

# 13th International Conference on Biomedical Applications of Electrical Impedance Tomography

EIT 2012

23-25, May 2012

Tianjin University, Tianjin, China

Day	Time	Event	Room
May 23	08:00-09:30	<b>Registration</b>	No.7 Conference room in Tianjin University
	09:30-10:00	<b>Welcome to the conference</b> <b>Host: Dong Ming</b> 1. Opening of the conference by someone from Tianjin University 2. Introduction by the Chairman of the conference Dr. Xuemin Wang	
	10:00-10:40	<b>Tea &amp; coffee break/group picture</b>	
	10:40-12:00	<b>Invited talks:</b> <b>Chairs: David Holder, Xuemin Wang</b> 1. Prof. Xiuzhen Dong, The research on dynamic image monitoring by EIT 2. Prof. Huaxiang Wang, The latest developments of EIT in China	
	12:00-13:30	<b>Buffet lunch</b>	The Start Epoch Hotel
	13:30-15:15	<b>Session 1: EIT Systems</b> <b>Chairs: Richard Bayford, Fusheng You</b> 1. <i>Hwan Koo, David Holder</i> , Design and validation of neural electrical impedance tomography system for detection of fast neural activity by evoked response in a rat brain cortex 2. <i>Eun Jung Lee, Tong in Oh , Tae Eui Kim, Eung Je Woo, Jin Keun Seo</i> , A microscopic electrical impedance tomography using a novel design with two injection current 3. <i>Harsh Sohal, Hun Wi, Tong In Oh, Eung Je Woo</i> , Design of impedance measurement module for an EEG and EIT integrated system 4. <i>S. Kaufmann, M. Ryschka</i> , A novel, multi-frequency EIT System Architecture with Active Electrode and early Digitalization at the Electrodes 5. <i>Fusheng You, Xiuzhen Dong</i> , A high speed portable EIT system with wireless data transmission 6. <i>Tae Eui Kim, Hun Wi, Tong In Oh k, Eung Je Woo</i> , Microscopic electrical impedance tomography system using a small container with micro-scale	

		electrodes 7. <i>Wei He, Peng Ran, Zheng Xu, Kang Ju, Bing Li</i> , Design in and discussion of portable open electrical impedance tomography (EIT) system	No.7 Conference room in Tianjin University
	15:15-15:45	<b>Tea &amp; coffee break</b>	
	15:45-17:45	<b>Session 2: EIT Algorithms I</b> <b>Chairs: W. R. B. Lionheart, Fusheng You</b> <ol style="list-style-type: none"> <li>1. <i>T. Doru, B.Packham, H.Koo, D. Holder</i>, Evaluation of reconstruction algorithms and imaging acute stroke with multi-frequency electrical impedance tomography in a head-shaped tank with a real human skull</li> <li>2. <i>Liwen Miao, Wei Wang, Yixin Ma</i>, Enhanced Resolution of EIT Images based on Restricted ROI</li> <li>3. <i>C Yang, M Soleimani</i>, Minimizing computational costs in large scale 3D EIT by using sparse Jacobian matrix and parallel CGLS reconstruction</li> <li>4. <i>Emma Malone, Gustavo Santos, David Holder, Simon Arridge</i>, A non-linear image reconstruction method for multi-frequency EIT of stroke using spectral constraints</li> <li>5. <i>Canhua Xu, Meng Dai, Bin Yang, Feng Fu, Xuetao Shi, Fusheng You, Ruigang Liu, Xiuzhen Dong</i>, A Layered Reconstruction Algorithm for Cerebral Electrical Impedance Tomography</li> <li>6. <i>Guoya Dong, Xian Li, Hongyan Li, Manling Ge</i>, EIT reconstructions with improved spatial resolution based on FOCUSS method for a cylindrical model meshed by tri-prism elements</li> <li>7. <i>Hongbin Wang, Guizhi Xu, Ying Li, Weili Yan</i>, Generalized Back Projection Algorithm Based on Node Analysis in 3-D EIT</li> <li>8. <i>Yaoyuan Xu, Guizhi Xu, Ying Li</i>, On the Calculation of Jacobian Matrix for Inverse Boundary Problem in 2D EIT</li> </ol>	
	18:00-21:30	<b>Reception</b>	
			The Start Epoch Hotel
<b>May 24</b>	08:00-10:15	<b>Session 3: EIT Applications</b> <b>Chairs: David Holder, Guoya Dong</b> <ol style="list-style-type: none"> <li>1. <i>Bart Iomiej Grychtol, Andy Adler</i>, Asymmetries in Electrical Impedance Tomography Lung Images</li> <li>2. <i>James Avery, Ben Hanson, David Holder</i>, Self abrading servo controlled</li> </ol>	

