



February 1998
Melbourne Australia

FINAL PROGRAM

2ND INTERNATIONAL CONFERENCE ON BIOELECTROMAGNETISM

15 - 18 February 1998
Melbourne, AUSTRALIA



Welcome



Dick Wicks
Magnetic Pain Relief Products



**Heart
Foundation**
Not just a charity, a necessity.



IEEE



Foundation for East West
Medicine - Taiwan



**February 1998
Melbourne Australia**

WELCOME



Dear Friends and Colleagues,

On behalf of the Organising Committee I welcome you all to the 2nd International Conference on Bioelectromagnetism.

As we are all aware, many biological processes within the living organism, from cellular up to the organism level, are based on bioelectric and biomagnetic phenomena. These phenomena are still not completely understood and are the subject of much scientific research. These various research areas could be summarised under the name, Bioelectromagnetism.

Bioelectromagnetism includes measurements of electrical and magnetic properties, as well as electric and magnetic stimulation of living organisms and tissues. It also includes interactions of electromagnetic radiation, like the one produced by mobile phones or power lines, with the living organisms, tissues and molecules.

Bioelectromagnetism is a new and growing area with an increasing number of new disciplines. That is why each new conference should have new sessions introduced. For example in this year's conference we have enriched the conference program with two new sessions: biomolecular electronics and electromagnetism in alternative medicine.

The 1st International Conference on Bioelectromagnetism was organised together with the 10th Nordic-Baltic Conference on Biomedical Engineering, in Tampere, Finland, and it was a great success. This time, in Melbourne, the International Conference on Bioelectromagnetism stands alone, showing that bioelectromagnetism has become a separate discipline attracting substantial research.

We hope that this conference will reflect the present state of this research. I hope you will all enjoy the conference, as well as your stay in Melbourne and in Australia.

In concluding, I would like to thank our sponsors: The Heart Foundation of Australia, The Institute for East-West Medicine and Dick Wicks Magnetic Products. They have helped us to make this conference possible. I would also like to thank the following for their help and support: Monash University, IEEE Engineering in Medicine and Biology Society, The Australian College of Physical Scientists and Engineers in Medicine, and of course the International Society for Bioelectromagnetism.

**Irena Cosic
Conference Chairman**

INFORMATION FOR DELEGATES

REGISTRATION 13.00-15.00 Sunday 15 February 1998 The Boardroom
8.00 Monday 16 February 1998 Foyer of the Conference Area

CONFERENCE OFFICE: If people want to contact you during the 4 days of the Conference at Sheraton Towers, Southgate, the contact number is :Telephone: 61 3 9696 3100 Facsimile: 61 3 9690 6581. Ask to be transferred to the 2nd International Conference on Bioelectromagnetism.

MESSAGE BOARD: Delegates are advised to consult the messages board, located near the conference office.

PHONE AND FAX: Card operated public fax and telephone are available.

CATERING: Morning and afternoon tea will be served. **Lunches will not be provided.** Please note that there are many restaurants in Southgate.

PARKING: Car Parking is available at the rate of **\$15.00 per day** at the Sheraton Towers Park. Alternative car parking is also available in the open Air Car Park at the rate of \$6.00 per day.

PROCEEDINGS: A copy of the conference proceedings will be given to each fully registered delegate when registering. Additional copies can be purchased at the registration desk.

SMOKING: Delegates are requested to refrain from smoking during the sessions and in the Conference area.

NAME TAGS: To assist you, the Organising Committee and Session helpers have coloured name tags.

Thursday 19 February 1998 There will be an on site agent/guide available to assist with bookings for full day and half day tours.

PLEASE NOTE: **The Conference Organisers and the Office of Continuing Education will not be responsible**
INCIDENTAL EXPENSES: **for any incidental expenses incurred by delegates during this Conference.**

The Conference Organisers gratefully acknowledge the support from the following exhibitors :

Aura Body Centre

Dick Wicks Magnetic Pain Relief Products

Foundation for East West Medicine - Taiwan

Magnacare Pty Ltd

Meyer Medical Electronics Pty Ltd

Natalex Pty Ltd

TGS Electronics Pty Ltd

PROGRAM - SUNDAY 15 February 1998

BALLROOMS

13.00 - 15.00

REGISTRATION - The Boardroom

17.00 - 17.15

OPENING CEREMONY

17.15 - 17.30

OPENING ADDRESS

Irene Cosic - Conference Chairman



Lyn Allison - Senator for Victoria



Peter Darvall - Deputy Vice Chancellor, Monash University



Jaakko Malmivuo - President of the International Society for Bioelectromagnetism

18.30 - 19.30

COCKTAILS

19.30

PLENARY SESSION

Wilson Greatbatch - Inventor of the pacemaker
Proudly sponsored by The Heart Foundation of Australia



**Heart
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Not just a charity, a necessity.

LYN ALLISON'S WELCOME



It gives me great pleasure to welcome you to this international conference on Bioelectromagnetics - and it is a privilege to be associated with so many learned scientists!

