



International Society of Electrochemistry

associated organization of IUPAC

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Dear friends, colleagues, and ISE members:

I am delighted to continue the tradition to circulate the yearly President's Newsletter and to bring you up-to-date with the activities of our Society during 2018, the second and final year of my term of office as ISE President.

Scientific Meetings

This year's Topical Meetings were held in Tokyo, Japan, and in Vilnius, Lithuania. The 69th Annual Meeting, "Electrochemistry from Knowledge to Innovation" was held in Bologna, Italy. A Virtual Special Issue of *Electrochimica Acta* is being prepared for each meeting. In the following, I summarize the key points of the reports we received from the Organizing Committee Co-chairs, already published on the ISE website.

Annual Meeting

The 69th Annual Meeting of the International Society of Electrochemistry (ISE) took place in Bologna, Nuovo Polo Congressuale, on 2-7 September 2018. This was the fifth time that Italy has hosted the main scientific event of our Society, after the CICTCE meetings 1950 (Milan) and 1962 (Rome), the 31st Annual Meeting held in Venice (1980) and the 50th Annual Meeting held in Pavia (1999), where the bicentenary of the invention of the electric pile by Alessandro Volta was celebrated. This year's meeting in Bologna was linked to the name of Luigi Galvani, another scientific giant who lived in Bologna his entire life (1737-1798) and greatly contributed to the birth of electrochemistry.

Thanks to the participation of 2033 delegates, including 795 students, this year's Annual Meeting was the largest in the ISE history, so far. The country with the largest number of delegates was Germany (261) followed by Italy (220), Japan (190), China (135), France (115), United Kingdom (111), Korea (108), Spain (77), USA (69), Brazil (66) and 45 other countries.

The mayor of Bologna, Virginio Merola and the *Magnifico Rettore* of Bologna University, Francesco Ubertini participated in the opening ceremonies that included "a little taste of Italian opera", performed live, with pieces of famous Italian composers like Rossini, Verdi, Puccini and Mascagni.

The scientific program included 20 symposia and a general session, and featured 6 plenary lectures, 58 keynote lectures, 826 oral communications, 1132 poster communications and 3 tutorials. The plenary lecturers were given by: Doron Aurbach, Israel, "Novel Electrochemical Methodologies for Analysing Composite Electrodes in Devices for Energy Storage", Steven Chu, USA, "The Role of Electrochemistry in Providing Technical Solutions to the Climate Challenge", Justin Gooding, Australia, "Well-defined Nanoscale Architectures Provide New Opportunities in Bioelectrochemistry Down to Single Entities", Shelley Minteer, USA, "Electrocatalytic Cascades for Energy Conversion and Electrosynthesis Applications", Marc Koper, Netherlands, "Electrochemistry of platinum: new views on an old problem" and Flavio Maran, Italy, "Electrochemistry of Monolayer Protected Gold Nanoclusters".

Among the keynote/oral communications presented in Bologna there were the award lectures delivered by the 2017 ISE prize winners: Patrick Unwin, Michael Eikerling, Armando Gennaro, Xile Hu, Xiangfeng Duan, Csaba Janaky, Abdoulaye Thiam, Federico Bella, Kristina Tschulik, as well as Doron Aurbach and Justin Gooding who gave plenary lectures.

Three tutorials dealt with "Computational Electrochemistry" (taught by Richard G. Compton, Enno Kaetelhoeven and Eduardo Laborda), "Differential Electrochemical Mass Spectrometry" (Helmut Baltruschat, and Zenonas Jusys) and "Impedance Spectroscopy for the Diagnostic of Electrochemical Energy Storage/Conversion Systems" (Mark Orazem).

In addition to this very busy scientific program, the delegates were able to enjoy the beauties of Bologna, the home of the oldest university in Europe, a city renowned for its friendly atmosphere, joie de vivre and haute cuisine. A banquet was held at Palazzo Isolani, in the heart of medieval Bologna, only a few minutes' walk away from Piazza Maggiore, Palazzo d'Accursio, the former city's Town Hall, the 13th century's Palazzo Re Enzo and the San Petronio Basilica.

Topical Meetings

The 22nd Topical Meeting "Materials Engineering and Process, Optimization at Electrified Solid/Liquid Interfaces" has been held at Waseda University International Conference Center (WUICC) in Shinjuku City, Tokyo, Japan from 15 to 18 April, 2018. Division 4 "Electrochemical Materials Science" and Division 5 "Electrochemical Process Engineering and Technology" were involved in the organization of the meeting. The Electrochemical Society of Japan, the Surface Finishing Society of Japan, the Tokyo Ohka Foundation for The Promotion of Science and Technology, and Waseda University supported the meeting.

