

Conference Report

The 18th Asian Chemical Congress and the 20th General Assembly of the Federation of Asian Chemical Societies (FACS)

December 8–12, 2019
Taipei International Convention Center, Taiwan¹

by Ehud Keinan
<https://doi.org/10.51167/acm00015>



Ehud Keinan

Professor Keinan of the Technion is President of the Israel Chemical Society, Editor-in-Chief of *AsiaChem* and the *Israel Journal of Chemistry*, Council Member of the Wolf Foundation, IUPAC Bureau Member, and past Board Member of EuChemS. He was Dean of Chemistry at the Technion, Head of the Institute of Catalysis, and Adjunct Professor at The Scripps Research Institute in California. His research program includes biocatalysis, organic synthesis, molecular computing, supramolecular chemistry, and drug discovery. He received the New England Award, the Herschel-Rich Award, the Henri Taub Prize, the Schulich Prize, the Asia-Pacific Triple E Award, AAAS Fellowship, and the EuChemS Award of Service.



Most global challenges, including global warming, food for everybody, the race for sustainable energy, water quality, dwindling raw materials, and health problems, are chemical problems by nature. Therefore, Humankind cannot meet these challenges without the chemical sciences and will not solve any of these problems without global cooperation. Chemists have always been doing much better than politicians in meeting these challenges, working together across borders through unique collaboration and friendship. Despite fundamentally different political systems and cultural diversity, chemists go beyond borders, find each other, share their findings, and solve problems together.

CONSIDERING THE STEADY shift of the center of gravity of the global economy to Asia and the unique role of chemistry in meeting global challenges, the FACS stands at a unique intersection with new opportunities and significant responsibilities.

The FACS, which has recently celebrated its 40th anniversary, can and should assume a leadership role in catalyzing the collaboration and cooperation among multiple communities of chemists of various cultures across the Asia-Pacific expanse. By the end of 2019, the FACS included 31 chemical societies in the Asia Pacific, and the list keeps growing.

The FACS recently held its 18th flagship, biennial international conference, Asian Chemical Congress (ACC), to provide a communication channel and collaboration among the professional chemists in the region. The 1st ACC took place on 1981 in Singapore, the 2nd on 1987 in Seoul, South Korea, the 3rd on 1989 in Brisbane, Australia, the 4th on 1991 in Beijing, China, the 5th on 1993 in Kuala Lumpur, Malaysia, the 6th on 1995 in Manila, Philippines, the 7th on 1997 in Hiroshima, Japan, the 8th on 1999 in Taipei, Taiwan, the 9th on 2001 in Brisbane, Australia, the 10th on 2003 in Hanoi, Vietnam, the 11th on 2005 in Seoul, South

Korea, the 12th on 2007 in Kuala Lumpur, Malaysia, the 13th on 2009 in Shanghai, China, the 14th on 2011 in Bangkok, Thailand, the 15th on 2013 in Resorts World Sentosa, Singapore, the 16th on 2015 in Dhaka, Bangladesh, and the 17th on 2017 in Melbourne, Australia.

Something for Everyone

The scientific program included 7 Plenary Lectures, such as the FACS Foundation Lecture, 47 Keynote Lectures, including three FACS Award Lectures, 99 Invited Lectures, and other oral presentations. Altogether the 18ACC featured 902 presentations, including 455 posters, which

1. The full version of this abbreviated report is available at *Isr. J. Chem.*, 2020, 60, 907-934.





were distributed among three poster sessions. One of those featured the “Best of the Best” poster competition. As the CSLT held its 2019 Annual Meeting on December 8 at the same venue, featuring an additional 440 posters, the total number of posters in the combined event reached 900.

The 86 sessions included three Presidential Lecture sessions, featuring 12 lectures by society presidents. Three RSC-sponsored sessions featured six Sponsored Lectures and a panel discussion on “Women’s Progress and Retention in Chemistry.” The 2nd ACES-GDCh Symposium featured two sessions and 6 Sponsored Lectures, including the Ryoji Noyori ACES Award Lecture. The ACS session on “CAS, Publication, and Communications” featured three Sponsored Lectures.

A selected group of 21 young professors, named “Asian Rising Stars,” delivered each a 25-minute Lecture. Merging the 18ACC, the 2019 CSLT Annual Meeting, added 15 scientific sessions. The half-sponsored/half-contributed scientific sessions included the IUPAC/ChemRAWN Symposium of two sessions on Green Catalysis, the ITRI Symposium, which included two sessions on Green Technology and CO₂ Utilization, and seven sessions on “Aggregation Induced Emission.” Two special sessions took place on the last day of the event, featuring short oral competition of the selected “Best of the Best” speakers. A unique plenary forum took place at the end of the congress, featuring three industry panels.