As a politician with an increasing interest and awareness in all matters concerned with public health - I can say that both the community and the government are ultimately dependent on the high quality of research that is brought to events such as this.

Drawing towards the end of this millennium we can look back over the past hundred years and see the extraordinary growth of industry and technology, and its often controversial relationship with science. We have also seen that when industry is tied to the field of scientific research, sometimes the ideals of science can run aground and it fails to serve the common good.

Although the powerline issue has been around for a while it has taken the wireless revolution to really wake us up to the possible dangers and health hazards associated with the use of the force of electricity. Bioelectromagneticist Dr Robert Becker has already shown us in his excellent books that natural electricity forms the basis of life - and that it can also be used as a source of healing.

Science, I believe, is based first and foremost on the ability to ask questions. It is through free hypothesising and questioning that we approach, and hope to unlock, the secrets of nature.

I would like to quote Michael Collier in his introduction to 'Grand Canyon Geology': "A science with all the answers and no more questions atrophies into mere technology."

*Lyn Allison
Senator for Victoria
Australian Democrats*

THE COALESCENCE OF THE SCIENCES

I am sure that the term "Bioelectromagnetism" means many different things to many different people. To me it means "The Coalescence of the Sciences".

We engineers feel very good about Ohm's Law. It is the same yesterday, today, and tomorrow out to many decimal places. But we forget that the reason this is so is that we are averaging the chaotic vibrations of many billions of electrons so that the average is always the same. As we go into the macrosciences like physics and chemistry, things are no longer so precisely repetitive. As we get into physiology and medicine, very little is ever the same and it often becomes almost more of an art than a science.

But as we get down into the science of very small biological units such as the nucleotides of the human genome, things seem better organized. Each rung on the DNA "ladder" (can you believe three billion rungs?) is made up of two nucleotides. There are only four nucleotides we can use, A, C, T and G. A always matches with T and C always matches with G. Three rungs code for an amino acid, and a bundle of amino acids make up a protein. Proteins make up us, so that everything we are is dictated by the sequence of the nucleotides on each rung of the ladder. Nucleotides are very small, only a few dozen atoms apiece. You can't see them in an electron microscope. They are so fundamental that they actually don't know if they are plant or animal, or if they are male or female. But when you start putting them together they pretty much go together the same way every time, reminiscent of our electrical laws in engineering.

So I believe all the Sciences are coalescing into one and that one is biology, specifically molecular biology. I note that the recent annual meeting (which I helped organize) of our USA Academy of Engineering had "Bioengineering" as its theme. I also note that the Massachusetts Institute of Technology is now requiring their engineering students to include biology in their engineering education. So I suspect that "Bioelectromagnetism" is coming into its own as a very broad-ranging, philosophical study of the effect of electricity and magnetism on all forms of plant and animal life, in diagnosis, analysis, and therapy.

Wilson Greatbatch



MONDAY 16 February 1998

BALLROOM A

FIELDS Chair : David Geselowitch

9.00 - 9.30 Is Accurate Recording of the Surface Laplacian Feasible? - *D. Geselowitz, J. Ferrara* USA

9.30 - 10.30 Modeling the Volume Conductor - Double Fourier Series Approximation Versus Spherical Harmonic Expansion - *G. Lafer, P. Wach, B. Tilg* AUSTRIA

Effect of the Skull on Scalp Potentials - *H. Eskola, T. Toivo, P. Laarne, A. Lahtinen, A-P. Meretoja, H. Lang, J. Malmivuo* FINLAND

10.30 - 11.00

11.00 - 11.15

The Effect of the Subcutaneous Fat Layer on the Measurement of the Surface Laplacian - *P. Johnston, D. Kilpatrick* AUSTRALIA

MagneSim: A Simple Magnetic Field Modelling Program - *W. Page, B. Rapley* NEW ZEALAND

