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31/March /2021

Dear IUPAC Nomination Committee

Subject: letter of support to nominate Professor Abeer Al-Bawab as member of IUPAC Bureau for term of 2022-2023.

It is with distinct professional and personal pleasure that I write this letter as a notice of nomination for Prof Abeer Al Bawab for the IUPAC elections for the 2022-2023 term as a member of the Bureau.

As a Prof. in chemistry Dr. Al-Bawab is an outstanding colleague in the field of Chemistry research in Jordan. She completed her undergraduate and master's degrees at the University of Jordan, and then pursued her PhD at Clarkson University in the United States of America. During her career, she dedicated her efforts, time, and knowledge to enhance the local scene of academic education and research. During the first ten years upon earning her titles as an assistant and associate professor, from 1998 to 2007, she served solely in academic teaching and researching, then gained her Prof title early. Following that, and as she profoundly proved her name and expertise through her hard work, she began getting appointed in high positions in relating to running research centers and institutions in Jordan. Not only has she honed her quantitative, critical thinking, and interpersonal skills through academic experiences, but she also exemplified the highest levels of leadership during her roles in management. Dr. Al-Bawab spent 20 years at the



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University of Jordan as a Professor. During that time as a faculty member, she was very actively involved in research, particularly one with a specific focus on an interdisciplinary approach. As a result, she has author or co-authored approximately 80 peer-reviewed publications in high standard international journals and conferences, most of which tackle a very specific emerging field of research and its applications in the real world. Those published papers are the result of 30 nationally and internationally funded projects, for approximately \$4,150,000 secured over the past fifteen years.

Additionally, she served as a mentor for undergraduate and graduate students, supervised more than 20 PhD and/or master's students, and found her own laboratory housed at the University of Jordan, focusing on chemistry and nanoparticle research. Simultaneous to her role as a faculty member at the University of Jordan, she has served as the director of Hamdi Mango Research Center for 6 years, dean of the Academically Research Deanship for 2 years, as well as General Director at the research support fund at the Minister of Higher Education and Scientific Research. During her time in leadership roles, she took initiative to construct some major research groups, including the Nanotechnology Research Group and the very first Management of Solid Waste Research group, both at the University of Jordan.

In addition to her academic roles at the University and the ministry, she ensured her involvement in the **social aspects** of the community to her capacity. She has always believed in the notion that academic research extends beyond the aspect



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of the laboratory and manuscript writing, and to ensure using her position as a female researcher in Jordan to be involved within the academic community. She has traveled to more than **40** countries for chairing, lecturing, attending, or moderating for various conferences or workshops. Often, she was the delegate representing Jordan in the given field. In addition, she served as a moderator or participant in many trainings and workshops in Jordan that focus on educating the youth on the basics of research and manuscript writing. Furthermore, Al Bawab served as a member then chairperson of Jordanian **HEREs** (Higher Education Reform Experts), & former member of the Board of Trustees for (PSUT).

Most recently, Dr. Al-Bawab received **the IUPAC award for Distinguished Women in Chemistry**. Undoubtedly, this was a well-earned recognition that we in the scientific community were not surprised with. However, what was amusing to witness is that Dr. Al-Bawab utilized her recognition locally in the media to further inspire the Jordanian youth. With every achievement she stumbles upon, she uses it as a platform to inspire the younger generation and promote the love of chemistry in a context that needs it. Such actions reiterate Al-Bawab's perception of chemistry, science, and research as a heartfelt passion. In a world where Science continuously proves its necessity for human survival, we need more people like Al-Bawab to inspire others.

Al Bawab was very active member in the Jordanian Chemical Society (JCS) since she was a student, then she became president of for two terms, and now is acting in the consulting committee for JSC, during all her roles she was interested in



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the **IUPAC impact** in the world and making sure that Jordan stays active member in the Union (these roles are voluntary). She is a very active member in many locally or international societies and unions, for example, Association of Jordanian Women Academics, Arab Union for Chemists and American Chemical Society ACS, **she was the founder of the ACS Chapter in Jordan**. She can maintain a high level of activity in any Union or society once she is really involved.

I can confidently say that I have no doubt Al-Bawab is very interested in this position at the IUPAC, and if granted, will use her position to inspire others and advance the world of Chemistry and will maintain a high level of activity in the Union like she did in other positions.

For all those reasons, I and the Jordanian Chemical Society members (JCS), give her our sincerest recommendations and highest references. Please do not hesitate to contact me for further information or questions.

Respectfully,

Prof. Dr. Raed Ghanem

President of Jordanian Chemical Society



Prof. Dr. Abeer Al Bawab



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Al Bawab is a professor at the University of Jordan specializing in the field of applied Physical Chemistry. She has extensive experience in academic research, teaching & management. Her research publications continue to make an impact within the academic scheme & the local community







962 79 6661601

drabeer@ju.edu.jo

orcid.org/0000-0003-2131-1791

Education:

BSc in chemistry - The university of Jordan (UJ) (1991) MSc and PhD in chemistry - Clarkson University (CU) – New York, USA (1993-1997)

Work Experience:

Prof. in UJ (1998-present)

Researcher and Manger for scientific & social projects (national and international)

General Director of Scientific Research Support Fund / the Ministry of Higher Education and Scientific Research (2017-2018).

Dean for the Deanship of Academic Research in UJ (2014-2016).

Director for a research center ;Hamdi Mango Center for Scientific Research (HMCSR) (2008 - 2014) in UJ. President of the Jordanian Chemical Society (JCS) (2013-2018).

Vice President for Association of Jordanian Women Academics (2014-2018).

The chairperson & member for HEREs committee (Higher Education Reform Experts) appointed by European Commission in Brussels (2014-2021).

A member of the Board of Trustees of Princess Sumaya University for Technology (PSUT), Jordan (2014-2017).

Scientific Research:

She is authored and co-authored more than 80 accredited and impacted scientific papers, which were published on international journals. Her main interest is in applied Physical & Surface Chemistry, as well as Nanoscience oriented towards, environment, water, food and conservation of Culture Heritage sites, as well as education & research management & enhancement.

Research Projects & Community Partnership Initiatives

Dr. Al bawab is a coordinator or member of many initiations & funded projects such as; MIMr; (Eramus⁺), JOCHERA, WatereUSE [all from EC], Restoration & Rehabilitation Project of the Roman Nymphaeum in Amman, phase I & II (AFCP (Ambassador Fund for Culture Preservation) from the American Embassy), Dead Sea Pre-Final Product and Modification from Potsh, JO, Economical Separation of Soluble Phenolic Compounds from OMW (From MENA NWC's water Innovation Fellowships (WIF) USA aids).

She is involved in many social projects such as: Empowerment of Jordanian Women academics, reality, achievement, requirements & challenges (MEPI, ACOR, USA). Recycling & Management Solid Waste inside the campus towards Green Campus, Animal house Research Building Establishing, DAR, UJ.

Awards:

✓ IUPAC distinguished women in chemistry ,2021

- ✓ Changer Creators (Arabic Women power for change) 2019
- ✓ Woman in Science Hall of Fame (2014), the American Embassy in Jordan,
- ✓ Arab Woman Award in Science and Technology for Development (2011), the Arab Women Organization
- ✓ Distinguished Researcher Award (2011) granted by UJ

<u>Prof Abeer Fayez Al Bawab</u> School of Science/ The University of Jordan/ Professor of Applied Physical <u>Chemistry</u>

orcid.org/0000-0003-2131-1791/ Scopus id 0000-0003-2131-1791

Abeer F. Al-Bawab is a professor of Applied Physical Chemistry in The University of Jordan (UJ). She obtained her B.S degree in chemistry in 1991 from The University of Jordan. Successive, the PhD and master's degree in physical chemistry were obtained from Clarkson University (CU) – New York, USA, during the period of 1993 - 1997.

Previously, she was the General Director of Scientific Research Support Fund / the Ministry of Higher Education and Scientific Research (2017-2018). Currently she works as a professor teaching chemistry courses as well as conducting research and managing scientific projects (national and international) in the University of Jordan (UJ) (1998-present). She acts as a mentor for her students in life and science, having supervised several graduate students previously and currently. Her main research interests are tremendously revealed in Applied Physical & Surface Chemistry, as well as Nanoscience oriented towards, environment, water, food and conservation of Culture Heritage sites or problems as well as education & research management & enhancement.

Previously she was the dean for the Deanship of Academic Research (DAR) from 2014 to 2016. Preceding 2014, she worked as a director for a research center located at the heart of The University of Jordan, Hamdi Mango Center for Scientific Research (HMCSR), for six continues years (2008 - 2014). During that time, Prof. Al-Bawab had set her eyes toward achieving her mission of restructuring the Center & Deanship and relocating its objectives and responsibilities. Consequently, she took the initiative to bring many ideas into action by obtaining many grants and funds for multiple research projects and capacity building projects. Additionally, she ensured to recruit many researchers as well as graduate, undergraduate and high school students to the center. What's more, the building capacity was enlarged for employees and students by construction workshops for their training. Nevertheless, she was involved in regulating the usage of scientific instruments, as well as establishment the center labs and transferring technology office inside the center then transfer these ideas and trying to put them in action into the deanship. Finally, she supervised the establishment of a whole building for animal research labs in the campus.

During her mission as dean & director, many funds & mega projects were initiated and are still in progressing such as Recycling and Management Solid Waste inside the campus towards Green Campus, Animal Research Group & Projects towards establishing a separate section and building, Nanotechnology Group & projects towards establishing separate section & labs.

Adding up to that, as a researcher she was and still is involved in many research projects that are funded institutionally, governmentally and internationally such as; (MIMr; Modernization Institutional Management of Innovation and Research in South Neighboring Countries,(Eramus ⁺)) JOCHERA, WatereUSE [all from EC], **R**estoration

& Rehabilitation Project of the Roman Nymphaeum in Amman, phase I &II (AFCP (Ambassador Fund for Culture Preservation) from the American Embassy), Dead Sea Pre Final Product and Modification, (from the Arab Potash Company), Economical Separation of Soluble Phenolic Compounds from OMW (From MENA NWC's water Innovation Fellowships (WIF) USA aids). In addition, she is involved in many social projects such as: Empowerment of Jordanian Women academics, reality, achievement, requirements, and challenges (MEPI, ACOR, USA). All these projects had a total funding worth more than \$3.0 million.

Furthermore, Prof. Al-Bawab authored and co-authored **around 80** different scientific papers, which were published on international journals. Some of them are original and novel scientific or research management, papers, reviews, chapters, and books. Concurrently, she was invited and attended many international and national conferences, meetings, workshops, and symposiums that were focused on scientific **or/and** research management purposes. Also, she was involved in establishing & arranging some national & international conference, meetings, workshops, and symposiums. Some of them she was Chair, Cochair, Moderator or Facilitator.

Moreover, Prof. Al-Bawab received many different honor awards such as **IUPAC** distinguished women in chemistry 2021, Changer Creators (Arabic Women power for change) 2019, the Woman in Science Hall of Fame (2014) granted by the American Embassy in Jordan, the Arab Woman Award in Science and Technology for Development (2011) in the League of Arab States granted by the Arab Women Organization as well as the Distinguished Researcher Award (2011) granted by The University of Jordan.

Additionally, Prof. Al-Bawab was the **editor-in-chief** for Dirasat Journal, which is published by the University of Jordan in Amman, Jordan, from 2014 to 2016. She is also a member in the **editorial board** for; **JJC** (Jordan Journal of Chemistry, published by Al-Yarmouk University in Irbid, Jordan), **Universal Journal of Chemistry** (published by Horizon Research Publishing in the United States of America) as well as the American Journal of Applied Chemistry (Published by Science PG in New York). She is scientific and proposals evaluator for many research agencies such as EC (European commission, FP7 & H20/20 proposals), Abdul Hameed Shoman Fund for Supporting Scientific Research, The Scientific Research Support Fund (SRSF). Also, evaluator for many scientific international journals and institutional scientific promotion.

Additionally, she often speaks at international events. She was able to travel to more than 40 countries for chairing, lecturing, attending, or moderating for congress, conference, symposium, meeting or workshop through funded projects or scientific networking or invitations.

In addition, Prof. Al-Bawab was the **President** of the Jordanian Chemical Society (JCS) (2013-2018) and was **vice President** for Association of Jordanian Women Academics (2014-2018). Now she is the chairperson for **HEREs** committee (Higher Education **R**eform Experts) appointed by the Education, Audiovisual, and Culture Executive Agency at the European Commission in **Brussels** (2018-2021), after serving as a member in this committee during (2014-2018), Finally, she was a member of the Board of Trustees of **P**rincess **S**umaya University for Technology (**PSUT**) in Amman, Jordan (2014-2017).



International Engagement

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www.rsc.org

Dr Lynn Soby Executive Director International Union of Pure and Applied Chemistry (IUPAC) P.O. Box 13757 Research Triangle Park North Carolina, USA 27709

31 March 2021

Dear Lynn

I am writing to confirm that the Royal Society of Chemistry, as the UK National Adhering Organisation of IUPAC, wishes to nominate Professor Hemda Garelick for a second term on the IUPAC Bureau.

I attach Hemda's CV, biography and photograph. Do not hesitate to contact me if you require further information.