The scientific program comprised five symposia, i.e. S1: Materials engineering for energy devices: batteries & capacitors; S2: Materials engineering for energy devices: fuel cells & energy carriers; S3: Materials engineering for sensing, electronic and photonic devices; S4: Fabrication and diagnosis processes including theoretical analyses and modeling; S5: Development of micro to large scale reactors including process optimization and industrial applications. There was a keynote lecture in each symposium, given by Richard Alkire (Univ. of Illinois, USA), Yue Kuo (Texas A&M Univ., USA), Hiroyuki Nishide (Waseda Univ., Japan), Eiichiro Matsubara (Kyoto Univ., Japan) and Ulrich Stimming (Newcastle Univ., UK). The program was completed by 15 invited lectures, 155 oral presentations and 141 poster contributions. Through these events, the latest information on materials and their processing for various applications such as energy devices, sensors, electronic and photonic devices, etc., has been presented and very actively discussed.

On Sunday 15 April, after the registration at WUICC, a get together reception was held at Okuma Garden House, the University's cafeteria. The opening ceremony took place, on Monday 16 April, at Ibuka Memorial Auditorium in WUICC, named after Dr. Masaru Ibuka, Waseda alumnus and co-founder of SONY. The meeting banquet was held at Rihga Royal Hotel Tokyo, and started with greetings from Prof. Zhong-Qun Tian (President Elect, ISE), Prof. Yue Kuo (President Elect, ECS), and Prof. Masayoshi Watanabe (President, ECSJ).

With 362 attendees from 34 countries, the participation was the largest, so far, for an ISE Topical Meeting. The countries with more delegates were Japan (175), Taiwan (38), China (20), Korea (19) and Germany (18). There were 12 exhibitors.

The 23rd ISE Topical Meeting "Electrochemistry for Investigation of Biological Objects: from Functional Nanomaterials to Micro/Nano-Electrodes" took place in the Joint Life Sciences Center (GMC) of Vilnius University in Vilnius, Lithuania from 8 to 11 May, with the contribution of Division 2 "Bioelectrochemistry".

The opening ceremony was held in the Townhall of Vilnius. The conference was opened by its chair Prof. Rasa Pauliukaite, the Minister of Science and Education of the Republic of Lithuania Mrs. Jurgita Petrauskienė, Mayor of Vilnius Mr. Remigijus Šimašius, President of Lithuanian Academy of Science Prof. Jūras Banys, and Director of the Center for Physical Sciences and Technology (FTMC) Prof.

Gintaras Valušis. ISE Past President Prof. Christian Amatore introduced the International Society of Electrochemistry, its mission and its activities.

Three keynote lectures were presented by Plamen Atanassov (USA), Ana Maria Oliveira-Brett (Portugal), and Lo Gorton (Sweden). Invited lectures were given by Jacek Lipkowski (Canada), Gintaras Valinčius (Lithuania), José Manuel Pingarron (Spain), Christian Amatore (France), Fred Lisdat (Germany) and Orlando Fatibello-Filho (Brazil). The program was completed by 45 oral presentations and 47 poster presentations. This event was not as largely attended as the Tokyo meeting, but its scientific quality was equally high. 99 scientists from 25 countries participated in the 23rd ISE Topical Meeting. Almost half of them were young researchers.

The guests had a possibility to discover the capital of Lithuania in a free walking excursion in the historical centre of Vilnius. The Gala Dinner was held in Belmontas place, where the researchers could sense Lithuanian culture with the Lithuanian folklore ensemble "Ratilio". During the Gala Dinner, Rimantas Ramanauskas, member of Grotthuss Foundation, awarded the Grotthuss Medal to former ISE Presidents Christopher M.A. Brett and Christian Amatore.

For these successful meetings, I gratefully thank all public and private institutions which provided financial support, the co-chairs of the Organizing Committees, Marco Musiani and Francesco Paolucci (Bologna), Takayuki Homma and Susumu Kuwabata (Tokyo), Rasa Pauliukaite (Vilnius), their co-workers and the student helpers who assisted the delegates. None of these successful meetings would have been possible without the dedicated effort and competence of the staff of the ISE Office, Thierry Lenzin, Kathleen Vionnet and Gil Bourgeois.