Application of the parameters, reflecting ventricular repolarization inhomogeneity for identification of patients with life-threatening arrhythmias - *J. Kaik, J. Lass, K. Meigas* ESTONIA

A Realistically Shaped Finite Element Model of the Human Head for Electric Field Simulation - *D. Chen, R.B. Silbertstein, A.D. Seagar, P.J. Cadush, D. Murphy* AUSTRALIA

12.30 - 13.30

13.30 - 14.45

14.45 - 15.15

15.15 - 16.30

INSTRUMENTS Chair : Brigitte Stroetmann

Innovation Management and Technology Assessment in Medical Industry - *B. Stroetmann, M. Beier, H. Kirchner, T. Redel* GERMANY

An Odour Sensing Robot Draws Inspiration from the Insect World - *A. Russell* AUSTRALIA

Consideration of EDLC as Emergency Power Source for Totally Implantable Medical Device - *H. Watanabe, N. Jinguji, H. Matsuki, N. Hoshimiya, S. Nitta* JAPAN

New Instruments to Measure Oxygen Saturation and Total Haemoglobin Volume in Local Skin by Near-infrared Spectroscopy - *Y. Nagashima, N. Komeda, Y. Yada, A. Sakai, H. Nose* JAPAN

Design and Implementation of a Microprocessor-based Controller for Rate-Responsive Demand Pacemaker Applications - *W-Y. Chung, H-S. Lin, Y-F. Chen, C-W. Yen* REPUBLIC OF CHINA

BALLROOM B

SIGNAL & IMAGE ANALYSIS Chair : Metin Akay

Spectral Analysis of Bioelectric Signals by Adapted Wavelet Transforms - *U. Wiklund, M. Akay* SWEDEN

Respiratory Sounds Denoising using Wavelet Packets - *M. Bahoura, M. Hubin, M. Ketata* FRANCE

Derivation of Complex Resistivity Values from MFEIT Images formed with Reactive References - *A. Fitzgerald, H. Griffiths* UNITED KINGDOM

A Study of a Neural-Fuzzy Network Method for Recognising Change in Neuronal Discharge Patterns - *Z-M. Xu, E.G. Butler, M.K. Horne* AUSTRALIA

MORNING TEA

SIGNAL & IMAGE ANALYSIS Chair : Gary Mc Darby

Characterising the Discrete Wavelet Transform of an ECG Signal with Simple Parameters for use in Automated Diagnosis - *G. McDarby, B.G. Celler, N.H. Lovell* AUSTRALIA

Spectral Analysis of Myoelectric Signals by Wavelet Methods - *S. Karlsson, J. Yu, M. Akay* SWEDEN

Multiresolution Based Fuzzy c-Means Clustering for Brain Hemorrhage Analysis - *D-C. Cheng, K-S. Cheng* REPUBLIC OF CHINA

Finding Characteristic Bands from Protein Sequences using Wavelet Packet Transform and Energy Map - *Q. Fang, I. Cosic* AUSTRALIA

BALLROOM C

TISSUES Chair : Tina Karu

Weak ELF Magnetic Fields Slow the Cell Cycle Clock in Root Tips of *Vicia faba* L., The Broad Bean - *B. Rapley, R.E. Rowland* NEW ZEALAND

Electrochemical Treatment of Localized Tumours with Direct Current - *C.K. Chou, N. Vora, J R Li, W Wang, Y Yen, R L Ren, J A McDougall, C Staud, B S Zhou, L Weiss* USA

Mapping of Microwave Radiation of Tissues for Exploration of Breast Tumors - *H. Hinrikus, J. Riipulk* ESTONIA

Detection of Cranial Rhythms: A novel approach using LASERS and Image Processing - *B. Rapley* NEW ZEALAND
(¹/₂ hour presentation)

TISSUES

Chair : Daniel Stroud

Nonlinear Models of Cells Exposed to Electromagnetic Fields - *Y.S. Yang, C.J. Thompson, D.C. Bardos, K.H. Joyner* AUSTRALIA

Continuous Observation of Single Sweat Gland Activity - *A.K.M. Shamsuddin, T. Togawa* JAPAN

What Does Bioimpedance Measure? - *D.B. Stroud* AUSTRALIA

LUNCH

STATE OF THE ART SPEAKER - Macro-neocortical Dynamics, Cognition and EEG - *P.L. Nunez* USA

