

MONDAY 6

ROOM A	
OPENING CEREMONY	
9:00	President UPC Chairman ICPRBI
	H P Schwan <i>The Practical Success of Impedance Techniques from an Historical Perspective</i>
Organ State and Tumors I	
10:20	E Gersing <i>Monitoring temperature induced changes in tissue during hyperthermia by impedance methods</i>
10:40	K S Osterman, K D Paulsen, P J Hoopes, A Hartov and S B Jones <i>Application of linear circuit models to impedance spectra in irradiated muscle</i>
11:00	J Jossinet and M Schmitt <i>Alternative parameters for the characterisation of breast tissue</i>
11:20	
11:30	Coffee Break
Organ State and Tumors II	
12:00	B Blad, P Wendel, M Jonson and K Lindstrom <i>An electrical impedance index to distinguish between normal and cancerous tissues</i>
12:20	N Chaveau, L Hamzaoui, P Rochaix, B Rigaud, JJ Voigt and J P Morucci <i>Ex vivo discrimination between normal fibrocystic and cancerous tissues in human breast surgical biopsies with bioimpedance spectroscopy</i>
12:40	J Stelter, J Wtorek, A Nowakowski, A Kopacz and T Jastrzembski <i>Complex permittivity of breast tumour tissue</i>
13:00	T Palko, A Chicha-Mikolajczyk and K Ilmurzynska <i>Examination of isolated rat heart by impedance spectrometry</i>
13:20	
13:30	LUNCH
14:30	Poster Session I Tissues and Organ Impedance
Organ State and Tumors III	
15:00	O Casas, R Bragos, P Riu, J Rosell, M Tresanchez, M Warren, A Rodriguez-Sinova, A Carreno and J Cinca <i>In-vivo and In-situ ischemic tissue characterisation using electrical impedance spectroscopy</i>
15:20	M Gheorghiu, E Gersing and E Gheorghiu <i>Quantitative analysis of impedance spectra of organs during ischemia</i>
15:40	M Schäfer, J Kirilum, C Schlegel and M M Gebhard <i>Dielectric properties of skeletal muscle during ischemia in the frequency range from 50 Hz to 200 MHz</i>
16:00	M Warren, O Casas, R Bragos, M Tresánchez, A Carreño, A Rodríguez-Sinovas, A Yáñez, J rosell, P Riu and J Cinca <i>Timecourse of myocardial tissue of electrical impedance during ischemia and reperfusion in in-vivo pig hearts</i>
16:20	
16:30	Coffee Break
Brain Impedance	
17:00	S Ryabow <i>Analysis of the electrical characteristics of rat cerebral cortex as volume conductor</i>
17:20	Y Moskalenko, T Kravchenko, A Chervotok and V Shalaev <i>Applications of bio-impedance for the study hemo and CSF dynamics in the human head</i>
17:40	P Rashkov, A Atanassova, E Hadjipetrova, T Vassileva and Tchalakova-Atanassova <i>Infomativity of rheoencephalograms and differential rheoencephalograms of patients with reversible ischaemic neurological deficit (RIND) in their follow-up in the course of one year</i>
18:00	

Poster Session I	
Tissues and Organ Impedance	
N H Nessler	<i>Model calculation of the current distribution under the neutral electrode in electrosurgery</i>
Y F Babich	<i>Wave-like modification of the skin 2D electrical impedance relief in response to a remote exposure to the non-thermal MM-EMF</i>
P Gizdulich and M S Romano	<i>A noninvasive measurement of human skin resistance, in vivo</i>
S Grimnes, H Pittan, O G Martinsen and G Gholizadeh	<i>Threshold of perception of DC current in human skin - a function of current or current density?</i>
M Huerta, G De Mercato and F Garcia	<i>Electrical properties of the bones of the craneal cavity in a frequencies range of 500 MHz to 1 GHz</i>
A Köning, B Mahner, W Tschiltschke and K D Rosenbaum	<i>Dielectric characteristics of erythrocyte suspensions: The influence of the suspension medium on the distribution parameter alpha</i>
E Vozáry, P László and G Zsivánovits	<i>Impedance parameter characterising apple bruise</i>
S Y semenov, R Svenson, G Simonova, A Bulishev, Y Sizov, A Nazarov, A Pavlovsky, G Tatsis, M Taran and A Starostin	<i>A model of myocardial dielectric properties in the frequency spectrum from 0.2 MHz up to 6.0 GHz. Application to myocardial anisotropy, acute and chronic myocardial infarction study</i>
S Y semenov, R Svenson, G L Wu and G Tatsis	<i>Spectroscopy of dielectric properties during acute and chronic myocardial infarction. Experimental results in spectrum from 0.2 MHz up to 6.0 GHz.</i>
D Lifen, Y Yafei, S Meiling and F Yutian	<i>Clinical study on electrical impedance method used in diagnosis of breast diseases</i>
D Chen	<i>The power spectral analysis of REG in patients with cerebral arteriosclerosis and coronary heart disease</i>