The ISE meetings for 2019 will be held in very attractive locations and promise to maintain a high scientific and organizational standard. For the first time in the history of our Society, an Annual Meeting will be held in Africa. Our program includes:

- 24th Topical Meeting of the International Society of Electrochemistry, *Electrochemical Assembly at the Meso, Nano and Molecular Scale*, 7-10 April 2019, Mérida, Mexico
- 25th Topical Meeting of the International Society of Electrochemistry, *New electrochemical processes for energy and the environment*, 12-15 May 2019, Toledo, Spain
- 70th Annual Meeting of the International Society of Electrochemistry, *Electrochemistry: Linking Resources to Sustainable Development*, 4-9 August 2019, Durban, South Africa

Detailed information is available in the web sites of each meeting, accessible from the ISE homepage.

Sponsored Meetings

ISE has sponsored 44 meetings held in 2018, mainly in Europe, but also in other continents. Financial support was offered by the ISE Divisions or by the Executive Committee. An exhaustive list is available on the website of the Society (<https://www.ise-online.org/ise-sponsoring/past-sponsored.php>).

Fellows

Five new ISE Fellows were appointed in 2018 in recognition of their outstanding scientific achievements. They are Daniel Bélanger, Yury Gogotsi, Katharina Krischer, Yang Shao-Horn and Guoxiu Wang. I congratulate each one of them. I am glad that, for the second consecutive year, there was a satisfactory gender diversity in the nominations, which allowed the Fellows Nominating Committee to recommend eminent female scientists and the Executive Committee to appoint them. I am confident that the recent positive trend that corrects a previous disequilibrium will continue in the coming years.

Awards

Twelve ISE Prizes were awarded in 2018 and announced in Bologna.

- The Electrochimica Acta gold medal was awarded to Juan Feliu, University of Alicante, Spain, in recognition of his sustained outstanding intellectual contributions to the understanding of

electrochemical phenomena at electrodes of defined surface structure, and to the establishment of fundamental relationships between electrode surface structure and reactivity.

- The ISE-Elsevier Prize for Experimental Electrochemistry was awarded to Yu Huang, University of California Los Angeles, USA, for her outstanding contributions to electrocatalyst design and experimental methods
- The Bioelectrochemistry Prize of Division 2 of ISE was awarded to David Waldeck, University of Pittsburgh, USA, in recognition of his fundamental work on charge transport phenomena associated with biomolecules, electron transport through proteins and nucleic acids, and electron transfer at biomolecule/electrode interfaces.
- The Brian Conway Prize for Physical Electrochemistry was awarded to Patrice Simon, Université Paul Sabatier, Toulouse, France, for his ground-breaking contributions to the fundamental understanding of the mechanism of charge storage in electrical double layers confined to carbon nanopores, shaping the field of capacitive energy storage, as well as to the design of nano-architected negative electrodes for Li-ion batteries
- The Jaroslav Heyrovsky Prize for Molecular Electrochemistry was awarded to Siegfried Waldvogel, Johannes Gutenberg University, Mainz, Germany, for his innovative and outstanding contributions to the field of organic electrosynthesis and particularly for the development of valuable methods/approaches allowing the preparation of high added value molecules
- The Tajima Prize was awarded to Stefan Freunberger, Graz University of Technology, Austria, for his outstanding researches on Li-Air batteries by the use of a range of *in-situ* electrochemical methods to achieve comprehensive understanding of the reactions taking place at the oxygen electrode.
- The ISE Prize for Electrochemical Materials Science was awarded to Peng Bai, Washington University in St. Louis, USA, in recognition of his research that uniquely combines theory and experiments at the intersection of electrochemistry, thermodynamics, and fluid and solid mechanics.
- The Zhaowu Tian Prize for Energy Electrochemistry was awarded to Fabio La Mantia, Universität Bremen, Germany, in recognition of his pioneering development of the mixing entropy battery based on salinity difference and his research on aqueous rechargeable metal-ion batteries.
- The ISE-Elsevier Prize for Green Electrochemistry was awarded to Emmanuel Mousset, CNRS/University of Lorraine, Nancy, France, in recognition of his significant contributions to applying advanced electrochemical approaches to wastewater treatment and soil remediation.
- The ISE-Elsevier Prize for Applied Electrochemistry was awarded to Kyle Smith, University of Illinois at Urbana-Champaign, USA, in recognition of his mathematical rigour in simulating electrochemical systems for a range of applications, providing model predictions for experimental validation.
- The Early Career Analytical Electrochemistry Prize of ISE Division 1 was awarded to Maria Cuartero, KTH Royal Institute of Technology, Stockholm, Sweden, for her continuous contribution to the electrochemical detection of various species in aquatic systems based mostly on potentiometric methods.
- The Oronzio and Niccolò De Nora Foundation Young Author Prize 2018 was awarded to Cigdem Toparli, Massachusetts Institute of Technology, USA for her article "*In situ* and *operando* observation of surface oxides during oxygen evolution reaction on copper", published in *Electrochimica Acta* 236 (2017) 104-115.

