

# *Tuesday, August 28*

## **Tutorial, organised by S. Grimnes and O. Martinsen**

*13:00 - 19:00, i7*

- 1 **13:00 - 13:15: Welcome**  
O. G. MARTINSEN, S. GRIMNES, H. SCHARFETTER
  
- 2 **13:15 - 14:00: Basic concepts of immittance Impedance / admittance, electrode systems, sensitivity, reciprocity**  
O. G. MARTINSEN
  
- 3 **14:15 - 15:45: Electrical properties of tissue: 30 min.: Tabulated data, organs, isotropy (Sverre Grimnes) 30 min.: Ischemia (Eberhart Gersing) 30 min.: Non-linear properties (Uwe Pliquett)**  
S. GRIMNES, E. GERSING, U. PLIQUETT
  
- 4 **16:15 - 18:00: Instrumentation, models and data presentation: 40 min.: Instrumentation of frequency-domain measurements (Eberhart Gersing) 25 min.: Time domain reflectometry (Uwe Pliquett) 40 min.: Models and data presentation (Sverre Grimnes)**  
E. GERSING, U. PLIQUETT, S. GRIMNES
  
- 5 **18:15 - 19:00: EIT / MIT**  
H. SCHARFETTER

# Wednesday, August 29

## Opening Ceremony

09:00 - 09:30, i7

## Lecture In Memoriam Herman Paul Schwan

09:30 - 10:15, i7

## Plenary Lectures (1)

10:15 - 11:00, i7

- 1 **Frontiers in nano- and microstructures on microarrays for cell and tissue real time monitoring by bioimpedance spectroscopy**  
A. A. ROBITZKI

## Cells, Cell Cultures and Suspensions 1 (oral)

11:30 - 13:30, i1 Chair: BRAGOS BARDIA Ramon, JOSSINET Jacques

- 1 **Storage Effects on Whole Blood: Physiological and Electrical Measurements**  
M. SEZDI, Y. ÜLGEN
- 2 **Frequency characteristics of the electrical conductivity in normal and coagulated blood**  
M. NOSHIRO, S. NEBUYA, A. FUJIMAKI, R. SMALLWOOD, B. BROWN
- 3 **The electrical impedance of pulsatile blood flowing through rigid tubes: an experimental investigation**  
R. GAW, B. CORNISH, B. THOMAS
- 4 **Four Electrode EIS Measurement on Interdigitated Microelectrodes for Adherent Cell Growing and Differentiation Monitoring**  
E. SARRÓ, A. FONTOVA, A. SOLEY, J. J. CAIRO, A. BAYÉS-GENÍS, J. ROSELL, R. BRAGOS BARDIA
- 5 **Appraisal of cellular systems using impedance spectroscopy – theoretical and experimental aspects**  
E. GHEORGHIU
- 6 **Sensing the cell-substrate interaction towards development of „smart” surfaces**  
A. URSU, M. GHEORGHIU, S. DAVID, E. GHEORGHIU
- 7 **Dielectric Spectroscopy of Biological Cells in Microfluidic Devices**  
V. SENEZ
- 8 **Measurements on cultured cells using screen printed sensors**  
B. GLEICH, P. LOS, T. WEYH, M. BRISCHWEIN

## Theory and Modeling 1 (oral)

11:30 - 13:30, i7 Chair: GRIMNES Sverre, RIU Pere J

- 1 **Uncertainty of estimation of the electrical bioimpedance frequency characteristic of tissues by means of transient functions analysis method**  
S. AKULOV, L. KALAKUTSKIY

- 2 **The current flow modelling in a sensor with the active shield**  
M. MASALSKI, T. KRECICKI, P. LOS
- 3 **High frequency and low concentration – limitation for impedance measurements**  
U. PLIQUETT, T. NACKE, K. SCHOENBACH
- 4 **Modelling the measurement of thoracic tissue impedance layers with local electrode arrays**  
R. PATTERSON, F. YANG
- 5 **Intra-Cardiac Bioimpedance Field Variability with Breathing**  
R. GORDON, J. HYTTINEN, J. VÄISÄNEN
- 6 **Using least squares and Kramers-Kronig transforms in the processing of impedance spectroscopy measurement data**  
A. POLINSKI, J. WTOREK
- 7 **First steps towards solving the inverse problem of the multi-layer skin system**  
L. FALCO-JONASSON, S. HUCLOVA, J. FRÖHLICH, H.-R. BENEDICKTER, C. FUMEAUX, F. DEWARRAT, M. TALARY, A. CADUFF, D. HUBER
- 8 **Why is the measured impedance of the bladder tissue different from the computational modelling results?**  
A. KESHTKAR

## **Cells, Cell Cultures and Suspensions 2 / Plant Impedance (oral)**

14:45 - 16:00, i1 Chair: *GHEORGHIU Eugen, KANAI Hiroshi*

- 1 **Dielectric spectra of biological cells and tissues simulated by three-dimensional finite difference method**  
K. ASAMI
- 2 **Electrical Time Constants of erythrocytes for condorcil and uniform thickness membrane**  
H. KANAI, N. FURUYA, K. SAKAMOTO, N. KANAI
- 3 **Dual SPR-Impedance Measurement System for detection of bioaffinity interactions**  
S. DAVID, M. GHEORGHIU, C. POLONCHII, E. GHEORGHIU
- 4 **Viable Biomass Probe for a Life Support System Bioreactor**  
R. BRAGOS BARDIA, J. MAS, J. SEVILLA, A. LÓPEZ, P. J. RIU, J. ROSELL
- 5 **Bioimpedance study on four apple varieties**  
Q. FANG, X. LIU, I. COSIC

## **Theory and Modeling 2 (oral)**

14:45 - 16:00, i7 Chair: *BROWN Brian, WTOREK Jerzy*

- 1 **Comparison of a theoretical impedance model with experimental measurements of pulsatile blood flow**  
R. GAW, B. CORNISH, B. THOMAS

- 2 **New Aspects of Estimating Electrical Participating Volume of the Thorax for Transthoracic Impedance Cardiography**  
J. FORTIN, R. GRÜLLENBERGER, W. HABENBACHER, A. HACKER, A. HELLER, H. PASSATH, P. WACH
- 3 **Properties of CMT studied by means of FEM and Spice models**  
J. WTOREK, A. JANCZULEWICZ
- 4 **The Waveform Analysis of Reconstructed Impedance Differential Cardiogram**  
X. QIUJIN, K. MING-XING, K. NAN-ZHEN, W. ZHEN-LI, W. PING
- 5 **Investigation of numerical modelling error in electrical impedance tomography**  
H. DEGHANI, M. SOLEIMANI