ROOM B	
Other applications & Methods	
T Repo,	<i>Electrical impedance analysis of woody plant tissues: an overview</i>
S Inglis, R H Bayford, D S Holder	<i>Assessment of improved instrumentation for measuring resistance changes during action potentials, in walking leg nerves of the edible crab, cancer pagurus</i>
J Wtorek and A Polinski	<i>Modelling of changes in blood complex permittivity contributions to impedance signal</i>
M M Radai, S Abboud and M Rosenfeld	<i>Evaluation of impedance technique to detect breast carcionoma using a 2-D numerical model of the torso</i>
	Coffee Break
Multi Freq. Methods	
L Ward, N Fuller, B Cornish, E Marinos and B Thomas	<i>A comparison of the Siconolfi and Cole-Cole procedures for multi-frequency impedance data analysis</i>
P Riu and C Lapaz	<i>Practical limits of the Kramers-Kronig relationships applied to experimental bio-impedance data</i>
A Fitzgerald, H Griffiths and D S Holder	<i>Complex resistivity derivation from in vitro and simulated MFEIT images</i>

TUESDAY 7

ROOM A	
INVITED LECTURE	
9:00	H C Lukaski
Body Composition I	
10:00	K Sakamoto, R Sunaga, K Nakamura, Y Sato, M Fuji, H Kanai, T Tsuchida, A Ueno, N Kanai and K Hasegawa <i>Study of the relation between fluid distribution change in tissue and impedance change during haemodialysis by frequency characteristics of the flowing blood</i>
10:20	M Jaffrin, A Seeger, A Le Gourrier <i>Evaluation of vascular refilling in dialysed patients using bioimpedance and haematocrit monitoring</i>
10:40	F Guglielmi, T Mastronuzzi, L Pietrini, A Panarese, C Panella and A Francavilla <i>The RXc Graph in the evaluating and monitoring fluid balance in patients with liver cirrhosis</i>
11:00	F Goovaerts, Th J C Faes, G W De Valk-de-Roo, M T Bolscher, J C Netelenbosch, W J F van der Vijgh, and R M Heethaar <i>Estimation of ECV by a two-frequency measurement</i>
11:20	
11:30	Coffee Break
Body Composition II	
12:00	B J Thomas, B H Cornish, L C Ward and A Jacobs <i>Bioimpedance: is it a predictor of true water volume?</i>
12:20	T Talluri, R J Liedtke, A Evangelisti, J Talluri and G Maggia <i>Fat free mass qualitative assessment with bioelectric impedance analysis (BIA)</i>
12:40	A Pietrobelli and S B Heymsfield <i>Impedance index correlation with major body compartments in healthy adults</i>
13:00	J Matthie, G Pan and P Withers <i>Advances in bioimpedance instrumentation for predicting body cell mass</i>
13:20	
LUNCH	
14:30	Poster Session II
Cardiovascular Impedance and Body Composition	
Cardiovascular system	
15:00	A Karpov, V shmelev, I Ilyin, E Morozov and A Mazaletskaya, <i>Heart's work and vessels contractility during pregnancy...</i>
15:20	D W Kim and S C Kim <i>Measurement of leg arterial compliance of normal and diabetics using impedance plethysmography</i>
15:40	P Gizdulich, C Guiot <i>Dependency of blood impedance on blood velocity and measurement frequency in small tubes</i>
16:00	A Polinski, J Wtorek and A Nowakowski <i>Validity of the Nyober equation</i>
16:20	
16:30	Coffee Break
Cardiac Impedance Models	
17:00	E Raaijmaker, Th J C Faes, R J P M Scholten, H G Goovaerts and R M Heethaar <i>A meta-analysis of published studies concerning the validity of thoracic impedance cardiography</i>
17:20	Th J C Faes, E Raaijmaker, J H Meijer, H G Goovaerts and R M Heethaar <i>Towards a theoretical understanding of stroke volume estimation with impedance cardiography</i>
17:40	P K Kaupinen, J A Hyttinen, T Kööbi and J Malmivuo <i>Lead field theoretical approach in impedance cardiography - towards more controlled measurement sensitivity</i>
18:00	

