



International Society of Electrochemistry

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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 2019, the first year of my term of office as the ISE President.

Scientific Meetings

This year's Topical Meetings were held in Merida, Mexico, and in Toledo, Spain. The 70th Annual Meeting, "Electrochemistry: Linking Resources to Sustainable Development" was held in Durban, Republic of South Africa. 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, which are also available on the ISE website.

Annual Meeting

The 70th Annual Meeting of the International Society of Electrochemistry (ISE) took place in Durban, International Congress Center, on 4-9 August 2019. It was the first time our Society has held its main scientific meeting in Africa. Durban is the largest city in the South African Province of KwaZulu-Natal and holds a unique place in South Africa's history. Archaeological findings from scenic Drakensberg mountains suggest that the Durban area has been inhabited by communities of hunter-gatherers since at least 100,000 BC

The Theme of the Meeting aimed to reflect the increasing importance of electrochemistry in promoting human development (through science, innovation, engineering and technology) and, most importantly, value-adding to Africa's abundant human and natural resources (mineral resources, solar energy, etc.) to achieve sustainable development on the continent. Thanks to the participation of 853 delegates, including 365 students, from 58 countries, this year's Annual Meeting has been the largest electrochemistry focused meeting on the African continent. The country with the largest number of delegates was South Africa (203) followed by Germany (98), Japan (52) and France (44).

The acting mayor of Durban, Fawzia Peer participated in the opening ceremony, that also included performances of the traditional dances typical for South Africa. The scientific program included 21 symposia and a general session. The Meeting featured 6 plenary lectures, 59 keynote lectures, 75 invited and 367 contributed oral communications together with 351 poster communications and 2 tutorials. Plenary lectures were delivered by Juan M. Feliu, (University of Alicante, Spain - "Well-defined Pt(hkl) solution interfaces: charge, ionic adsorption and acid-base properties"), Nobel Laureate Sir Fraser Stoddart (Northwestern University, USA - "Radical

Chemistry”), Tebello Nyokong (Rhodes University, South Africa - “Methods of electrode surface modification using porphyrin-type molecules combined with nanomaterials”), Peter G. Bruce (University of Oxford, UK - “Oxygen Redox Electrochemistry - The Future of Lithium Batteries?”), Wolfgang Schuhmann (Ruhr University Bochum, Germany - “From bioelectrocatalysis to electrocatalysis. A contribution to sustainability of energy provision”) and Peidong Yang (University of California, USA, -“Liquid Sunlight: the evolution of Photosynthetic Biohybrid Systems”).

Among the keynote and oral communications presented in Durban there were the award lectures delivered by the 2018 ISE prize winners: Stephan Freunberger, Kyle Smith, Yu Huang, Peng Bai, David Waldeck, Emmanuel Mousette, Siegfried Waldvogel, Fabio La Mantia, Maria Cueretaro Botia and Cigdem Toparli, as well as Juan Feliu who gave plenary lecture.

Two tutorials dealt with “Computational Electrochemistry” (delivered by Marc Koper, Alexander Oleinick and Wolfgang Schmickler) and “Electrochemical Sensors” (given by Emmanuel Iwuoha, Daniel Mandler, and David Williams).

This year, for the first time, a series of lectures, called Masterclasses of Electrochemistry, were held each day of the conference and comprised carefully selected presentations delivered in a classroom style format. The aim of the Masterclasses was to provide both schooling and insight into current and newer directions in electrochemistry, and was aimed at both students and young researchers. The Masterclass lectures received overwhelmingly positive reviews in terms of content and concept.

In addition to this very busy scientific program, the delegates were able to experience the excursions to African nature. The Durban beachfront of the Indian Ocean provided the perfect backdrop for the conference dinner, held in true African style in the themed Moyo restaurant, providing lucky ticket holders with selections of African cuisine, entertainment by Zulu dancing and delicate African-themed face painting. Last but not least, two satellite meetings were successfully held before and after the main conference. The meeting entitled “Energy Storage and Industry 4.0: Challenges and Prospects” was held from 31 July to 2 August 2019 in North West Province, South Africa and the meeting entitled “Electrochemistry at Nanostructured interfaces” was held from 11-14 August 2019 in Cape Town, South Africa. I sincerely thank our colleagues, student helpers and friends from South Africa for their great contributions.

Topical Meetings

The 24th Topical Meeting “Electrochemical Assembly at the Meso, Nano and Molecular Scale” has been held at El Conquistador Hotel in Mérida, Mexico from 7 to 10 April, 2019. Division 4 “Electrochemical Materials Science” and Division 6 “Molecular Electrochemistry” were involved in the organization of the meeting.