### **Advanced Technologies (oral)**

*16:45 - 18:30, i1 Chair: MARTINSEN Orjan G., SCHARFETTER Hermann*

- 1 **Tomographic image reconstruction from dual modality ultrasound and electrical impedance data**  
G. STEINER, M. SOLEIMANI, H. DEGHANI, D. WATZENIG, F. PODD
- 2 **Magneto-Acousto-Electrical Tomography: a New Imaging Modality for Electrical Impedance**  
S. HAIDER, A. HRBEK, Y. XU
- 3 **Interface impedance improvement with carbon nanotubes**  
G. GABRIEL, R. GOMEZ, R. VILLA
- 4 **Designing a PtCO<sub>2</sub> sensor based on conductivity measurements**  
P. MIRTAHERI, S. GRIMNES, O. G. MARTINSEN
- 5 **Ultra-Thin Si membrane as a Sensitive Substrate for BioScreening**  
P. K. SEKHAR, S. BHANSALI
- 6 **Probing Biomimetic Molecular Structures on Gold and Silicon(111) with Electrical Impedance Spectroscopy**  
T. CHILCOTT, E. WONG, T. BÖCKING, H. COSTER

### **Tissue and Organ Impedance (oral)**

*16:45 - 18:30, i7 Chair: GERSING Eberhard, PLIQUETT Uwe*

- 1 **Electrical Impedance Spectroscopy of Prostatic Tissues**  
R. HALTER, A. SCHNED, J. HEANEY, A. HARTOV, K. PAULSEN
- 2 **Electrical impedance measurements during electroporation of rat liver and muscle**  
A. IVORRA, L. MILLER, B. RUBINSKY
- 3 **Comparative dielectric studies of malignant and healthy breast tissue. Intra-operative cancer detecting probe.**  
K. ORZECOWSKI, M. RUDOWSKI, M. RZACA

- 4 **Heart graft rejection assessed by multi-frequency electrical impedance: human results**  
J. ROSELL, M. A. GARCIA, J. RAMOS, R. BRAGOS BARDIA, Y. SALAZAR, M. FERNÁNDEZ, X. VIÑOLAS, J. CINCA
- 5 **Evaluation of the periodontal tissue hydration level via bioimpedance spectrometry**  
O. MOSKOVETS, A. SMIRNOV, D. V. NIKOLAEV
- 6 **A Pilot Study For Tissue Characterisation Using Bioimpedance Mapping**  
J. SMITH, B. THOMAS, B. CORNISH
- 7 **Electrical and thermal monitoring during cardiosurgery interventions**  
A. NOWAKOWSKI, J. WTOREK, W. STOJEK, J. ROGOWSKI, J. SIEBERT

# Thursday, August 30

## Herman Paul Schwan Award and Award Lecture

09:00 - 09:45, i7

### EIT Hardware (oral)

09:45 - 11:00, i1 Chair: ROSELL Javier, SAULNIER G.

- 1 **Determination of the dynamic measurement error of EIT systems**  
G. HAHN, A. JUST, G. HELDIGE
- 2 **Low-Noise Measurement for Electrical Impedance Tomography**  
M. RAFIEI-NAEINI, P. WRIGHT, H. MCCANN
- 3 **Investigation of biological phantom for 2D and 3D breast EIT images**  
W. WANG, G. QIAO, Y. HE
- 4 **Calibration of Multi-frequency EIT System**  
H. KOO, T. OH, E. J. WOO
- 5 **Complex Conductivity Spectra of Seven Materials and Phantom Design for EIT**  
K. LEE, Y. T. KIM, T. OH, E. J. WOO

### Skin Impedance (oral)

09:45 - 11:00, i7 Chair: GRIMNES Sverre, OLLMAR Stig

- 1 **Low-frequency dielectric properties of the oral mucosa**  
I. LACKOVIC, Z. STARE
- 2 **Water gradient and calibration of stratum corneum hydration measurements**  
G. K. JOHNSEN, O. G. MARTINSEN, S. GRIMNES
- 3 **Calibration of skin hydration measurements**  
O. G. MARTINSEN, S. GRIMNES, C. TRONSTAD
- 4 **Examination of amount of moisture of adult female's forearm epidermal stratum corneum with two kinds of impedance sensors**  
K. SHIRAI, Y. YAMAMOTO
- 5 **Evaluation of the effects of topical clobetasol propionate by electrical impedance**  
N. KUZMINA, T. TALME, L. EMTESTAM

### EIT Algorithms 1 (oral)

11:30 - 13:30, i1 Chair: ADLER Andy, LIONHEART William

- 1 **RECONSTRUCTION ALGORITHMS TO MONITOR NEONATE LUNG FUNCTION**  
R. BAYFORD, P. LIATSI, A. TIZZARD, R. YERWORTH, A. DEMOSTHENOUS
- 2 **Current patterns for three dimensional EIT of the head**  
T. TANG, S. OH, R. SADLEIR
- 3 **Quantitative analysis of shape change in Electrical Impedance Tomography (EIT)**  
S. OH, T. TANG, R. SADLEIR

- 4 **Direct calculation of the electrode movement Jacobian for 3D EIT**  
C. GOMEZ-LABERGE, A. ADLER
- 5 **VALIDATION OF FINITE ELEMENT MESH WARPING FOR IMPROVING THE FORWARD MODEL IN EIT OF BRAIN FUNCTION.**  
A. TIZZARD, R. BAYFORD
- 6 **Validation of a finite element solution for electrical impedance tomography in an anisotropic medium**  
J. F. ABASCAL, S. ARRIDGE, W. LIONHEART, R. BAYFORD, D. HOLDER
- 7 **Predicted EIT current densities in the brain using a 3D anatomically realistic model of the head**  
C. POMFRETT, J. DAVIDSON, H. MCCANN
- 8 **Frequency Marked Electrodes in Electrical Impedance Tomography**  
Y. GRANOT, B. RUBINSKY

**Special Session 1 (oral): Skin Impedance Technology, Devices and Applications**  
*11:30 - 13:30, i7*

- 1 **Evolution of a diagnostic decision support tool based on electrical impedance**  
S. OLLMAR, I. NICANDER, P. ÅBERG, U. BIRGERSSON
- 2 **Measuring the skin - why, what and how**  
P. ELSNER
- 3 **Skin impedance to detect fake fingers on the fingerprint sensor**  
O. G. MARTINSEN
- 4 **Clinical demonstration**  
I. NICANDER
- 5 **Closing Remarks and Plenary Discussion**  
N. N.