Yours sincerely

Sorn Throws

Dr Sarah Thomas CSci CChem FRSC Senior Programme Manager, International Engagement

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Hemda Garelick is a Professor of Environmental Science and Public Health Education, Department of Natural Sciences, School of Science and Technology, Middlesex University. She is currently the President of 'Chemistry and the Environment' Division at the International Union of Pure and Applied Chemistry (IUPAC). <u>https://iupac.org/who-we-are/divisions/division-details/?body_code=600</u>

Prof Garelick has a long term interest in public and environmental health, with particular focuses on health and hygiene aspects of water, wastewater and sanitation systems, investigating health aspects of chemical and microbial pollution in water and soil. Areas of particular interest include: the analysis and the fate of antibiotics and antibiotic resistant microorganisms in the environment and in food, which led to a number of local and pan European projects, as well as the impact of solid waste disposal such as electronic waste (E-Waste) and its effect. Her interest in pollution affecting poor societies has also led her to investigate the problem of arsenic pollution in drinking water and the effect of people exposure to contaminated groundwater. Similarly, she became interested in the informal recycling of electronic waste (E-Waste) and its effect on the health and environment of poor societies such as the Nigerian sites near the city of Lagos.

She has been working on EU funded projects related to dissemination in countries such as Kazakhstan and Russia and developed long term relationships with scientist in these countries which led to joint IUPAC projects.

As well as the research carried out at Middlesex University a number of IUPAC projects related to the above have been developed and carried out.

Over the years she has also been involved in many IUPAC activities and has built cross- and interdivisional and committee collaborations as well as Union led activities such as WCLM (World Chemistry Leadership Meeting supporting the NAO programme for Young Observers) and GWB (Global Women Breakfast, on the Union activities to enhance diversity and connection).



HEMDA GARELICK (PROFESSOR OF ENVIRONMENTAL SCIENCE AND PUBLIC HEALTH EDUCATION)

Department of Natural Sciences, Faculty of Science & Technology, Middlesex University <u>h.garelick@mdx.ac.uk;</u> OPCID: https://arsid.org/0000.0002.4568.2200

ORCID: https://orcid.org/0000-0003-4568-2300

Education

- PhD, London University,. Thesis titled 'Studies on the growth and attenuation of hepatitis A virus in cell culture'. Developed a vaccine for Hep A as part of the project.
- MSc (with distinction), School of Applied Science, Hebrew University, Jerusalem, Israel, in Human Environmental Studies.
 - o BSc (Hons), Chemistry. Technion, Israel Institute of Technology, Haifa, Israel.

Membership of Professional Bodies & Learned Societies

- Fellow of the Royal Society of Chemistry
- Member of The American Chemical Society
- Fellow the Higher Education Academy
- $\circ \quad \text{Member of the London Freshwater Group}$

IUPAC Engagement

- President of the Chemistry and the Environment Division of the International Union of Pure and Applied Chemistry (IUPAC) 2020- to date
- o Elected member of the Bureau IUPAC: 2016-2020
- \circ $\,$ Member of the UK delegation to the IUPAC council:2010- to date $\,$
- Division representative on the Committee on Chemistry Education (CCE) a Committee on Chemistry and Industry (COCI) for different periods 2010-2018
- Chair of the Subcommittee on Chemistry of Environmental Compartments Division of Chemistry and the Environment. IUPAC: 2008-2014
- Secretary of the Chemistry and the Environment Division of the International Union of Pure and Applied Chemistry (IUPAC) 2014-2018
- Participation in IUPAC project
 Current projects: 12
 Completed projects: 14

Other Academic Activities

- Associate editor: Frontiers in Microbiology, section Antimicrobials, Resistance and Chemotherapy 2019-A member of the of the editorial board of *Work Based Learning e-Journal* ISSN 2044-7868 <u>http://wblearning-ejournal.com</u>
- \circ Invited referee : The Portuguese Foundation for Science and Technology (FCT) : 2013-2014
- A Panel Member for the Research Council of Norway. 2009-2012
- Panel: *Responsive Mode Projects in Environment and Development (FRIMUF)*

Research supervision, Teaching and Assessment

- Completions: (11 PhD, 2MProf, 15 DProf); Current supervision: (6 PhD, 8 DProf)
- Examination : (8 at Doctoral level, numerous at Master level, Numerous panel Charing)
- Leader of Specialist Pathway in Masters and Doctorates in Professional Studies (M/DProf) In the Schools of Science and Technology and Health and Education, Middlesex University
- o Departmental Research Degree Coordinator
- Leader, MSC module 'Monitoring and Control of Pollution'; Supervised to completion over 80 MSc projects

Selected Publications Relevant to IUPAC Work

Over 100 outputs including publications and conference presentations, edited books and book chapters

- Victor Castro Gutierrez, Francis Hassard, Rodrigo Leitao, Beata Burczynska, _View
 Dirk Wildeboer, Isobel Stanton, Shadi Rahimzadeh, Gianluca Baio, Hemda Garelick... Lian Lundy, Andrew
 C Singer, Mariachiara Di Cesare (2021) Monitoring occurrence of SARS-CoV-2 in school populations: a wastewaterbased approach. doi: <u>https://doi.org/10.1101/2021.03.25.21254231</u>
- Marano, Roberto B M, Fernandes, Telma, Manaia, Célia M, Nunes, Olga, Morrison, Donald, Berendonk, Thomas U, Kreuzinger, Norbert,.... Bürgmann, Helmut, Beck, Karin, Garelick, Hemda,and Cytryn, Eddie (85 contributors) (2020) *A global multinational survey of cefotaxime-resistant coliforms in urban wastewater treatment plants.* Environment International, 144, 106035. ISSN 0160-4120 [Article] (Published online first) (doi:10.1016/j.envint.2020.106035)
- Purchase, Diane , Abbasi, Golnoush, Bisschop, Lieselot, Chatterjee, Debashish, Ekberg, Christian, Ermolin, Mikhail, Fedotov, Petr, Garelick, Hemda , Isimekhai, Khadijah, Kandile, Nadia G., Lundstrom, Mari, Matharu, Avtar, Miller, Bradley W., Pineda, Antonio, Popoola, Oluseun E., Retegan, Teodora, Ruedel, Heniz, Serpe, Angela, Shevah, Yehuda, Surati, Kiran R., Walsh, Fiona, Wilson, Benjamin P. and Wong, Ming Hung (2020) *Global occurrence, chemical properties, and ecological impacts of e-wastes (IUPAC technical report)*. <u>Pure and Applied</u> <u>Chemistry</u>, 92 (11) . pp. 1733-1767. ISSN 0033-4545 [Article] (doi:10.1515/pac-2019-0502)
- Cacace, Damiano, Fatta-Kassinos, Despo, Manaia, Celia M., Cytryn, Eddie, Kreuzinger, Norbert, Rizzo, Luigi, Karaolia, Popi, Schwartz, Thomas, Alexander, Johannes, Merlin, Christophe, Garelick, Hemda, et al (2019) Antibiotic resistance genes in treated wastewater and in the receiving water bodies: a pan-European survey of urban settings. Water Research, 162. pp. 320-330. ISSN 1879-2448 (doi:10.1016/j.watres.2019.06.039)
- Plume, Ruth, Page, Alan and Garelick, Hemda (2018) Responding to the risk of reducing resources: development of a framework for future change programmes in environmental health services. International Journal of Disaster Risk Reduction, 31. pp. 30-36. ISSN 2212-4209 (doi:10.1016/j.ijdrr.2018.04.013)
- Pantoja Munoz, Leonardo, Gonzalez Baez, Alejandra, McKinney, Deena and Garelick, Hemda (2018) Characterisation of "flushable" and "non-flushable" commercial wet wipes using microRaman, FTIR spectroscopy and fluorescence microscopy: to flush or not to flush. Environmental Science and Pollution Research, 25 (20). pp. 20268-20279. ISSN 0944-1344 (doi:10.1007/s11356-018-2400-9)
- Chan, Wai Kit, Wildeboer, Dirk, Garelick, Hemda and Purchase, Diane (2018) Competition of As and other Group 15 elements for surface binding sites of an extremophilic Acidomyces acidophilus isolated from a historical tin mining site. Extremophiles, 22 (5). pp. 795-809. ISSN 1431-0651 (doi:10.1007/s00792-018-1039-2)
- Isimekhai, Khadijah, Garelick, Hemda, Watt, John and Purchase, Diane (2017) Heavy metals distribution and risk assessment in soil from an informal e-waste recycling site in Lagos State, Nigeria. Environmental Science and Pollution Research, 24 (20). pp. 17206-17219. ISSN 0944-1344 [Article] (doi:10.1007/s11356-017-8877-9)
- Ellis, John Bryan and Garelick, Hemda (2009) A multi-criteria approach for assessing options to remediate arsenic in drinking water. In: Reviews of environmental contamination: international perspectives on arsenic pollution and remediation. Garelick, Hemda and Jones, Huw, eds. Reviews of Environmental Contamination and Toxicology, 197. Springer, New York, pp. 129-161. ISBN 9780387792835. [Book Section] (doi:10.1007/978-0-387-79284-2_5)
- Garelick, Hemda , Jones, Huw , Dybowska, Agnieszka and Valsami-Jones, Eugenia (2008) Arsenic pollution sources. In: Reviews of environmental contamination: international perspectives on arsenic pollution and remediation.
 Garelick, Hemda and Jones, Huw , eds. Reviews of Environmental Contamination and Toxicology. (197) . Springer, New York. ISBN 9780387792835. [Book Section] (doi:10.1007/978-0-387-79284-2_2)
- **Garelick, Hemda** and Jones, Huw (2008) Mitigating arsenic pollution: bridging the gap between knowledge and practice. <u>*Chemistry International*</u>, 30 (4). ISSN 0193-6484 [Article]

Selected conference presentations

- Hemda Garelick, Khadijah Isimekhai, Alejandra Gonzalez Baez, Leonardo Pantoja-Munoz and Diane Purchase (2020).
 E-Waste : What Is It ? Where Is It and Who Is Effected?. <u>IUPAC Keynote Lecture</u> at the International Scientific
 Conference. "Physics and Radioelectronics in Medicine and Ecology Phreme'2020" Vladimir Russia, 2-3/07/2020
- L. Pantoja Munoz*, A. Gonzalez Baez, D. Mckinney, H. Garelick* (2019) Microplastics and Wet-Wipes: Should They Be Flushed into The Sewer System. <u>IUPAC 47th World Chemistry Congress</u> (in Paris 5-12 July, 2019 Theme: Chemistry and Society : Current Knowledge
- D. Purchase*, G. Abbasi, L. Bisschop, D. Chatterjee, C. Ekberg, P. Fedotov, H. Garelick, N. Kandile, M. Lundström, A. Matharu, B. Miller, A. Pineda, O. Popoola, T. Retegan, H. Ruedel, A. Serpe, Y. Sheva, K. Surati, F. Walsh, B.P. Wilson, M.H. Wong (2019) E-Waste An Emerging 21st Century Global Grand Challenge: Global Occurrence, Chemical Properties and Ecological Impacts. <u>IUPAC 47th World Chemistry Congress</u> (in Paris 5-12 July, 2019 Theme: Chemistry and Society : Current Knowledge



INSTITUT KIMIA MALAYSIA

MALAYSIAN INSTITUTE OF CHEMISTRY

(Inaugurated on 8 April 1967, incorporated under Chemists Act 1975 on 1 November 1977)

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President: Datuk ChM Dr. Soon Ting Kueh

15 March 2021

Dr. Lynn M. Soby Executive Director, IUPAC IUPAC Secretariat PO BOX 13757 Research Triangle Park, NC 27709-3757, USA

Institut Kimia Malaysia Nomination - Datuk Dr SOON Ting Kueh

On behalf of Institut Kimia Malaysia (IKM) Council, we would like to nominate **Datuk Dr SOON Ting Kueh**, IKM President, to stand for election as a IUPAC Bureau member as well as Vice President.

Thank you.

Yours sincerely,

Qunicf: Jakania

Datin Dr Zuriati Zakaria IKM Vice President



BIOGRAPHICAL SKETCH

Name: SOON Ting-Kueh (Ph. D.)

Datuk Dr Soon Ting-Kueh is President of Institut Kimia Malaysia (IKM) since 2018 and currently a Titular Member in the IUPAC CCE.

Education, Academic Career and Research

Dr Soon graduated from University of Malaya with B. Sc. Hons (Chemistry) in 1972 and obtained his Ph. D. from the same university in 1975. His areas of research and work include physical organic chemistry, oils and fats chemistry and technology, oleochemicals and biofuels, and chemistry education.

Institut Kimia Malaysia (IKM)

Datuk Dr Soon is IKM President and he is actively involved in advancing chemical sciences and chemistry education. He is the Chairman of IKM Chemical Education and Community Section Committee since 1988 and serves in a number of Academic Advisory Boards of Malaysian universities. He is also a member of the National Council on the Teaching of Mathematics and Science under the Ministry of Education Malaysia. For his contribution to chemistry education, IKM presented him with the **Tan Sri Dato' Seri Law Hieng Ding Award** in 2010.

Organisation for the Prohibition of Chemical Weapons

Datuk Dr Soon also served as a member of the Temporary Working Group on Education and Outreach in the Organisation for the Prohibition of Chemical Weapons (OPCW) from 2012 - 13.

Federation of Asian Chemical Societies (FACS)

Dr Soon is also very active in the Federation of Asian Chemical Societies (FACS), being its President (2007 - 2009) and serves in various positions in FACS Council until present.