AFTERNOON TEA

SIGNAL & IMAGE ANALYSIS Chair : Jaakko Malmivuo

Artificial Neural Network for the Exercise Electrocardiographic Detection of Coronary Artery Disease - *R. Lehtinen, H. Holst, V. Turjanmaa, L. Edenbrandt, O. Pahlm, J. Malmivuo* FINLAND

Quantitative Multivariate analysis with Artificial Neural Networks - *C-W. Lin, T-C Hsiao, M-T Zeng, H-H Chiang* REPUBLIC OF CHINA

SNR Improvement, Filtering and Spectral Equalisation in Cochlear Implants using Wavelet Techniques - *C. Behrenbruch, B.J. Lithgow* AUSTRALIA

Potential Advantages of High Pulse Rate Stimulation of Cochlear Implants - *B. Lithgow* AUSTRALIA

MOLECULES

Chair : Lajos Baranyi

Reconstruction of the Spectral Properties of a Biomolecule under Electromagnetic Exposure by Means of Molecular Simulation - *M. Zago, P. Fossati, A. Palombo, G D'Inzeo* ITALY

Antisense Homology Boxes Coincide with the Hot Spot Regions Predicted by Resonant Recognition Theory - *L. Baranyi, I. Cosic, W. Campbell, V. Deretey, N. Okada, H. Okada* JAPAN

Prediction of Protein Active Site using Digital Signal Processing Methods - *I. Cosic, Q. Fang* AUSTRALIA

Analysis of Amino Acid Parameters in the Resonant Recognition Model - *E. Pirogova, Q. Fang, E. Lazoura, I. Cosic* AUSTRALIA

17.00 - 22.00

Barbecue on the Beach. Delegates are to meet in the Foyer of the Sheraton Hotel

TUESDAY 17 February 1998

BALLROOM A

IMPEDANCE Chair : Stig Ollmar

9.00 - 9.30 Diagnostic Potential of Electrical Bio-Impedance for Skin and Oral Mucosa - S. Ollmar, I Nicander SWEDEN

9.30 - 10.30 Non-Invasive Iterative Skull Resistivity Estimation Based on A Priori Information - D. Chen, R.B. Silberstein, A.D. Seagar, P.J. Cadusch, D. Murphy AUSTRALIA

Observation of Human Impedance at 50 kHz for Analysis of Acupuncture Points - Suhariningsih, H. Kanai INDONESIA

The Skin 2D Electroimpedance Response to a Remote Non-Thermal mm - EMF Exposition: Phenomenological Study - Y.F. Babich UKRAINE

BALLROOM B

ELECTROMAGNETIC INTERACTIONS Chair : Vitas Anderson

Development of a New In Vitro RF Exposure Device for Confocal Microscopy Imaging during Concurrent 900 MHz RF Exposure - V. Anderson, A.W. Wood, K.H. Joyner AUSTRALIA

Investigation of Analogue and Digital Mobile Phone Low Frequency Radiation Spectrum Characteristics - B. Heath, S. Jenvey, I. Cosic AUSTRALIA

The Safety of Digital Mobile Cellular Telephones with Minute Ventilation Rate Adaptive Pacemakers - K. Joyner, P.B. Sparks, H.G. Mond, M.P. Wood AUSTRALIA

FDTD Handset Antenna Modelling at 1800 MHz for Electrical Performance and SAR Results - J. Rowley, R.B. Waterhouse, K.H. Joyner AUSTRALIA

Measurements of the Effectiveness of Antenna Screens for Protection of the Head from Mobile Phone Radiation - S. Jenvey AUSTRALIA

BALLROOM C

MOLECULES Chair : Angelina Novak

Recent Advances in Image Analysis of Chromosomes Subjected to HG-Banding and In Situ Hybridization (FISH) - A. Novak, A. Jovanovic YUGOSLAVIA

A Possible Role of Excitons within the Protein Backbone - P. Ciblis, I. Cosic AUSTRALIA

RRM Designed α -Chymotrypsin-like Peptides - E. Lazoura, I. Cosic AUSTRALIA

Biophysics, Biomolecular and Radionuclide Tracing Technique to Explain Signal Transduction Profile of Acupuncture Points - K. Saputra INDONESIA

9.00 - 9.30

9.30 - 10.30

10.30 - 11.00

MORNING TEA

11.00 - 12.30

IMPEDANCE Chair : Hannu Eskola

Simulated Annealing and Genetic Algorithms Based Methods for Impedance Image Reconstruction - K-S. Cheng, B. Chen REPUBLIC OF CHINA