**Poster Session 1: Advanced Technologies**

*14:45 - 16:00, Poster Area*

- 1 **Circular and Magnetron Inductor/Sensor Coils to Detect Volumetric Brain Edema by Inductive Phase Shift Spectroscopy: A Sensitivity Simulation Study**  
C. GONZALEZ, R. ROJAS, B. RUBINSKY
- 2 **2D Reconstruction method for Magnetoacoustic Tomography with Magnetic Induction (MAT-MI)**  
G. LIU, H. WANG, J. JIANG, M. MENG, L. JIANG, X. WANG

**Poster Session 1: Cells, Cell Cultures and Suspensions and Plant Impedance**

*14:45 - 16:00, Poster Area*

- 1 **Effect of mechanical stress on apple impedance parameters**  
E. VOZÁRY, P. MÉSZÁROS

- 2 **4 Point technique for transepithelial impedance spectroscopy to detect low concentrations of pore forming compounds towards cell based biosensing**  
M. GHEORGHIU, D. BRATU, E. GHEORGHIU, T. WOHLAND
- 3 **Quantitative evaluation of nano-order micromotion of cultured cells using electric cell-substrate impedance sensing method**  
F. KAJIYA, N. KATAOKA, T. KUSUHARA, S. MOHRI, K. NARUSE, N. GODA, T. NAKAMURA, Y. YAMAMOTO
- 4 **Unified conductivity equation for suspensions**  
J. JOSSINET
- 5 **Impact of the additional stress on electrical characteristics of pine tree stem in areas with different pollution levels**  
P. ARTEM

### **Poster Session 1: Electrodes and Instrumentation**

14:45 - 16:00, *Poster Area*

- 1 **Mapping and Monitoring of Cardioactivity: Multi-Channel Impedance Technology and System**  
S. SCHOOKIN, L. SAFONOVA, I. SERGEEV, O. MEDVEDEV
- 2 **Alternative substrates to Impedance Needle Probe**  
R. GÓMEZ-MARTÍNEZ
- 3 **A measurement system for evaluation of electrical properties of myocardium**  
J. WTOREK, A. BUJNOWSKI, A. NOWAKOWSKI
- 4 **A measurement system for evaluating electrical properties of flowing blood**  
J. WTOREK, A. BUJNOWSKI
- 5 **A new experiment system for monitoring brain edema with magnetic induction measurement**  
M. QIN
- 6 **Saline-saturated Balsa Wood as a Testing Medium for Rotational Electrical Impedance Myography**  
A. CHIN, S. RUEHR, A. TARULLI, S. B. RUTKOVE
- 7 **Digitally Controlled Reference Impedance Device for Test and Calibration of the Bio-Impedance Measurement System (BIMS) in a Networked Environment**  
A. BIRJUKOV, A. KRIVOSHEI, T. PARVE
- 8 **A Custom-made Demodulation Technique for EIT/EIS Systems**  
J. FROUNCHI, M. H. ZARIFI, F. DEHKHODA
- 9 **Design A Fast Wide Spectrum Skin Impedance Measurement System**  
D. STANCIC, I. COSIC, Q. FANG
- 10 **Development of a multi-frequency electrical impedance measurement system for bio-impedance applications**  
N. D. KHAMBETE, S. KELKAR

- 11 **Novel Wide Band Dual Balanced Current Source used in Electrical Impedance Spectroscopy**  
V. C. VINCENCE, P. BERTEMES-FILHO
- 12 **Behavior of electrode-electrolyte interface in bipolar and tetrapolar concentric axial electrodes**  
J. A. GOMEZ SANCHEZ, W. ARISTIZABAL BOTERO, R. E. MADRID, C. J. FELICE

### **Poster Session 1: Skin Impedance**

*14:45 - 16:00, Poster Area*

- 1 **Diagnosing Diseases by Measurement of Electrical Skin Resistance: A Novel Technique**  
E. ZIMLICHMAN, A. KANEVSKY, Y. SHOENFELD
- 2 **Characteristics of Skin Impedance for Biological Active Points Using Dry Electrode Measuring System**  
M. S. KIM, G. LIM, I. KWON
- 3 **Skin impedance of acupuncture points and meridians at extremely low frequency**  
I. COSIC, D. CVETKOVIC, Q. FANG

### **Poster Session 1: Theory and Modeling**

*14:45 - 16:00, Poster Area*

- 1 **Sensitivity of the Tetrapolar Lead Configurations on the Impedance Changes of the Lungs**  
J. VÄISÄNEN, V.-P. SEPPÄ, P. KAUPPINEN, J. MALMIVUO, J. HYTTINEN
- 2 **Sensitivity analysis of polysegmental BIA parameters for estimation of body composition and systemic hydrohaemodynamics**  
D. V. NIKOLAEV
- 3 **Heterogeneous model for human impedance hydrohaemodynamics estimation**  
D. V. NIKOLAEV
- 4 **The model of vascular bed for estimation of human systemic hydrohaemodynamics**  
D. V. NIKOLAEV
- 5 **An Electrical Impedance Model for Deep Brain Stimulation of Parkinson's Disease**  
B. BLAD
- 6 **Influence of Breathing on Foucault Cardiogram Origination**  
V. ZADIN, K. SKABURSKAS, J. VEDRU
- 7 **Sensitivity distribution simulations of electrode configurations for monitoring tissue grafts**  
H. LUOMA-AHO, P. KAUPPINEN, J. HYTTINEN
- 8 **Investigation of Wave Reconstruction for Impedance Cardiogram**  
K. MING-XING, X. QIUJIN, K. NAN-ZHEN, C. CHAO-YING, X. WEI

## **EIT Algorithms 2 (oral)**

*16:45 - 18:30, i1 Chair: BAYFORD Richard, SADLEIR Rosalind*

- 1 **Conversion of EIT brain images for co-registration**  
H. MCCANN, D. MCCORMICK, J. DAVIDSON
- 2 **A new clinical data and image analyse tool for monitoring neonatal lung function**  
R. YERWORTH, R. BAYFORD
- 3 **New anomaly detection algorithm using multi-frequency trans-admittance maps**  
J. LEE, J. K. SEO, S. KIM, S. W. KIM, E. J. WOO
- 4 **An excitation in differential EIT - selection of measurement frequencies**  
A. BUJNOWSKI, J. WTOREK
- 5 **Regularization of EIT problem using trust region subproblem method**  
M. GOHARIAN, M. SOLEIMANI, A. JEGATHEESAN, G. MORAN
- 6 **Sensitivity of two different reconstruction algorithms to body shape and electrode position errors in absolute EIT**  
A. JUST, C. RÜCKER, G. HAHN, G. HELLIGE
- 7 **Four-Dimensional Regularization for Electrical Impedance Tomography Imaging**  
T. DAI, M. SOLEIMANI, A. ADLER