Poster Session II	
Cardiovascular Impedance and Body Composition	
J M Wang, P Meng, X F Ba, H Juan, W L Ying and C Sheng <i>The alteration of impedance cardiogram ondulate form in diabetic heart disease patients</i>	
H Wang, L Wang, Y Wang and B Huang <i>The evaluation on the cardiac function in anaesthesed equine by impedance cardiogram</i>	
W Walichnowski and F W Skibniewski <i>Interpretation problems of impedance cardiography</i>	
L shujun and Weibin <i>Observation on left cardiac function of patients for pulmonary heart desesse with impedance nonlinear method</i>	
A kalb, F Melis, A Cristafulli, V. Orrù, R Lener, R Sollai, C Lai and A Concu <i>Cardiodynamic changes induced by driving motorcycles at high speed obtained by a device for telemetric transmission of teb signals</i>	
A Polinski, J wtorek and A Nowakowski <i>Impedance of a limb segment as a function of applied external pressure</i>	
G Jukang <i>Impedance hepatography as a new method in assessing right heart failure with hepato-congestion</i>	
Y Cai, T Krantz, D N Eder, N H Secher <i>Intracellular water as assessed by bioelectrical conductance</i>	
Y Maruyama and S Hisanobu <i>Investigation of changes in body fluid measured by continuous multi-frequency impedance method during dialysis</i>	
H Takada, H Iwata, S Sugita and K Takada <i>Application of the bio-impedance method:Electrocardiographic amplitudes in japanese obese adolescents, defined by both body mass index and body fat</i>	

ROOM B	
Skin Impedance I	
E Alanen, T Lahtinen and J Nuutinen <i>Penetration of electromagnetic fields of open-ended coaxial probe at different frequencies in skin measurements</i>	
J Nuutinen, T Lahtinen and E Alanen <i>Water content of human skin by dielectric measurements at high radiofrequencies</i>	
A H Lacknermeier, E T MacAdams, G P Moss and A D Woolfson <i>Normalisation of in vivo skin impedance to facilitate study of transdermal drug delivery</i>	
M Nyrén, L Hagströmer and L Erntestam <i>Electrical impedance for assessment of tuberculin skin reactions</i>	
Coffee Break	
Skin Impedance II	
I Nicander and S Ollmar <i>EBI related to structural differences and reactions in skin and oral mucosa</i>	
F Pliquet and U Pliquet <i>Stress action on skin tissue, detected by the Py-value</i>	
U Pliquet, C Gusbeth and F Pliquet <i>Perturbation of human stratum comeum: electric field application vs. Heating</i>	

