



International Society of Electrochemistry

associated organization of IUPAC

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Dear friends, colleagues and ISE members:

With the arrival of the new year 2022, I would like to follow the President's tradition to look back at our Society and its activities in 2021.

We started the year 2021 full of optimism that the Covid-19 pandemic, which affected so much the activities of ISE in 2020, would not restrict our life and work anymore. Unfortunately, reality was very different. The Covid-19 related restrictions remained (and will remain) to be a huge factor in our society's activities, and forced the Executive Committee to take several difficult decisions, mainly with regard to the planned meetings. Although 2021 turned out to be anything but ordinary, the ISE found ways to remain active in supporting electrochemical science and technology on all continents. The flexible response of our Society to the challenges of pandemic restrictions has to be attributed to positive approach and the unwavering support of its officers and members. As a President, 2021 was my first year and it obviously was much more challenging than I originally expected. Looking back at the events of the past year, I want to sincerely thank all those people who have helped to guide our Society through 2021. In particular I would like to thank the members of the Executive Committee (EC) and the ISE Office, for their valuable time and efforts in many online meetings. It has not been easy to work on a moving target with the circumstances changing continuously, but we learned and are still learning how to make the proper decisions, thanks to the dedication of all these people to ISE. It is a privilege to work with all of them!

Scientific Meetings

Topical Meetings

The Covid pandemic had its most pronounced impact on the scientific meetings originally planned for 2021. Because of local regulations which were in effect in Czech Republic and in Taiwan during 2021, and out of concern for the health of our delegates, the EC was forced to hold both Topical Meetings online.

The online mode of meetings is of course less attractive than a regular onsite meeting held in person. Nevertheless, the 29th Topical Meeting in Mikulov attracted a significant attendance of 186 participants. The meeting was devoted to two principal topics: i) Energy – electrochemistry in securing sustainable society development and ii) Water: electrochemistry in securing the sustainable society development. The conference featured four Keynote Speakers (Plamen Atanassov, University of California Irvine; Rebeca Marcilla, IMDEA Energy; Vladimír Matolín, Charles University; and Thomas von Unwerth, TU Chemnitz) and ten Invited speakers (Francesca Soavi, University of Bologna; Xiao Su University of Illinois; Marta Hatzell, Georgia Institute of Technology;

Thomas Turek, TU Clausthal; Stylianos Neophytides, FORTH/ISE-HT; Oluf Jenssen DTU, Denmark; Marcelo Carmo, FZJ; Ann Cornel KTH; Syed-Asif Ansar, DLR; and Robert Hillman, University of Leicester). The keynote and invited lectures provided the framework for more than 150 oral presentations which outlined the recent progress relevant for development of catalytic systems for electrolytic and fuel cell applications as well as for water remediation. Live discussion sessions of the presentations were organized to provide the participants with an opportunity to interact. The report of the 29th TM from the Organizing Committee Chairs is available on the ISE website.

The 30th Topical Meeting was originally planned to take place in Taipei between November 21st and 24th. However, due to the Covid-19 related restrictions, it was also organized fully online. The meeting's topic "Electrochemical Deposition for Semiconductor and Green Energy" attracted 120 presenting authors mainly from Taiwan (61), Japan (12) and Germany (11). The submitted papers were presented in three parallel sessions devoted to Semiconductors, Energy Conversion, and Energy Storage. The meeting featured 4 keynote lectures, 83 oral and 39 poster presentations. The keynote lectures were delivered by Joseph Hupp (Northwestern University, USA), Martin Winter (University of Muenster, Germany), Peter Broekmann (University of Bern, Switzerland) and Suo Chen (University of Houston, USA).

I would like to thank here specifically Karel Bouzek and Fu-Ming Wang, resp., and their organizing teams, for all the efforts that they put into organizing these two topical meetings.