## **Modeling and Data Processing (oral)**

*16:45 - 18:30, i7 Chair: MERWA Robert, NOSHIRO Makoto*

- 1 **Signals in bioimpedance measurement: different waveforms for different tasks**  
M. MIN, U. PLIQUETT, T. NACKE, A. BARTHEL, P. ANNUS, R. LAND
- 2 **Simultaneous multi-frequency bio-impedance measurement applying synchronised uniform or non-uniform sampling**  
M. MIN, T. PARVE, A. RONK
- 3 **A Novel Approach for Estimation of Electrical Bioimpedance: Total Least Square**  
F. SEOANE MARTINEZ, K. LINDECRANTZ
- 4 **A new hard and software concept for impedance spectroscopy analysers for broadband**  
T. NACKE, A. BARTHEL, J. FRIEDRICH, J. SACHS, P. PEYERL, U. PLIQUETT, M. SCHAEFER
- 5 **Geometry dependencies in tetrapolar electrode systems - a finite element analysis on needle electrodes**  
P. HOYUM, S. GRIMNES, O. G. MARTINSEN
- 6 **Electric field tomography system with planar electrode array**  
T. TUYKIN, A. KORJENEVSKY
- 7 **Needle position determined by tissue impedance**  
H. KALVØY, S. GRIMNES, O. G. MARTINSEN

*Friday, August 31*

**Plenary Lectures (2)**

*09:00 - 09:45, i7*

- 1 **New Techniques in Impedance Imaging: MFEIT and MREIT**  
E. J. WOO

**EIT Algorithms 3 (oral)**

*09:45 - 11:00, i1 Chair: PEYTON Anthony, VAUHKONEN Marko*

- 1 **Experimental results of anomaly detection using multi-frequency trans-admittance scanner**  
H. KIM, E. J. WOO, T. OH, J. K. SEO, S. KIM
- 2 **Coregistration of Electrical Impedance Tomography and Magnetic Resonance Imaging**  
R. HALTER, P. MANWARING, A. HARTOV, K. PAULSEN
- 3 **Image reconstruction for the selection of electrode patterns in Electrical Impedance Endotomography**  
J. JOSSINET, A. MATIAS
- 4 **Information Content of EIT Measurements**  
A. ADLER, W. LIONHEART
- 5 **Impact of the reconstruction method on the point spread function in electrical tomography**  
G. STEINER, D. WATZENIG, H. ZANGL, H. WEGLEITER, A. FUCHS

**Electrodes and Instrumentation 1 (oral)**

*09:45 - 11:00, i7 Chair: MIN Mart, WATSON Stuart*

- 1 **Comprehensive studies of GIC and modified Howland based current source for obtaining extra high output impedance**  
W. WANG, M. BRIEN, D.-W. GU
- 2 **A Differential Current Source for High Frequency Biomedical Applications Implemented in a 0.5  $\mu\text{m}$  CMOS Integrated Circuit Technology**  
J. FROUNCHI, M. H. ZARIFI, F. DEHKHODA
- 3 **Data acquisition and impedance mapping using a multielectrode bioimpedance spectroscopy system**  
G. VUPPALA, S. BHANSALI, A. RAHMAN
- 4 **Two-channel high dynamic range bioimpedance monitor for cardiography**  
I. VISCOR, V. VONDRA, J. HALÁMEK
- 5 **Multi Frequency, Multi Channel, Differential Impedance Analyzer for Rapid Assays**  
C. POLONSCHII, D. BRATU, E. GHEORGHIU

## **Electrodes and Instrumentation 2 (oral)**

*11:30 - 13:30, i7 Chair: GRIFFITHS Hugh, LACKOVIC Igor*

- 1 **Expanding the functionality of HP4284A precision LCR meter through measurement system integration**  
G. SMOLJKIC, I. LACKOVIC
- 2 **Medical device for multichannel logging of long term sweat activity**  
C. TRONSTAD, S. GRIMNES, O. G. MARTINSEN, E. FOSSE
- 3 **An energy efficient wearable tissue monitor**  
P. ANNUS, M. MIN, T. PARVE, R. LAND, E. HALDRE, A. KUUSIK, G. POOLA
- 4 **Multichannel Handheld Hard-tissue Bio-impedance Meter with Bluetooth Link**  
E. CALDERON, A. GUIMERA, P. LOS, A. MOURoux, N. B. PITTS
- 5 **Wireless Measurement System for Bioimpedance and ECG**  
T. VUORELA, V.-P. SEPPÄ, J. VANHALA, J. HYTTINEN
- 6 **Impedance sensor with actively driven electrical shield for soft tissue examinations**  
T. GRYSINSKI, P. LOS, T. KRECICKI
- 7 **Implantable bioimpedance system for measuring impedance of kidney**  
P. BOGONEZ FRANCO, P. J. RIU
- 8 **Skin Electrode Impedance of Textile Electrodes for Bioimpedance Spectroscopy (BIS)**  
G. MEDRANO, A. UBL, N. ZIMMERMANN, T. GRIES, S. LEONHARDT

## **MREIT (oral)**

*11:30 - 13:30, i1 Chair: EYUBOGLU Murat, WOO Eung Je*

- 1 **Projected current from one component of magnetic flux density in MREIT**  
O. I. KWON, C. PARK, B. I. LEE
- 2 **Local harmonic  $B_z$  algorithm in MREIT**  
S. W. KIM, S. KIM, J. K. SEO, E. J. WOO
- 3 **Equipotential projection based MREIT reconstruction without potential measurements**  
M. EYUBOGLU, E. DEGIRMENCI
- 4 **Newton Method for Injection Current Nonlinear Encoding(ICNE) in MREIT**  
C. PARK, O. I. KWON
- 5 **Anisotropic conductivity imaging with MREIT using equipotential projection algorithm**  
E. DEGIRMENCI, M. EYUBOGLU
- 6 **In vivo determination of electric conductivity and permittivity using a standard MR system**  
U. KATSCHER, T. DORNIOK, C. FINDEKLEE, P. VERNICKEL, K. NEHRKE
- 7 **In Vivo MREIT Experiment of Canine Brain**  
H. J. KIM, Y. T. KIM, B. I. LEE, E. J. WOO

- 8 **Current injection optimization for magnetic resonance-electrical impedance tomography (MR-EIT)**  
H. ALTUNEL, M. EYUBOGLU, A. KOKSAL

