

## NOMINATIONS FOR VICE PRESIDENT

The Vice-President to be elected at the 51st Council will be President-Elect and will become President on 1 January 2024.

The nominations received for Vice President are as follows and, the VP statement, bio sketch, and CV have been compiled in the following pages:

- Prof. Mary Garson (Australia), p.2
- Prof. Ehud Keinan (Israel), p. 6
- Dr. Ting-Kueh Soon (Malaysia), p. 10
- Prof. Supawan Tantayanon (Thailand), p. 14

## **Supporting Statement – Emeritus Professor Mary Garson AM**

The mission of IUPAC can be summarized as "...providing scientific expertise and developing essential tools relating to chemical knowledge for the benefit of humankind". A set of six core values further guide IUPAC in its relationship with stakeholders.

With >20 years' experience in the Union, including both as a Division President and Elected Bureau Member, I am deeply familiar with the scientific work on symbols, nomenclature, measurements, standards, and terminology. IUPAC is also about global chemical issues of societal impact, and the immense value that flows from the contributions of the many individual volunteers, staff, and stakeholders. IUPAC has always appealed to me as a collegial scientific "family". In 2020, much of the core scientific work, as well as networking and educational activities, slowed significantly because of the global pandemic. An organizational structure review group recommended a new governance structure, improvements to lines of communication, and commented on membership issues. Against this challenging background, the key issues about which I am passionate include:

**Developing strategic initiatives on emerging issues in the chemical sciences:** The goal for IUPAC must be to generate projects that focus on issues of strategic importance to chemistry. Pertinent to this is the annual selection of the Ten Top Emerging Technologies in Chemistry, as well as the discussion on new research themes in the chemical sciences presented in the review group report. We need to better align our project activities with these emerging scientific trends as well as the big picture global themes of sustainability, big data, artificial intelligence, safety and risk management. The project system, first implemented in 2001, has been successful in many ways, but has become workload-intensive while some individual projects have received inadequate evaluation or performance review. We must work cooperatively as a Union to revitalize the project system, its scientific focus, and its evaluation.

**Embracing the younger generation:** The future of chemistry lies in the actions and activities of the next generation of talented and creative researchers and educators. IUPAC must extend its interactions with early career groups, including the energetic International Young Chemists Network (IYCN). We need to strengthen the contributions of these groups to our scientific work. The recent Global Women's Breakfast (GWB2021) event revealed the enthusiasm of many young chemists, both men and women, for the work of IUPAC.

**Increasing the global reach of IUPAC:** Participants in GWB2021 came from 70 different countries, while players from >135 countries/territories took the Periodic Table Challenge during 2020. We must facilitate networking interactions that enhance the diversity of IUPAC and its membership. We should continue encouraging online symposium or workshop activities that allow wider participation by the global chemistry community.

**Revitalizing IUPAC finances:** during 2020, decreased project proposal activity and meeting cancellations have eased some of IUPAC's immediate financial concerns. As the global situation improves, the Union must reach out, inform stakeholders, and develop stronger partnerships with current and future NAOs, associated organizations, chemical industry and academia.

For the last 100 years, IUPAC has guided the global chemistry community to scientific consensus and well-defined terminology. My experience and accomplishments, both within and external to IUPAC, have well positioned me for a leadership role within the Union. I decided to nominate for the Vice-President/President-Elect position so that I could lead delivery of solutions to the many challenges that face us. I ask for your support so that I can work together with all of you to add value to the global network of IUPAC, and best resource its exceptional and unique scientific work.

## Biographical Sketch - Emeritus Professor Mary Garson AM

My involvement with IUPAC began in 1994 when I facilitated a bid for Australia to host the General Assembly and Scientific Congress in Brisbane. I was the Executive Secretary of the Organizing Committee which successfully delivered these combined meetings in 2001.

Since 2018, I am an elected Member of the IUPAC Bureau; as a member of the Evaluation Committee, I have been assessing the project system. I joined Division III (organic & biomolecular) as a Titular Member (2006-2007), then as Secretary, and was the Division President for the 2014-2015 biennium. Within the Division, a focus has been on facilitating communication and decision-making. I have been an Associate Member of the Committee for Chemistry Education, and have contributed to projects in both Division III and in CCE. I have organized international meetings on behalf of Division III.

In 2011, I created and convened the global breakfast event *Women Sharing a Chemical Moment in Time* for the International Year of Chemistry, in which 40 countries shared events with each other through social media. I introduced a video item at the IYC Opening Ceremony in Paris.

