



INTERNATIONAL SOCIETY OF ELECTROCHEMISTRY
associated organization of IUPAC

President: Prof. Dr. D. M. Kolb

Dear friends and colleagues, dear members,

This newsletter is to update you all on the main developments that have taken place in ISE in 2004.

Scientific Meetings

Annual Meeting. The 55th Annual Meeting of the ISE was held in Thessaloniki from September 19th to 24th 2004. Thessaloniki was chosen to host the Meeting since electrochemical research in Greece originated in the Laboratory of Physical Chemistry of the Aristotle University of Thessaloniki, where E. Theodoridou, President of the Local Organizing Committee, G. Kokkinidis, president of the Scientific Committee, and most of the members of the LOC are located. The main theme of the Meeting was **“Electrochemistry: From Nanostructures to Power Plants”**. The scientific programme was arranged in 12 Symposia:

1. Interfacial electrochemistry (Div. 1, 4) (Organizers: C. Buess-Herman, W. Schmickler, K. Uosaki, P. Nikitas, A. Anastopoulos)
2. Organic electrochemistry and bioelectrochemistry (Div. 4, 8) (L. Gorton, O. Hammerich, G. Kokkinidis, G. Kyriakou)
3. Environmental electrochemistry (Div. 5) (Ch. Comninellis, A. De Battisti, I. Poulios, V. Stankovic)
4. Electroanalysis and electrochemical sensors (Div. 3, 8) (W. Schuhmann, J. Wang, A. Voulgaropoulos, A. Pappa-Louisi)
5. Electrodeposition and electroplating processes (Div 6) (T. Osaka, W. Plieth, A. Milchev, A. D. Jannakoudakis, P. D. Jannakoudakis)
6. Electrocatalysis (Div 4, 6) (S. Trasatti, N. Markovich, C. Vayenas, G. Kokkinidis)
7. Corrosion science and technology (Div. 4) (F. Di Quarto, M. Janik-Czachor, E. Kálmán, D. Sazou)
8. Electrochemical production and applications of new materials (Div. 4) (G. Greenbaum, P. Jacobsson, M. Janik-Czachor, N. Spyrellis, M. Stoukides, A. Papoutsis)
9. Electrochemical power sources and energy conversion (Div. 3) (J. O. Besenhard, J. Garche, C. Lamy, M. Mastragostino, Z. Ogumi, E. Theodoridou, A. Papoutsis)
10. Microscale and nanoscale electrochemistry (Div. 6, 7) (G. Denuault, H. Masuda, J. W. Schultze, S. Sotiropoulos)
11. Industrial electrochemistry and electrochemical engineering (Div. 3, 5) (S. Bebelis, Ch. Comninellis, I. Poulios, V. Stankovich)
12. General session (All Divisions) (G. Inzelt, A. Anastopoulos, P. D. Jannakoudakis)

A successful Young Scientists Symposium was organized within Symposium 7.

The Meeting was attended by 915 participants from 61 countries. The programme included 5 Plenary Lectures (S. Trasatti: Surfaces and interfaces in electrochemistry; T. Osaka:

Electrochemical nanotechnology for new materials design; C. Vayenas: Solid state electrocatalysis and electropromotion: From fundamentals to reactors; P. N. Bartlett: From 1 to 1000 nm. Regular nanostructures by templated electrodeposition; U. Stimming: Fuel cells - From systems to nanometers), 102 keynote Lectures, 499 oral presentations and 747 posters. A very entertaining evening lecture about the past and the evolution of ISE was delivered by Dr. O. Dossenbach who was awarded honorary membership for his invaluable contributions to the Society as a former treasurer of ISE.

During the conference, the ISE Prizes 2003 were presented to the winners, and the ISE Prize winners 2004 were announced.

The social events included two short leisure trips, one to the historic sites of Pella and Vergina and another to the historic site of Dion and Mount Olympus, a concert at the Aristotle University Ceremony Hall and the Meeting Banquet. A post conference tour provided the participants and accompanying persons with the opportunity to make a cruise around Mount Athos. Everybody seemed to enjoy the excellent scientific programme and the great hospitality in Greece.

The 56th Annual Meeting will take place in Busan, Korea, September 25-30, 2005. Its theme will be "Electrochemistry for the next generation".

Spring Meeting. The 2nd Spring Meeting, organised by Zhong-Qun Tian and his team, took place on March 7-10, 2004 in the campus of Xiamen University, Xiamen, China. The meeting theme was "Electrochemistry at Nanoscale: Structuring, Characterization and Theories". The fundamental aspects of nano-scale electrochemistry were emphasized. The meeting aimed at bringing together chemists, physicists, biologists and materials scientists, and it covered the following topics: (i) Naturally and artificially controlled surface nanostructuring by means of electrochemistry, alone or combined with other chemical and/or physical methods; (ii) Nanoscale electrochemical phenomena characterized by *in-situ* scanning probe microscopies, spectroscopic and diffraction techniques; (iii) theories of nano-scale phenomena. The meeting gathered over 100 participants from 23 countries. One keynote lecture, 26 invited lectures, 27 oral communications and 54 posters were presented. As the second phase of the meeting, a small post-conference workshop was held in Beijing, March 13-15, organized by Li-Jun Wan of the Institute of Chemistry, Chinese Academy of Sciences.