The 18ACC attracted more than 2,000 participants, including 650 international chemists from 50 countries, mainly from Taiwan, Japan, China, South Korea, the USA, Hong Kong, Saudi Arabia, Singapore, Australia, Philippines, Thailand, Nigeria, India, Turkey, and Malaysia. Special delegations arrived from international organizations, including the American Chemical Society (ACS), the Royal Society of Chemistry (RSC), the German Chemical Society (GDCh), the International Union of Pure and Applied Chemistry (IUPAC), the Asian Chemical Editorial Society (ACES), the European Federation of Medicinal Chemistry (EFMC), and Asian Federation of Medicinal Chemistry (AFMC).

The Congress also featured a large commercial exhibition by providers of lab equipment, scientific instrumentation, chemicals, materials, services of analytical chemistry, publishing houses, higher education institutions, etc. The mix of excellent lectures, colorful poster sessions, exhibitions and other activities created a vivid atmosphere with vibrant discussions, exchange of information and social gathering, all reflected by the collage of photographs on the previous page.

Organizing Committees

The Chemical Society Located in Taipei (CSLT) hosted the 18th ACC and the 20th General Assembly of the FACS at the Taipei

International Convention Center. The CSLT focuses on the general advancement of the Chemical Science and its application and currently has over 2,000 active members. It is governed by a committee of 21 board members from academia and industry, directly elected by the individual members. Prof. Yuhlong Oliver Su is the current CSLT President (2019-20). The CSLT publishes a monthly periodical with Wiley, Journal of the Chinese Chemical Society (Taipei).

The 18ACC Chairman Reuben Jih-Ru Hwu of the National Tsing Hua University was helped by Secretary General Ling-Kang Liu of Academia Sinica, Honorary Chairmen, Chain-Shu Hsu of the National Chiao Tung University, and CSLT President, Yuhlong Oliver Su of the National Chi Nan University. The International Organizing Committee included FACS representatives whereas the Program Committee and the Local Organizing Committee included many professors and researchers from Taiwanese academic and research institutions.

In addition to the many sponsors from the industrial sector, the congress was hosted by the CSLT, National Tsing Hua University, National Taiwan University, and National Chi Nan University. The co-organizers included Wiley, RSC, Taiwan Chapter of the ACS, Asian Chemical Editorial Society (ACES), the German Chemical Society (GDCh), IUPAC, National Chiao Tung University, National Central University, National Yang Ming University, University System of Taiwan, and Academia Sinica. The actual operation, including all technical aspects, administration, organization of the exhibition, promotion, etc., was carried out by the experienced team of Elite PCO of Taipei.

The 20th General Assembly of the FACS

The FACS 20th General Assembly took place on December 8, 2019, in the TICC (see photos on the facing page) with Representatives of 24 Member Societies, guests and observers. Reuben Jih-Ru Hwu, President-elect and organizer of the 18ACC, welcomed everyone to the meeting and noted a very good turnout of member societies that included those that haven’t attended for several years. He also provided encouraging statistics concerning the 18ACC and some details of the scientific and social programs. Yuhlong Oliver Su, President of the CSLT, welcomed the meeting delegates on behalf of the host society and wished them well and hoped they would enjoy the 18ACC.

President Dave Winkler welcomed all member society representatives, executive committee members, and observers to the general assembly and thanked Prof. Hwu for the meeting’s preparation and organization. At the end of his two-year presidency, it was a good time to review the original goals’ progress. His original plans included balancing regional inclusiveness with international engagement beyond the region, expanding membership of

FACS and interactions with kindred societies internationally, and restructuring the FACS to run more efficiently and capture the attractive opportunities Asia-Pacific region.

He reported on visiting societies, especially those not very active in FACS. He identified two potential new members, Myanmar and Timor Leste. He discussed closer interactions with ACS, RSC, EuCheMS, Royal Society, IUPAC, Commonwealth Chemical Societies, African Federation, Institution of Chemical Engineers (IChemE). The FACS operations were restructured by better defining the EXCO members’ roles, simplifying the operational documents, and objective fee structure, allowing for faster decisions using electronic communication. The ACC was renamed to Asiachem congresses to compete with Pacificchem and ABCChem in the Asia-Pacific region.

The Turkish Chemical Society reported on their preparations for the 19ACC and 21GA, which will occur in Istanbul by the end of 2021. Following the bids to host the 21ACC in 2023, the GA decided to hold it in Bangkok, Thailand. The application of Timor-Leste to join FACS as a new member was approved unanimously. Confirmation of awards recommendations proposed by the EXCO.

As part of the discussion on external relations, the GA voted for setting up an MOU agreement with the RSC and Renewing the MOU with the ACS.

Sarah Thomas (RSC), discussed the MOU recently completed between the RSC and the FACS. She pointed out that the RSC had been collaborating with FACS through involvement in the congress for several years and working individually with many of the FACS members, and the MOU will formalize the relations.