## **Poster Session 2: EIT Algorithms**

14:45 - 16:00, Poster Area

- 1 **New direction of multi-frequency conductivity and permittivity imaging in EIT**  
S. KIM, J. K. SEO, E. J. WOO
- 2 **The Effect of SVD with a threshold on Electrical Impedance Tomography**  
P. YAN, L. GAO, Y. YUAN, Y. CHEN, C. CHENG, J. YAN
- 3 **Finite difference time domain (FDTD) method in simulation of quasistatic electromagnetic tomography systems**  
A. KORJENEVSKY
- 4 **Preliminary investigation of correlation of between in-vitro specimen measurement and in-vivo imaging data from ROI analysis**  
W. WANG, G. SZE, G. QIAO, L. WANG, D.-W. GU
- 5 **Cole-Cole model curve fitting methodologies and associated calibration requirements as applied to multi-dimensional Electrical Impedance Tomography**  
W. WANG, G. SZE, G. QIAO, Y. HE, M. BRIEN, D.-W. GU
- 6 **Identification of tissues within heterogeneous masses by use of inverse pathological modelling**  
W. WANG, G. SZE
- 7 **3D EIT of a computer neck model based on EIDORS software**  
M. MASALSKI, T. KRECICKI, P. LOS
- 8 **An Artificial Neural Network Implementation on FPGA in Biomedical EIT/EIS Systems for Cancer Detection**  
J. FROUNCHI, M. H. ZARIFI, M. BARADARAN NIA
- 9 **Modeling and Electrode Contact Compensation for EIT in a Mammography Geometry**  
G. BOVERMAN, D. ISAACSON, J. NEWELL, G. SAULNIER, T.-J. KAO, B. S. KIM
- 10 **A DIPOLE MODEL FOR A GENERIC CONDUCTIVITY INHOMOGENEITY IN THE LINEARIZED EIT PROBLEM**  
I. JIVET
- 11 **Using MEA For On-line EIT Measurement**  
D. ZHONG, J. HYTTINEN, J. M. A. TANSKANEN, S. SILTANEN
- 12 **Surface Topography from Electrical Impedance Measurements**  
M. SOLEIMANI, A. ADLER
- 13 **Systematic Noise Removal in EIT using Principal Components Analysis**  
A. JEGATHEESAN, M.-J. BRUWER, M. GOHARIAN, J. MACGREGOR, G. MORAN

- 14 **EIT for calculating ventricular ejection fraction: Numerical Experiments**  
S. CARDOSO JR., W. FREIRE, F. PETERS, R. WEBER DOS SANTOS, L. P. BARRA

## **Poster Session 2: EIT Clinical Applications**

14:45 - 16:00, Poster Area

- 1 **Ventilatory Pattern Monitoring with Electrical Impedance Tomography. Validation for Healthy Subjects.**  
M. BALLEZA, D. ANTON, N. CALAF, P. CASAN, T. FEIXAS, J. FORNOS, M. GONZALEZ, P. J. RIU
- 2 **Electro-Impedance Tomographic evaluation in early detection of Breast Cancer**  
K. L. CHAKRABORTI

## **Poster Session 2: EIT Hardware**

14:45 - 16:00, Poster Area

- 1 **Study into the repeatability of the electrode-skin interface utilizing electrodes commonly used in Electrical Impedance Tomography**  
L. WANG, W. WANG, G. QIAO
- 2 **Time-and Frequency-difference Imaging using KHU Mark1 EIT system**  
S. M. KIM, T. OH, E. J. WOO, S. W. KIM, J. K. SEO
- 3 **EIT of hard tissues – IDMoS 3D technology platform**  
S. KOCHAN, P. LOS, N. B. PITTS, C. LONGBOTTOM, A. CZAJCZYNSKA-WASZKIEWICZ
- 4 **The Next Generation Dartmouth EIT System**  
P. MANWARING, A. HARTOV, K. PAULSEN
- 5 **Estimation of the tissue impedance change by 3-dimensional electrical impedance tomography**  
N. FURUYA, K. SAKAMOTO, H. KANAI
- 6 **Integrated Data Collection in Electrical Impedance Tomography**  
H. SHA, S. ZHAO, C. REN
- 7 **EIT Spectroscopy in the Mammography Geometry Using ACT 4**  
C. TAMMA, G. SAULNIER, T.-J. KAO, J. NEWELL, G. BOVERMAN, D. ISAACSON

## **Poster Session 2: MIT**

14:45 - 16:00, Poster Area

- 1 **Correction of systematic errors in frequency differential magnetic induction tomography**  
H. SCHARFETTER
- 2 **Magnetic Induction Tomography: A feasibility study of brain oedema detection using a finite element human head model**  
R. MERWA, H. SCHARFETTER
- 3 **16 Channel Magnetic Induction Tomography System Featuring Parallel Readout**  
M. HAMSCH, C. H. IGNEY, M. VAUHKONEN

- 4 **Temporal magnetic induction tomography imaging**  
M. SOLEIMANI, A. PEYTON, C. KTISTIS
- 5 **Study on techniques of phase detection in brain magnetic induction tomography**  
X. HU, Q. LU, J. WANG, M. QIN
- 6 **Dielectric Measurement using Radio Imaging Method for Tomography**  
I. HIEDA, K.-C. NAM

## **Poster Session 2: Modeling and Data Processing**

*14:45 - 16:00, Poster Area*

- 1 **The use of Transient Response for Tissue Characterisation**  
W. WANG

## **Poster Session 2: MREIT**

*14:45 - 16:00, Poster Area*

- 1 **Reconstruction algorithm of Inductive Magnetic Resonance Electrical Impedance Tomography**  
G. LIU, M. MENG, J. JIANG, H. WANG, X. WANG, L. JIANG

## **MIT (oral)**

*16:45 - 18:30, i1 Chair: IGNEY Claudia H, QIN Mingxin*

- 1 **Development of the Multichannel Simultaneous Magnetic Induction Measurement System Musimitos**  
S. LEONHARDT, M. STEFFEN
- 2 **Spectroscopic 16 channel magnetic induction tomograph: The new Graz MIT system**  
H. SCHARFETTER, A. KÖSTINGER, S. ISSA
- 3 **Magnetic Induction Tomography: The influence of the coil configuration on the spatial resolution**  
R. MERWA, H. SCHARFETTER
- 4 **Parallelisation Methods For Implementation Of Magnetic Induction Tomography Forward Models In Symmetric Multiprocessor Clusters**  
Y. MAIMAITIJIANG, A. ROULA, S. WATSON, R. WILLIAMS, H. GRIFFITHS
- 5 **Using outer boundary information for image reconstruction in magnetic induction tomography**  
C. KTISTIS, A. PEYTON
- 6 **Image reconstruction approaches for Philips magnetic induction tomograph**  
M. VAUHKONEN, M. HAMSCH, C. H. IGNEY

## **Special Session 2 (oral): Standardization in BIA**

*16:45 - 18:30, i7*

- 1 **Plenary Discussion moderated by A. Talluri**  
A. TALLURI

# Saturday, September 01

## Plenary Lectures (3)

09:00 - 09:45, i7

- 1 **What separates us from turning EIC and EIT into successful clinical bed-side instruments?**  
P. DE VRIES

## BIA 1 (oral)

09:45 - 11:00, i7 Chair: PICCOLI Antonio, WARD Leigh

- 1 **Application of bioimpedance technique in dialysis patients**  
E. LEONARD, F. ZHU, . LEVIN, G. HANDELMAN, M. KUHLMANN, P. KOTANKO
- 2 **Estimation of fluid volume changes during haemodialysis with an anisotropic finite element model**  
M. FREIBERGER, P. BRUNNER, M. MAYER, H. SCHARFETTER, P. J. RIU, O. SURAKHI
- 3 **Local Tissue Bioimpedance Measurement for Fluid Shifts Estimation during Hemodialysis (HD)**  
O. SURAKHI, F. VAZQUEZ GALLEGO, M. GARCIA, A. RODRIGUEZ-JORNET, J. A. IBEAS, J. MAS, P. J. RIU
- 4 **IN HEMODIALYSIS PATIENTS LEAN BODY MASS CAN BE EVALUATED BY BIOELECTRICAL IMPEDANCE ANALYSIS (BIA)**  
C. DONADIO
- 5 **Body composition measurements in limbs using eight-electrodes bioimpedance**  
M. JAFFRIN, H. MOREL, Y. LAVIELLE

