, RWTH Aachen University, FB10: "Mud in the Blood?"

15:30-16:00 **Coffee Break &**
Poster Exhibition “Biomedical Engineering @ RWTH Aachen University”

16.00-17.00 Session VI: Challenges and Perspectives in Medical Engineering
(Chair: Prof. Dr.-Ing. Klaus Radermacher, Chair of Medical Engineering, Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University FB4)

- Dr. Wolfgang Lauer, Head of Research Group Safety of Medical Devices, Federal Institute for Drugs and Medical Devices (BfArM), Bonn: “Medical Device Safety - Challenges and Perspectives”
- Univ.-Prof. Dr.-Ing. Dorit Merhof, Institute of Imaging & Computer Vision, RWTH Aachen University: “Cancer diagnostics by computer-assisted analysis of cell images”
- Armin Janss, Dipl.-Ing. , Chair of Medical Engineering, Helmholtz Institute for Biomedical Engineering, RWTH Aachen University, FB4: “OR.NET – Approval of Medical Devices for Plug&Play Operating Room Systems – Challenges and Approaches”

17:00-18:00 Session VII: Stem Cells and Mechanobiology
(Chair: Prof. Dr. Martin Zenke, Chair of Cell Biology, Helmholtz Institute for Biomedical Engineering, RWTH Aachen University FB10):

- Prof. Dr. Dr. Wolfgang Wagner, Stem Cell Biology and Cellular Engineering, Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University: “Induced pluripotent stem cells”
- Joana Frobels, M.Sc., Stem Cell Biology and Cellular Engineering, Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University: “A journey to pluripotency and back again: generation of MSC from MSC-derived iPS cells”
- Prof. Dr. Rudolf Merkel, Institute of Complex Systems 7: Biomechanics, Research Center Jülich: “Mechanobiology”

18:00-21.00 Get Together & Chill Out (incl. Drinks, Snacks & Music) - in the Poster Exhibition Area

Program Chairs:

Lothar Elling, Willi Jahnen-Dechent, Fabian Kießling, Steffen Leonhardt, Klaus Radermacher, Thomas Schmitz-Rode, Martin Zenke

Helmholtz Institute for Biomedical Engineering , RWTH Aachen University