The social programme included a Culture Night, with ancient Chinese music and dancing, an excursion to Gulang Island, and a technical tour to the State Key Laboratory of Physical Chemistry of Solid Surfaces. I would like to congratulate Profs. Tian and Mao for having set up such an excellent programme, which not the least has also demonstrated the internationally recognized high level of research at the hosting place.

The 3rd Spring Meeting "Bioelectrochemistry" will be organised jointly with the Bioelectrochemical Society and will take place in Coimbra, Portugal, June 19-24, 2005.

Sponsored Meetings. A number of international meetings were sponsored by the ISE in 2004:

- 6th International Symposium on Electrochemical Impedance Spectroscopy, May 16, 2004 - May 21, 2004, Cocoa Beach, Florida USA, Divisions 2 and 4
- 3rd Croatian Symposium on Electrochemistry, May 30 - June 3, 2004, Dubrovnik, Croatia, Division 4,
- 4th Kurt Schwabe Corrosion Symposium, 13-17 June, 2004, Espoo, Finland, Division 4

- 15th International Conference on Photochemical Conversion and Storage of Solar Energy, 4-9 July, 2004, Paris, France, Division 5
- 10th International Conference on Electrified Interfaces (ICEI 2004), July 11-16, 2004, Spa, Belgium, Divisions 3, 4 and 7
- 9th International Symposium on Polymer Electrolytes, August 22-24, 2004, Mragowo, Poland, Divisions 3 and 4
- EUROCORR 2004, 12-16 September, 2004, Nice, France, Division 4
- Electrode Processes, 15-18 September, 2004, Szczyrk, Poland, Division 4
- 5th International Symposium on Electrochemical Micro and Nano Technologies (EMT2004), 29 September - 1 October, 2004, Tokyo, Japan, Division 4
- Workshop on Computational Electrochemistry, 26-29 September, 2004, Santorini, Greece, Division 7

Awards

Seven ISE Prizes were awarded in 2004 to outstanding scientists and promising young researchers. The number of nominations and applications was higher than ever, thus proving the increasing interest of the electrochemical community in the ISE awards.

The **Pergamon Electrochimica Acta Gold Medal** has been attributed to **Jacek Lipkowski** (Guelph, ON, Canada) for his outstanding contributions to the investigation and the understanding of the thermodynamics and the structure of molecular layers at electrode surfaces. This award will be attributed again in 2006, under the new name of **Electrochimica Acta Gold Medal**.

The **ISE Bioelectrochemistry Prize**, created in 2003 thanks to a generous donation of Katsumi Niki, a former president of the Society, has been attributed for the first time to **Jens Ulstrup** (Lingby, Denmark) for his pioneering work on both theoretical and experimental treatment of electron transfer in redox metalloproteins, which has led to the obtaining of atomistic and single molecule information, and has attracted the attention of physical electrochemists on biomolecules. After the sudden death of Professor Niki, the Executive Committee has decided to rename this award **Katsumi Niki Prize for Bioelectrochemistry**.

The **Tajima Prize** has been attributed to **Juergen Fleig** (Stuttgart, Germany) for his activity in the field of electrochemistry of the Solid State, in particular for the quantitative analysis of electroceramics, clarifying how local properties of individual grain boundaries contribute to the overall response of a polycrystalline material and for developing microimpedance techniques.

The **Hans-Juergen Engell Prize** has been attributed to **Julia Kunze** (Düsseldorf Germany; presently Guelph, ON, Canada) for her original contributions in studies on the structure and initial growth mechanism of passive films on different metals (Cu, Ag, Co) by the in-situ STM technique.

The **Oronzio De Nora Foundation Young Author Prize** has been attributed to **Leonardo Morais da Silva** (Ribeirão Preto, SP, Brazil) for his paper "Electrochemical ozone production: influence of the supporting electrolyte on kinetics and current efficiency" published in *Electrochimica Acta* 48 (2003) 699-709 with co-authors Luiz A. De Faria, and Julien F. C. Boodts.

The **Oronzio De Nora Foundation Prize of ISE on Electrochemical Energy Conversion** has been attributed to **Nicolas Mano** (Austin, TX, USA) for his very significant contribution to bioelectrochemical energy conversion and for demonstrating highly active anode

and cathode bioelectrocatalysts for glucose oxidation and oxygen reduction under physiological conditions.

The **Oronzio De Nora Foundation Prize of ISE on Electrochemical Technology and Engineering** has been attributed to **Dimitrios Tsiplakides** (Patras, Greece) for his studies on the electrochemical promotion of catalysis, very original research combining electrochemistry and catalysis.

Six award winners will give lectures at the 56th Annual Meeting in Busan, Korea.

Nine ISE prizes will be awarded in 2005. Nominations and applications must be submitted to the ISE Office between February 1st and May 1st 2005.