WEDNESDAY 8

ROOM A			
9:00	INVITED LECTURE		
	Chris L Davey <i>From Concept to Market in Industrial Impedance Applications</i>		
	Cells and Cultures		
	K Nakajima, M Fuji, K Sakamoto and H Kanai <i>Orientation and deformation of erythrocytes in flowing blood</i>		
10:20	E Gheorghiu <i>On the limits of ellipsoidal models when analysing dielectric behaviour of living cells; emphasis on red blood cells</i>		
10:40	M Fuji, N Kanai, K Hashimoto, T Tsuchida, A Ueno, K Sakamoto and H Kanai <i>The effect of osmotic pressure on frequency characteristics of blood impedance</i>		
11:00	T C Chilcott and H L Coster <i>Electrical impedance tomography study of biological processes in a single cell</i>		
11:20	R Bragós, X Gàmez, J Cairó, P Riu and F Gòdia <i>Biomass monitoring using impedance spectroscopy</i>		
11:40			
11:50	Coffee Break		
	Bio-Impedance Methods		
12:20	H G Goovaerts, Th J C Faes, E Raaijmakers and R M Heethaar <i>Design concepts for electrical impedance measurements</i>		
12:40	J Jossinet, B Lavandier and D Cathignol <i>A new modality based on conductivity modulation by ultrasound</i>		
13:00	H Halldórsson and Stig Öllmar <i>Signal analysis of non-invasive impedance spectra of transplanted kidneys in vivo</i>		
13:20			
13:30	LUNCH		
14:30	Poster Session III		
	Inductive Methods	ROOM B	
		EIT Reconstruction I	
15:00	H Scharfetter, N Wolfgang, B Puswald, G Petrova, D Kovachev and H Hutten <i>Wideband transceiver for inductive bioimpedance spectroscopy (IBIS)</i>	J P Kaipio, P A Karjalainen, E Somersalo and M Vauhkonen <i>State estimation in time-varying electrical impedance tomography</i>	
15:20	H Griffiths, W R Stewart and W Gough <i>Magnetic Induction tomography: Measurements with a single channel</i>	J C de Munck, Th J C Faes and R M Heethaar <i>A parametric method for the EIT inverse problem</i>	
15:40	A Kornejevsky and V Cherepenin <i>Measuring system for induction tomography</i>	R Olmi, M Bini, S Manetta and S Priori <i>EIT reconstruction of static images by a genetic algorithm approach</i>	
16:00	J C Tozer, R H Ireland, D C Barber and A T Baker <i>Magnetic Impedance Tomography</i>	A Gibson, S Somaroo, R H Bayford and D S Holder <i>Development of a reconstruction algorithm for imaging impedance changes in the human head</i>	
16:20			
16:30	Coffee Break	Coffee Break	
	Instrumentation	EIT Reconstruction II	
17:00	K S Paulson and M Pidcock <i>Optimal placement of voltage measurement electrodes for local bio-impedance measurements</i>	W R B Lionheart <i>Problems of shape and dimension in EIT</i>	
17:20	C A González-Correa, B Brown, R Smallwood and C K D Bardhan <i>An impedance probe for the investigation of Barrett's esophagus</i>	P J Vauhkonen, M Vauhkonen, T savolainen and J P Kaipio <i>Static three dimensional electrical impedance tomography</i>	
17:40	D Yélamos, O Casas, R Bragós and J Rosell <i>Improvement of a front-end for impedance spectroscopy</i>	V Molebny, J Jossinet, O Skipa and S Sputai <i>I.I.T. - Inverse impedance tomography:Modelling contrast sensitivity</i>	
18:00			

Poster Session III Instrumentation and EIT Reconstruction	
	M Vauhkonen, P J Vauhkonen and J P Kaipio <i>Estimation of organ boundaries in electrical impedance tomography</i>
	M Kocikowski and A Nowakowski <i>RCFART-3D reconstruction algorithm for EIT</i>
	Z Giza, J Sikora and A Zochowski <i>The linear approximation of material coefficients distribution in the electrical impedance tomography</i>
	R González-Garza, J Delgado-Romero, I Chang and K R Foster <i>A multichannel multielectrodes switching system computer controlled for bioelectrical impedance measurements</i>
	L Ming-Yuan <i>Phase lock loop application in electrical bio-impedance measurements</i>
	M J Osypka and E E Schafer <i>Impedance cardiography: advancements in demodulation techniques</i>
	B A Galwas, J K Piotrowski and T Palko <i>Non-resonant and resonant dielectrometers for measurements of bio-liquids at microwave frequencies</i>
	O Mårtens, H Märtin, M Min, T Parve and A Ronk <i>Digital post-processing of the bio-impedance signal</i>
	V Cherepenin and A Kornejevsky <i>Nonlinear impedance tomography</i>
	A Kornejevsky, V Cherepenin, V Kornienko and Y Kultiasov <i>Electrical impedance tomography with non-adjacent current injection and back projection image reconstruction</i>
	P C J Tekieli, P C J Hamn, B H Brown and G C van Rhoon <i>Measurement of skin damage after irradiation using applied potential tomography</i>
	M Castro, A Gaona, M Aguillón and A Zapata <i>A semi-parallel system of 16 electrodes for electric impedance tomography, and its application in a model of healthy and cancerous tissue</i>
	D Nita, K Mikolajczyk and T Palko <i>The concept of switching system for electrical impedance tomography</i>

