

Scientific Program

Thursday, March 18, 2010

Reception

Introduction

- 13:00 **Opening Remarks**
T. M. Buzug¹, J. Borgert²; ¹Institute of Medical Engineering, University of Lübeck, Lübeck, Germany, ²Philips Research Europe – Hamburg, Germany
- 13:10 **History of MPI**
M. Kuhn¹; ¹Philips Health Care – Hamburg, Germany
- 13:20 **Keynote: Overview on MPI**
B. Gleich¹, J. Weizenecker²; ¹Philips Research Europe – Hamburg, Germany, ²Department of Electrical Engineering, University of Applied Science, Karlsruhe, Germany

Scientific Session – Short Presentations

- 14:05 **Colloidal Stability of Water Based Dispersions Containing Large Single Domain Particles of Magnetite** 1
N. Buske¹, S. Dutz²; ¹Magnetic Fluids, Berlin, Germany, ²Department of Bio NanoPhotonics, Institute of Photonic Technologies, Jena, Germany
- 14:08 **Superparamagnetic Iron Oxide Nanoparticles for Magnetic Particle Imaging** 2
K. Lüdtke-Buzug¹, S. Biederer¹, M. Erbe¹, T. Knopp¹, T. F. Sattel¹, T. M. Buzug¹; ¹Institute of Medical Engineering, University of Lübeck, Lübeck, Germany
- 14:11 **Investigation of The Magnetic Particle Imaging Signal's Dependency on Ferrofluid Concentration** 3
J.-P. Gehrcke¹, M. A. Rückert^{1,2}, T. Kampf¹, W. H. Kullmann², P. M. Jakob^{1,3}, V. C. Behr¹; ¹Department of Experimental Physics 5, University of Würzburg, Würzburg, Germany, ²University of Applied Sciences Würzburg-Schweinfurt, Schweinfurt, Germany, ³Research Center Magnetic Resonance Bavaria (MRB) e.V., Würzburg, Germany
- 14:14 **Magnetization Harmonics as a Remote Method for Monitoring Endocytosis of Nanoparticles** 4
A. M. Rauwerdink¹, A. J. Giustini^{1,2}, P. J. Hoopes^{1,2}, J. B. Weaver^{1,2,3}; ¹Thayer School of Engineering, Dartmouth College, Hanover, USA, ²Dartmouth Medical School, Dartmouth College, Hanover, USA, ³Department of Radiology, Dartmouth-Hitchcock Medical Center Lebanon, Hanover, USA
- 14:17 **Magnetic Particle Spectrometry for the Evaluation of Field-Dependent Harmonics Generation** 5
T. Wawrzik¹, J. Hahn¹, F. Ludwig¹, M. Schilling¹; ¹Institut für Elektrische Messtechnik und Grundlagen der Elektrotechnik, TU Braunschweig, Braunschweig, Germany
- 14:20 **Particle Dynamics of Mono-Domain Particles in Magnetic Particle Imaging** 6
J. Weizenecker¹, B. Gleich², J. Rahmer², J. Borgert²; ¹Department of Electrical Engineering, University of Applied Science, Karlsruhe, Germany, ²Philips Research Europe – Hamburg, Hamburg, Germany