Society Journal

During summer 2004, Elton Cairns concluded his activity as Editor of *Electrochimica Acta*. We are grateful to Elton for his superb task as editor, and for his leading role in serving our Society. The Editorial Board of the Journal consists now of Sergio Trasatti (Editor-in-Chief) Tomokazu Matsue and Andrzej Wieckowski.

The Executive Committee has appointed a new Advisory Board for the period 2005-2007. Its members are: L.A. Avaca (Brazil), R. Hillman (UK), G. Inzelt (Hungary), G. Kokkinidis (Greece), E. Leiva (Argentina), F. Mansfeld (USA), F. Maran (Italy), P. Marcus (France), A.M. Oliveira Brett (Portugal), A. Rodes (Spain), D. Scherson (USA) and M. Watanabe (Japan).

The Impact Factor of *Electrochimica Acta* in 2003 was 2.0, slightly lower than for the previous year. Complete data are not yet available; it is, however, clear that the number of manuscripts submitted to the Journal has significantly increased in 2004.

Executive Committee

The term of three EC members who have greatly contributed to the recent evolution of the ISE, Erika Kálmán, Robert Hillman and Hasuck Kim, ended on 31 December 2004. I am sure that you wish to join me in thanking them for all they did, and will continue to do, for our Society. Elections were held last spring, to replace the leaving members of the EC: Christopher Brett was chosen as President Elect, Sharon Roscoe as Secretary General and Luis Alberto Avaca as Vice-President. Petr Novák was confirmed in his position of Treasurer. Recently, Francesco Di Quarto has been elected Vice-President, to re-fill the position left by Chris Brett.

Divisions

The Chairs and Chairs elect of the new ISE Divisions were elected during the autumn, with a large participation rate of the members in the vote. As a result, the composition of the Divisional Boards for the term 2005-2006 will be the following:

Division 1, ANALYTICAL ELECTROCHEMISTRY

Chair: P. Unwin, Past Chair: S. Roscoe, Chair Elect: G. Inzelt

Division 2, BIOELECTROCHEMISTRY

Chair: A.M. Oliveira-Brett, Past Chair: E.J. Calvo, Chair Elect: W. Schuhmann

Division 3, ELECTROCHEMICAL ENERGY CONVERSION AND STORAGE

Chair: C. Lamy, Past Chair: R. Koetz, Chair Elect: M. Mastragostino

Division 4, ELECTROCHEMICAL MATERIALS SCIENCE

Chair: P. Marcus, Past Chair: F. Di Quarto, Chair Elect: W. Kautek

Division 5, ELECTROCHEMICAL PROCESS ENGINEERING AND TECHNOLOGY

Chair: A. De Battisti, Past Chair: C. Comninellis, Chair Elect: C. Vayenas

Division 6, MOLECULAR ELECTROCHEMISTRY

Chair: O. Hammerich, Past Chair: B. Speiser, Chair Elect: C. P. Andrieux

Division 7, PHYSICAL ELECTROCHEMISTRY

Chair: G. A. Attard, Past Chair: A. Tadjeddine, Chair Elect: E. Leiva

Each Divisional Board will be completed by two Vice-Chairs who will be either elected by the Division members or appointed by the Chairs. In the future, there will be a natural progression from Chair Elect to Chair and from Chair to Past Chair. New Chairs Elect will be chosen each second year. I wish to express my thanks to former co-Chairs for their activity during the term 2003-2004.

Organisation of the Society

After the profound renewal undergone in the last few years, the Society's organisation has entered a period of stability. The EC has decided to renew the contract with FontisMedia and thus this company will take care of the ISE Office for three more years (April 2005 to March 2008). Furthermore, the ISE Office will be increasingly involved in Annual and Spring Meetings organisation.

New regional representatives of 7 sections have been recently elected or are about to be elected in the next few weeks. Among these sections, Venezuela and Serbia-Montenegro recover their right to have a Regional Representative, after a hiatus. I wish to express my thanks to former regional representatives for their activity and my congratulations to the new ones for their election. Their active participation in the life of the Society, especially in the process of recruiting new members, is of primary importance.

Membership

The Society membership has slightly increased in 2004, to reach 1120 active members. There have been more than 250 applications for membership, but these have been compensated by an almost equal number of losses of old members. The recruitment action launched last year continues: all corresponding authors of papers published in *Electrochimica Acta* who are not ISE members are now currently invited to join the Society. Invitations have been sent to the participants of the 55th Annual Meeting who were not ISE members. A program of recruitment of participants in the ISE-sponsored meetings is being implemented. Of course, all members may contribute to extend the ISE membership by convincing their co-workers and colleagues to join the Society.

My term as President has come to its end. I am sure that my successor, Juan M. Feliu, will lead our Society with competence. I am convinced that he will enjoy as much as I did, the restless and skilful help of Marco, our Executive Secretary, without whom the presidential job would only be half the fun. During the past two years I enjoyed tremendously the many friendly and personal contacts with our members. I look forward to meeting you all at the future ISE meetings.

Dieter M. Kolb, ISE President 2003-2004.