Ale Palermo (RSC) shared the RSC involvement in forming the Federation of Commonwealth Chemical Science Societies (COM CHEM) that grew out of the RCS’s commonwealth Science conferences. The RSC gauged societies’ interest in the Commonwealth to form a federation focusing on the UN’s sustainable development goals (SDGs) and early career chemist development and received a very positive response.

Lori Brown of the ACS gave an overview of the ACS’s drive to get all chemical societies to sign up to a joint framework to address the UN’s SDGs. They started the process at the IUPAC Centenary Congress in Paris earlier that year, where the presidents of chemical societies who were present signed up, including 3 FACS members, and now are building momentum around the world and invited the remaining FACS members to sign up. The undersigned chemical societies commit to collaborating and identifying local solutions to global challenges - using the SDGs as a guide.

Finally, the GA elected the Executive Committee members for the biennial term of 2019-2021: Reuben Jih-Ru Hwu, President; Dave Winkler, Past President; Mustafa Culha,

President-elect; Ling-Kang Liu, Secretary General; Onder Metin, Secretary General-elect; Edward Juan Joon Ching, Treasurer; Bong June Sung, Communications director; Mitsuo Sawamoto, Science Director; Ehud Keinan, Science Director; Suping Zheng, representative of the East & Pacific Asia region; Dien Pandiman representative of South East Asia & Papua New Guinea region; Wahab Khan representative of the South & West Asia region.

Opening Ceremony

On Monday morning, December 9, all FACS member societies representatives participated in the ceremony, which took place in the Plenary Hall (see images below).

Prof. Reuben Jih-Ru Hwu of the National Tsing Hua University, Chairman of the 18ACC, opened the conference, welcoming all participants and guests. He pointed out that the FACS' general objective is to promote the advancement and appreciation of chemistry and provide a channel of communication and collaboration among the professional chemists in the Asia Pacific region and all other areas around the world. The organizers were grateful to receive much help and support from seven societies and institutions that helped organized six distinguished symposia: the Chemical Society Located in Taipei, the Royal Chemical Society, Asian Chemical Editorial Society, German chemical society, American Chemical Society, International Union of

Pure and Applied Chemistry, and Industrial Technology Research Institute.

Prof. David Winkler, FACS President, greeted the audience, thanked the organizers of both the General Assembly and the 18ACC. He referred to the happy occasion that this was the 40th anniversary of the FACS, pointing out that Asian science and Asian commerce and industry were very different from how they looked now when the Federation was founded. Asia is now the epicenter of business and science globally, and this trend will undoubtedly intensify. Consequently, the FACS is going to change to reflect these opportunities in the Asian Pacific region.

Dr. Dar-Bin Shieh, Deputy Minister of Science and Technology, pointed out that this gathering would promote the advancement and appreciation of chemistry and take this opportunity to build up communication and networking to further collaborations between the professional chemists and other fields, especially in the Asian and Pacific regions. He took this opportunity to welcome all foreign guests to Taiwan, urging everyone to enjoy the traditions and the cultures of this beautiful island country.

Prof. Richard Hartshorn, Secretary General of IUPAC, provided the audience with some background on IUPAC, which was 100 years old. As a global organization, IUPAC provides objective scientific expertise and develops the essential tools for applying and communicating chemical knowledge to

benefit humankind and the world. IUPAC has about 2300 volunteers and over 800 affiliate members, in addition to 54 National Adhering Organizations, 31 Associated Organizations, and 32 Company Associates. He explained that IUPAC is deeply involved in curating the Periodic Table and developing the nomenclature and the Color Books, which compile recommendations and technical reports. He anticipated that in the next 100 years, IUPAC would lead global efforts related to green chemistry, sustainable development, and education with a particular focus on diversity and inclusion. He emphasized the collaborations with other international organizations. He mentioned that IUPAC has recently been awarded the Hague award for its work in cooperation with the Organisation for the Prohibition of Chemical Weapons (OPCW).

Dr. Bonnie A. Charpentier, President of the American Chemical Society, thanked the FACS leadership for their kind invitation to host the ACS delegation, mentioning the long and fruitful partnership with the FACS. She explained that the ACS mission is to advance the broader chemistry enterprise and its practitioners to benefit Earth and its people. She provided a short introduction of the ACS, which has over 152,000 members in more than one hundred countries representing chemists, chemical engineers, and allied chemical science professionals in academia, industry, and government. Of those members, almost 20% live outside the USA. The ACS publishes



more than 50 peer-reviewed journals and is home to the Chemical Abstracts Service. The ACS includes 32 Technical Divisions, 24 International Chemical Sciences Chapters, and 67 International Student Chapters.