International Union of Pure & Applied Chemistry (IUPAC)

Datuk Dr Soon plays an active role in IUPAC. He is actively involved in the International Year of Chemistry (IYC) 2011 as a Member of the IUPAC IYC Management Committee. He is also a Titular Member in CCE from 2018.

At the IUPAC 50GA in Paris in 2019, IKM won the bid to organise the IUPAC 53rd General Assembly and 50th World Chemistry Congress in Kuala Lumpur, Malaysia in 2025 and also the right to organise the 51st IUPAC World Polymer Congress (MACRO) in Kuching, Malaysia in 2026.

Datuk Dr Soon has been very active in promoting the advancement of chemistry in Malaysia and Asia. IKM organizes many international conferences such as the 7th Asian Chemical Congress (7ACC) in 2007 and the annual International Congress on Pure and Applied Chemistry (ICPAC) since 2016.

In 2012, Dr Soon was conferred a **Honorary Doctorate** by the Kazan National Research Technological University, Republic of Tatarstan, Russia and in 2013, he was admitted as a **Honorary Fellow** of the Singapore National Institute of Chemistry. For his contribution to the advancement of chemistry in Asia and the Pacific, Datuk Dr Soon is awarded the **FACS Citation Award** in 2015.



CURRICULUM VITAL

Name: SOON Ting-Kueh (Ph. D.)

Affiliation: Institut Kimia Malaysia (IKM)

Datuk Dr Soon Ting-Kueh is the President of Institut Kimia Malaysia (IKM) since 2018, He is the Past President of the Federation of Asian Chemical Societies (FACS) from 2007 – 2009 and has served in FACS Executive Committee in various capacities since 2005.

He is currently a Titular Member in the IUPAC Committee on Chemistry Education (CCE). He served as a Titular Member of the IUPAC Committee on Chemical Research Applied to World Needs (CHEMRAWN) from 2011 - 2018.

Education, Academic Career and Research

Dr Soon graduated from University of Malaya with B. Sc. Hons (Chemistry) in 1972 and obtained his Ph. D. majoring in physical organic chemistry from the same university in 1975. His areas of research and work include physical organic chemistry, atmospheric chemistry, oils and fats chemistry and technology, oleochemicals and biofuels, and chemistry education.

Involvement in IKM, FACS, IUPAC and OPCW

Institut Kimia Malaysia (IKM)

Datuk Dr Soon has been playing a very active role in Institut Kimia Malaysia (IKM) since he first joined the IKM Council in 1988. He became IKM President from 2007 and served until 2014. In 2018, he returned as IKM President and served until present.

He is actively involved in chemistry education both within and outside Malaysia. He is the Chairman of **IKM Chemical Education and Community Section Committee** since 1988. Under his chairmanship, the Section publishes 21 volumes of **Kimia Kini** which is distributed free to all secondary schools in Malaysia. The Section also organised many activities in chemical education and public appreciation and understanding of chemistry including the following:

• Kuiz Kimia Kebangsaan Malaysia" or K₃M which is an annual national chemistry quiz started in 2002 with 10,399 students taking part and increasing steadily over the year to 39,068 in 2021,

• Karnival Kimia Malaysia (K₂M) which is an annual public understanding of chemistry function aimed at secondary school students and the general public started in 2006. and

• Involved in the training of Malaysian students taking part in **International Chemistry Olympiad** or **IChO** since 2006

Tertiary Chemistry Education

At the tertiary level, Datuk Dr Soon serves in the Academic Advisory Board of a number of universities in Malaysia. He was also the Chairman of the IKM Examination Board that conducts the IKM Parts I & II Examinations for IKM Membership until 2013.

Datuk Dr Soon also serves as a member of the **National Council on the Teaching of Mathematics and Science** under the Ministry of Education Malaysia.

For his contribution to chemical education and public understanding of chemistry, IKM presented him with the **Tan Sri Dato' Seri Law Hieng Ding Award** in 2010.

Asian Chemical Editorial Society (ACES)

At the international level, Datuk Dr Soon represents IKM in the Asian Chemical Editorial Society (ACES) which publishes the Chemistry – An Asian Journal by Wiley-VCH.

Organisation for the Prohibition of Chemical Weapons

Datuk Dr Soon Ting Kueh also served as a member of the Temporary Working Group (TWG) on Education and Outreach under the Science Advisory Board (SAB) of the Organisation for the Prohibition of Chemical Weapons (OPCW). He had taken part in a number of international meetings on Education and Outreach of the Chemical Weapons Convention (CWC) including a Asian Meeting of OPCW National Authorities (NAs) held in Beijing in May 2015 and an Ethics Guidelines Workshop held in OPCW Headquarters in The Hague in September 2015. He also serves as a member of the Advisory Board on Education and Outreach of the Malaysian CWC National Authority.

Federation of Asian Chemical Societies (FACS)

Dr Soon is also very active in the Federation of Asian Chemical Societies (FACS), being its President (2007 - 2009), the Coordinator of Projects from 2011 - 2015 and Treasurer from 2016 - 2019. His involvement with FACS started as early as 1995 when he served as Editor of Publications. He is very active in the Asian Chemical Education Network (ACEN) of FACS.

In the last few years, he is especially active in promoting collaborations among FACS member societies. He organized the Cambodian Malaysian Chemical Congress (CMCC) in Seam Reap, Cambodia in 2012 and the Vietnam Malaysian Chemical Congress (VMCC) in Hanoi, Vietnam in 2014

International Union of Pure & Applied Chemistry (IUPAC)

Datuk Dr Soon plays an active role in the International Union of Pure & Applied Chemistry (IUPAC) He played an active part in the International of Chemistry (IYC) 2011 where he served as a Member of the IUPAC IYC Management Committee and also in the Global Stamp Competition.

In 2011, IKM organised the IUPAC International Conference on Chemical Research Applied to World Needs (ChemRAWN XIX) in Kuala Lumpur, Malaysia in 2011 and also the 24th IUPAC International Conference in Chemistry Education (ICCE) in Kuching, Malaysia in 2016.

He served as a Titular Member of IUPAC ChemRAWN Committee from 2011 – 2018.

Datuk Dr Soon is a National Representative of the IUPAC Committee on Chemistry Education (CCE) since 2009 and serves as a Titular Member from 2018 until present. At CCE, he brought the Young Ambassadors of Chemistry (YAC) program to Malaysia in 2012 and is currently involved in the Flying Chemist Program (FCP) and YAC.

In 2019 at the IUPAC 50th General Assembly (50GA) in Paris, IKM won the bid to organise the IUPAC 53rd General Assembly (53GA) and 50th World Chemistry Congress (50WCC) in Kuala Lumpur, Malaysia in 2025. At the same function, IKM also won the right to organise the 50th IUPAC World Polymer Congress (MACRO 2026) in Kuching, Malaysia in 2026.

Datuk Dr Soon Ting-Kueh has been very active in promoting the advancement of chemistry in Malaysia and Asia. He serves in the IKM Council since 1988 and has held many positions in IKM Council, including Chairman of Chemical Education Section since 1988 and President from 2007 – 2014. During his tenure as the President, IKM organized many international conferences and meetings such as the 7th Asian Chemical Congress (7ACC) in 2007, the 10th Asian Conference on Analytical Sciences (ASIANALYSIS X) in 2009 and the International Symposium on Pure and Applied Chemistry (ISPAC) in Kuching, Malaysia in 2016.

In 2012, Dr Soon was conferred a **Honorary Doctorate** by the Kazan National Research Technological University, Republic of Tatarstan, Russia and in 2013, he was admitted as a **Honorary Fellow** of the Singapore National Institute of Chemistry. For his contribution to the advancement of chemistry in Asia and the Pacific, Datuk Dr Soon Ting Kueh is awarded the **FACS Citation Award 2015**.

Datuk Dr Soon continues to play an active role in the advancement of chemistry worldwide. He also plays an important role in promoting chemistry education and public appreciation of chemistry among the younger generation and the general public.

INSTITUT DE FRANCE – ACADEMIE DES SCIENCES

COMITE NATIONAL DE LA CHIMIE

28 rue Saint Dominique - 75341 PARIS Cedex 07

Président : Clément SANCHEZ

Comité membre du COFUSI

Académie des sciences



To whom it may concern

Subject : Support for Mr. Maestro's candidacy for the IUPAC Bureau

Paris, March 30, 2021

The *Comité National de la Chimie* is very proud to support the candidacy of Patrick Maestro, Scientific Director of Solvay, to run for the IUPAC Bureau.

The *Comité National de la Chimie* that represents France at IUPAC is very keen on promoting both fundamental and industrial chemistry. We have no doubt that Patrick Maestro will promote chemistry as a discipline, a profession and an industry as IUPAC does.

We are sure that Mr. Maestro can help us to accomplish the transformation of IUPAC promoted by the actual Bureau of IUPAC. These transformations will allow IUPAC to be as useful to chemists of the 21st century as it was to chemists of the 20th century.

Sincerely Yours,

Clément Sanchez CNC President

Professeur au Collège de France

Member of the French Academy of Sciences

Member of the French Academy of Technologies

Member of the European Academia of Sciences

Member of the Academia Europaea

MRS and RSC Fellow

Patrick MAESTRO

Born October, 10, 1952

Training

Master of Physics and Chemistry, University of Bordeaux 1, 1974.

PhD in Physical and Chemical Sciences, CNRS Solid State Chemistry Laboratory, Bordeaux, May 1981: Synthesis and magnetic properties of ferromagnetic chrome dioxide derivatives.

Key functions:

Research Engineer (Rhône-Poulenc Research Centre, Aubervilliers), from November 1980. Luminescence of Rare Earths.

From 1984 to 1995, setting up and responsible for the Rare Earth application laboratories. Luminescence, magnetism, electronics, catalysis. Coaching up to 100 people

Senior Fellow Scientist of the Rhône-Poulenc group (1995)

Scientific Advisor Rhône-Poulenc, then Rhodia (1998)

Scientific Director of Rhodia (2004)

Scientific Director of Solvay (2013)

Description of works and achievements/publications/books:

1980s: in a structure-activity relationship approach, development of expertise and the concept of oxides and mixed salts as precursors of phosphors. This concept was widespread in the Rare Earth industry for phosphors, and has led to the development of Yttrium-Europium mixed oxides (red phosphor) and Lanthanum-Cerium-Terbium phosphates (green phosphor), which became industry standards for phosphor precursors for fluorescent lighting ("low consumption lamps"). Development of Rhodia's "Solid State Chemistry" team, and contributing to the development of new phases for catalysis (such as cerium-zirconium mixed oxides used today for automotive catalysis), magnetism (doping of neodymium-iron-boron magnets), electronics (anti-stokes phosphors for confidentiality tagging).

1990s: Discovery and development of colored pigments based on Rare Earths (Cerium Sulfides and derivatives). Focus of synthesis and relationship between composition (crystal structure), and color on the one hand, morphology and coloring power on the other hand (optics of solid). These pigments, with great thermal stability, were developed industrially by Rhodia for the coloring of technical plastics for the automotive market for example.

2000s: as scientific director of Rhodia, contribution to the group's long-term research and development policy, in particular through the creation of joint units with the academic world, in areas relevant to the group's long-term strategy: soft matter physics and chemistry (polymers and colloids, formulation..), mineral chemistry, thermoplastic and elastomer polymers, materials science, eco-responsible chemistry and catalysis.

Defined the scope and strategy of six advanced laboratories for the group, as well as the overall organization (scientific and technical exchanges, choice of people, connections with the outside world, support of young directors for laboratories,...), all in relation to the group's long-term business strategies.

Contribution to the development of a very strong relationship between the academic world and the industrial world, through this model of joint units bringing together, in one place and on

subjects shared from the upstream to the downstream, researchers from Rhodia and the academic world (permanent and students).

Like for example :

Laboratory of Advanced Materials (Solvay Research Centre in Lyon): it has been recognized as a major industrial and academic player on understanding the role of silica in the reinforcement of elastomers, and on understanding and improving the thermo-mechanical properties of polyamides. For example, this laboratory has enabled the development of new grades of rubber silica (application to the "green tire" with low rolling resistance and high wear resistance). The laboratory launched innovative projects on thermoplastic composites (replacement of heat-sensitive resins) and polymer powders (for rapid prototyping).

Creation of the LOF (Laboratory of the Future) in Pessac in 2004 to improve research productivity in Chemistry (microfluidics and robotics), accompanied by a high-level scientific project on the physics of flows in confined environments. Today, comprising 70 people, academic and industrial, the laboratory has increased our productivity by factors ranging from 100 to 1,000 for the acquisition of basic data for processes, and for the evaluation of the properties of formulations or materials. He is a world-renowned contributor to the study of the physics of discharge in confined environments, and the fundamental results, presented in the best scientific journals, contribute to the development of improved formulations, in cosmetics, lubricants, or for assisted oil recovery.