14:23	Noise Within Magnetic Particle Imaging I. Schmale ¹ , B. Gleich ¹ , J. Borgert ¹ , J. Weizenecker ² ; ¹ Philips Technologie GmbH Forschungslaboratorien, Hamburg, Germany, ² Hochschule Karlsruhe – Technik und Wirtschaft, Fakultät für Elektro- und Informationstechnik, Karlsruhe, Germany	7
14:26	A Novel Compensated Coil System with High Homogeneity and low Strayfields R. Hiergeist ¹ , J. Lüdke ¹ , R. Ketzler ¹ , M. Albrecht ¹ , G. Ross ² ; ¹ AG 2.51, Magnetic Measurements, PTB Braunschweig, Braunschweig, Germany, ² Magnet-Physik Dr. Steingroever GmbH, Köln, Germany	8
14:29	A Surveillance Unit for Magnetic Particle Imaging Systems S. Kaufmann ¹ , S. Biederer ¹ , T. F. Sattel ¹ , T. Knopp ¹ , T. M. Buzug ¹ ; ¹ Institute of Medical Engineering, University of Lübeck, Lübeck, Germany	9
14:32	Superparamagnetic Iron Oxides for MR-Visualization of Textile Implants I. Slabu ¹ , T. Schmitz-Rode ¹ , M. Hodenius ¹ , U. Klinge ² , J. Otto ² , G. A. Krombach ³ , N. Krämer ³ , H. Donker ³ , M. Baumann ¹ ; ¹ Applied Medical Engineering, Medical Faculty, Helmholtz-Institute RWTH Aachen University, Aachen, Germany, ² Department for Surgery, Medical Faculty, RWTH Aachen University, Aachen, Germany, ³ Department for Radiology, Medical Faculty, RWTH Aachen University, Aachen, Germany	10
14:35	Detection of Autologous Chondrocytes at Polyethylene Scaffolds in Vivo - Experimental Study I. Schoen ¹ , F. Angenstein ² , K. Neumann ¹ , E. Roepke ¹ ; ¹ Department of Otorhinolaryngology, Head and Neck Surgery, Martin Luther University, Halle-Wittenberg, Halle, Germany, ² Special Lab of non invasive Imaging, Leibniz Institute of Neurbiology, Magdeburg, Germany	11
14:38	Current Iron Oxide Nanoparticles - Impact on MRI and MPI F. M. Vogt ¹ , J. Barkhausen ¹ , S. Biederer ² , T. F. Sattel ² , T. Knopp ² , K. Lüdtk-Buzug ² , T. M. Buzug ² ; ¹ Clinic for Radiology and Nuclearmedicine, University Hospital Schleswig Holstein, Lübeck, Germany, ² Institute of Medical Engineering, University of Lübeck, Lübeck, Germany	12
14:41	The Lack of a Mucosal Glycocalyx as a Potential Marker for the Detection of Colorectal Neoplasia by Magnetic-Particle-Imaging K. Ramaker ¹ , N. Röckendorf ¹ , A. Frey ¹ ; ¹ Division of Mucosal Immunology, Research Center Borstel, Borstel, Germany	13

Industrial Presentation

14:45	Collaboration of Bruker and Philips on MPI H. Post ¹ ; ¹ Bruker BioSpin MRI GmbH, Ettlingen, Germany
15:00	<i>Break and Poster Session</i>

Scientific Session – Particles I

- 16:00 **The Effects of Molecular Binding on the Phase of MSB Measurements** 14
J. B. Weaver¹, A. M. Rauwerdink²; ¹Department of Radiology, Dartmouth Medical School, Dartmouth-Hitchcock Medical Center, Lebanon, New Hampshire, USA, ²Thayer School of Engineering, Dartmouth College, Hanover, New Hampshire, USA
- 16:30 **SPIO Nanoparticles Encapsulation into Human Erythrocytes for MPI Application** 15
D. Markov¹, H. Boeve¹, B. Gleich², J. Borgert², A. Antonelli³, C. Sfara³,
M. Magnani³; ¹Philips Research Europe, High Tech Campus 34, Eindhoven, The Netherlands, ²Philips Research Europe, Sector Medical Imaging Systems, Hamburg, Germany, ³Department of Biomolecular Sciences, University of Urbino, Urbino, Italy
- 17:00 **Break**

Scientific Session – Particles II

- 17:15 **Use of Resovist in Magnetic Particle Imaging** 16
G. Schütz¹, J. Lohrke¹, J. Hütter¹; ¹Bayer Schering Pharma AG, Cardiovascular Imaging & Contrast Media Research, Berlin, Germany
- 17:35 **Clinical Application of Iron Oxide Nanoparticles in Magnetic Resonance Imaging and Research Perspectives** 17
M. Port¹, C. Corot¹, I. Raynal¹, C. Robic¹, P. Robert¹, J. M. Idee¹, G. Louin¹, J. S. Raynaud¹, O. Rousseaux¹; ¹Guerbet Research, Roissy CDG, France
- 17:55 **Larger Single Domain Iron Oxide Nanoparticles for Magnetic Particle Imaging** 18
S. Dutz¹, R. Müller¹, M. Zeisberger²; ¹Department of Bio NanoPhotonics, Institute of Photonic Technologies, Jena, Germany, ²Department of Spectroscopy and Imaging, Institute of Photonic Technologies, Jena, Germany
- 19:30 **Dinner**
Kartoffelkeller, Koberg 8, Lübeck