Dr. Charpentier emphasized the extended partnership with the FACS, formalized by a Memorandum of Understanding agreement. She also emphasized the global collaborative effort is the United Nations proclamation of 2019 as the International Year of the Periodic Table of Chemical Elements, IYPT, celebrating 150 years of the periodic table. One way to carry the spirit of IYPT past 2019 is through working together on the United Nations Sustainable Development Goals (SDGs). This collection of 17 cross-cutting goals provides a mechanism and language for the scientific community to work together with the public, government, academia, and industry to address our time's most pressing issues. As the ACS seeks out new partnerships or initiatives with sister chemical societies, we frame those conversations with the SDGs. Organizations such as ACS, FACS, universities, and industrial partners can take advantage of the power of collaboration to advance these goals.

Award ceremony

At the end of the opening ceremony, David Winkler and Reuben Hwu awarded the prestigious FACS Awards (facing page). Prof. Vivian Yam received the Foundation Lecturer Award; Dr. Wenent Pan received the Distinguished Contribution to Economic Advancement medal; Prof. David Warren received the Distinguished Contribution to Chemical Education medal; Datin Prof. Zuriati Zakaria received the FACS Citation Medal; and Prof. Jasim Uddin Ahmad received the FACS Fellowship medal.

Plenary Lectures

Prof. Yuan Tseh Lee of the Academia Sinica of Taiwan and the University of California at Berkeley, Laureate of the 1986 Nobel Prize in Chemistry, presented the first plenary lecture on "Facing the Challenges of Global Environmental Problems," (see images on the following page). Lee argued that the greatest danger to Humanity is climate change because, for the first time, we have the power to change our environment to the point where it cannot support life anymore. The difficult problem of climate change needs a global solution as neither a single country nor scientists can solve this problem alone. In December 2015, 195 political leaders from worldwide came to Paris to attend the COP21. The final agreement to limit the global temperature rise to 2.0°C was a tremendous historical awakening. They also agreed that human society must decarbonize and become carbon neutral in the second half of this century to accomplish this goal. Lee expressed his belief that for

global sustainability, we have to learn to store, transform, and share energy from the sun, and improve equality around the world.

Sir Prof. James Fraser Stoddart of Northwestern University, Nobel Prize in Chemistry 2016, lectured on "Chemically and Electrically Driven Molecular Pumps and Motors." He explained that in 2010, his research group discovered an example of radically enhanced molecular recognition, which represents a valuable tool for the design and synthesis of artificial molecular pumps (AMPs) and artificial molecular motors (AMMs). Stoddart described how this breakthrough has led to the fabrication of (1) two AMPs, (2) a duet and a dual pump, (3) an electrically driven AMM and (4) a precise polyrotaxane synthesizer, which can be produced by attaching an AMP to each end of a polymeric connecting chain. All these molecular machines operate away-from-equilibrium, using energy ratchet mechanisms, in the presence of fuels and environments dominated by Brownian motion. Stoddart predicted that it would soon be possible to generate highly engineered polyrotaxanes with palindromic arrays of co-constitutionally heterotopic rings positioned on constitutionally symmetrical polymer dumbbells and then, ultimately, transcribe their programmed information back into the domain of sequence-controlled polymer synthesis.

Prof. Valery N. Charushin of the of the Urals State Technical University, Ekaterinburg, Russia, who serves as Vice-Chairman of the Russian Academy of Sciences, lectured on "Nucleophilic C(sp²)-H functionalization: a new logic of organic synthesis." He explained that the last decade has shown a growing interest in direct modification of the C-H bonds in aromatic and heteroaromatic compounds. In particular, the nucleophilic C-H functionalization of arenes proved to be of a great importance, as a powerful tool of green chemistry, changing the logic of traditional organic synthesis. There are two principal approaches to incorporate fragments of nucleophilic reagents into an aromatic ring through displacement of hydrogen of the C-H bond. The first one is based on catalytic activation of the C-H bond, and it involves the step of deprotonation followed by the formation of organometallic intermediates, which then react with nucleophiles to produce the final products. The second approach (SN H) suggests a direct nucleophilic attack at an aromatic ring, leading to σ H-adducts, followed by their oxidation and departure of proton (Addition-Elimination Protocol). The metal-free SN H reactions provide a good complimentary basis for transition-metal-catalyzed cross-coupling reactions. Charushin proposed that recent advances in the field of direct functionalization of the C-H bond in aromatics should be considered as a very promising methodology of organic synthesis.