Established in Shanghai (2010) the International Joint Unit Solvay-CNRS-ENS Lyon-ECNU Shanghai on chemistry and eco-responsible processes, for the development of environmentally friendly surfactants, bio-sourced polymers, new pathways to access to vanillin, or the study of the transformation of CO2 into chemicals,

Various :

Rhône-Poulenc Research Award (1994)

Chairman, Materials and Process Evaluation Committee, ANR, 2005 - 2009

Vice-President of the Board, Institut Polytechnique de Bordeaux (2010 - 2016)

Member of the Board, Ecole Nationale Supérieure de Chemistry Paris (2010 - 2014)

Regular member of audit committees for French evaluation bodies like HCRES

Member of the Scientific Council of the Institute of Higher Studies for Science and Technology (2008 - 2014)

Member of the Aquitaine Development Innovation Directorate, since 2013

Member of the CNRS Scientific Council (2010 - 2015)

Member of the French Academy of Technologies since 2015

Recipient of the CNRS Innovation Medal 2015

Knight of the "Legion d'Honneur" 2018

Publications

20 patents, 50 Publications, 40 invited lectures

Participation in about 50 thesis or HDR juries

The National Academies of SCIENCES • ENGINEERING • MEDICINE

U.S. National Committee for the International Union of Pure and Applied Chemistry

23 March 2021

Dr. Richard Hartshorn IUPAC Secretary General IUPAC Secretariat P.O. Box 13757 Research Triangle Park, NC 27709

Dear Dr. Hartshorn,

On behalf of the U.S. National Committee (USNC) for IUPAC, the U.S. National Academies would like to nominate Dr. Laura McConnell for the position of Elected Member of the IUPAC Bureau.

Currently a Bayer Science Fellow, Dr. McConnell previously held a role at the global intersection of industry, academia, and government in the critical area of regulatory science affairs. The way this position bridged these sectors gives her a unique perspective of the needs of the field in a way that would the benefit the Bureau's vision and mission.

Dr. McConnell has been an exemplary contributor to IUPAC over the last fifteen years, rising to Emeritus Fellow of Division VI. Throughout, she has continuously worked to increase and diversify participation in Division VI in addition to her work on numerous projects on soil contaminants and other topics. Her familiarity with the Union and active engagement to date will be important assets for the Bureau when thinking strategically about the future of IUPAC.

As a co-chair of the Global Women's Breakfast, Dr. McConnell has been a champion of inclusivity and reducing the gender gap in chemistry. Leveraging the reach of IUPAC has been an effective strategy in providing access to networking by women chemists around the world. Her emphasis on mentorship and support of incoming members of the community is notable, also reflected in her work with the International Younger Chemists Network (IYCN) and USNC Young Observer program. Her efforts in this arena are important for increasing the awareness and impact of IUPAC on younger chemists, as well as strengthen the chemistry enterprise as a whole.

Dr. Laura McConnell has shown a commitment to and leadership in the chemistry community, and the U.S. National Committee believes that IUPAC would benefit tremendously from having her serve as an Elected Member of the Bureau.

Respectfully,

Liana Vaccari, PhD

Program Officer

Short Biosketch:

Dr. Laura L. McConnell Science Fellow in the Regulatory Scientific Affairs team at Bayer Crop Science in St. Louis Missouri. At Bayer she leads global engagement with Universities and Scientific Societies on regulatory science topics. Her expertise is in the field of analytical and environmental chemistry. Prior to coming to Bayer, she was a Lead Scientist and Research Chemist at the U.S. Department of Agriculture for more than twenty years. Within IUPAC, Dr. McConnell served continuously as a Division VI member for approximately 15 years, serving as an officer from 2010 to 2018. During that time, she worked to expand the number and diversity of members participating in Division VI activities and to raise the profile of the division within IUPAC. She was recently named Emeritus Fellow of Division VI. She served as a co-organizer of the World Chemistry Leadership Meeting at the 2015 Busan World Chemistry Congress. She served as co-chair of the IUPAC100 committee. She currently serves as co-chair of the Global Women's Breakfast committee. She has also served as the Chair of the United States National Committee for IUPAC and led the US delegation at Council during the last two biennial IUPAC General Assemblies.

Dr. Laura Lee McConnell

Bayer U.S. LLC, Crop Science Division 700 Chesterfield Parkway W FF-3339-A Chesterfield, MO 63017 Ph: 919-475-5980 Email: laura.mcconnell@bayer.com

EDUCATION

- Ph.D. Chemistry and Biochemistry, University of South Carolina, Columbia, SC, May 1992
- B.S. Chemistry, College of Charleston, Charleston, SC, May 1987

PROFESSIONAL EMPLOYMENT

2019 – Present	Bayer Science Fellow, University and Scientific Society Engagement Lead, Regulatory & Scientific Engagement, Regulatory Scientific Affairs, St. Louis, Missouri
2013 – 2019	Environmental Fate Coordinator and Water Stewardship Lead, Environmental Safety, Research Triangle Park, North Carolina
1997- 2013	Lead Scientist, Research Chemist, US Department of Agriculture, Agricultural Research Service, Beltsville, Maryland
1992-1997	Research Chemist (Term Appointment), US Department of Agriculture, Agricultural Research Service, Beltsville, Maryland
AWARDS	

- 2020 Emeritus Fellow Award, International Union of Pure and Applied Chemistry
- 2014 Fellow Award, American Chemical Society.
- 1992 Iota Sigma Pi (National Honor Society for Women in Chemistry), Anna Louise Hoffman Award for Outstanding Achievement in Graduate Research, sponsored by the American Chemical Society, Women Chemists Committee.

LEADERSHIP IN SCIENTIFIC SOCIETIES

American Chemical Society (ACS)

- 2012-Present AGRO Division Webinar Committee Chair
- 2012-2018 Associate Member, ACS Committee for Environmental Improvement.
- 2005-2007 Elected Vice Chair, Program Chair, Chair, Division of Agrochemicals.

International Union of Pure and Applied Chemistry (IUPAC)

- 2019-2021 Co-Chair IUPAC Global Women's Breakfast
- 2017-2019 Co-Chair, IUPAC100 100th Anniversary Committee
- 2015-2021 Chair and Past Chair of IUPAC US National Committee
- 2010-2017 Vice President, President and Past President of IUPAC Division of Chemistry and the Environment

IUPAC PROJECTS

2020-012-2-020 – IYCN-IUPAC Younger Chemist Showcase (ChemVoices)

2020-010-2-020 – Creation of IUPAC Global Women's Breakfast Series and a Global Network in Support of Eliminating the Gender Gap in the Chemical Sciences

2016-016-2-600- Guidance for Industry and Regulators on Assessment of the Environmental Fate and Risks of Nano-enabled Pesticides

2014-032-1-600 - Advances on the Assessment of Pesticides' Soil Microbial toxicity: New research and regulatory aspects in light of the recent methodological advances

JOURNAL EDITORSHIPS AND EDITORIAL BOARDS

2020-Present Deputy Editor, ACS Agricultural Science and Technology (New Journal)

2019-2020 Associate Editor, Pest Management Science

2012-2015 Associate Editor, *Environmental Science and Pollution Research*

PEER-REVIEWED JOURNAL PUBLICATIONS (10 MOST RELEVANT OUT OF 102 TOTAL)

- Levine, S.L., Giddings, J., Valenti, T., Cobb, G.P., Carley, D.S. & McConnell, L.L. Overcoming Challenges of Incorporating Higher Tier Data in Ecological Risk Assessments and Risk Management of Pesticides in the United States: Findings and Recommendations from the 2017 Workshop on Regulation and Innovation in Agriculture, Integrated Environmental Assessment and Management, vol. 15, no. 5, pp. 714-725. 2019.
- Molyneux, R.J., Beck, J.J., Colegate, S.M., Edgar, J.A., Gaffield, W., Gilbert, J., Hofmann, T., McConnell, L.L. & Schieberle, P. Guidelines for unequivocal structural identification of compounds with biological activity of significance in food chemistry (IUPAC Technical Report)", Pure and Applied Chemistry, vol. 91, no. 8, pp. 1417-1437. 2019.
- Schmidt, W.F., Hapeman, C.J., McConnell, L.L., Rice, C.P., Broadhurst, C.L., Nguyen, J.K., Qin, J., Chao, K., Kim, M.S. & Shelton, D.R. Using torsional forces to explain the gradient temperature Raman spectra of endosulfan isomers and its irreversible isomerization. Journal of Molecular Structure, vol. 1139, pp. 43-51. 2017.
- 4. **McConnell, L.L.**, Racke, K.D., Hapeman, C.J. & Seiber, J.N. 13th IUPAC International Congress of Pesticide Chemistry: Crop, Environment, and Public Health Protection, Technologies for a Changing World. Journal of Agricultural and Food Chemistry, vol. 64, no. 1, pp. 4-5. 2016.
- Centofanti, T., McConnell, L.L., Chaney, R.L., Beyer, N.W., Andrade, N.A., Hapeman, C.J., Torrents, A., Nguyen, A., Anderson, M.O., Novak, J.M. & Jackson, D. Organic amendments for risk mitigation of organochlorine pesticide residues in old orchard soils, Environmental Pollution, vol. 210, pp. 182-191. 2016.
- 6. Xu, T., Dyer, D.G., **McConnell, L.L.**, Bondarenko, S., Allen, R. & Heinemann, O. Clothianidin in agricultural soils and uptake into corn pollen and canola nectar after multiyear seed treatment applications. Environmental Toxicology and Chemistry, vol. 35, no. 2, pp. 311-321. 2016.
- 7. Ziska, L.H. & **McConnell, L.L.** Climate Change, Carbon Dioxide, and Pest Biology: Monitor, Mitigate, Manage. Journal of Agricultural and Food Chemistry, vol. 64, no. 1, pp. 6-12. 2016.
- 8. Kim, J.H., Chan, K.L. & **McConnell, L.L.** Augmenting the efficacy of fungal and mycotoxin control via chemosensitization. Outlooks on Pest Management, vol. 26, no. 4, pp. 171-175. 2015.
- McCarty, G.W., Hapeman, C.J., Rice, C.P., Hively, W.D., McConnell, L.L., Sadeghi, A.M., Lang, M.W., Whitall, D.R., Bialek, K. & Downey, P. Metolachlor metabolite (MESA) reveals agricultural nitrate-N fate and transport in Choptank River watershed. Science of the Total Environment, vol. 473-474, pp. 473-482. 2014.
- Schmidt, W.F., Hapeman, C.J., McConnell, L.L., Mookherji, S., Rice, C.P., Nguyen, J.K., Qin, J., Lee, H., Chao, K. & Kim, M.S. Temperature-dependent raman spectroscopic evidence of and molecular mechanism for irreversible isomerization of β-endosulfan to α-endosulfan. Journal of Agricultural and Food Chemistry, vol. 62, no. 9, pp. 2023-2030. 2014.

ZOLTAN MESTER

Zoltan Mester completed his PhD in chemistry splitting his time between his alma mater in Budapest and Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Rome, Italy. After his graduation he joined University of Waterloo, Canada and developing novel microextraction methodologies. In 1999 accepted a position at the National Research Council Canada (NRC) in Ottawa, Canada where since 2010 he is heading the inorganic chemical measurement science research program. His research interest is focused on the analytical use of mass spectrometry. Under his leadership NRC has established a program in stable isotope ratio mass spectrometry. Since 2012 he has championed the digital transformation of chemical data delivery and created the first electronic repository of Reference Materials within the Canadian National Science Library.

Since 2005, he has been active at the International Union of Pure and Applied Chemistry (IUPAC), in increasingly senior roles, where he is currently completing his second and final term as the President of the Analytical Chemistry Division. At IUPAC he has spearheaded major organizational update of the Division from strategic planning, articulating long- and short-term vision to execution working with stakeholders and staff. He has a deep understanding both of the scientific aspirations and the practical operation of the Union.

Since 2010 he has been representing Canada at the Consultative Committee for Amount of Substance (CCQM) of the Metre Convention (international treaty, curating the system of units, the SI). In his role, he championed the cooperation of IUPAC and CCQM on the new SI and redefinition of the unit mole and also negotiated the formalization of the relationship between the IUPAC and BIPM by signing an MOU.

In 2020 he began his term as the Vice Chair (Chair elect) of the Cooperation on International Traceability in Analytical Chemistry (CITAC) which the oldest international organization dedicated to the advancement of chemical measurement science and academic and governmental collaborations.

Apart from research and international outreach activities he is also involved training the next generation of analytical chemists by hosting students in his laboratories at NRC. He delivered /contributed to courses at universities in more than 20 countries and maintained adjunct professorships at two Canadian universities.

He has published over 225 peer reviewed papers, 3 book chapters and one book. His papers receive around 500 citations annually. Over the years he gave numerous invited/keynote presentations at conferences around world.