Annual Meeting

The 72st Annual Meeting of the International Society of Electrochemistry (ISE) took place in Jeju, Korea and it was organized as a hybrid meeting. The pandemic situation in Korea remained under relative control during 2021 allowing reasonable planning of onsite meeting. Since the pandemic situation outside Korea needed much stricter measures, the onsite activities were complemented by a set of online activities allowing participation of colleagues unable to travel to Korea. In the final arrangement all participants – even those attending the meeting onsite in Jeju - were requested to submit their presentation in recorded form prior to the meeting. The meeting took place between August 29th and September 3rd 2021. The main Theme of the Meeting was Electrochemistry from Fundamentals to Products. The scientific program comprised of five Plenary lectures delivered by Hyuk Chang (Samsung SDI), Daniel Mandler (Hebrew University), Kathy Ayers (Nel Hydrogen), Lo Gorton (Lund University) and Christian Amatore (ENS Paris). The contributed papers were presented in 21 parallel Symposia and encompassed 97 Keynote, 894 oral presentations and 900 poster presentations. The best posters presented by students were selected for ISE Best Poster Awards; the names of the award winners are available at the ISE web page.

Two Tutorial workshops lectures were available online during the Annual meeting. These workshops dealt with "Electrochemistry Start-Up Companies" given by Daniel Esposito (Columbia University, USA), Toon Baars (Ivium Technologies, The Netherlands) and Bong Kyun Oh (i-Sens, Inc., Korea) and with "Electrolyte design principles for Li-ion batteries" delivered by Hee Tak Kim (KAIST, Korea), Sang-Young Lee (Yonsei

University, Korea) and Yoon Seok Jung (Yonsei University, Korea). The traditional author workshop organized by Society's journal *Electrochimica Acta* was replaced by an online panel discussion on Open Access Publishing moderated by Robert Hillman, Editor in Chief of *Electrochimica Acta* and Professor at the University of Leicester. The panel was attended by representatives of leading publishing houses - Sara Bosshart (Royal Society of Chemistry), Sybille Geisenheyner (American Chemical Society), Chris Januzzi (The Electrochemical Society), Peter Harrison (Elsevier) and by a representative of the CoalitionS, Johan Rooryck.

The 72nd Annual Meeting was attended by 2453 participants, 1219 of which attended the meeting only online. The meeting was attended by delegates from 56 countries; the highest participation was from Korea (1241) followed by Germany (163), China (135), Japan (110), France (83), Italy (79), United Kingdom (65), USA (63), Spain (54) and Netherlands (49). There was also a limited participation from delegates outside South Korea, thanks to the outstanding efforts of the organizers to arrange travel visa and quarantine exemptions. It needs to be stressed that this unexpectedly high participation was facilitated primarily by an fantastic support from Korean electrochemical community. The online component of the meeting also led to an unusually high participation of students. This is indeed a positive news, and the Executive Committee will focus on promoting students and young colleagues to remain ISE member. Although the structure of the Jeju meeting was completely new and demanding from organizational point of view, the feeling of sharing results, discoveries and diverse approaches in electrochemistry, despite being unable to meet in person, was highly rewarding.

The success of the first hybrid ISE Annual Meeting was mainly possible thanks to the extraordinary effort of the chair of the Organizing Committee, Woonsup Shin, seconded by Jaeyoung Lee, in collaboration with all the Symposia organizers and of course all the participants. The success of this meeting would also not have been possible without the dedicated effort and competence of the staff of the ISE Office, i.e. Raphael Berger and Gill Bourgeois.

Unfortunately, the current Covid-19 situation suggests that the ISE activities in 2022 will still be affected by the pandemic. It is expected that international and intercontinental travel will be still restricted in 2022. It is also anticipated that some of the countries will impose strict social distancing rules throughout 2022. Unfortunately this will apply also to China, which was scheduled to host 73rd Annual Meeting in Xiamen. Based on the projected Covid-19 situation and after consultation with representatives of the Chinese electrochemical community, the Executive Committee decided to cancel the planned on-site conference in Xiamen and replace it with an online meeting organized from Lausanne. It needs to be stressed that reaching this decision was extremely difficult and I would like to thank the local organizers headed by Bin Ren and the whole Chinese electrochemical community for supporting the Executive Committee in this difficult decision, despite the efforts spent already in preparation of the Xiamen meeting.