Prof. Chi-Huey Wong of The Scripps Research Institute and the Academia Sinica of Taiwan spoke about "Carbohydrate Chemistry and Translational Innovation." He presented recent advances in carbohydrate chemistry and biology, emphasizing a scientific research path from curiosity-driven to discovery research and innovative development to illustrate the important contribution of this process to the field of glycoscience. Wong explained that glycosylation is a reaction used by nature to modulate the structure and function of molecules. The significance of glycosylation at the molecular level is not well understood, and as such, the pace for the development of carbohydrate-based medicines and materials is relatively slow. Thus, it is important to develop new tools and methods to study glycosylation's effect on the structure and function of proteins and other molecules. He focused on developing new methods for the synthesis of oligosaccharides and homogeneous glycoproteins, study of glycosylation effect on protein folding and function, development of glycan arrays for disease detection, and design of carbohydrate-based therapeutics to tackle the problems of cancer and infectious diseases.

Marinda Li Wu, Past President of the American Chemical Society, lectured on "The Evolving Role of Professional Societies in International Collaboration: Partners for Progress and Prosperity." She pointed out that the chemistry enterprise is evolving, becoming increasingly multidisciplinary and global. The roles of societies that support the chemistry profession must also evolve and adapt. Traditional roles for professional societies have included sharing research, providing access to information and technologies, and supporting educational excellence. Global challenges now provide sister international societies with opportunities to collaborate on improving the public image of chemistry, identifying and supporting global job opportunities as markets shift, and promoting diversity and inclusion to accelerate progress. Moreover, societies can work together to foster sustainable development by tackling grand challenges that are reflected in the United Nations Sustainable Development Goals.

Eiichi Nakamura of the University of Tokyo lectured on "Molecular Electron Microscopy - A New Tool for Chemistry Research." He explained that a molecule is a quantum mechanical entity. "Watching motions and reactions of a molecule with our eyes" has been an impossible dream of chemists for a century. Single-Molecule Atomic resolution Real-Time electron microscopic (SMART EM) imaging that his group has been developing since 2004 made this dream come true. The method provides a hitherto inaccessible possibility to in situ observe mechanical motions of motions under quantum control and the time evolution of chemical events, as recently



demonstrated for the kinetics study of [2+ 2] cycloaddition of [60]fullerene. The method also allows them to isolate and study at a single molecule level, minute intermediates of chemical reactions in rapid equilibrium with each other in solution, and hence hardly characterizable by the conventional time and molecular averaged methods. SMART EM imaging is thus opening up a new dimension of studies on the mechanism of catalytic reactions.

Vivian Wing-Wah Yam of the University of Hong Kong lectured on “From Simple Discrete Metal Complexes to Supramolecular Assembly and Nanostructures.” She explained that her group’s recent work has shown that various metalligand chromophoric building blocks could assemble to novel classes of chromophoric and luminescent metal-containing molecular materials. She described the different design and synthetic strategies. A number of these simple discrete metal complexes undergo supramolecular assembly to give various nanostructures and morphologies. Subtle changes in the microenvironment and nanostructured morphologies have led to drastic changes in these supramolecular assemblies’ electronic absorption and emission properties. Explorations into the underlying factors that determine their spectroscopic properties and morphologies and their assembly mechanisms have provided new insights into the understanding of the interplay of the various intermolecular forces and interactions for the directed assembly of novel classes of metal-containing soft materials and hybrids.

Presidential Symposium

Presidential lecture sessions: To celebrate the 40th anniversary of FACS, twelve Society Presidents accepted the invitation to deliver 30-minute keynote lectures either on scientific content or community service achievements. The organizers proposed that the initiative would become a standard feature of all future ACC events. Representatives of 29 member chemical societies attended the 18ACC and the 20th General Assembly, the majority of them were presidents. Those who did not participate in the three Presidential lecture sessions presented invited ACC lectures in their disciplinary sessions (see photos on the facing page).

David A. Winkler of Monash University, Parkville, Australia, President of the FACS, lectured on “Designing Materials for Bespoke Modulation of Biological Responses.”

Fabian M. Dayrit of the Ateneo de Manila University, President of Philippines Federation of Chemical Societies, lectured on “Application of NMR for the Profiling and Standardization of Medicinal Plant Extracts.”

Ismail Yalcin of Ankara University, President of Computer Aided Drug Design & Development Society in Turkey, spoke about “Structure-Activity Relationships of Some New 2,5- Disubstituted Benzoxazoles as hGSTP1-1 Enzyme Inhibitors.”

Dr. Vojislav V. Mitić, of the Institute Technical Sciences of SASA, Belgrade, Serbia, President of the Serbian Ceramics Society, lectured on “Brownian Motion and Fractal Nature in Chemistry and Material Sciences.”

Datuk Dr. Ting-Kueh Soon, President of the Institut Kimia Malaysia, spoke about “FACS & ACC: Forty years of Advancing Chemistry in Asia.”

Dr. Supa Hannongbua, President of the Chemical Society of Thailand, spoke about “Impact of Chemical Society Driven the Country Development.”

Dr. Tatas H.P. Brotosudarmo, President of the Himpunan Kimia Indonesia, spoke about “Chemistry for Indonesia Biodiversity.”