The meeting attended 92 participants who contributed to the scientific program which run a single symposium conference. The program featured four keynote lectures given by Margarita Miranda Hernandez (Universidad Autonoma de Mexico, Mexico), Lo Gorton (Lund University, Sweden), Reginald Penner (University of California at Irvine, USA) and Yogesh Surendranath, (MIT, USA). The program was completed by 11 invited lectures, 40 oral presentations and 50 poster contributions. Through these events, the latest information on behaviour of assembled layers at the electrodes was presented and very actively discussed.

On Sunday 7 April, after the registration, Opening ceremony and initial lectures, a get together reception was held at El Conquistador Hotel in Mérida. The attendance of 92 participants from 20 countries was slightly lower than expected. On the other hand, the large participation from Mexico increased the ISE presence in the region. The conference was attended by 4 exhibitors.

The 25th ISE Topical Meeting “New electrochemical processes for energy and the environment” took place in Technological Campus of Fábrica de Armas, of the University of Castilla-La Mancha in Toledo, Spain from 12 to 15 May, with the contribution of Division 5 “Electrochemical Process Engineering and Technology” and Division 7 “Physical Electrochemistry”. The opening ceremony took place on Sunday May 12 and was chaired by the ISE President ZQ Tian. The opening ceremony was immediately followed by the on-site welcome reception and guided tour of the City of Toledo.

The conference featured four parallel symposia devoted to Environmental Electrochemistry, Energy applications, Electrocatalysis and General applications. The conference listed 4 keynote lectures presented by Beatriz Roldan Cuenya (Germany), Juan M. Feliu (Spain), Christina Roth (Germany) and Minghua Zhou (China). The program further featured 12 invited lectures, 170 oral presentations and 150 poster presentations. The event was attended by 356 registered participants from 40 countries setting a new all-time record for ISE Topical Meetings. The highest numbers of participants arrived from Spain, France, Germany and Italy.

For these successful meetings, I gratefully thank all public and private institutions which provided financial support, the co-chairs of the Organizing Committees, Janice Limson, Mkhulu Mathe and Kenneth Ozoemena (Durban), Carlos Frontana, Ignacio Gonzalez and Linda Gonzalez-Gutierrez (Merida), Enrique Herrero and Manuel A. Rodrigo (Toledo), 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, Raphael Berger and Gil Bourgeois.

The ISE meetings for 2020 will be held in very attractive locations and promise to maintain a high scientific and organizational standard. Our program includes:

- 26th Topical Meeting of the International Society of Electrochemistry, Electrochemical Deposition for Semiconductor and Green Energy, 29 March-1 April 2020, Tainan, Taiwan
- 27th Topical Meeting of the International Society of Electrochemistry, Electroanalytical Chemistry and Bioelectroanalysis, 18-21 May 2020, Salt Lake City, USA
- 71th Annual Meeting of the International Society of Electrochemistry, Electrochemistry toward Excellence, 30 August-4 September 2020, Belgrade, Serbia

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

Sponsored Meetings

ISE has sponsored 47 meetings held in 2019, 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

Six new ISE Fellows were appointed in 2019 in recognition of their outstanding scientific achievements. They are Douglas MacFarlane, Frank Marken, Shelley Minteer, Sanjeev Mukerjee, Mark Orazem and Yongyao Xia. I congratulate each one of them. Unfortunately, the recent trend when the Fellow nominations had satisfactory gender diversity was broken in 2019. I would like to encourage you, therefore, to nominate eminent female scientists for this recognition.

Awards

Twelve ISE Prizes were awarded in 2019 and announced in Durban.