## EIT Clinical Applications 1 (oral)

09:45 - 11:00, i1 Chair: FRERICHS Inez, KORJENEVSKY Alexander

- 1 **Analysis of ventilatory conditions under different inspiratory oxygen concentrations and positive end-expiratory pressure levels by EIT**  
G. SCHMITZ, S. PULLETZ, D. SCHÄDLER, G. ZICK, J. SCHOLZ, N. WEILER, I. FRERICHS
- 2 **Determination of local phase changes in lung ventilation by EIT during continuous postural changes**  
M. MAYER, P. BRUNNER, F. M. SMOLLE-JÜTTNER, A. MAIER, N. NEUBÖCK, H. SCHARFETTER
- 3 **Distribution of regional ventilation during restricted chest wall movement determined by EIT**  
S. PULLETZ, G. SCHMITZ, G. ZICK, D. SCHÄDLER, J. SCHOLZ, N. WEILER, I. FRERICHS
- 4 **Quantification of ventilation by time series EIT data**  
G. HAHN, A. JUST, J. DITTMAR, G. HELLIGE
- 5 **Measurement accuracy in pulmonary function test using electrical impedance tomography**  
S. NEBUYA, K. KITAMURA, H. KOBAYASHI, M. NOSHIRO, B. BROWN

## **BIA 2 (oral)**

*11:30 - 13:30, i7 Chair: JAFFRIN Michel, LEONARD Edward*

- 1 **A device for monitoring hydration state in hemodialysis patients using a calf bioimpedance technique**  
F. ZHU, E. LEONARD, . LEVIN, G. HANDELMAN, M. KUHLMANN, P. KOTANKO
- 2 **Different impedance indexes in segmental and whole-body bioimpedance measurements in PD patients**  
L. NESCOLARDE, T. DOÑATE, M. A. GARCIA, J. ROSELL
- 3 **BODY COMPOSITION AND GLOMERULAR FILTRATION RATE IN CHRONIC KIDNEY DISEASE PATIENTS: MALES ARE DIFFERENT FROM FEMALES?**  
C. DONADIO
- 4 **Estimation of arm muscle mass in hemodialysis patients by segmental bioimpedance, (SBIS), MRI and 40K techniques**  
M. CARTER, F. ZHU, S. R. SARKAR, G. A. KAYSEN, L. M. RAMIREZ, S. B. HEYMSFIELD, G. HANDELMAN, . LEVIN
- 5 **Sensitivity of whole-body bioelectrical impedance to edema in one leg**  
M. CODOGNOTTO, A. PICCOLI, M. PIAZZA, P. FRIGATTI
- 6 **Can bioimpedance spectroscopy (BIS) tell us about the form of lymphoedema?**  
L. WARD, B. CORNISH, B. LINGWOOD
- 7 **Total body water measurement: using the multifrequency BIS-Hanai approach with 50 kHz single frequency**  
M. JAFFRIN, H. MOREL
- 8 **Best published equation for the calculation of Body Fat in a sample of Colombian young males using Bioelectrical Impedance Analysis**  
C.-A. GONZALEZ-CORREA, C.-H. GONZALEZ-CORREA, J.-A. RAMOS-RODRIGUEZ

## **Special Session 3 (oral): Monitoring of lung ventilation by EIT in a clinical setting**

*11:30 - 13:30, i1*

- 1 **Current practice in artificial ventilation - can EIT be of help?**  
N. WEILER
- 2 **EIT monitoring in adult intensive care patients**  
L. CAMPOROTA
- 3 **EIT monitoring in neonatal and paediatric intensive care patients**  
I. FRERICHS
- 4 **Closing Remarks and Plenary Discussion**  
I. FRERICHS

### **Poster Session 3: Applications: Basic Studies**

14:45 - 16:00, Poster Area

- 1 **Evaluation of cardiogenic impedance signals at different body postures in dogs and pigs**  
N. HOLMSTRÖM, A. BLOMQUIST, M. ÖHLANDER, J. SVAHN, J. WIENER, S.-E. HEDBERG, S. BOWALD
- 2 **Effects of Dobutamine on Cardiogenic Impedance Signals in Dogs**  
N. HOLMSTRÖM, A. BLOMQUIST, M. ÖHLANDER, J. SVAHN, J. WIENER, S.-E. HEDBERG, S. BOWALD
- 3 **Bioimpedance Methods in Urology Functional Diagnostics**  
I. MUDRAYA
- 4 **Electrical impedance of relaxed and contracted skeletal muscle**  
T. ZAGAR, D. KRIZAJ
- 5 **Pectoral Muscle Bioimpedance: A Potential Method For Confirming Transient Hypotension**  
D. VENUGOPAL, R. PATTERSON, R. JHANJEE, D. BENDITT
- 6 **Effective longitudinal resistivity and the interpretation of changes of the phase of the electrical impedance during illness**  
R. AARON, C. SHIFFMAN, S. B. RUTKOVE
- 7 **Electrical Impedance Myography at High Frequencies**  
C. SHIFFMAN, H. KASHURI, R. AARON
- 8 **Verification of physical models used for root canal measurement by impedance comparison**  
T. MARJANOVIC, Z. STARE, I. LACKOVIC
- 9 **Changes in the Arm Bioimpedance with Applied Pressure and Force**  
G. GIOVINAZZO, O. SURAKHI, P. BOGONEZ FRANCO, P. J. RIU
- 10 **Measurement of blood flow of penis using impedance penis-graphy**  
Y. AN QI, G. JUKANG, S. JING
- 11 **Method of noninvasive impedance monitoring of the cardiovascular system parameters**  
I. SERGEEV, S. SCHOOKIN, O. RUTKOVSKY, O. MEDVEDEV
- 12 **Dielectric qualities of erythrocytes in healthy people of different age groups**  
Y. BOBILEV
- 13 **Dielectric qualities of erythrocytes in healthy people and in patients with cardiovascular disease**  
Y. BOBILEV
- 14 **Utility of the short time bioelectrical impedance for the gastric motility assessment: Preliminary Results**  
M. VALLEJO-VILLALPANDO, M. VARGAS-LUNA, R. HUERTA-FRANCO, T. CÓRDOVA, E. HERNANDEZ