Accurate Conductivity Model of the Human Abdomen for Electrogastrography - I. Konkka, H. Eskola, V. Turjanmaa FINLAND

Bioelectrical Impedance Analysis: The Electronic Skin-Fold Caliper? - L. Ward, B. Cornigh, N. Fuller, O. Dewit, M. Elia, B. Thomas AUSTRALIA

Instrumentation for the Non-Invasive Direct Measurement of Skull Impedance - A. Seagar, D. Chen AUSTRALIA

Effective Bioimpedance Spectroscopy Method for Evaluation of Body Cell Water Compartments - R.A. Fiorini, G. Dacquino, G. Arrigo, G. Colasanti, L. Selicato, G. D'Amico ITALY

ELECTROMAGNETIC INTERACTIONS Chair : D.C. Laycock

Theory and Application of Magnetic Field Therapy in Multiple Sclerosis - D.C. Laycock UNITED KINGDOM (1/2 hour presentation)

The Therapeutic Applications of Static Magnetic Fields-A Case Study - D. Wicks, M. Cohen AUSTRALIA

Bio Magnetic Micro-Massage Therapy Basic Research - D. Susic AUSTRALIA

Effects of EMF on the Human Brain Activity - H.A. Sadafi, A.W. Wood, R.B. Silberstien AUSTRALIA

STIMULATION Chair : Brian Lithgow

Direct Current Measurements in Cochlear Implants: An in vivo and in vitro study - C.Q. Huang, P.M. Carter, R.K. Shepherd, P.M. Seligman, B. Tabor, G.M. Clark AUSTRALIA

Cochlear Implant Threshold Changes at High Electric Stimulus Pulse Rates - B. Lithgow AUSTRALIA

Effects of Firing Statistics on the Mean Frequency of EMG and VMG Signals - L.Y. Xu, Y.T. Zhang HONG KONG

The Effective Electrical Activation of Skeletal Muscle - Y. Huang, T.I.H. Brown, D.L. Morgan, U. Proske, A. Wise AUSTRALIA

Eddy Current Density for Non-Invasive Treatment System for Urinary Incontinence Using Functional Continuous Magnetic Stimulator (FCMS) - N. Ishikawa, S. Suda, T. Sasaki, H. Hosaka, T. Yamanishi, K. Yasuda, H. Ito JAPAN

12.30 - 13.30

LUNCH

STATE OF THE ART SPEAKER - Basics of the Action of Monochromatic Visible and Near IR (Laser) Radiation on Cells - T. Karu RUSSIA

14.45 - 15.15

AFTERNOON TEA

15.15 - 16.15 The Annual General Meeting of ISBEM

16.15 - 17.15 The Council Meeting of ISBEM

18.30 Conference Dinner - Boat Cruise. Meet in the Ballroom Foyer (The boat will be leaving promptly at 19.00)

WEDNESDAY 18 February 1998

BALLROOM A

CARDIOGRAPHY Chair : Hiie Hinrikus

9.00 - 9.30

Correlation Between Measured Surface and Endocardial Electrical Signals of Heart - H. Hinrikus, J Kaik, K Meigas, J Lass ESTONIA

9.30 - 10.30

Multichannel SQUID System for Detecting Fetal Magnetocardiograms - K. Akhiko, K. Tsukada, H. Horigome, M. Asaka, S. Shigemitsu, M. Takahashi, Y. Terada, T. Kubo, A. Matsui, T. Mitsui JAPAN

Three Dimensional Excitation Sequence During Torsade de Points in the Cardiac Computer Model with M cells - O. Okazaki, D. Wei, K. Haruni, N. E. Harrison USA

Measurement of Haemodynamic Parameters during Dobutamine Echocardiography by Automated Impedance Cardiography - A.W. Scherhag, S. Pflieger, J. Stastny, W. Boelker, D. Heene GERMANY

10.30 - 11.00

MORNING TEA

11.00 - 12.30

CARDIOGRAPHY Chair : Homer Nazeran

ECG Noise Cancellation using Digital Filters - H. Gholam-Hosseini, H. Nazeran, K.J. Reynolds AUSTRALIA

System of Electrically Measured Physiological Parameters for Reconstruction of Heart Rate - H. Hinrikus, J. Lass, K. Meigas, J. Kaik ESTONIA