- The Frumkin Memorial Gold Medal was awarded to Hector Abruna, Cornell University, USA, for the contributions to advanced *in-situ* techniques provided a possibility to 'decode' the previous thermodynamic considerations and hypotheses concerning the structure of complex charged interfaces and induced the development of electrocatalysis research at atomic/molecular level.
- The ISE-Elsevier Prize for Experimental Electrochemistry was awarded to Ethan Crumlin, Lawrence Livermore Laboratory, USA, for outstanding contributions outlining the relationships between potential-structure in electron transfer reactions, particularly using X-ray photoelectron spectroscopy.
- The Katsumi Nikki Prize of Division 2 of ISE was awarded to Evgeny Katz, Clarkson University, USA, in recognition of his outstanding contribution to the fields of enzyme bioelectrochemistry, biosensor, bioelectronics, biofuel cell, and biocomputing.
- The Alexander M. Kuznetsov Prize for Theoretical Electrochemistry was awarded to Jan Rossmeisl, Copenhagen University, Denmark, for his work related to the development of a computational hydrogen electrode and his contributions towards development of methods introducing explicitly the electrolyte effects in atomic scale simulations.
- The Jaroslav Heyrovsky Prize for Molecular Electrochemistry was awarded to Christian Amatore, Ecole Normale Supérieure, Paris, France, in recognition of the contributions in the development of advanced electrochemical concepts, methodologies, and instrumentation namely employing ultra-microelectrodes at micro- and nano-scales for characterization of complex reaction mechanisms.
- The Tajima Prize was awarded to Shinsuke Inagi, Tokyo Institute of Technology, Japan, for his outstanding researches on electrochemical synthesis of molecular and polymeric functional materials to development and comprehensive understanding of electrochemical polymer reaction and bipolar electrochemistry.
- The ISE Prize for Electrochemical Materials Science was awarded to Laifa Shen, Max Planck Institute for Solid State Research, Stuttgart, Germany, for his excellent contributions in the research and development of new materials for next-generation high performance, low-cost energy storage device.
- The Zhaowu Tian Prize for Energy Electrochemistry was awarded to Zhichuan Xu, Nanyang Technological University, Singapore, for contribution to understanding of the role of key parameters of nano structured materials in electrochemical energy conversion and storage. based

on parameters like composition, crystalline structure, surface area, and electronic property of nano materials.

- The ISE-Elsevier Prize for Green Electrochemistry was awarded to Wei Jin, Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China, for his excellent contributions to the study of electrochemical processes for resources recovery and wastewater remediation.
- The ISE-Elsevier Prize for Applied Electrochemistry was awarded to Jiayan Luo, Tianjin University, China, in recognition of his extensive and innovative research on novel lithium battery materials and architectures.
- The Early Career Analytical Electrochemistry Prize of ISE Division 1 was awarded to Sabine Kuss, University of Manitoba, Winnipeg, Canada, for fundamental contributions to analytical electrochemistry at the interface between electrochemistry and biology, notably basic developments in SECM related to the electroanalytical detection of bacteria and living cells.
- The Oronzio and Niccolò De Nora Foundation Young Author Prize 2019 was awarded to Mounika Kodali, University of California, Irvine, USA for her article “ Enhancement of Microbial Fuel Cell Performance by Introducing a Nano-composite Cathode Catalyst“, published *Electrochimica Acta* 265 (2018), 56-64.

Nominations and applications for the 2020 ISE Prizes are invited and must be submitted to the ISE Office between February 1st and May 1st, 2020.

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 70th ISE Annual Meeting, were awarded to Philippe Dauphin Ducharme, Xiao Xinxin, Felipe Conzuelo, Francesco Di Franco, Maria Komkova, Kai S. Exner, Elena Davydova, Anisha Patel, Marco Tulio Fonseca Rodrigues and Serena Arnaboldi. The same number of Travel Awards will be made available in 2020, to enable young researchers to participate in the 71st Annual Meeting, in Belgrade, Serbia.

Society Journal

The Board of Editors of *Electrochimica Acta* has been extended during the past 12 months and currently it includes Robert Hillman (Editor-in-Chief), Sergio Trasatti (Special Issues Editor), Philippe Allongue, Gary Attard, Nick Birbilis, Aicheng Chen, Elena Ferapontova, Laurence Hardwick, Deborah Jones, Robert Kostecki, Rüdiger Kötz, Pawel Kulesza, Tomokazu Matsue, Angela Molina, Sotiris Sotiropoulos, Shi-Gang Sun and Jiang-Ping Tu. The Impact Factor of the Society journal for 2018 was 5.383, higher than that for 2017 (5.116) and all previous years. This result confirms and improves the position of *Electrochimica Acta* among electrochemical journals. Although the numerical increase (ca. 5%) is relatively modest, comparison with the outcomes for competing journals indicates that this is not simply generic inflation. There are only three journals publishing more than 2,000 articles, of which only two have IF > 5 and only two show an increase in IF; *Electrochimica Acta* is the only one of this trio to score positively in both respects. This positive development assuring further growth of the journal brings also up the cost of manuscript evaluation. A significant example is the handling of short communications, defined as manuscripts with <3,000 words. The “traditional” arrangement is that *Electrochimica Acta* does not publish such articles: they are re-directed to *Electrochemistry Communications*, a journal established for exactly this purpose. However, a combination of the increased impact

factor of *Electrochimica Acta* and the conversion of *Electrochemistry Communications* to a purely open access journal (i.e. with publication charges) has increased the flow of communications to *Electrochimica Acta*. The second major example is the level of pre-review rejection. While there is no pre-conceived target for rejection rate, reviewer behaviour has led to a typical publication rate of 25-30%. The goal is to identify the top ca. 30% of submitted manuscripts with minimum delay and maximum accuracy.