Niranjana Parajuli of Tribhuvan University, Kathmandu, Nepal, President of the Nepal Chemical Society, spoke about “Recent Advances in Directed Evolution of Enzymes.”

Sarah L. Masters of the University of Canterbury, President of the New Zealand Institute of Chemistry, spoke about “Utilising the Combined Power of Theory and Experiment to Understand the Quirks of Molecular Structure.”

Ehud Keinan of the Technion - Israel Institute of Technology, President of the Israel Chemical Society, lectured on “Bio-inspired synthesis of spherical containers.”

Dr. Narayanasami Sathyamurthy, President of the Chemical Research Society of India, spoke about “Nonadiabatic coupling and conical Intersection(s) between potential energy surfaces for HeH₂⁺.”

Dr. Ghulam Abbas Miana, President of the Chemical Society of Pakistan, spoke about “Alkaloids from Medicinal Plants of Pakistan.”

Keynote Lectures

Approximately 45 world-renown scientists presented Keynote Lectures in the various sessions.

Sergey M. Aldoshin of the Institute of Problems of Chemical Physics, Russian Academy of Sciences, Lectured on “Single-Ion Magnet Behavior of a Hexacoordinated Co(II) Complex with Easy-Axis and Easy-Plane Type Magnetic Anisotropy. Prospects of Development.”

Koen Augustyns of the University of Antwerp, Belgium, spoke about “Regulated Necrotic Cell Death: Novel Opportunities for Medicinal Chemistry.”

Sergey O. Bachurin of the Institute of Physiologically Active Compounds RAS, Russia, spoke about “Contemporary Approaches for the Developing Therapeutic Agents for Dementia Treatment.”

Konstantin V. Balakin of the Scientific and Educational Center of Pharmaceutics, Kazan, Russia, spoke about “Innovative Drug Candidates Developed at the Kazan Federal University in 2010–2019: a Brief Survey.”

Martin G. Banwell of the Australian National University at Canberra, spoke about “Studies

in natural products synthesis – pathways to biologically active systems.”

John P. Burrows of the Institute of Environmental Physics, University of Bremen, Germany, lectured on “Observing the changing Atmospheric Composition in the Anthropocene from space and from aircraft.”

Eugene Y.-X. Chen of Colorado State University, Fort Collins, USA, spoke about “Towards A Circular Materials Economy: Design and Methodology for Reversible Polymers with Robust Properties and Chemical Circularity.”

Debbie C. Crans of Colorado State University, Fort Collins, USA, spoke about “Menaquinone composition, structure, redox potential and enzyme activities.”

Paul S. Cremer of Penn State University at University Park, USA, spoke about “Exploring the Function of PI(45)P2 Lipids with Supported Bilayer Systems.”

Hai-Lung Dai of Temple University at Philadelphia USA, spoke about “Observing Molecular Adsorption and Transport at Living Cell Membranes through Second Harmonic Light Scattering and Microscopy.”

Vy M. Dong of the University of California at Irvine lectured on “Make it or Break it with Metal-Hydrides.”

Mohamed Eddaoudi of the King Abdullah University of Science and Technology (KAUST), Saudi Arabia, spoke about “Reticular Chemistry: MOF Design Strategies to Applications.”

Antonio Facchetti of Northwestern University, USA, spoke about “Unconventional polymer-based materials and thin-film architectures for circuit and solar devices.”

Koichi Fukase of Osaka University, Japan, spoke about “Synthesis and biofunctional studies of immunomodulating glycoconjugates.”

Betty J. Gaffney of Florida State University at Tallahassee USA, spoke about “Lipoxygenases: EPR Studies of a Radical Enzyme.”

Richard Hartshorn of the University of Canterbury at Christchurch, New Zealand, lectured on “Marrying Ruthenium and Cobalt – something old something new something borrowed and something blue.”

Martijn J. van Hemert of Leiden University Medical Center, the Netherlands, spoke about “Antivirals against chikungunya virus.”

Rolf Hilgenfeld of the University of Luebeck, Germany, spoke about “Broad-Spectrum Antivirals Targeting the Proteases of Coronaviruses and Enteroviruses.”

Teh Chung Ho of the ExxonMobil Corporate Strategic Research Laboratories at Annandale NJ, USA, spoke about “Ultra-Deep Diesel Hydrodesulfurization Catalysis and Process: A Tale of Two Sites.”

Alex Jen of the City University of Hong Kong at Kowloon, spoke about “Development of Highly Efficient Stable and Environmentally Stable Perovskite Solar Cells and Their Integration with OPV.”

Dong-Pyo Kim of POSTECH, Pohang, South Korea, spoke about “Taming Diverse Flash Chemistries in Various Microreactors.”