The Executive Committee expects that on-site meetings (i.e. traditional meetings) should be possible in the late spring or during the summer of 2022. This gives us hope that at least the topical meetings planned for 2022 in Aachen (May 15th-19th, Theory and Computation in Electrochemistry: Seeking Synergies in Methods, Materials and Systems), Stockholm (June 19th -22nd, Experimental and Modelling tools for Electrochemical Energy Devices) and Santiago (November 27th- 30th, Challenges in Molecular Electrochemistry and Surface Reactivity) may take place in the originally planned format with attendees present on site. At the same time, the Executive Committee realizes that the opportunity to network - one of the traditional strengths of the ISE meetings - has been dearly missed by our members. Anticipating that international travel on a regional level may be possible in the summer 2022, and to compensate for lack of physical meeting opportunities, the Executive Committee decided to organize one more co-called Regional Meeting in 2022. This Regional meeting is intended as a one-time event, bringing together experts from all fields of electrochemistry regardless of their focus and career stage. This Regional meeting will be held in Prague, Czech Republic, between 15th and 19th of August. The details of the meeting are finalized right now and will be announced to you in January.

Guiding principles in our decisions about meetings are the health of our members, the local regulations of the region organizing the meeting, and the commitment of ISE to its goal of promoting electrochemical science and technology in a way that ensures equal access to its activities for electrochemists of all countries and all continents.

Detailed information on all ISE meetings is available in the web sites of each meeting, accessible from the ISE homepage. I look forward to meeting you at ISE meetings in 2022.

Sponsored Meetings

The Covid-19 pandemic also severely affected ISE sponsored activities. The ISE sponsored only 23 meetings in 2021. This number is slightly up from the situation in 2020, yet below the pre-Covid situation. We are ready to resume our normal sponsoring activities once the Covid-19 related restrictions are lifted throughout the world. The sponsoring request form with the relevant rules, as well as an exhaustive list of sponsored events may be found on the website of the Society (<https://www.ise-online.org/ise-sponsoring/sponsored.php>) .

ISE Fellows

Eight new ISE Fellows were appointed in 2021 in recognition of their outstanding scientific achievements. They are John B. Goodenough, Akira Yoshino, Stanley M. Whittingham, Bing-Wei Mao, Bin Ren, Piotr Zelenay, Hubert Gasteiger and Eugene Katz. Congratulations to all of them! The ISE Fellowship has developed into one of the most prestigious recognitions of scientific excellence given by ISE. This is attested by the number of nominations the ISE receives every year. However, we need to improve the diversity imbalance among the nominated candidates, which does not reflect the structure of our membership. I would therefore like to encourage you to nominate eminent scientists from underrepresented groups, notably excellent female electrochemists, for this

recognition. Details for preparing your nomination are here: <https://www.ise-online.org/fellows.php>.

Awards

Twelve ISE Prizes were awarded in 2021 and announced during the Jeju meeting.