The Publisher has proposed to expand the editorial team further in the medium term in part in reaction to retirements, notably that of Sergio Trasatti as Special Issues Editor. In a phased transition through 2020, Sergio will be succeeded by Sotiris Sotiropoulos. Further strengthening of the editorial team is planned to reflect the current and evolving patterns of manuscript topics and origins also will be necessary.

Web site

Following the General Data Protection Regulation (GDPR) rebuilding of the ISE web site in 2018 the site has undergone just minor changes in 2019. The Publications Committee continues to collect the membership's feedback on how the ISE web site should be optimized to meet the demands of the membership. The Publication Committee also explores the ways of increasing the Society presence on social media.

Executive Committee

Elections were held in the spring 2019, to renew two positions in the Executive Committee. Robert Kostecki will serve as the Vice-President responsible for the Regions in 2020-2022. Gunther Wittstock has been re-elected as the Society Treasurer and will serve his second term between 2020-2022. 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 Ignacio Gonzales who agreed to stand as candidate and, although not elected, received large numbers of votes. The term of service of Marilia Goulart (ISE Vice President 2017-2019) comes to its end. We all are indebted to her for her excellent service to the Society and for her friendly and constructive attitude.

The elections of the President Elect (2021-2022) and of two Vice Presidents (2021-2023) will take place during the spring 2020. A Nominating Committee chaired by myself, comprising Mark Orazem, Catia Arbizzani, Jiri Ludvik and Phil Bartlett as immediate Past President, will select the candidates.

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. Since the Division officers serve their respective terms for 2 years we did not have Divisional elections in 2019 and the Divisions will continue to run with the current Division officers. 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.

Regional Sections

In the calendar year 2019, the ISE had 44 recognized Regional Sections. The reports on the activities of most Regional Sections are available on the website of the Society (https://www.ise-online.org/ise-committees/RRreports/RR_Reports_2019).

Elections of Regional Representatives for the term 2020-2022 were held in 13 Regions. Tamas Pajkossy (Hungary), Lital Alfonta (Israel), Guy Denuault (UK) and Shelley Minter (USA) were re-elected for a second term. Carlos Cabrera (Caribbean Region), Pekka Peljo (Finland), A.K. Satpati (India), Tetsu Tatsuma (Japan), Jurga Juodkazyte (Lithuania), Jelena Bajat (Serbia), Alvaro Colina (Spain), Burak Ulgut (Turkey) and Jean-Pierre Pereira-Ramos (France) will each serve their first term in 2020-2022.

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 Augustin Bolzan as member of the Scientific Meetings Committee (SMC) ended on 31st December 2019. Janice Limson will replace him and will serve on the SMC for 3 years (2020-2022). Nadine Pebere will chair the SMC in 2020, the final year of her term.

In the Fellows Nominating Committee (FNC), Philippe Hapiot was appointed to replace Richard Compton, whose ordinary five-year term ended on 31st December 2019. Elena Savinova will chair the committee in 2020. I wish to thank Augustin and Richard, for their numerous valuable contributions to the activity of the ISE committees, Janice and Philippe, for agreeing to serve. The activity of the "Working Party for Diversity" will continue in 2020. 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

This year ISE had 3816 active members (including 15% students and 4% retired members), which is the second highest number in the ISE history. The ISE membership recruited from 80 countries and regions, which is the highest number of regions in the ISE history. I am confident that a further growth will be possible in the near future. 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.

In the middle of my term of service as President of the Society, I am happy with ISE performance. I'm convinced that the Society can rely on the contribution of new and current officers, meeting organizers, symposium organizers and other dedicated members.

I look forward to meeting you all at ISE meetings during the coming year, in Tainan, Salt Lake City and Belgrade. I wish you all a successful and happy New Year!

Sincerely,

A handwritten signature in black ink, appearing to be 'Zhong-Qun Tian', written in a cursive style.

Zhong-Qun Tian

ISE President 2019-2020

Xiamen, December 31st, 2019