Fuk-yeo Kwong of the Chinese University of Hong Kong, spoke about “Palladium-Catalyzed Site-Selective Multicomponent Process for Assembling Substitution-Manipulated Polycyclic Arenes.”

Yuan Chuan Lee of the Johns Hopkins University, USA, spoke about “Serendipity in Scientific Discoveries: Examples in Biology and Chemistry.”

Aiwen Lei of Wuhan University, China, spoke about “Oxidation Induced C—H Activation and Catalytic Oxidative Cross-Coupling.”

Jürgen Liebscher of the Humboldt-University at Berlin, Germany, spoke about “Polydopamine – Famous but Structurally Challenging.”

Bin Liu of the National University of Singapore, spoke about “Aggregation-Induced Emission: Materials and Biomedical Applications.”

Todd Lowary of the University of Alberta at Edmonton, Canada, spoke about “Synthesis of Complex Microbial Glycan Probes.”

Atsuhiko Osuka of Kyoto University, Japan, spoke about “Stable Porphyrin Radicals.”

Jacob J. Plattner of Research, Boragen Inc., Durham, USA, spoke about “Applications of Boron in Medicinal Chemistry.”

Daniel G. Nocera of Harvard University, USA, spoke about “Artificial and Bionic Leaf: Food and Fuel from Sunlight, Air and Water.”

Norbert O. Reich of the University of California at Santa Barbara, USA, spoke about “Intracellular delivery of proteins for basic research and therapeutic applications.”

Tibor J. Sabo of the University of Belgrade, Serbia, spoke about “Moving towards clinical trials of O,O'-diethyl-(S,S)- ethylenediamine-N,N'-di-2-(3-cyclohexyl)propanoate dihydrochloride.”

Mitsuo Sawamoto of Kyoto University, Japan, spoke about “Precision Polymerizations: Present and Future.”

Ben Zhong Tang of the South China University of Technology, Guangzhou, China, and the Hong Kong University of Science and Technology, China, spoke about “Aggregation-Induced Emission: Making the Impossible Possible.”

Lutz F. Tietze of the Georg-August-University at Göttingen, Germany, lectured on “Domino Reactions. The Green and Economical Art of Chemical Synthesis.”

Weitao Yang of Duke University, USA, and South China Normal University, China, spoke about “Quasiparticle and Excitation Energies from Ground State DFT Calculations.”

Jackie Yi-Ru Ying of the NanoBio Lab, Agency for Science, Technology and Research (A*Star), Singapore, spoke about “Nanomaterials and Nanosystems for Catalytic Energy and Biomedical Applications.”

Samir Z. Zard of the Ecole Polytechnique at Palaiseau, France, spoke about “Radical Alliances. Solutions and Opportunities for Organic Synthesis.”

Social Programs

The Welcome Reception (see images on the facing page) took place in the lobby of the TICC on December 8 at 18:00. Nearly 2000 participants visited the exhibition and posters that were on display in the lobby area.

The Chairman’s Dinner took place on December 9, at the Kun Lun Room on the 12th floor of the Grand Hotel Taipei. Approximately 80 invited guests enjoyed the dinner and night view of the City of Taipei (facing page top).

A four-hour guided Culture Tour (facing page middle) took place on December 11 from 13:00 to 17:00. The participants went by several buses to visit scenic sites on the seashore and a traditional Taiwanese village.

The Gala Dinner & Celebration of the 40th Anniversary of FACS took place on December 11, in the Grand Ballroom I on the 6th floor of the Taipei Dazhi Denwell restaurant (facing page bottom). Approximately 500 participants enjoyed a long evening, watching cabaret performances of dancing and singing teams, and participated in active group dancing. A formal ceremony of the 40th anniversary of the FACS included addresses by current and past FACS presidents, and active participation of the audience.

Prof. Reuben Jih-Ru Hwu awarded a FACS medal of appreciation (see images left) to 1.) Prof. David Winkler, FACS President; 2.) Prof. Chin-Kang Sha of the National Tsing Hua University, previous chair of CSLT financial committee; 3.) Prof. Chain-Shu Hsu of the National Chiao Tung University, Immediate Past President of CSLT; and 4.) Dr. Fang-Chen Lee of YungShin Global Holding and YungShin Pharmaceutical Industrial Co., CSLT President-elect.

EXCO meeting

The 76th meeting of the FACS Executive Committee (EXCO) took place on the afternoon

of December 9, in the TICC (see images on facing page) in the presence of President Reuben Jih-Ru Hwu, Past President Dave Winkler, Secretary-General Liu Ling-Kang, Secretary General-elect Onder Metin, Treasurer Edward Juan Joon Ching, Science Director Mitsuo Sawamoto, Science Director Ehud Keinan, Representative of Southeast Asia & Papua New Guinea Dien Pandiman, Representative of South & West Asia Wahab Khan, Xuefeng Jiang (on behalf of Suping Zheng, Representative of East & Pacific Asia). Dr. Ale Palermo of the RSC attended as a guest.