Nominations and applications for the 2019 ISE Prizes are invited and must be submitted to the ISE Office between February 1st and May 1st, 2019.

Three *Electrochimica Acta* Travel Awards for Young Electrochemists, sponsored by Elsevier, and seven ISE Travel Awards, aimed at encouraging the participation of young scientists in the 69th ISE Annual Meeting, were awarded to Marco Altomare, Corina Andronescu, Hadar Ben-Yoav, Matteo Grattieri, Oana-Alexandra Hosu, Wei Jin, Kasinath Ojha, Peter Toth, Zexing Wu and Giorgia Zampardi. The same number of Travel Awards will be made in 2019, to enable young researchers to participate in the 70th Annual Meeting, in Durban, South Africa.

Society Journal

The composition of the Board of Editors of *Electrochimica Acta*, during the past 12 months has not changed. It includes Robert Hillman, Editor-in-Chief, Sergio Trasatti, Special Issues Editor, and twelve Editors: Philippe Allongue, Gary Attard, Nick Birbilis, Aicheng Chen, Elena Ferapontova, Laurence Hardwick, Robert Kostecki, Rüdiger Kötz, Pawel Kulesza, Tomokazu Matsue, Sotiris Sotiropoulos, and Shi-Gang Sun.

The Impact Factor of the Society journal for 2017 was 5.116, higher than that for 2016 (4.798) and all previous years. This result confirms and improves the strength of *Electrochimica Acta* among electrochemical journals. Although the numerical increase in IF (ca. 7%) is relatively modest, the fact that it is above 5 offers the prospect of attracting more numerous and high quality manuscripts. This will be beneficial for a further growth of the journal, but at the cost of processing a larger quantity of submissions. The Publisher has proposed to expand the editorial team further in order to reduce the Editors' workload. Elsevier and ISE have collaborated in the search for suitable candidates, selected primarily for their technical expertise and commitment. Other criteria have included geographical location (the dominance of Asia – predominantly China – in submitted and published manuscripts continues), gender balance and age.

Web site

The ISE web site has undergone some profound changes, imposed by the European General Data Protection Regulation (GDPR). The ISE members have been requested to review and accept the Society's policy on the Personal Data Protection. The password system has been improved.

The Publications Committee is actively working at collecting information on how the ISE web site should be modified to become more useful for the membership, and is considering a more active presence of the Society on social media.

Executive Committee

Elections were held in the spring 2018, to renew two positions in the Executive Committee. Marc Koper will be the President Elect of the Society in 2019-2020. He will then progress to President (2021-2022) and Past President (2023-2024). Francesco Paolucci will serve as Vice President for the term 2019-2021. I am glad to welcome them and I am sure that they will greatly contribute to the future activities of our Society. I am grateful to Wolfgang Schuhmann and Daniel Mandler who agreed to stand as candidates and, although not elected, received large numbers of votes. The terms of service of Christian Amatore (ISE President in 2015-2016) and Tomokazu Matsue have come to their ends. We are all indebted to them for their excellent service to the Society and for their always friendly and constructive attitude.

The elections of the Treasurer (2020-2022) and of a Vice President (2020-2022) will take place during the spring 2019. A Nominating Committee chaired by Zhongqun Tian, comprising Justin Gooding, Priscilla Baker, Renata Bilewicz and myself, as immediate Past President, will select the candidates.

Marco Musiani, whom I thank on behalf of the Executive Committee for his service, has completed his third five-year term as Executive Secretary. He will be replaced by Petr Krtil who - I am sure - will hold the position with competence, dedication and energy.