- The Frumkin Memorial Medal was awarded to Jacek Lipkowski, Guelph University, Canada, for his universal and very deep contribution to fundamental interfacial electrochemistry. His combination of interfacial thermodynamics and direct spectroscopic approaches forms a vital link between classical and molecular level electrochemistry.
- The ISE-Elsevier Prize for Experimental Electrochemistry was awarded to Beatriz Roldan Cuenya, Fritz Haber Institute Berlin, Germany, for her combination of spectroscopy, microscopy and diffraction techniques applied to electrocatalytic processes, leading to atomistic insights under reaction conditions.
- The Katsumi Niki Prize in Bioelectrochemistry was awarded to Julea Butt, University of East Anglia, United Kingdom, in recognition of her for pioneering and breakthrough contributions to bioelectrochemistry, both proteins and whole cells.
- The Alexander Kuznetsov Prize for Theoretical Electrochemistry was awarded to Jun Cheng, Xiamen University, China, for his contributions to the fundamental understanding of electrochemical phenomena, especially interfacial phenomena, using a well-devised combination of theory and first-principles simulations.
- The Jaroslav Heyrovsky Prize for Molecular Electrochemistry was awarded to Kevin D. Moeller, Washington University, Saint Louis, USA, for his contribution (a) to the development of new transformations and their applications to total synthesis, (b) to the insightful use of mechanisms to direct and understand the course of electrochemical processes, (c) to an unprecedented level of understanding of the nature of cation radicals, and (d) to the development and use of electrochemistry on a chip to detect interactions between small molecules and bioreceptors in real-time.
- The Tajima Prize was awarded to Bryan McCloskey, University Berkley, USA, for his outstanding research on energy conversion and storage systems with special focus on Li-rich metal oxides.
- The ISE Prize for Electrochemical Materials Science was awarded to Federico Bella, Politecnico di Milano, Italy, for his excellent research in the field of materials for solar cells.
- The Zhaowu Tian Prize for Energy Electrochemistry was awarded Joaquin Rodriguez-Lopez, University of Illinois, USA, for his pioneering work on battery materials developing a new concept for size - selective flow batteries based on soluble polymers.
- The ISE-Elsevier Prize for Green Electrochemistry was awarded to Xiao Su, University of Illinois, USA, in particular in the development of advanced materials for molecularly selective separations and process intensification for different applications (energy, environment, chemical manufacturing).
- The ISE-Elsevier Prize for Applied Electrochemistry was awarded to Karthish Manthiram, MIT, USA, in recognition of his outstanding contributions in the electrochemical reduction of carbon dioxide which have opened new ways to minimize the impact of the global warming throughout electrochemistry.

- The Early Career Analytical Electrochemistry Prize of ISE Division 1 was awarded to Dmitry Momotenko, University of Oldenburg, Germany, for the development of new advanced instrumental analytical techniques for micro- and nanoscale analyses and for physico-chemical characterization of different materials and particularly for the extensive study of soft probe microelectrodes for SECM and for the integration of this advanced technique with mass spectrometry.

- The Oronzio and Niccolò De Nora Foundation Young Author Prize 2020 was awarded to Yan B. Vogel, TU Delft, Netherlands for his article “Microelectrode arrays with active-area geometries defined by spatial light modulation”, published in *Electrochimica Acta* on October 1st, 2020 (Volume 356, article no. 136849).

Nominations and applications for the 2022 ISE Prizes will be invited and must be submitted to the ISE Office between March 1st and May 1st, 2022.

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 72nd ISE Annual Meeting, were awarded to Ngoc-Anh Tran, Anna Wittig, Ruben Rizo, Michelle Browne, Dulce Morales, Fangyuan Zhao, Shiva Mohajernia, Mariel Brtes Helu, and Albert Cortijos Aragones. Due to the fact that the travel of the Travel Award winners to Jeju was unduly hampered by Covid-19 restrictions, the awardees are allowed to use their award to cover the registration fees at ISE meetings in the next 3 years. The same number of Travel Awards will be made in 2022.

Society Journal

The composition of the Board of Editors of *Electrochimica Acta* during the past 12 months has been Robert Hillman (Editor-in-Chief), Sotiris Sotiropoulos, 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, Shi-Gang Sun and Jiang-Ping Tu.

The Impact Factor of the Society journal for currently is at 6.906, up from 6.216 reported last year and above the journal’s impact factor recorded in all previous years. This result confirms and improves the strength and position of *Electrochimica Acta* among electrochemistry journals (*Electrochimica Acta* ranks currently as 2nd out of 41 journals devoted to electrochemistry). There are only two other electrochemistry-focused journals with comparable impact factors. It is important to note that *Electrochimica Acta* was able to adjust to the Covid-19 situation without losing its competitive edge. The submissions dropped to 6303 in 2020 and a similar submission number was also reached in 2021. Despite the lower number of submissions the journal was able to attract a sufficient number of good quality submissions and to process them through the peer review process. It reflects the position of the journal in the electrochemical community in general as large numbers of our colleagues accept reviewer assignments. The usage of the journal as projected from the number of downloads slightly dropped in 2021 but remained comparable with previous years. Despite the adverse situation with the organization of scientific meetings in 2020, *Electrochimica Acta* initiated eight Special Issues which collected papers presented at the Society Meetings in 2020 and 2021, but also three Special Issues which were topically oriented. The journal plans to publish Virtual Special Issues also in 2022 when the Special Issues produced for the meetings planned/organized for

2020 will be complemented by several topic-oriented Special Issues to maintain the upward trajectory of the journal.