FACS President Reuben Jih-Ru Hwu welcomed all EXCO members, mentioning that this was the first EXCO meeting of his term, which provided an opportunity to greet the incoming members and thank the outgoing members. The Immediate Past President Dave Winkler was pleased with the previous EXCO members’ contributions and wished to see more progress on modernizing the governance of FACS, looking forward to more standard operating procedure (SOP) rules and templates for operations. All members approved the minutes of the 75th EXCO Meeting in Tokyo, Japan. The Memorandum of Understanding between FACS and RSC has recently been completed and is to be signed by Paul Lewis, president-elect of the RSC, and Dave Winkler for FACS on December 10, 2019. The RSC had been collaborating with FACS through involvement in the congress for several years and worked individually with many FACS members. The MOU will formalize the relations. A course of action worth debating was for FACS to become a legal entity, such as an incorporated body, or become a holder of such an incorporated body. This would allow FACS to enter into contracts, have bank accounts, and hold copyrights and trademarks. The next meeting was planned at KAUST of Saudi Arabia upon an invitation by the Saudi Chemical Society.

Closing Ceremony

The one-hour closing and award ceremony took place on December 12 at 17:00. Two groups of students, from Taiwanese primary schools and high schools, who have led the International Year of the Periodic Table (IPCT) activities, received the FACS Award from Prof. Mei-Hung Chiu. She described some of the IPCT activities in Taiwan, including promoting the events through exhibitions and dynamic activities in the Taipei Mass Rapid Transit (MRT) system and the Taipei 101 Tower.

The Asian Rising Stars (ARS) program has launched in the ACC 2013 in Singapore to recognize young chemists at the initial stage of their career. The ARS speakers were first identified and selected based on their academic record. The speakers were invited to present a 25-minute lecture and receive a medal at the end of the presentation. The 21 ARS speakers included four young professors from China, Xuefeng Jiang, Hai-Bo Yang, Shou-Fei Zhu,





and Feng Wang. Six students from Japan, Kazuhiro Takanabe, Satoshi Maeda, Shinya Hagihara, Yasuhide Inokuma, Aiko Fukazawa, and Shuhei Furukawa. Abhishek Dey from India, Tae-Lim Choi from South Korea, Osman Bakr and Jr-Hau He from Saudi Arabia, Yu Zhao from Singapore, Hao Ming Chen and Kui-Thong Tan from Taiwan, Montree Sawangphruk from Thailand, Xing Yi Ling from Singapore, Ustyugov Aleksey from Russia, and Ying Yeung Yeung from Hong Kong.

The Best of the Best (BBP) competition, which took place for the first time in the 18ACC, was organized by Prof. Susan Shwu-Chen Tsay and Dr. Patrick Charchar. The two-stage competition started with 40 selected graduate students who presented a poster followed by a 3-minute oral presentation and a 1-minute discussion. The BBP Judging Panel presented the BBP award certificate, a medal, and a \$150 award to ten

winners: Patricia Abarquez (the Philippines), Merfat Alsabban (Saudi Arabia), Mavis Dambi (Zimbabwe), Qiaoxian Huang (China), Alvin Teik Zheng Lim (Malaysia), Shavneet Mani (Fiji), Benjamin Martinez (France), Jen-Hao Ou (Taiwan), Ryoko Oyama (Japan), and Benny Wahyudianto (Indonesia).

Dr. Marinda Wu, Past President of the ACS, and Dr. Bonnie Charpentier, current ACS President received the FACS Medal.

Prof. Onder Metin of Koc University, Turkey, Secretary General-Elect of the FACS, presented the preparations for the 19ACC and the 21st General Assembly of the FACS, which will take place in Istanbul on 2021. He explained that the Turkish Chemical Society has already started organizing the events and already contracted a highly experienced professional company in organizing international conferences. They keep in mind that the objectives of the FACS are to promote and

advance chemistry and the related disciplines by allowing scientists and professionals to communicate and collaborate in the Asia Pacific region. In this regard, the 19th ACC will be unique among all ACCs organized so far because it will take place in Asia's very west end. Prof. Metin pointed out that Istanbul is an ancient city with many museums, historic streets, mosques, churches, and synagogues, all providing a blend of history of the Hellenic, Roman, Byzantine, and Ottoman cultures. Istanbul is the largest city in Turkey and one of the most important economic, financial, and trade centers. The city is located in a beautiful landscape, on both sides of Phosphorous, which bridges Europe and Asia, rendering it one of the unique tourist destinations worldwide. It is the city of two continents.

The ceremonial transfer of the FACS flag from Taipei to the 19ACC organizers in Istanbul marked the end of the 18ACC. ◆