- 15 **Human electrophysiological signal responses to non-continuous and consecutive 5 day ELF PEMF exposure: pilot study**  
D. CVETKOVIC, Q. FANG, S. MAHMOUD, I. COSIC
- 16 **Equipment for real-time bioimpedance diagnostics of the functional state of human organism**  
L. LAVROV, A. BESSARAB
- 17 **Impedance Spectroscopy of Human Blood and Erythrocyte Sedimentation**  
T. CORDOVA-FRAGA, J. BERNAL ALVARADO, M. SOSA, J. M. DE LA ROCA, J. BARREDA, M. VARGAS-LUNA, F. HERNANDEZ CABRERA
- 18 **Variation of Magnetic Induction Plethysmogram on Human Thoracic Surface**  
O. SOLNTSEVA, J. VEDRU
- 19 **Electrodermal response - correlation between potential and conductance**  
A. JABBARI, S. GRIMNES, O. G. MARTINSEN
- 20 **Influence of a Magnetic Field on Changes in Bio-impedance**  
S. PAPEZOVA, V. PAPEZ
- 21 **Bio-Impedance Signal Decomposer (BISD) as an Adaptive Signal Model Based Separator of Cardiac and Respiratory Components**  
A. KRIVOSHEI, V. KUKK, A. BIRJUKOV
- 22 **Investigating on the Left and Right Heart Circulation Effect in Impedance Change on Chest Surface**  
C. CHAO-YING, K. MING-XING, Z. ZHI-JIAN, H. WEN-QIN, H. AI-RONG
- 23 **Experiment Research on Influence of Induced Ventricular Premature Beats to AO component of Reconstructed Impedance Cardiogram**  
X. QIUJIN, P. JING-TIAN, L. YUE-ZHEN, K. MING-XING, W. PING
- 24 **Bioelectrical Impedance Analysis of Skin Rubor for Early Detection of Pressure Ulcer.**  
S. ISHIGAME, Y. OHTA, J. NIITSUMA

### **Poster Session 3: BIA**

*14:45 - 16:00, Poster Area*

- 1 **Bioimpedance as a measure of muscle function.**  
K. NORMAN, M. PIRLICH, T. SCHUETZ, H. LOCHS, P. CHRISTENSEN, J. KONDRUP, V. HAAS
- 2 **Bioelectric impedance phase angle and body composition in Russian children aged 10-16 years: reference values and correlations**  
S. RUDNEV
- 3 **Preliminary report on a serendipitous finding: Association of wrist-ankle BIA resistance values and intestinal permeability in normal weight, healthy females**  
L. VALENTINI, M. PIRLICH, S. BÜHNER, S. HENGSTERMANN, L. SCHAPER, T. KOERNICKE, C. BUNING, H. LOCHS

- 4 **Prediction of basal metabolic rate in young obese female patients using bioimpedance analysis**  
M. MARRA, C. MONTAGNESE, M. MUSELLA, C. DE CAPRIO, C. FINELLI, F. CONTALDO, F. PASANISI

### **Poster Session 3: Clinical Applications**

14:45 - 16:00, *Poster Area*

- 1 **Sarcopenia in quiescent inflammatory bowel disease (IBD)**  
L. VALENTINI, C. BUNING, S. HENGSTERMANN, T. KOERNICKE, L. SCHAPER, M. PIRLICH, H. LOCHS
- 2 **Relevance of phase angle percentiles in hospitalized patients**  
T. SCHUETZ, K. NORMAN, H. LOCHS, L. VALENTINI, M. PIRLICH
- 3 **Arterial system reaction on isometric stress in patients with arterial hypertension depending on the stage of the disease**  
A. DUMLER
- 4 **Lungs electrical conductivity and respiratory volumes in the functional-diagnostic testing.**  
Y. TSOFIN, A. KARPOV
- 5 **Non-Invasive Impedance based Continuous Glucose Monitoring System**  
D. HUBER, F. DEWARRAT, M. TALARY, A. CADUFF, L. FALCO-JONASSON
- 6 **Parameters for monitoring refeeding of anorexia nervosa patients by bioimpedance**  
M.-V. MORENO, M. JAFFRIN, D. DJEDDI
- 7 **Disturbed autonomic regulation of cardiac function in Parkinson's disease measured with impedance cardiography**  
S. BOESVELDT, J. H. MEIJER, E. ELBERTSE, H. W. BERENDSE
- 8 **Regional Admittivity Spectra in 3-D EIT Reconstruction with Tomosynthesis in Breast Biopsy Patients**  
T.-J. KAO, G. BOVERMAN, J. NEWELL, D. ISAACSON, G. SAULNIER, R. H. MOORE, D. KOPANS
- 9 **Changes of bile and urine electrical conductivity in patients with biliary tracts' pathology**  
A. POPOV, E. KITAEVA
- 10 **Lung Edema Monitoring using Impedance with Convergent Lead Fields**  
A. BELALCAZAR, R. PATTERSON

### **EIT Clinical Applications 2 (oral)**

16:45 - 18:30, *i1 Chair: BROWN Brian, HAHN Günter*

- 1 **Evaluation of the performance of the Multifrequency Electrical Impedance Tomography (MFEIT) intended for imaging acute stroke**  
A. ROMSAUEROVA, A. MCEWAN, L. FABRIZI, D. HOLDER
- 2 **Statistical analysis of non-invasive Low Frequency EIT human measurements of neuronal activity**  
O. GILAD, L. HORESH, S. AKSELROD, D. HOLDER

- 3 **Diagnostics of dyshormonal mammary gland diseases with multifrequency electrical impedance mammography**  
O. TROKHANOVA, M. OKHAPKIN, A. KORJENEVSKY
- 4 **Chemotherapy Monitoring With EIS: Early Findings**  
A. HARTOV, R. HALTER, P. MANWARING, K. PAULSEN
- 5 **Particularities of the electroimpedance images in different forms of infiltrative breast cancer.**  
A. SENCHA, N. SOTSKOVA, A. KARPOV, M. KOROTKOVA
- 6 **A Compact EIT System for Ventilation Monitoring in COPD Patients**  
D. ANTON, M. BALLEZA, J. FORNOS, P. CASAN, P. J. RIU
- 7 **Analysis of resting noise characteristics of three EIT systems in order to optimize time difference imaging with scalp electrodes during epileptic seizures**  
L. FABRIZI, A. MCEWAN, T. OH, D. HOLDER

**Special Session 4 (oral): Bioimpedance Status Assessment in Dialysis Patients**  
*16:45 - 18:30, i7*

- 1 **Assessment of body composition and dry weight in hemodialysis patients: static vs. dynamic bioimpedance analysis**  
M. KUHLMANN
- 2 **Estimation of hydration status in dialysis patients using segmental bioimpedance analysis**  
F. ZHU
- 3 **Model development, validation and application of a device for the quantitative assessment of overhydration using whole body bioimpedance spectroscopy**  
P. WABEL
- 4 **Cardiac output measurements by impedance cardiography in patients with and without renal disease: limitations and new options**  
F. SKRABAL
- 5 **For dialysis patients: What do we want to know? What can we know from BIA?**  
E. LEONARD
- 6 **Closing Remarks and Plenary Discussion**  
E. LEONARD