Computer Simulation of Bundle Branch Re-entry in a 3D Cellular Automata Model of the Heart - P.H. Fleischmann, P. Wach AUSTRIA

Prediction of Carotid Pressure Waveforms by Mathematical Transformation of Pressure Waves Recorded from the Radial Artery - I. Rauchberger, A. Dart, M. Cohen AUSTRALIA

ULTRA SOUND & ELECTRIC FIELDS Chair : Tadej Kotnik

Electrical Neuroimmunomodulation - a Possible Mechanism for Wound and Cancer Treatment - L. Vodovnik, D. Miklavcic, T. Kotnik SLOVENIA

The Natural Geoelectric Field - F. Kocijan AUSTRALIA

Electric Field Based Sensing for Underwater Vehicle Guidance - G. Chetty, A. Russell AUSTRALIA

Dolphin Sonar Pulse Intervals and Human Resonance Characteristics - S. Birch AUSTRALIA

BALLROOM C

STIMULATION Chair : Bob Grace

Bio Magnetic Energy in Pain Relief and Healing - B. Grace AUSTRALIA

Bio Magnetic Micro Massage Therapy Application in the Physical Therapy and Rehabilitation - D. Susic AUSTRALIA

Instant Kirlian Diagnostic System. (IKIDS) A Unique Form of Diagnosis - V. Soultanov, J. Charalambous, E. White, D. Sapunar AUSTRALIA

Is There a Relationship Between Sunspot Numbers and Psychiatric Admissions? - M. Cohen, A. Wohlers AUSTRALIA

CARDIOGRAPHY Chair : Homer Nazeran

ECG Noise Cancellation using Digital Filters - H. Gholam-Hosseini, H. Nazeran, K.J. Reynolds AUSTRALIA

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POWER LINES & ELECTROMAGNETIC INTERACTIONS Chair : Andrew Wood

Power Frequency Magnetic Fields and Computer VDU Interference Phenomena - T. Dovan, R. Owen AUSTRALIA

Effects of 50 Hz Magnetic Fields on Human Physiology: Plasma Melatonin Levels - A.W. Wood, M.L. Sait, S.M. Armstrong, M.J. Martin AUSTRALIA

Developing a Mathematical Model which Represents Magnetic Field Density around Powerlines - A. Zahedi, R.J. Tao AUSTRALIA

Biological and Clinical Effects of Electromagnetism - E.A. Bakay, Yu. F. Babich, T.P. Shulkevich UKRAINE

ACUPUNCTURE Chair : Toshimitsu Musha

Numerical Estimation of the State of Mind - T. Musha, H. Araga, H.A. Haque, K. Kawamori, Y. Terasaki JAPAN

Variability of Electric Skin Conductivity on Selected Points as a Potential Diagnostic and Prognostic Test in Asthmatic Children - A. Fedorowski, E. Ziobro, A. Steciwko POLAND

Do Acupuncture Points Have Different Absorption Properties to Laser Light than Surrounding Skin? - H. Lazoura, M. Cohen, E. Lazoura, I. Cosic AUSTRALIA

Is There a link between Acupuncture Meridians, Earth-ionosphere Resonances and Cerebral Activity - M. Cohen, C. Behrenbruch, I. Cosic AUSTRALIA

Physiological Significance of the Meridian System - K-G Chen REPUBLIC OF CHINA

12.30 - 13.30

LUNCH

13.30 - 14.45

STATE OF THE ART SPEAKER - A Modern Interpretation of Acupuncture and the Meridian System - J. Tsuei REPUBLIC OF CHINA

14.45 - 15.15

AFTERNOON TEA

15.15 - 16.30

CARDIOGRAPHY Chair : Daming Wei

Reconstruction of Respiratory Patterns from Electrocardiographic Signals - H. Nazeran, K. Behbehani, F. Yen, P. Ray AUSTRALIA

Analysis of the Diurnal Variation of Arterial Pressure Waves - I. Rauchberger, M. Cohen, A. Dart AUSTRALIA

Myocardial Anisotropy in Genesis of Abnormal Q Waves in Hypertrophic Cardiomyopathy: A Simulation Study - D. Wei, N. Miyamoto, S. Mashima JAPAN

Clustering of Source Locations based on the Transfer Matrix for ECG Simulations - N. Takano, J. Hytinen, P. Kauppinen, J. Malmivuo FINLAND