Divisions

The Division Officers, with the cooperation of their members, play a central role in the life of the Society, by promoting scientific activities in their respective fields, preparing and implementing the scientific programs of the symposia of meetings of the Society, and organising divisional activities at Annual Meetings. The Division Chairs Elect in charge during the next two years (2019-2020) have been elected by the members. For ISE Divisions from 1 to 7, respectively, they are: Luigi Falciola, Elisabeth Lojou, Andrea Balducci, Vincent Vivier, Manuel Rodrigo, Magdalena Hromadova and Shen Ye. The elected Division Officers have appointed the Vice Chairs 2019-2020, to complete the divisional boards. The Executive Committee has appointed Hubert Girault as New Topics Committee Chair Elect.

During the next 2 years, the ISE Divisions from 1 to 7 will be respectively chaired by Alain Walcarius, Elena Ferapontova, Francesca Soavi, Monica Santamaria, Gerardine Botte, Patrizia Mussini and Angel Cuesta. Yongyao Xia will chair the New Topics Committee.

I gratefully thank the Division Past Chairs who leave the boards, for their activities on behalf of ISE, and I congratulate the new Chairs Elect on their election.

Regional Sections

In the calendar year 2018, the ISE had 44 recognized Regional Sections. The reports on the activities of most Regional Sections are available on the website of the Society (http://www.ise-online.org/ise-committees/RRreports/RR_Reports_2018.pdf).

Elections of Regional Representatives for the term 2019-2021 were held in various Regions. B. Gollas (Austria), T. Breugelmans (Belgium), M. Foita (Czech Republic), S. Neophitides (Greece), J. Rohan (Ireland), W. Shin (Korea), V. Yartys (Norway), P. Baker (South Africa), R. Wreland-Lindström (Sweden) and P. Broekmann (Switzerland) were re-elected for a second term. C. Santato (Canada), I. Ponce (Chile), J. Chen (China), B. Rezaei (Iran), C. Arbizzani (Italy), K. Mathwig (Netherlands), W. Nogala (Poland), A. Antipov (Russia)) and O. Linyucheva (Ukraine) will each serve their first term in 2019-2021.

I gratefully thank the former Regional Representatives for their activities on behalf of ISE and I congratulate the new ones on their election. Their active participation in the life of the Society, especially in recruiting new members and in maintaining and strengthening the links between the ISE and the local electrochemical communities, is of primary importance.

Committees

The term of Wei-nien Su as member of the Scientific Meetings Committee (SMC) ended on 31st December 2018. David Williams will replace him and will serve on the SMC for 3 years (2019-2021). Agustin Bolzan will chair the SMC in 2019, the final year of his term.

In the Fellows Nominating Committee (FNC), Wolfgang Schuhmann was appointed to replace Takashi Kakiuchi, whose ordinary five-year term ended on 31st December 2018. Richard Compton will chair the committee in 2019. I wish to thank Wei-nien and Takashi, for their numerous valuable contributions to the activity of the ISE committees, David and Wolfgang, for agreeing to serve.

The activity of the "Working Party for Diversity" will continue in 2019. Stimulating nominations of female candidates to ISE awards and ISE Fellowship will be one of their main tasks. The Working Party will be chaired by Francesco Paolucci and will comprise Shelley Minter and Elena Ferapontova.

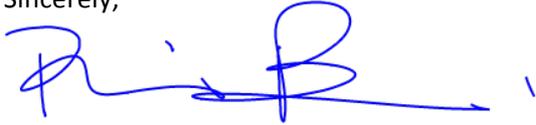
Membership

For the second consecutive year, the ISE membership has slightly declined to 3710, this year, as compared to 3774 in 2017. Besides small fluctuations, the ISE membership has essentially stabilized since 2013 well above 3500, in a range that could hardly be imagined only 10 years ago. I am confident that a further growth will be possible already next year. The geographical distribution of the members is very sensitive to the location of the Annual Meeting and, to a minor extent, to that of Topical Meetings, but about a half of the members are steadily from Europe. The membership fees for 2019 have been maintained at the 2018 level, i.e. 50 € for ordinary members and 15 € for young and emeritus members.

At the end of my term of service as President of the Society, I am happy with ISE performance and I look at the future with optimism, as I know that the Society can rely on the contribution of new and current officers, meeting organizers, symposium organizers and other dedicated members. My successor, Professor Zhongqun Tian, the first ISE President from China, has all the human and scientific qualities necessary to successfully lead our Society.

I look forward to meeting you all at ISE meetings during the coming year, in Mérida, Toledo and Durban. I wish you all a successful and happy New Year!

Sincerely,

A handwritten signature in blue ink, appearing to read 'P. N. Bartlett', with a long horizontal stroke extending to the right.

Philip N. Bartlett
ISE President 2017-2018
Southampton, December 31st, 2018