## *Sunday, September 02*

### **Applications: Basic Studies 1 (oral)**

*09:00 - 11:00, i1 Chair: KIM Deok Won, NOWAKOWSKI Antoni*

- 1 **Multifrequency Electrical Impedance Myography In Amyotrophic Lateral Sclerosis**  
A. CHIN, A. TARULLI, S. B. RUTKOVE, C. SHIFFMAN, R. AARON
- 2 **Frequency Dependence of Muscle Impedance During Isometric Contractions**  
H. KASHURI, C. SHIFFMAN, R. AARON
- 3 **Electrical monitoring of myocardium during induced ischemia**  
J. ROGOWSKI, J. SIEBERT, W. STOJEK, J. WTOREK, A. BUJNOWSKI, A. NOWAKOWSKI
- 4 **Measuring Respirational Parameters with a Wearable Bioimpedance Device**  
V.-P. SEPPÄ, J. VÄISÄNEN, P. KAUPPINEN, J. MALMIVUO, J. HYTTINEN
- 5 **Intrathoracic Impedance Monitoring in a Novel Model of Acute Pulmonary Edema**  
T. ZIELINSKI, M. ROUW, K. KNOX, K. VINCENT, D. HETTRICK
- 6 **Motion discrimination using parameters of bioelectrical impedance**  
T. NAKAMURA, T. KUSUHARA, Y. YAMAMOTO
- 7 **Parametric image: a step forward for virtual biopsy by EIT?**  
W. WANG, L. WANG
- 8 **Determination of the root canal length using the impedance ratio method**  
D. KRIZAJ, T. ZAGAR, J. JAN

### **Clinical Applications 1 (oral)**

*09:00 - 11:00, i7 Chair: PALKO Tadeusz, PATTERSON Robert*

- 1 **Measurement of haemodynamic response during exercise test by impedance cardiography method in patients with coronary artery disease**  
J. SIEBERT, B. TRZECIAK, D. ZIELINSKA, S. BAKULA
- 2 **Beat-to-beat Variability of Stroke Volume's Output Velocity, measured by impedance cardiographic method**  
O. PARANDEY, M. ZUBAREV, A. DUMLER, V. SCHEKOTOV
- 3 **Impedance cardiography in cardiac pacing**  
K. PECZALSKI, D. WOJCIECHOWSKI, Z. DUNAJSKI, T. PALKO
- 4 **Possibilities of Foucault Cardiography-Based Estimation of Heart Pumping Performance**  
O. TARASSOVA, J. VEDRU
- 5 **Signal quality evaluation in Ambulatory Impedance Cardiography**  
G. CYBULSKI, W. NIEWIADOMSKI, A. GASIOROWSKA, D. KWIATKOWSKA
- 6 **Using time interval parameters from impedance cardiography to evaluate autonomic nervous function in Parkinson's disease**  
J. H. MEIJER, S. BOESVELDT, E. ELBERTSE, H. W. BERENDSE

- 7 **Cerebral impedance following hypoxia/ischaemia in the human infant**  
B. LINGWOOD, G. HEALY, K. DUNSTER, Z. KECSKEA, P. GRAY, L. WARD, P. COLDITZ
- 8 **Development of a Biosensor for hCG $\beta$  Detection**  
P. KASSANOS, R. ILES, R. BAYFORD, A. DEMOSTHENOUS

### **Applications: Basic Studies 2 (oral)**

*11:30 - 13:30, i1 Chair: MERWA Robert, RIU Pere J*

- 1 **Electrical Impedance Scanning for Breast Cancer Risk Stratification for Young Women**  
A. STOJADINOVIC
- 2 **Detection of Menstrual Cycle Changes in Breast Ductal Epithelium using Impedance Spectroscopy**  
R. DAVIES, M. BRUMFIELD, M. PIERCE
- 3 **The use of bioimpedance analysis for the study of dysphagia**  
J. CICHERO, A. MCCULLAGH, L. WARD
- 4 **A Simple Measurement Method of Visceral Fat Accumulation by Bioelectrical Impedance Analysis**  
T. SHIGA, Y. OSHIMA, H. KANAI, M. HIRATA, K. HOSODA, K. NAKAO
- 5 **A new approach of gastric motility measurement and evaluation by bioimpedance**  
Z. LI, C. REN, H. SHA, S. ZHAO, Y. WANG
- 6 **Rheoencephalogram reflects cerebral blood flow autoregulation in pigs**  
M. BODO, F. PEARCE, S. VAN ALBERT, R. ARMONDA
- 7 **The technique of estimation of the electroimpedance image of the mammary gland.**  
M. KOROTKOVA, A. KARPOV
- 8 **Beat-by-beat changes in pre-ejection period during functional tests evaluated by impedance aortography: a step to a left ventricular contractility monitoring**  
V. ERMISHKIN, E. LUKOSHKOVA, E. BERSENEV, M. SAIDOVA, V. SHITOV, V. KHAYUTIN, O. VINOGRADOVA

### **Clinical Applications 2 (oral)**

*11:30 - 13:30, i7 Chair: IGNEY Claudia H, SCHARFETTER Hermann*

- 1 **Morphofunctional aspects of early postnatal developments of small premature infants' lungs.**  
V. DASHICHEV, A. LIASHENKO, A. KARPOV
- 2 **Impedance rheography for systemic and pulmonary circulation study and clinical application**  
T. PALKO
- 3 **Arterial system reaction on isometric stress in patients with arterial hypertension depending on the stage of the disease**  
M. ZUBAREV, A. DUMLER, M. MALOVA

- 4 **Bioelectrical Impedance Analysis Measures the Ejection Fraction of the Calf Muscle Pump**  
A. MCCULLAGH, L. WARD, W. SHIRER, S. CHETHAM
- 5 **Bioimpedance profiling of limb lymphoedema**  
S. KILBREATH, M.-J. LEE, S. YORK, L. WARD
- 6 **A new ambulatory urodynamic monitoring system to quantify abdominal pressure using bio-impedance**  
D. W. KIM, K. S. KIM, Y.-S. AHN, J.-H. SEO, C. G. SONG
- 7 **Clinical point of view of thoracic electrical bioimpedance (TEB) in comparison with other non-invasive methods in cardiology**  
Z. TREFNY
- 8 **Diagnosis of Breast Cancer using Ductal Epithelial Impedance Spectroscopy**  
R. DAVIES, M. BRUMFIELD, M. PIERCE

**Young Investigators Award and Closing Ceremony**  
*13:30 - 14:00, i7*