		<p>electrode</p> <ol style="list-style-type: none"> <li>3. <i>Doan Trang Nguyen, Craig Jin, Aravinda Thiagalingam, Alistair McEwan</i>, 3D Electrical Impedance Tomography for Pulmonary Perfusion Defect Imaging- Is it possible with a 16 channel EIT system</li> <li>4. <i>Robert P, Patterson, Jie Zhang, Fei Yang</i>, What is the Slice Thickness of a 2D EIT Image of the Lungs</li> <li>5. <i>Michael Czaplik, Rolf Rossaint, Steffen Leonhardt</i>, Multi-frequency EIT in Acute Lung Injury - Differences in multi-frequency EIT imaging in an animal model of acute lung injury</li> <li>6. <i>Thomas Schlebusch , Axel Cordes , Robert Pikkemaat , Klaus Moehringy, Ruediger Ruppy , Steffen Leonhardt</i>, Application of EIT to determine bladder volume</li> <li>7. <i>J. L. Davidson, R. A. Little, P. Wright, M. Crabb, J. Naish, A. Morgan, G. J. M. Parker, W. R. B. Lionheart, R. Kikinis, H. McCann</i>, MRI-informed functional EIT lung imaging</li> <li>8. <i>Zhanqi Zhao, Sven Pulletz, In é Frerichs, Knut Moeller</i>, The EIT-based global inhomogeneity index is highly correlated with regional lung opening in patients with acute lung injury</li> <li>9. <i>Xuemin Wang, Yue Wang, Guang Han, Xiaolei Ma, Peng Zhou</i>, Study of the visibility of the Meridian based on electrical impedance tomography</li> </ol>	No.7 Conference room in Tianjin University
	10:15-10:45	<b>Tea &amp; coffee break</b>	
	10:45-12:30	<p><b>Session 4: EIT Algorithms II</b>  <b>Chairs: EungJe Woo, Guoya Dong</b></p> <ol style="list-style-type: none"> <li>1. <i>W. R. B. Lionheart, K. Parides, A Adler</i>, Resistor networks and transfer resistance matrices</li> <li>2. <i>B Packham, G. Sato dos Santos, A Plata Garcia, O Gilad, T Oh, A Ghosh, G Barnes, D Holder</i>, Statistical analysis of electrical impedance tomography image sets of epicortically recorded evoked neural activity in the anaesthetised rat</li> <li>3. <i>Zhou Zhou, Hui Xu, Hongqi Yu, Zheng Xie</i>. The Forward Problem Study of EIT on Curved Surface</li> <li>4. <i>G. del Muro González, A. Seppänen, V. Kolehmainen, N. Hyvönen</i>, A Bayesian approach to Cole-Cole parameter estimation with multi-frequency ETI</li> <li>5. <i>Hyeuknam Kwon, Jin Keun Seo</i>, Local image reconstruction method for EIT with</li> </ol>	

		<p>internal electrodes</p> <p>6. <i>Youssoufa Mohamadou, Tong In Oh, Hun Wi , Eung Je Woo</i>, Performance comparison of four bio-impedance spectroscopy systems</p> <p>7. <i>Shuai Zhang, Guizhi Xu, Hongbin Wang, Xueying Zhang, Guoya Dong, Yaoyuan Xu, Ying Li</i>, A Forward Problem Model of Electrical Impedance Tomography with Generalized Finite Element Method</p>	
	12:30-14:00	<b>Lunch buffet</b>	The Start Epoch Hotel
	14:00-15:45	<p><b>Session 5: EIT New Methods</b></p> <p><b>Chairs: Tong In Oh, Yixin Ma</b></p> <p>1. <i>Richard Bayford, Andrea Botic, Andrew Tizzard, P_Kantartzis, Panos Liatsis , Andreas Demosthenous</i>, New imaging mapping device for the detection and location of rectal cancer</p> <p>2. <i>S. Kaufmann, A. Latif, T. Moray, W. C. Saputra, J. Henschel, M. Ryschka</i>, A flexible FPGA SoC based multi-frequency EIT Hardware Platform</p> <p>3. <i>Yizhuang Song, Eunjung Lee, Eung Je Woo, Jin Keun Seo</i>, Optimal geometry toward uniform current density electrodes</p> <p>4. <i>Mohammad Khalighi, Bijan Vosoughi Vahda, Mohammad Mortazavi, CL Yang, Manuchehr Soleimani</i>, A Practical Voltage-Controlled Current Source Design For Electrical Impedance Tomography</p> <p>5. <i>Tong In Oh, Hun Wi, Adnan Farooq, Eunjung Lee, Jin Keun Seo , Eung Je Woo</i>, Multi-frequency apparent conductivity distribution for ion mobility imaging in electrical impedance tomography</p> <p>6. <i>A.V. Korjenevsky, S.A. Sapetsky , T.S. Tuykin</i>, Time domain magnetic induction and electric field tomography</p> <p>7. <i>Pascal Olivier Gaggero, Bartłomiej Grychtol, Andy Adler, Andreas Waldmann, Volker Maximillian Koch</i>, Towards a common and open file format for electrical impedance tomography</p>	No.7 Conference room in Tianjin University
	16:00-20:00	<b>Tour and dinner (River boat touring)</b>	
<b>May 25</b>	08:00-09:30	<p><b>Session 6: MREIT/MIT</b></p> <p><b>Chairs: Alex Krojanevsky, Yanbin Xu</b></p> <p>1. <i>Zijun Meng, Eung Je Woo</i>, In Vivo MREIT Conductivity Imaging of Canine Brain to Evaluate Brain Abscess</p>	