PUBLICATIONS:

http://orcid.org/0000-0002-2377-2615

NETWORKING:

www.linkedin.com/in/zoltanmester

1. AREA(S) OF RESEARCH

Metrology in chemistry; Mass spectrometry; Trace element speciation

2. EMPLOYMENT HISTORY

1999-present, Research Scientist, Chemical Metrology, National Research Council Canada

3. EDUCATION

Postdoctoral Fellow 1999, University of Waterloo, Waterloo, Canada

Ph.D. 1998, Dep. of Chemistry, Univ. of Horticulture and Food Industry, Budapest, Hungary M.Sc. 1994, Dep. of Food Chemistry, Univ. of Horticulture and Food Industry, Budapest, Hungary

4. NATIONAL AND INTERNATIONAL OUTREACH, COMMITTEES

-2006–present: International Union for Pure and Applied Chemistry (IUPAC) Analytical Chemistry division. Various roles, including **President (2018-2021)**, Vice president, Secretary, member https://iupac.org/who-we-are/divisions/division-details/?body_code=500

-2010–present: Metre Convention, Consultative Committee for Amount of Substance: Metrology in Chemistry and Biology (CCQM), **Canadian delegate**

https://www.bipm.org/en/committees/cc/ccqm/

-2010–present: CCQM working groups (strategic planning, biology, key comparisons), **founder** and current Chair of Isotope Ratio Working Group

https://www.bipm.org/en/committees/cc/wg/irwg.html

-2017–present: Joint Committee for Guides in Metrology, Lead delegate of IUPAC https://www.iso.org/sites/JCGM/JCGM-introduction.htm

-2013–present: Inter-American Metrology System; Chemistry working group, **National** representative

https://sim-metrologia.org/about-us/structure/technical-committee/chemistry/

-2013–present: Canadian Mirror Committee of ISO Committee on Reference Materials, founder and current **chair** and **convenor** of the working group on inorganic purities;

https://www.iso.org/committee/55002.html

-2020-present: Vice Chair (Chair Elect) of Cooperation on International Traceability in Analytical Chemistry (CITAC)

http://www.citac.cc/

5. SCHOLARLY AND PROFESSIONAL ACTIVITIES

-2010–2012: Spectrochimica Acta B, Review Editor

-2012-2016: Analytica Chimica Acta, Editorial Board

-2016–present: Journal of Pure and Applied Chemistry, Editorial Board

-2018-present: Accreditation and Quality Assurance, International Advisory Board

-2005–present: Canadian & US, EU funding agencies, research grant proposal reviewer/committee/panel member

-2012–present: Technical auditor/reviewer/advisory board member of various scientific organizations in Japan, Hong Kong, Colombia, Czech Republic, Australia, Croatia, Mexico, Uruguay, Canada

-2005–present: Teach courses in Canada and internationally on analytical chemistry and chemical metrology, and adjunct professor at Queen's and Trent Universities in Canada.

-2012–present: Leading collaborative research efforts between in ASEAN region and NRC Canada in the field chemical measurement science. He championed strategic MOU between Thailand Ministry of Science and Technology and National Research Council of Canada (2018).

6. SUPERVISION AND TRAINING OF HQPs

Hired, supervised and trained 30+ staff scientists over 15 years. His research team has been attracting talent from all over the world. Dr. Mester's lab has been hosting 5-10 visiting scientists, postdocs and graduate students annually, from 20+ countries.

7. MAJOR PROJECTS AND GRANTS

DATE	Value	ROLE	PARTNERS	TITLE	
2015– 2018	\$700K project, -\$6M CRM inventory created	PI	Canadian Nuclear Safety Commission and 30 international partners	Reference Mat development o Forensics	erial (CRM) f Nuclear
2011– 2017	\$10M+ overall project \$0.7M Canadian project	NRC Project Lead	PTB, Germany NIST, US NMIJ, Japan NIM, China	redefinition of t redefinition of r Metre Convent	he kilogram + nole, new SI. ion
2005– 2018	\$3M	PI	Canadian Safety and Security Program Chemical, CBRNE Research and Technology Initiative	Four consecuti chemical detec	ve projects on tion
2010– present	\$5.5M since 2010 in research contracts	PI	Partners from 50+ countries, from industry, governments and academia	Support internation measurement of via the provision and calibration	ational comparability n of CRMs s
2010– present	\$8M in research and service contracts	PI	80+ companies and research organizations annually.	Glow discharge spectrometry (s medical device sectors)	e mass supporting, s, aerospace
2005– present	\$5.7M	PI	Various funding sources	Major lab instru grants	umentation
8. PUBLICATIONS AND INTELLECTUAL PROPERTY SUMMARY					
PUBLICATION TYPE			CAREER TOTAL	TOTAL (last 5 years)	
Patents			7	0	
Other IP outputs (trade secrets, etc.)			6	4	
Peer-reviewed publications (journals and conference proceedings)			225	67	
Books and book chapters			4	3	
Standards, guides			1	0	
Invited lectures			75	28	

Dr. Mester's work has been cited 8,478 times and has an *h*-index of 52.

https://scholar.google.ca/citations?user=hHBkWsgAAAAJ&hl=en;

http://orcid.org/0000-0002-2377-2615;

EXPLORE DISCOVER SHARE



31 March 2021

Dr Lynn Soby Executive Director IUPAC Secretariat Email: <u>lsoby@iupac.org</u>

Dear Dr Soby

RE: Nomination to the IUPAC Bureau 2022-2023 - Professor Gregory T. Russell

Further to the Call for Nominations for IUPAC Offices and Bureau Members, Royal Society Te Apārangi as New Zealand's National Adhering Organisation to IUPAC, we wish to submit our nomination of Professor Gregory T. Russell for the position of Bureau Member. The New Zealand Institute of Chemistry also endorses our nomination.

In addition to the Curriculum Vitae and Biographical sketch, the following details are provided:

Nominee Full Name	Associate Professor Gregory T Russell
Gender	Male
Address	College of Science
	University of Canterbury
	Private Bag 4800
	Christchurch 8140, New Zealand
Email	greg.russell@canterbury.ac.nz
Website	https://www.canterbury.ac.nz/science/contact-us/people/greg-russell.htm

Royal Society Te Apārangi

11 Turnbull Street, Thorndon, Wellington 6011 PO Box 598, Wellington 6140, New Zealand **T** +64 4 472 7421

ROYALSOCIETY.ORG.NZ

Please confirm receipt of this nomination and please let us know if you require any additional information.

Yours sincerely

Knin

Professor Dame Cynthia Kiro Ahorangi CEO Royal Society Te Apārangi

Candidacy Sketch – Prof. Gregory T. Russell



Recently the Secretary General made a profound observation:

"with only five paid employees, the Secretariat staff, it would be hard to argue that IUPAC was large. On the other hand, IUPAC currently has around 2000 scientists actively involved in its Divisions, Committees, Commissions, and Project Task Groups." (*Chem. Int.*, **40(2)**, 2)

The IUPAC Bureau sits at the apex of this vast volunteer network. As a member of the Bureau, one must therefore be intimately aware of the array of work going on underneath. It is such knowledge and experience I would bring to the Bureau, having been involved in many facets of this voluntary work over the last 3 decades, starting even in my days as a PhD student, and ongoing to this day. My work has covered all the major strands of IUPAC's mission:

- Education and outreach through Div. IV's *Subcommittee on Polymer Education* (since 2006)
- Terminology and nomenclature through Div. IV's *Subcommittee on Polymer Terminology* (since 2011)
- Data evaluation and method standardization through Div. IV's *Subcommittee on Modeling of Polymerization Kinetics and Processes* (since 1991) and the *Interdivisional Subcommittee on Critical Evaluation of Data* (since 2018)
- Leadership through *Bureau* membership (2016-19), a full officer cycle (Vice-President, President, Past-President; 2012-2021) in Div. IV, and *Kinetics Subcommittee* chairpersonship (2007-12)
- Conference organization (numerous examples, both under the IUPAC banner and separate to it)

- Project work (19 in all), mostly resulting in publications, many of which have been highly cited
- Award organization, judging and promotion (Solvay Award, and Div. IV's *Polymer International*, Hanwha Total, DSM and Stepto Awards, the latter of which I started in recognition of the passing of a Division Past-President)

If one has done all these things, then it's easier to guide others in doing them.

I believe in IUPAC activity through both traditional ways (conferences, journal publications, etc.) and more modern means, e.g. I started <u>https://twitter.com/IUPACPolymer</u>, I have championed Div. IV's forays into Wikipedia, and I have worked on Div. IV's Brief Guides. I believe it is vital for IUPAC to be involved in current issues, e.g. I am a member of an interdivisional project on microplastics in the environment, and I have ensured Div. IV is part of IUPAC's engagement with OPCW.

I do all this with a background of research excellence, a commitment to rigorous educational standards, and a deep belief in selfless service and friendly international cooperation infused by diversity and IUPAC's family-like values.

Curriculum Vitae – Prof. Gregory T. Russell

Personal Details

Date of Birth:	30 October 1963
Nationality:	Born in Australia, permanent resident of New Zealand (since 1994)
Languages:	Native tongue English, fluent in German, school-level French
Family:	Wife Christine Prince , daughter Isabelle (b. 18 July 2004), step-daughter Scarlett (b. 7 August 2004), son Sebastian (b. 29 March 2008)

Degrees and Career

1982-85: Bachelor of Science with First Class Honours in Chemistry at the University of Sydney

1986-90: Ph.D. (Science) in Physical and Theoretical Chemistry at the University of Sydney

- **1991-94:** Alexander von Humboldt *Research Fellow* at the Institut für Physikalische Chemie der **Universität Göttingen** (Germany).
- **1994-present:** *tenured academic position* in the Department of Chemistry, School of Physical and Chemical Sciences at the **University of Canterbury**, Christchurch (New Zealand)
- 2002, 2010: sabbatical years in Australia (2002), USA (2002) and Germany (2002, 2010)

Research and Publications

General Area of Research: Radical polymerization - kinetics, mechanisms and synthesis

Publications: Over 90 publications, including 6 book chapters, 1 patent, 4 invited reviews, 8 invited journal articles and 70 refereed journal articles

Citations: *h-index*: 38; *total citations*: 5 739 (average per refereed item: 82) (from Google Scholar, 30 March 2021).

Research students supervised: 8 Ph.D. (all graduated), 1 M.Sc. (graduated), 1 PG.Dip.Sc. (graduated) and 11 Honours (all graduated)

IUPAC Service

Bureau: member (appointed) 2016-19

- Committee of Division Presidents and Standing Committee Chairs: *chair* (elected) 2018-19, *member* 2016-17
- **Division IV (Polymer Division):** *Titular member* 2008-11, *Vice-President* 2012-15, *President* 2016-19, *Past President* 2020-21 (all elected positions), *National Representative* 1999-2004
- Subcommittee on Modeling of Polymerization Kinetics and Processes: *chair* (elected) 2007-12, *deputy chair* (elected) 2003-07, *member* 1991-present

Subcommittee on Polymer Education: member 2006-present

Subcommittee on Polymer Terminology: member 2011-present

Interdivisional Subcommittee on Critical Evaluation of Data: member 2018-present

Interdivisional Subcommittee on Materials Chemistry: member 2013-present

Projects: 19 in all (12 current, 7 completed) over 2000-present, including 2 as *chair* **Solvay Award:** *member of judging panel* (appointed) 2016, 2017, 2018, 2019

Awards and Notable Achievements (outside of IUPAC)

- **2019-20:** *Guest editor* of *Polymers* Special Issue on "Advanced Polymeric Materials" (https://www.mdpi.com/journal/polymers/special_issues/advanced_polymeric_materials)
- **2019:** *Member of scientific program committee*, 47th IUPAC World Chemistry Congress (Paris, France, 7–12 July 2019)
- **2017-18:** *Guest editor* of *Polymers* Special Issue on "Emulsion Polymerization" (http://www.mdpi.com/journal/polymers/special_issues/Emulsion_Polymerization)
- 2016: Honorary Chairman and Member of International Advisory Committee, MACRO 2016 46th IUPAC World Polymer Congress: Bridging Continents & Bridging Molecules (Istanbul, Turkey, 17-21 Jul. 2016)
- 2012: Member of International Advisory Committee, 44th International Symposium on Macromolecules (MACRO 2012) – IUPAC World Polymer Congress: Enabling Technologies for a Safe, Sustainable, Healthy World (Blacksburg VA, USA, 24-29 Jun. 2012)
- **2010:** *Member of International Advisory Board*, Polymer Science in the Service of Society: 43rd IUPAC World Polymer Congress, Macro2010 (Glasgow, UK, 11-16 Jul. 2010)
- **2009-present:** Member of the Editorial Board of the journal Polymers (ISSN 2073-4360, http://www.mdpi.com/journal/polymers/)
- 2008-17: Councilor, Australian Institute of Nuclear Science and Engineering
- **2006:** *Co-Chair*, Theory of Molecular and Macromolecular Kinetics: A Symposium in Honour of Professor Bob Gilbert's 60th Birthday (Sydney, Australia, 20-22 Oct. 2006)
- **2006:** *Guest Editor, Australian Journal of Chemistry* Special Issue on "Polymer Chemistry Meets Biomaterials" (Vol. 59, No. 8, 2006)
- **2006:** *Chair*, Organizing and Scientific Committees for the 28th Australasian Polymer Symposium and 16th Annual Conference of the Australasian Society for Biomaterials (Rotorua, New Zealand, 5-9 Feb. 2006)
- 2005: FRACI, Elected to Fellowship of the Royal Australian Chemical Institute
- 2004-06: Chair, Polymer Division of the Royal Australian Chemical Institute
- **2003:** Royal Australian Chemical Institute *Polymer Division Citation* "for scientific achievement in the study of the mechanisms of free radical polymerization and for services to the Polymer Division"
- 1996-98: Chair, Canterbury Branch of the New Zealand Institute of Chemistry
- **1996:** *Rennie Memorial Medal* of the Royal Australian Chemical Institute, for the young chemist (under 33 years of age) who has made the most significant contribution to published research in the last ten years
- **1991:** Alexander von Humboldt Research Fellowship granted by the Alexander von Humboldt Foundation of the Federal Republic of Germany
- 1986: University Medal from the University of Sydney