THURSDAY 9

ROOM A

EIT Applications	
10:00	I Frerichs, G Hahn, H Schiffmann, C Berger and G Hellige <i>A new approach in monitoring regional lung function by functional EIT during assisted ventilation</i>
10:20	P W A Kunst, A Von Noordegraf, and P M J M de Vries <i>Pulmonary perfusion measurements by electrical impedance tomography</i>
10:40	N Vaisman, N Weintrob, A Blumental, Z Yosefsberg and P Vardi <i>Delayed gastric emptying in patients with type I diabetes mellitus</i>
11:00	D S Holder, C A González-Correa, T Tidswell, A Gibson, G Cusick and R H Bayford <i>Assessment and calibration of a low frequency system for electrical impedance tomography (EIT), optimized for use in imaging brain function in ambulant human subjects</i>
11:20	
11:30	Coffee Break
Cardiac Impedance I	
12:00	R Patterson, D Witsoe and A From <i>Impedance stroke volume compared with dye and electromagnetic flowmeter values during drug induced inotropic and vascular changes in dogs</i>
12:20	H J J Kerckamp and R M Heethaar <i>A comparison of bioimpedance and echocardiography in measuring systolic heart function in cardiac patients</i>
12:40	M Min, T Parve, H Martin and A Kuhlberg <i>Thoracic bio-impedance as a basis for pacing control</i>
13:00	A W Scherhag, J Stastny, S Pflieger, W Voelker and D L Heene <i>Evaluation of systolic performance by automated impedance cardiography</i>
13:20	
13:30	LUNCH
14:30	
Cardiac Impedance II	
15:00	T Nawarycz, L Ostrowska-Nawarycz and J Kaczmarek <i>Impact of cardiovascular reactions using impedance cardiography method in hypertension</i>
15:20	J Siebert and J Wtorek <i>Stroke volume variability during postural changes in the patients before and after coronary artery bypass grafting</i>
15:40	M Zubarev, A Dumler, V Shutiv and N Popov <i>Assessment of left ventricular systolic function and diastolic time intervals by bioimpedance polyrheocardiographic system</i>
16:00	A W Scherhag, J Stastny, S Pflieger, W Voelker and D L Heene <i>Haemodynamic monitoring during bicycle exercise testing by automated impedance cardiography</i>
16:20	
16:30	Coffee Break
CLOSING CEREMONY	
17:00	K S Rabbani <i>Research & development on electrical bio-impedance in Bangladesh</i> <i>Focused impedance measurement (FIM) - A new technique with improved zone localisation</i> Chairman ICPRBI

ROOM B

EIT Methods and Applications	
15:00	J Wtorek, J Stelter and A Nowakowski <i>Impedance mammograph 3D phantom studies</i>
15:20	B Tunstall, W Wang, Z Cheng, M McCormik, R Walker and D Rew <i>In-vitro study results from De Montfort Mk1 electrical impedance mammography system</i>
15:40	P W A Kunst, S Bohm and P M J M de Vries <i>Regional pulmonary pressure volumes curves by electrical impedance tomography in a model of ARDS</i>
16:00	N Khambete, P Metherall, B Brown and R Smallwood <i>Can we optimise electrode placement for impedance pneumography?</i>
16:20	
16:30	Coffee Break