		<ol style="list-style-type: none"> <li>2. <i>L. Ma, H.-Y. Wei, M. Soleimani</i>, Cryosurgical Monitoring Using Electromagnetic Measurements- A feasibility Study for Magnetic Induction Tomography</li> <li>3. <i>T R Qureshi, Nan Li, A Zarafshani, C R Chatwin, Wei Wang</i>, Performance comparison between voltage source design and current source for EIM systems</li> <li>4. <i>Wei Zhou</i>, Feasibility of multiplexing coil array in magnetic induction tomography</li> <li>5. <i>Zijun Meng, Eung Je Woo</i>, Detection of Liver Radiofrequency Ablation Lesion using MREIT Conductivity Imaging</li> <li>6. <i>M. Negishi<sup>1</sup>, R. T. Constable</i>, Magnetic Resonance Driven Electrical Impedance Tomography: A Phantom Study</li> </ol>	No.7 Conference room in Tianjin University
	09:30-10:00	<b>Tea &amp; coffee break</b>	
	10:00-12:30	<b>Session 7: Impedance/Others</b> <b>Chairs: Robert Patterson, Yanbin Xu</b> <ol style="list-style-type: none"> <li>1. <i>Munkh-Erdene Ts, E.J. Lee, J.K. Seo, S.W. Kim</i>, Imaging of regional admittivity change using a planar array of voltage-sensing electrodes and two pairs of current-injection electrodes</li> <li>2. <i>Nan Li, T R Qureshi, A. Zarafshani, N B ágo, Z Zhou, H Xu, C Chatwin, W Wang</i>, Fast Lock-in System for Biological Cell Impedance Analysis</li> <li>3. <i>Ahmed Raihan Abir, Ahamad Imtiaz Khan, K Siddique-e Rabbani</i>, Experimental verification of a new Pigeon Hole Imaging (PHI) modality</li> <li>4. <i>Mingkang Zhao, Hun Wi, Abu Hena Mostofa Kamal, Tong In Oh, Eung Je Woo</i>, Preliminary test for anomaly detection using a trans-admittance mammography (TAM) system with 60*60 sensing electrodes</li> <li>5. <i>Tohru F. Yamaguchi, Kazuo Maki, Li-Qun Wang, Mitsuhiro Katashima, Shinya Kuriki</i>, Human abdominal fat imaging considering anisotropy of bioelectrical conductivity</li> <li>6. <i>Xuetao Shi, Xiuzhen Dong</i>, Comparative Study on the Dielectric Properties of living and Nonliving tissue from Human and Animal</li> <li>7. <i>Hun Wi, Hyeuknam Kwon, Bastian Harrach, Bishal Karki, Tong In Oh, Eung Je Woo, Jin Keun Seo</i>, Multi-electrode bioimpedance spectroscopy using the localized electrical energy concentration method</li> <li>8. <i>Ting Ting Zhang, Seo Jin Keun</i>, Computational method for frequency dependent potentials in cell-suspension model</li> </ol>	

		<p>9. <i>Fan Zheng, Guofeng Qiao, Xiaolin Zhang, C Chatwin, Wei Wang</i>, A comparison of two-and four-electrode bio-impedance measurements in electrolytes of different conductivity for measurement of cell suspension condition</p> <p>10. <i>Feng Fu, Bing Li, Xue-tao Shi, Shijie Hu, Rui-gang Liu, Fusheng You, Canhua Xu, Bin Yang, Zhou Fei, Xiuzhen Dong</i>, Using EIT to monitor the changes of cerebral impedance during dehydration treatment for brain edema: feasibility and preliminary results</p>	
	12:20-	<b>Lunch buffet and wrap up</b>	The Start Epoch Hotel