Ken Sakai

Affiliation: Professor of Inorganic and Analytical Chemistry, Department of Chemistry, Faculty of Sciences, Kyushu University.
Address: Department of Chemistry, Faculty of Science, Kyushu University, Motooka 744, Nishi-ku, Fukuoka 819-0395, Japan
E-mail: ksakai@chem.kyushu-univ.jp
Lab. Website: http://www.scc.kyushu-u.ac.jp/Sakutai/index.eng.html
ORCID (Ken Sakai): https://publons.com/researcher/3996058/ken-sakai/



KS studied in Tokyo at Waseda University, obtained Ph.D. in 1993 from Waseda, was a Research Associate at Seikei University (1991-1999), an Associate Professor at Tokyo University of Science (1999-2004), and promoted as a full professor in 2004. His degree thesis was focused on the syntheses, crystal structures, and homogeneous catalytic reactions of multinuclear platinum mixed-valence complexes, with his special interests on water oxidation, water reduction, and dioxygen reduction. During his study at Waseda, he gained an extremely large variety of analytical techniques, such as chromatography, electrochemistry, X-ray crystallography, EPR, MS, NMR, stopped-flow, photocatalysis, etc. Rotating ring disk electrode system was also used to analyze the mechanism of dioxygen reduction using molecular catalysts. After receiving his degree, he extended his studies on (i) photocatalytic water reduction to molecular hydrogen using platinum-based homogeneous catalysts and (ii) development of conductive one-dimensional platinum chain complexes having partially oxidized valence. Besides these studies, he also promoted his research projects on (iii) equilibrium and kinetics of the reactions by various transition metal complexes. By promoting various projects, he gradually increased his areas of research and improved his ability to develop various original apparatus, instruments, and computer applications. The recent remarkable results involve (a) Pt-based photo-molecular devices for H_2 generation, (b) single-site-Co POMs and porphyrins for water oxidation catalysis, (c) Co porphyrins for CO_2 reduction, and (d) Fe-, Co-, and Ni-catalysts for electrocatalytic H⁺ and CO₂ reduction. The recent study is largely focused on the development of truly useful artificial photosynthetic devices for the overall water splitting and the CO₂ reduction to fuels (e.g., CO, HCOOH, MeOH, and CH₄) combined with water oxidation catalysis. In addition to his research activity, he also greatly devoted his time in help organizing domestic and international conferences in the coordination chemistry society as well as those for the America Chemical Society (ACS) and the Chemical Society of Japan (CSJ). He has been involved in the IUPAC activities in the last 14 years, currently Bureau and Division II NR. During the last four years, he was a chairman of SCJ (Science Council of Japan), which is one of the NAOs of IUPAC. He had a great contribution to the organization of domestic activities for the IYPT2019 as a chairman of the IYPT2019 planning subcommittee specially located within SCJ leading to make great success in the organization of the IYPT2019 closing ceremony held in Tokyo on December 2019.

Ken Sakai

Affiliation: Professor of Inorganic and Analytical Chemistry, Department of Chemistry, Faculty of Sciences, Kyushu University.

Address: Department of Chemistry, Faculty of Science, Kyushu University, Motooka 744, Nishi-ku, Fukuoka 819-0395, Japan Phone/Fax: +81-92-802-4169

E-mail: ksakai@chem.kyushu-univ.jp

Lab. Website: <u>http://www.scc.kyushu-u.ac.jp/Sakutai/index.eng.html</u> ORCID (Ken Sakai): <u>https://orcid.org/0000-0003-4976-9796</u> Publons (Ken Sakai): <u>https://publons.com/researcher/3996058/ken-sakai/</u>

Education

1989 – 1991 Ph.D.	Waseda University (Thesis 1993)
1987 – 1989 M. S.	Waseda University (Chemistry)
1983 – 1987 B. S.	Waseda University (Chemistry)

Professional Career

2018.08-2020.07	IYPT2019 Managing Committee Member (IUAPC/UNESCO)
2018.06-2020.03	IYPT2019 Planning Subcommittee Chairman (SCJ)
2017.12-2020.12	IUPAC Subcommittee Chairman (SCJ)
2014.10-Present	Member of Science Council of Japan (SCJ)
2012.01 - 2020.03	Principal Investigator, International Institute for Carbon Neutral Energy
	Research (WPI-I2CNER), Kyushu University
2011.04 - Present	Professor, Center for Molecular Systems (CMS), Kyushu University
2004.08 - Present	Professor, Department of Chemistry, Kyushu University
2003.04 - 2004.07	Associate Professor, Dept. Appl. Chem., Tokyo University of Science
1999.04 - 2003.03	Lecturer, Dept. Appl. Chem., Tokyo University of Science
1991.04 - 1999.03	Assistant Professor, Dept. Industrial Chem., Seikei University

Activities in IUPAC

2007	Observer, attended General Assembly Meeting in Torino, Italy
2008-2009	Associate Member of Inorganic Chemistry Division (Division II)
2010-2013	Titular Member of Inorganic Chemistry Division (Division II)
2014-2015	Associate Member of Inorganic Chemistry Division (Division II)
2016-2017	Associate Member of Inorganic Chemistry Division (Division II)
2018-2019	National Representative of Inorganic Chemistry Division (Division II)
2017-2021	Elected Bureau

Project in IUPAC

Project No. 2009-045-1-200: Guidelines for Measurement of Luminescence Spectra and Quantum Yields of Inorganic Compounds, Metal Complexes and Materials



Selected Publications

- "Mechanisms of Water Oxidation using Ruthenium, Cobalt, Copper, and Iron Molecular Catalysts", A. R. Parent, T. Nakazono, Y. Tsubonouchi, N. Taira and K. Sakai, *Adv. Inorg. Chem.* 2019, 74, 197-240.
- "Highly Efficient and Selective Photocatalytic CO₂ Reduction to CO in Water by a Cobalt Porphyrin Molecular Catalyst", A. Call, M. Cibian, K. Yamamoto, T. Nakazono, K. Yamauchi, and K. Sakai, *ACS Catal.* 2019, *9*, 4867-4874.
- 3. "Photochemical CO₂ Reduction Driven by Water-Soluble Copper(I) Photosensitizer with the Catalysis Accelerated by Multi-Electron Chargeable Cobalt Porphyrin", X. Zhang, M. Cibian, A. Call, K. Yamauchi, and K. Sakai, *ACS Catal.* 2019, *9*, 11263-11273.
- 4. "A Molecular Cobalt Hydrogen Evolution Catalyst Showing High Activity and Outstanding Tolerance to CO and O₂", J.-W. Wang, K. Yamauchi, H.-H. Huang, J.-K. Sun, Z.-M. Luo, D.-C. Zhong, T.-B. Lu, and K. Sakai, *Angew. Chem. Int. Ed.* 2019, *58*, 10923-10927.
- "Near-Infrared-Light-Driven Hydrogen Evolution from Water using a Polypyridyl Triruthenium Photosensitizer", Y. Tsuji, K. Yamamoto, K. Yamauchi, and K. Sakai, *Angew. Chem. Int. Ed.* 2018, 57, 208-212 (Cover Picture).
- 6. "A Nickel Dithiolate Water Reduction Catalyst Providing Ligand-based Proton-coupled Electron Transfer Pathways", K. Koshiba, K. Yamauchi, and K. Sakai, *Angew. Chem. Int. Ed.* 2017, *56*, 4247-4251.
- "One-dimensional Magnus-type platinum double salts", C. H. Hendon, A. Walsh, N. Akiyama, Y. Konno, T. Kajiwara, T. Ito, H. Kitagawa, and K. Sakai, *Nat. Commun.* 2016, *7*, 11950.
- 8. "Molecular photo-charge-separators enabling single-pigment-driven multi-electron transfer and storage leading to H2 evolution from water", K. Kitamoto, M. Ogawa, G. Ajayakumar, S. Masaoka, H.-B. Kraatz, and K. Sakai, *Inorg. Chem. Front.*, 2016, *3*, 671-680.
- 9. "Pigment-Acceptor-Catalyst Triads for Photochemical Hydrogen Evolution", K. Kitamoto and K. Sakai, *Angew. Chem. Int. Ed.* 2014, *53*, 4618-4622.
- 10. "Three Distinct Redox States of an Oxo-Bridged Dinuclear Ruthenium Complex", M. Yoshida, M. Kondo, T. Nakamura, K. Sakai, and S. Masaoka, *Angew. Chem. Int. Ed.* 2014, *53*, 11519-11523.
- 11. "Progress in Base-Metal Water Oxidation Catalysis", A. R. Parent and K. Sakai, *ChemSusChem* **2014**, *7*, 2070-2080.
- 12. "Cobalt Porphyrins as Homogeneous Catalysts for Water Oxidation", T. Nakazono, A.R. Parent, K. Sakai, *Chem. Commun.* 2013, *49*, 6325-6327.
- "Photoinduced Hydrogen Evolution from Water Based on a Z-Scheme Photosynthesis by a Simple Platinum(II) Terpyridine Derivative", M. Kobayashi, S. Masaoka, K. Sakai, *Angew. Chem. Int. Ed.* 2012, *51*, 7431-7434.
- "Photo-Hydrogen-Evolving Molecular Devices Driving Visible-Light-Induced Water Reduction into Molecular Hydrogen: Structure-Activity Relationship and Reaction Mechanism", H. Ozawa, K. Sakai, *Chem. Commun.* 2011, 47, 2227-2242 (Feature Article, invited, Hydrogen Issue).
- "Evidence for Pt(II)-Based Molecular Catalysis in the Thermal Reduction of Water into Molecular Hydrogen", K. Yamauchi, S. Masaoka, K. Sakai, J. Am. Chem. Soc. 2009, 131, 8404-8406.
- "The Use of Aurophilic and Other Metal-Metal Interactions as Crystal Engineering Design Elements to Increase Structural Dimensionality", M. J. Katz, K. Sakai, D. B. Leznoff, *Chem. Soc. Rev.* 2008, 37, 1884-1895.
- 17. "Homogeneous Catalysis of Platinum(II) Complexes in Photochemical Hydrogen Production from Water", K. Sakai, H. Ozawa, *Coord. Chem. Rev.* 2007, 251, 2753-2766.
- "A Photo-Hydrogen-Evolving Molecular Device Driving Visible-Light-Induced EDTA-Reduction of Water into Molecular Hydrogen", H. Ozawa, M.Haga, K. Sakai, J. Am. Chem. Soc. 2006, 128, 4926-4927.
- 19. "New Partially-Oxidized 1-D Platinum Chain Complexes Consisting of Carboxylate-Bridged *cis*-Diammineplatinum Dimer Cations", K. Sakai et al., *J. Am. Chem. Soc.* 2002, *124*, 12088-12089.

Zhigang Shuai Biosketch

Zhigang Shuai received his PhD from Fudan University, Shanghai, in 1989. He then worked in the University of Mons, Belgium as a postdoc and then as a research staff scientist with Prof. Jean-Luc Brédas. Since 2000, he became a Hundred-Talent Program professor in the Institute of Chemistry of the Chinese Academy of Sciences based in Beijing. From 2008, he is a Changjiang Scholar Chair Professor in the Department of Chemistry, Tsinghua University in Beijing. His research interests focus on the development of computational methodologies for modeling the electronic processes in organic/polymeric materials. He has devised computational schemes for the radiative and non-radiative decay rates, carrier mobility, thermoelectric conversion, and photovoltaic conversion processes. He has extended the density matrix renormalization group theory and its time dependent formalism for the excited states for conjugated polymers and molecular aggregates. Based on the original computational methods, his team has devised a computational chemistry software MOMAP (abbreviated for MOlecular MAterials Property prediction package), http://www.momap.net.cn), which was first released in 2014 and then was commercialized by Shanghai Hongzhiwei Tech Ltd. He has published 409 articles with an H-index 78.

Zhigang Shuai started his IUPAC activity in 2005 by assisting to organize one of the eight technical sessions of the 40th IUPAC Congress in Beijing and he attended all the following Council Meetings. He has served as a National Representative in IUPAC CCE (2010-2017), Associate Member (2018-2019) and tehn Titular Member (2020-2021) for Division I. He has served as a member of IUPAC Organizational Structure Review Group to make recommendations to the 51st IUPAC Council Meeting in Montreal, August, 2021.

He was a keynote speaker on "Chemistry and the Progress of Civilization: Example of China" in the UNESCO International Year of Chemistry Launch Ceremony in 2011. He delivered a speech in the Closing Ceremony of the International Year of Periodic Table for Chemical Element in Tokyo, 2019. Since 2008, he has served as a founding and active member of the steering committee for CS3 (Chemical Sciences and Society Summit) organized by the five national chemical societies of China, Germany, Japan, UK, and US.

He was elected to the International Academy of Quantum Molecular Science in 2008 (and became the Vice President in 2018), the Fellow of the Royal Society of Chemistry in 2009, Foreign Member of the Academia Europaea in 2011, the Royal Academy of Belgium in 2013, and the Scientific Board Member of the World Association of Theoretical and Computational Chemists (WATOC) in 2017. He is the recipient of the National Outstanding Young Scientist Award of the National Natural Science Foundation of China (2004), Changjiang Scholar Chair Professorship of the Ministry of Education of China (2008), the Chinese Chemical Society – AkzoNobel Chemical Sciences Award (2012), and the Prix Franco-Chinois of the French Chemical Society (2018). He is the Vice President of the Chinese Chemical Society (2019-2022) responsible for international affairs.