Executive Committee

Elections were held in spring 2021, to renew one position in the Executive Committee. Elena Ferapontova was elected and will serve as a Vice-President in 2022-2024. I am pleased to welcome her and I am sure that she will greatly contribute to the future activities of our Society. I am grateful to Alexander Kuhn who agreed to stand as candidate and, although not elected, received large numbers of votes. The term of service of Francesco Paolucci (ISE Vice President 2019-2021) comes to its end. We all are deeply indebted to him for his excellent service to the Society.

The elections of a President Elect (2023-2024), a Vice-President (2023-2025) and of a Treasurer (2023-2025) will take place during the spring of 2022. A Nominating Committee chaired by Marc Koper (as the President), comprising Jose Zagal, Susana Torresi, Guy Denuault, and Zhong-Qun Tian (as the Immediate Past President), will select the candidates.

Divisions

The Division Officers supported by Division 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. In accordance with the two year cycle the Society will hold the election of Division Officers in 2022.

Regional Sections

In the calendar year 2021, the ISE had 43 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_2021).

Elections of Regional Representatives for the term 2022-2024 were held in 15 Regions. Julia Kunze (Austria), Tom Breugelmans (Belgium), Clara Santato (Canada), Tomáš Navrátil (Czech republic), Liis Siinor (Estonia), Antonis Karantonis (Greece), Bezhad Rezei (Iran), Micheal Scanlon (Ireland), Catia Arbizzani (Italy), Jaeyoung Lee (Korea), Klaus Mathwig (The Netherlands), Krzysztof Fic (Poland), Anatoly Antipov (Russia), Bjorn Wickman (Sweden), and Matthias Arenz (Switzerland) will serve as Regional Representatives in 2022-2024.

I gratefully thank the former Regional Representatives for their activities for ISE and I congratulate the new Regional Representatives 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 David Williams as member of the Scientific Meetings Committee (SMC) ended on 31st December 2021. Jaeyoung Lee will replace him and will serve on the SMC for 3 years (2022-2024). Janice Limson will chair the SMC in 2022, the final year of her term.

In the Fellows Nominating Committee (FNC), Maria Forsyth was appointed to replace Hasuck Kim, whose ordinary five-year term ended on 31st December 2021. Robert Savinell will chair the committee in 2022.

I wish to thank David and Hasuck, for their numerous valuable contributions to the activity of the ISE committees, and Maria and Jaeyoung for agreeing to serve.

Membership

This year ISE recorded 3242 active members (including 24% students and 4% retired members). This number represents a decrease from the number ISE recorded in 2020, yet the number still remains rather high given the fact that the Society was forced to restrict its operations to online activities. We can also expect that the membership will bounce back in 2022 thanks to the unprecedented success of the hybrid Annual Meeting in Jeju. The ISE membership includes members from 80 countries and regions, which is the highest number of regions in the ISE history. The membership fees for 2022 have been maintained at the 2020 level, i.e. 50 € for ordinary members and 15 € for young and emeritus members. ISE will continue to improve the service to its members through various online and on-site activities, and through topical and regional meetings.

The detailed analysis of the ISE activities in 2021 shows that the Society is fully alive despite the adverse circumstances, supported by a strong basis of highly committed members. I am convinced that with your continued support we can look ahead with optimism. May I end this detailed letter with my best wishes to all of you for a healthy, peaceful and happy New Year, and with the hope that we will meet again in person at an ISE Meeting in 2022!

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'MK' followed by a stylized flourish.

Marc Koper
ISE President 2021-2022
Leiden, December 31st, 2021