ELECTROMAGNETIC INTERACTIONS Chair : Sajal Palit

Public Perceptions of Safety Standards for Human Exposure to Electromagnetic Fields - I. Beale, N. Thoms NEW ZEALAND

Biological Effects of Electromagnetic Waves - an Overview - S.K. Palit AUSTRALIA

Bioelectromagnetic Research and Statistical Power - J. Podd, W. Page, B. Rapley, I. Beale NEW ZEALAND

Testing a Commercial Water Magnetiser: A Study of Viscosity - B. Rapley, O. Campanella, W. Page, I. Beale, S. Glasgow NEW ZEALAND

Therapeutic Applications of Magnetic Field - H. A. Sadafi AUSTRALIA

WORKSHOP ELECTROMAGNETISM IN ALTERNATIVE MEDICINE

Electromagnetism in Alternative Medicine - Julia J. Tsuei

Scientific Basis of the Electro-dermal Screening Test - Kuo-Gen Chen

A Concept in Analgesic Mechanism of Acupuncture - Jaung-Geng Lin

Sound Wave and Frozen Shoulder - Shiao-Tien Kuo

Present States of Integration of Chinese Traditional Medicine and Eastern Medicine in Taiwan - D. Wang

17.00

CLOSING CEREMONY and Award for the Best Scientist Contribution

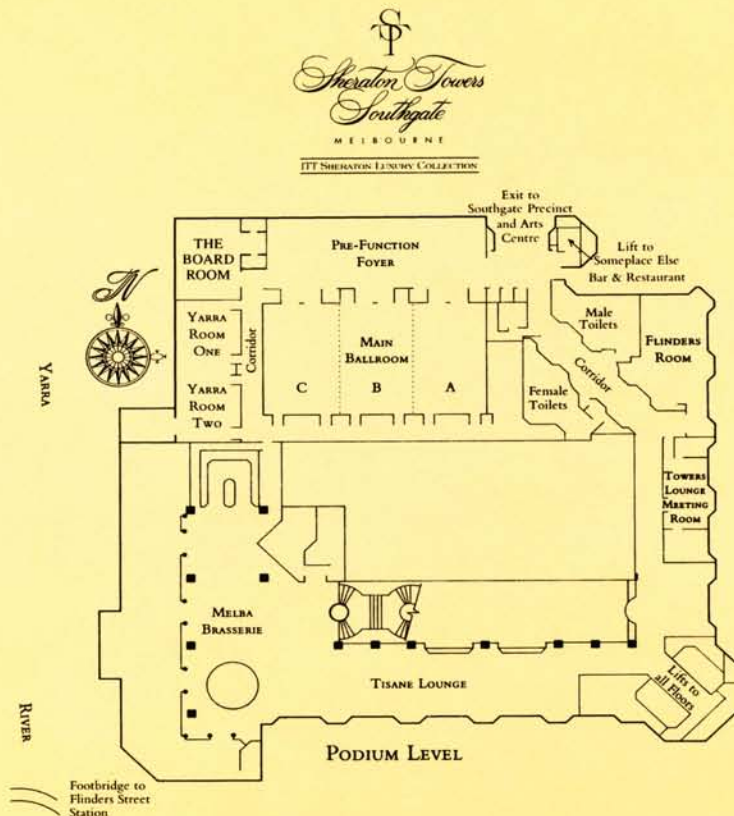
INSTRUCTIONS TO SESSION CHAIRS AND SPEAKERS

Session Chairs

1. Please collect your session folder from the Registration Desk.
2. Meet the speakers in the appropriate room before the session begins.
3. Introduce each speaker before his/her presentation - brief biographies are enclosed in the session folder. Please note blank sheets means that the speaker has not forwarded a biography to the Conference Organisers.
4. Total time allowed for each paper is varied - (Please refer to program). Please ensure the presentation is completed in time to allow a few minutes for questions (and encourage discussion during question time) with 1 minute for changeover to the following speaker.
5. Warn the speaker 2 minutes before his/her presentation time is up.

Oral Speakers:

1. Please check your paper details carefully in the Final Program. They may have changed from those in the Advance Program.
2. Contact your Session Chair before the session begins in the appropriate room.
3. Please try to limit the presentation to ensure there is 5 minutes for questions and changeover at the end of your presentation.
4. Staff will be provided to assist with your audio visual needs.



CLARENDON BANQUETING ROOMS