Curriculum Vitae

zgshuai@tsinghua.edu.cn, +86-10-62797689, http://www.shuaigroup.net/

Family name:	Shuai
First name:	Zhigang
Sex:	Male
Marital Status:	Married to Shunan Ma (gave birth to two sons)
Born:	Yanshan County, Jiangxi Province, China, on August 27, 1962
Nationality:	Chinese
Languages:	Chinese (native), French (fluent), English (fluent)
Address:	Department of Chemistry, Tsinghua University, 100084 Beijing, China

EDUCATION

1983: Bachelor's Degree in physics, Zhongshan University, Guangzhou, China 1986: Master's Degree in solid state physics, Wuhan University, Wuhan, China 1989: Ph. D. in theoretical condensed matter physics, Fudan University, Shanghai, China

PROFESSIONAL EXPERIENCES

1989, 7 – 1990,3:	Research Fellow, Department of Physics
	Fudan University, Shanghai
1990,3 – 2001, 12	Postdoctor and Senior Research Scientist
	Service de Chimie des Matériaux Nouveaux (Jean-Luc Brédas Lab),
	Université de Mons-Hainaut, Mons, Belgium
2002,1 - 2008,4:	Full Professor
	Key Laboratory of Organic Solids,
	Institute of Chemistry, Chinese Academy of Sciences
	100190 Beijing, China
2008,5 – Present	Changjiang Chair Professor
	Department of Chemistry
	Tsinghua University
	100084 Beijing, China

HONORS

2004 Outstanding Young Scientist Award (National Natural Science Foundation of China)

2008 Changjiang Scholarship Professor (Ministry of Education of China)

2008 Elected Member of the International Academy of Quantum Molecular Science

2009 Fellow of the Royal Society of Chemistry (UK)

2011 Foreign Member of the Academia Euporaea (London)

2012 Chinese Chemical Society – AkzoNobel Chemical Science Award (2012)

2013 Foreign Member of the Royal Academy of Belgium (Brussels)

2017 Scientific Board Member of the World Association of Theoretical and Computational Chemists (WATOC)

2018 French Chemical Society Prix Franco-Chinois

2018 Elected Vice-President of the International Academy of Quantum Molecular Science

IUPAC SERVICES

- (1) Keynote Speaker, UNESCO International Year of Chemistry Launch Ceremony, January 27, 2011, UNESCO headquarter.
- (2) The 40th IUPAC seesion "Computer in Chemistry" Assistant Chairman, 2005, Beijing
- (3) General Assemblies and Council Meetings of IUPAC 2007 (Torino), 2009 (Glasgow), 2011 (San Juan), 2013 (Istanbul), 2015 (Busan), 2017 (Sao Paolo), 2019 (Paris).
- (4) 2010-2017, National Representative in the Committee of Chemistry Education
- (5) 2018- 2019, Associate Member of Division I.
- (6) 2020-2021, Titular Mamber, Division I.
- (7) 2019-2021, Appointed Member, IUPAC Organizational Structure Review Group
- (8) IUPAC Project "Assessment of theoretical methods for the study of reactions involving global warming gas species degradation and byproduct formation", No. 2007-048-2-100 (2007 – 2013, Diviosn I), chaired by Prof. Ponnadurai Ramasami.

SOCIETAL/EDITORIAL SERVICES

2019-2022: Vice-President of the Chinese Chemical Society

2011-2022: Elected Member of the Standing Council Committee of the Chinese Chemical Society

2007-2018: Deputy-Secretary General of the Chinese Chemical Society

2015-2018: Chairman of the Theoretical Chemistry Committee of the Chinese Chemical Society

Associate Editor, Acta Chimica Sinica (2012 -)

Editorial Board Member of: National Science Review (CAS), Research, Science Bulletin (CAS), J. Mater. Chem. C (RSC), Theor. Chem. Acc. (Springer), Adv. Theor. Simul (Wiley).

Advisory Board Member of: J. Phys. Chem. (ACS), Chem. Asian J. (Wiley), Nanoscale (RSC), Chem. Phys. Lett. (Elsevier), WIRES Comput. Mol. Sci. (Wiley), ChemPhysChem (Wiley), Nanoscale Advances (RSC).

SCIENTIFIC ACHIEVEMENTS

- (1) Theoretical prediction of higher than 25% spin statistics quantum efficiency for polymer electroluminescence;
- (2) Vibration correlation function formalism for the excited state decay and light-emitting efficiency of OLEDs;
- (3) Quantum Nuclear Tunneling model and computational methods for carrier mobility of organic semiconductors and nanomaterials;
- (4) Quantum chemistry density matrix renormalization group theory
- (5) Principal author of the software MOMAP (http://www.momap.net.cn)
- (6) Supervised 27 PhDs
- (7) 409 publications, 20570 citations, H-index 78



สมาคมเคมีแห่งประเทศไทยในพระอุปถัมภ์ของศาสตราจารย์ ดร. สมเด็จพระเจ้าน้องนางเธอ เจ้าฟ้าจุฬาภรณวลัยลักษณ์ อัครราชกุมารี กรมพระศรีสวางควัฒน วรขัตติยราชนารี Chemical Society of Thailand under the Her Royal Highness Princess Chulabhorn Walailak The Princess Srisavadhana

30th March 2021

Dear Executive Director of IUPAC,

The Chemical Society of Thailand (CST) is very pleased to nominate Professor Dr.Supawan Tantayanont to be a candidate for the IUPAC Vice President which will be elected during the General Assembly 2021.

During the past four decades, Professor Tantayanont has led efforts at several local, national, and international societies and organizations, in various kinds of tasks and activities which involved in IUPAC for over 13 years. These provide a solid foundation from which to launch new ideas, to build more effective collaborations within IUPAC, and to strengthen both existing and new relationships with other scientific organizations and stakeholders, to support the strategic plan of IUPAC.

Enclosed, please kindly see her statement on four vital matters, while maintain and enhance all the continued tasks and activities of IUPAC through Expanding and maintain membership in IUPAC, Engaging young generations to learn science, Fostering the sustainable development and Building the financial strength.

It is indeed the greatest pride of Thailand to nominate Professor Dr.Supawan Tantayanont as the IUPAC Vice President.

Enclosed, please kindly see the information of Professor Dr.Supawan Tantayanont as following:

- 1. A short statement describing their plans if elected.
- 2. Nomination letter
- 3. Abbreviated CV
- 4. Biographical sketch and photo

It would be very kind if you could consider this nomination and I am looking forward to hearing from you.

With the best regards,

Supe Hannongbur

Supa Hannongbua, Professor President of the Chemical Society of Thailand

Supawan Tantayanon (Thailand)

Professor Supawan Tantayanon, the Former Presidents of Polymer Pacific Federation (2002-2003) and Federation of Asian Chemical Societies (2011-2013), was tasked with establishing the first college of Chulalongkorn University in 1987, on petrochemical industry which was new to Thailand at the time. She was later a consultant of some petrochemical companies (1989-2000) which made her realized the importance of chemical safety and the integration of chemistry, business, and society. It influenced her teaching and research interest so much that her focus shifted to "greener" and "application-driven" chemistry. She initiated and constructed three more new academic programs aimed at applied chemistry, the transformation of science and technology to innovation, and this year on "Green Chemistry and Sustainability".

Professor Tantayanon is interested in small-scale chemistry since 2000, firstly to solve the problems on the high risk of chemical exposure to students in the laboratory. Later she invented the complete set of portable organic chemistry laboratory, "Small-Lab Kit", holding four Thai patents. She is also the authors of the books "Organic Chemistry Laboratory Based on Chemical Safety and Pollution Minimization (in Thai)", a chapter "Microscale Organic Experimentations Using Small-Lab Kit" in the book "Microscale Chemistry Experiments for All Ages", and the book entitled "Small Scale Laboratory: Organic Chemistry at the University Level", available on the UNESCO website since 2009. In addition, she is the co-author of the book "Chemical Laboratory Safety and Security: A Guide to Developing Standard Operating Procedures", The National Academies Press, USA available since 2016.

She held numerous national and international positions, including the Coordinator of ACS Green Chemistry Institute (Thailand Chapter) (2002-2006), and the Advisory Board member of UNIDO-Yale Global Green Chemistry Initiatives (2018-2020). Currently she is the Presidents of the Council of Science and Technology Professionals of Thailand, the Science Society of Thailand under the Patronage of His Majesty the King.

Professor Tantayanon was the plenary speakers at 5 various international conferences, conducted more than 100 workshops on small-scale chemistry, green chemistry, and chemical safety in various countries. She has received several awards, including 2018 IUPAC CCE Distinguished Contribution to Chemistry Education and 2021 IUPAC Distinguished Women in Chemistry or Chemical Engineering.

Professor Tantayanon has been active in IUPAC for over 10 years, attending IUPAC GA and Council meetings since 2007, involving with several IUPAC Divisions as a national representative and currently served as a member of the Standing Committee on Chemistry Education and the Interdivisional Committee on Green Chemistry for Sustainable Development. She also actively involved in several IUPAC programs: IYC in 2011, YAC in 2014, and GWB since 2010. Furthermore, she served as the Chairs of MACRO2014 and the 8th ICGC in 2018, as well as members of the IUPAC Task Group of the project No. 2012-009-1-020, and currently the project No. 2020-010-2-020.

CV of SUPAWAN TANTAYANON

Birth:	November 3, 1951, Rajchaburi, Thailand
Marital Status	Married, two sons.

Education

1973	B.Sc. honor (Chemistry), Chulalongkorn University	
1975	M.Sc. (Organic Chemistry), Mahidol University	
1982	Ph.D. (Organic Chemistry), Worcester Polytechnic Institute, USA	
1993	Diploma (Polymer Science), Ferrara University, Italy	
Academic Positions		
1975-1983	Instructor, Department of Chemistry, Faculty of Science, CU.	
1983-1990	Assistant Professor, Department of Chemistry, Faculty of Science, CU.	
1990-2012	Associate Professor, Department of Chemistry, Faculty of Science, CU.	
1997-2012	Affiliate Associate Professor, Worcester Polytechnic Institute, USA	
2009-2013	Adjunct Professor, University of Regina, Canada	
2012-present	Professor, Department of Chemistry, Faculty of Science, CU.	

Administrative Positions in Chulalongkorn University

1985-1990	Director, Graduate Multidisciplinary Program on Petrochemical and
	Polymer Science and Technology, Graduate School.
1986-1989	Founding Director, Petroleum and Petrochemical College.
1997-2000	Vice Chair for Planning and Development, Department of Chemistry.
2000-2003	Vice Chair for Research Affairs, Department of Chemistry.
2003-2007	Associate Dean, Faculty of Science.
2007-2012	Director, Technopreneurship and Innovation Management Program.

Positions Held (International)

1999-2001	Vice President, Pacific Polymer Federation
2002-2003	President, Pacific Polymer Federation
2002-2006 2003-present	Coordinator, ACS Green Chemistry Institute (Thailand Chapter). Member, the Editiorial Board of Polymer Internationl, John Wiley&Son.
2006-2007	Co-director of Low-cost Instrumentation and Microscale Chemistry, FACS.
2007-2009	Director of Low-cost Instrumentation and Microscale Chemistry, FACS.
2009-2011	President-Elect, Federation of Asian Chemical Societies (FACS)
2009-2012	Thailand Representative, IUPAC.
2010-2013	Director, The Asian Regional Center of Chemical Safety and Security
	under the collaboration of Sandia National Laboratory, USA and Faculty of
	Science, Chulalongkorn University
2011-2013	President, Federation of Asian Chemical Societies (FACS)
2011-2018	Member, Asian Chemistry editorial Societies (ACES), Wiley
2011-2013	Member, Committee on Chemical Nomenclature and Structure
	Representation Division, IUPAC
2013-2015	Member, Committee on Chemistry and Environmental Division, IUPAC.
2013-2015	Immediate Past President, Federation of Asian Chemical Societies (FACS)
2013-present	Member, Standing Committee on Chemical Education, IUPAC.
2016-2019	Project Coordinator, Federation of Asian Chemical Societies (FACS)
2017-present	Member, IGCSD, IUPAC
2018-2020	Member, Advisory Board of UNIDO-Yale Global Green Chemistry
	Initiatives

Positions Held (National)

1990-2016	Member, Professor Dr Tab Nilanithi Foundation
1995-present	Member, Dr. Preecha and Prapi Amartayakul Foundation
1997-2003	President, Polymer Society (Thailand)
1998	Assistant General Secretary, National Foundation of Promoting of Science and Technology
1998-2001	President, Chemical Division, Science Society of Thailand.
2001-2006	Vice President, Chemical Society of Thailand
2002-present 2003-2017	Director, Small Scale Chemistry Center, Chulalongkorn University Vice President, Science Society of Thailand.
2004-2014	Member, Distance Learning Foundation.
2007-2012	President, The Chemical Society of Thailand.
2007-2010	Member, the Safety Committee of National Synchroton Light Research Institute (Public Organization)
2007-2012	Chairperson, The Chemistry Olympiads Sub-Committee, The Institute for the Promotion of Teaching Science and Technology
2010-2019	Member, the National Hazardous Chemical Committee, Thailand
2011-2013	Member, the Chemical and Consumer Laboratory Accreditation Committee, Thai Industrial Standards Institute, Thailand.
2013-2017	Member, Council of Science and Technology Professionals.
2013-2017	Chair, Sub- Committee of Science and Technology Professionals in
	Hazardous Chemical Manufacture, Control and Management, Council of Science and Technology Professionals.
2017-present	President, The Council of Science and Technology Professionals of Thailand
2017-present	Member, the Trade Secrets Board, Department of Intellectual Property,
	Ministry of Commerce.
2020-present	President, The Science Society of Thailand

Honours, Awards and Scholars

1977	Fulbright grantee
1979	Phi Lambda Upsilon, Beta Zeta Chapter, USA
1980	Sigma Xi, USA
2009	Outstanding Alumnus of Faculty of Science, Chulalongkorn University
2011	Women in Chemistry, John Wiley & Sons.
2012	Science Project for Excellence Award, The Senate, Kingdom of Thailand
2013	Honorary Fellow, Singapore National Institute for Chemistry (Worldwide contribution to chemistry)
2013	National Research Council of Thailand scholar
2014	Women Leaders of the Global Chemistry Enterprise, ACS.
2015	International Microscale Chemistry Award.
2015	FACS Fellow, Federation of Asian Chemical Societies.
2017	CST Award for Distinguished Contribution to Chemical Education 2016.
2017	FACS Award for Distinguished Contribution to Chemical Education 2017
2018	2018 IUPAC CCE Distinguished Contribution to Chemistry Education.
2021	2021 IUPAC Distinguished Women in Chemistry or Chemical Engineering.



Consiglio Nazionale delle Ricerche Dipartimento Scienze Chimiche e Tecnologie dei Materiali Istituto di Chimica dei Composti Organometallici Dott. Maurizio Peruzzini Associate Research Director

Rome, March 30th, 2021

Dr. Lynn Soby, Executive Director **IUPAC** Secretariat PO Box 13757 Research Triangle Park, NC 27709-3757, USA

e-mail: executivedirector@iupac.org

Subject: Nomination of Prof. Pietro Tundo to IUPAC Bureau

Dear Dr. Soby, dear Lynn,

It is a pleasure for me, as Chair of the Italian National Adhering Organization of IUPAC, to support the nomination of Prof. Pietro Tundo for the position of Elected Member of the IUPAC Bureau.

Pietro Tundo is an outstanding scientist who showed great commitment at national and international level. He holds an exceptional knowledge of the chemistry sciences and related technologies.

Along all his university and management career, Prof. Tundo took care of connecting basic sciences with social needs through sustainable development; his scientific knowledge in green chemistry, combined with his longstanding and excellent experience and high-level worldwide contacts with international organizations, can greatly facilitate a solid research policy of IUPAC and the development of right and timely decisions.

Tundo's experience as previous IUPAC Board Member can efficiently support and contribute to the development of IUPAC, extending and reinforcing its activities and strengthening the relationships with NAOs. Furthermore, due to his recognised and renowned international activities aimed at pursuing the goal of the sustainable development at the global level. His devoted and continuing work in green chemistry education in favour of Developing Countries is a pivotal evidence of this.

CNR, as IUPAC National Adhering Organization for Italy, firmly supports Prof. Tundo's nomination for election to the IUPAC Bureau: connecting basic sciences, applications and outreach to sustainable development, he can positively contribute to inform the scientific community worldwide towards this goal.

Professor Tundo can actively contribute to decision making process. We are confident that his election will be a great benefit in connecting Council with IUPAC Governing Bodies.

Sincerely yours, Seu

Dr. Maurizio Peruzzini, President of the Italian National Commission **CNR-IUPAC** Adhering Organization

Pietro Tundo's Biographical sketch

Pietro R. Tundo is Professor of Organic Chemistry; retired in 2016. ORCID: <u>https://orcid.org/0000-0002-8167-356X</u> h index 44 Publications: <u>https://www.unive.it/data/persone/5591778/pubb_anno</u>

Professor Tundo is a pioneer in research and education on green chemistry. He holds a high international profile and is the foremost academic researcher in the field of reactions of dialkyl carbonates which are inherently safe chemical compounds.

He is author of about 400 scientific publications, 40 patents and about 20 books (h index 44) dealing with organic synthesis with low environmental impact and their sustainable applications. Tundo promoted and coordinated many research projects for Italian Ministry of Research, European Union, NATO, and chemical industries.

He is coordinator of UNESCO-UNITWIN "Green Chemistry Excellence from Baltic Sea to Mediterranean Sea and Beyond" (UNTWIN No. 1225) and holder of the UNESCO Chair on Green Chemistry (UNTWIN No. 731).

Tundo is Member of the Bureau of IUPAC (2020-2021) and Chair of the IUPAC Interdivisional Committee on Green Chemistry for Sustainable Development <u>https://iupac.org/body/041</u>. Tundo was President of IUPAC Division Organic and Biomolecular Chemistry (biennium 2007-2009) and founded the IUPAC International Conferences Series on Green Chemistry (first in Dresden, 2006; the ninth to be held in Athens, 2022).

https://en.wikipedia.org/wiki/International Conference on Green Chemistry). He established the Green Chemistry Post-Graduate Summer Schools (1998 – 2020), sponsored by the EU, UNESCO, NATO and IUPAC. Next Summer school (the 13th) will be held on July 2021.

Professor Tundo has given a major contribution to improve chemistry and sustainability, extending the boundaries of his activity to a significant number of countries, including all Europe, Russia, China, Australia, a few countries of Africa, Arab region, as well as USA and South America, by establishing common research and education projects, also involving most important international organizations in this attempt. Connecting basic sciences, applications and outreach to sustainable development, he informed the scientific community towards this goal.

Prof Tundo promoted interdisciplinary research and international cooperation to the achievement of sustainable development through chemistry. On this regard, he is Chair of "Assessment of the Contribution of IUPAC Projects to the Achievement of the United Nations Sustainable Development Goals" (Project No.2020-011-2-041).

He has played major roles in enabling both male and female students from many developing countries to acquire extensive information about Green Sciences, for whom he organised financial support. Through the Summer Schools, they have also forged friendships which have allowed for inter and intra country Sustainable Development and Tundo's pivotal work represents how Sciences can connect people and illustrates a peaceful way of Chemistry for the future.

Emails: tundop@unive.it; pierotundo45@gmail.com

Pietro Tundo's abbreviated CV - March 2021

https://orcid.org/0000-0002-8167-356X h-index 44. http://www.unive.it/data/persone/5591778

Education and History of Employment

- 1989 - present: Ca' Foscari University of Venice (Italy). Professor of Organic Chemistry, retired.

- 2016: Senior Associate Researcher at the Institute for the Chemistry of Organometallic Compounds, CNR. Florence (Italy).

- In the years 1979 - 1983: guest researcher at A&M University, College Station (Texas), Syracuse University (New York) and Clarkson College of Technology, Potsdam (New York).

- Founder and President of the *Green Sciences for Sustainable Development* Foundation, GSSD - <u>https://www.gssd-foundation.org/</u>. GSSD is a non-profit organization founded in 2020 with headquarters in Venice.

Scientific Leader Profile

Professor Tundo is a scientist with a high international profile. He published 400 Papers and 40 Patents, one single-Author book, about 20 Edited books.

He has made substantial improvement in a number of fields of basic chemistry sciences, developing green chemical pathways through new syntheses, new reaction mechanisms and new reaction conditions. His work proves the need of research and innovation for implementing greener and more sustainable routes of the chemical production.

In the last 20 years his research is directed toward carbonate chemistry: dialkyl carbonates (no more synthetized from phosgene) are inherently safe compounds for green syntheses and sustainable applications; the Nominee is the foremost academic researcher having published the greatest number of scientific papers in this field.

Prof. Tundo has directed and coordinated many research collaborations with Academy, international Governmental Organizations (UNESCO, OECD, UNEP, OPCW), and industry.

Over the years Professor Tundo was entrusted with many responsibilities by several institutional bodies, membership of scientific societies, many advisory and editorial boards; he received many honors, institutional responsibilities and was invited to major international conferences.

Here below are reported a few services which seem to be the most relevant in the current context. - 1993: Professor Tundo has founded and directed the Interuniversity Consortium "*Chimica per l'Ambiente*" (Chemistry for the Environment), INCA, embodying 31 Italian Universities.

INCA's activities were evaluated by the Italian Ministry of Research suggesting that INCA had the scientific leadership in Italy in the area of "Science and technologies for the sustainable development and governance".

- 2003: he launched and carried out the first Italian course entirely dedicated to women, aiming at strengthening their career advancement on sustainable chemistry in the university. 25 Young researchers attended and concluded their experience with an internship abroad.

- 2005 - 2015: Chairman of MEGREC (Mediterranean Green Chemistry Network). This voluntary association of Green Chemistry Institutions of Mediterranean Countries (Egypt, Italy, Morocco, Tunisia, Algeria, Serbia, Greece and Spain) <u>http://virgo.unive.it/megrec/</u> was founded on 2005 and represented by the UNESCO UNITWIN No. 731; in cooperation with MEGREC, this UNITWIN promoted and managed many research and educational projects directed forward sustainable chemistry with many Conferences and Workshops.

- 2018 - present: Coordinator of UNESCO "Green Chemistry Excellence from Baltic Sea to Mediterranean Sea and Beyond" (UNITWIN No.1225).

- UNESCO delegate at the Small Island Developing State (SIDS) Workshop: "Mobilizing science and knowledge systems for the sustainable development of SIDS", Praia, Cabo Verde, 25-26 July 2019.

- 2000: Chairman of the Working Group "Green and Sustainable Chemistry" of the European Association for Chemical and Molecular Sciences, which was upgraded in 2015 into the current EuCheMS Division on Green and Sustainable Chemistry.

- 1996 - 2020: Tundo is Italian Representative to OECD for Sustainable Chemistry OECD's Programme. He organized the first OECD Workshop on Sustainable Chemistry: Venice, 15-17 October 1998. Presently, he is the Italian representative to OECD's Working Party on Risk Management.

- 2016 - present: Tundo was involved and participated in many OPCW meetings, expert groups, workshops with the aim to promote and disseminate the peaceful utilization of Chemistry.

- 2018 - present: Member of the Scientific Board of the International Sustainable Chemistry Collaborative Centre (ISC₃), Germany.

Responsibilities in IUPAC

- 2007 - 2009: President of the IUPAC Division III (Organic and Biomolecular Chemistry) https://iupac.org/who-we-are/divisions/division-details/?body_code=300.

- 2016 - 2019: Elected Member of the Bureau of IUPAC.

- 2018 - 2021: Chair IUPAC Interdivisional Committee on Green Chemistry for Sustainable Development – <u>https://iupac.org/body/041</u>.

- Chair of 21 IUPAC projects (<u>https://iupac.org/member/pietro-tundo/</u>), all focused at sustainability through green and sustainable chemistry. Presently, he is chairing the Project "Assessment of the Contribution of IUPAC Projects to the Achievement of the United Nations Sustainable Development Goals" (2020-011-2-041) <u>https://iupac.org/projects/project-details/?project_nr=2020-011-2-041</u>.

- July 8th, 2019: Promoter and Organizer of the Special Symposium: Chemistry Addressing the UN-17 Sustainable Development Goals at IUPAC General Assembly and Congress, Paris.

- 2014-2021: Member of the Jury of the PhosAgro/UNESCO/IUPAC Award on Green Chemistry (<u>http://www.unesco.org/new/en/natural-sciences/science-technology/basic-sciences/chemistry/green-chemistry-for-life/</u>)

- 2018-2021: Chair of the Jury of IUPAC/ NHU-Zhejiang International Award for Advancements in Green Chemistry <u>https://iupac.org/iupac-zhejiang-nhu-international-award</u>.

- 2006: Professor Tundo established the series of IUPAC International Conferences on Green Chemistry the first of which was held in Dresden (2006) and then in Moscow, Ottawa, Foz de Guazu, Durban, Venice, Moscow, Bangkok (2018). The next one will be in Athens (2022)

(https://en.wikipedia.org/wiki/International_Conference_on_Green_Chemistry),

- 1998: Tundo established the first Green Chemistry Postgraduate Summer School in the world, which brought innovating in science education and has provided more than one thousand of students with a solid foundation in green chemistry. The first 10 Summer Schools were supported by INCA and EU. The 11th and 12th editions were endorsed by IUPAC. The 13th Summer School will be held next Summer in Venice, Italy - <u>https://www.greenchemistry.school/</u>. Their Motto is "Sustainability through green chemistry". These Summer Schools stand out for their interdisciplinarity, not just in the selection of teachers and students (carefully selected in order to have high level classes able to understand the importance of sustainability) but also in the main topics discussed (chemistry, biology, medicine, engineering, physics).

- Tundo proposed and co-organized the first IUPAC sponsored Postgraduate Summer School on Green Chemistry in Africa, that was held in Tanzania, in May 2019. <u>https://iupac.org/event/iupac-for-africa-postgraduate-summer-school-on-green-chemistry</u> and

https://www.udsm.ac.tz/web/index.php/colleges/conas/gallery/154/1

Professor Tundo recognized the importance of educating the next generation of scientists to practice chemistry in a sustainable fashion. His activities are aligned with the U.N. Sustainable Development Goals. Most significantly, Prof. Tundo arranged for many young early career delegates from developing countries to attend the events by providing substantial financial support for this purpose.