Between 2016-2019, I was the co-chair (with Dr. Laura McConnell) of the IUPAC100 Management Committee to celebrate the centenary of IUPAC. We scripted a commemorative piece on IUPAC for the 50th GA/47th WCC in Paris. Key initiatives included (i) IUPAC Stories; (ii) Periodic Table of Younger Chemists; (iii) Periodic Table Challenge; (iv) Global Women's Breakfast.

I am co-leader of the project task group *Creation of IUPAC Global Women's Breakfast Series and a Global Network in Support of Eliminating the Gender Gap in the Chemical Sciences*. This year, our network hosted 324 events in ~70 countries; when surveyed, ~60% of respondents "indicated an increased attention to diversity issues in their organization."

Other leadership roles have included as Chair of the International Relations Committee of the Royal Australian Chemical Institute (1996-2004), with membership of the National Committee for Chemistry; this committee reports to the Australian Academy of Sciences, the NAO to IUPAC. I was Chair of the Board of Australian Science Innovations (2002-2005), a premier provider of challenging science programs, and which oversees Australia's participation in international science Olympiads. I led the national committee organizing the 15th International Biology Olympiad.

I have worked in the UK, Italy, USA and Australia, and been an active participant in research collaborations, meetings and workshops in the Asia-Pacific region for >30 years.

---

# Emeritus Professor Mary J Garson AM

## Personal Details

Full name: Mary Jean GARSON  
Citizenship: Dual Australian/British nationality  
Contact details: +61-402-715-893 (Ph); [m.garson@uq.edu.au](mailto:m.garson@uq.edu.au) (Email); @MMaryGarsonae (Twitter)

## Academic Record and Qualifications

- PhD, University of Cambridge UK, 1977, *The Biosynthesis of Polyketides* (with Prof J Staunton).
- MA (1978) and BA (Hons) University of Cambridge UK (1974, natural science tripos, part II chemistry).

## Professional Experience

- Professor of Chemistry, School of Chemistry and Molecular Biosciences (SCMB), The University of Queensland, 2006- 2020; (Emeritus Professor 2021-).
- Deputy Head of School (SCMB), The University of Queensland, 2005-2009.
- Earlier positions at The University of Queensland: Associate Professor (1998-2005)/Senior Lecturer (1992-1997)/Lecturer (190-1991).
- Earlier positions at The University of Wollongong: Senior Lecturer (1990)/Lecturer in chemistry (1986-1989).
- Queen Elizabeth II Research Fellow, James Cook University of North Queensland, 1983-1986.
- Medicinal chemist, Smith Kline and French Research Ltd., Welwyn UK, 1981-1983.

## Awards and Fellowships (selection only)

- Member (AM), The Order of Australia, for significant service to education and to women in science, 2019.
- Royal Society of Chemistry Australasian lectureship, 2018 (by invitation).
- Excellence in Leadership award, The University of Queensland, 2018.
- Inaugural recipient, Margaret Sheil “Women in Chemistry” leadership award of RACI, 2017.
- Named as one of the “175 Faces of Chemistry” by the Royal Society of Chemistry, UK, 2014.
- Distinguished Woman in Chemistry or Chemical Engineering award of IUPAC, 2013.
- Fellow of the Royal Society of Chemistry (RSC) elected 2013.
- Leighton Memorial Medal of the Royal Australian Chemical Institute, 2011, awarded for distinguished service to the Institute in the broadest sense.
- Inducted into *Everyday Women, Extraordinary Lives* tribute gallery, QLD government initiative, 2011;
- National citation for contributions to Royal Australian Chemical Institute (2001).
- Fellow of the Royal Australian Chemical Institute (RACI), elected 1993.
- Queen Elizabeth II Research Fellowship (James Cook University of North Queensland), 1983-1986.
- College Research Fellowship, Murray Edwards College (New Hall) Cambridge UK, 1978-1981.
- Overseas Research Fellowship, Royal Society of London (Rome), 1977-1978.
- UK postgraduate scholarship (Science Research Council; 1974-1977) & Bathurst scholarship (Newnham College, 1976-1977) held at the University of Cambridge.

## Professional Service (Professional Societies/NGOs)

### *International Union of Pure and Applied Chemistry (IUPAC)*

- Elected Member, IUPAC Bureau for 2018-2019 and for 2020-2021.
- Chair, IUPAC100 Management Committee reporting to the IUPAC Bureau (2016-2019).
- Member, Australian delegation to the Council meetings of the IUPAC General Assembly, 1999-2017.
- President of Division III (organic and biomolecular), and member of IUPAC Bureau, 2014-2015.
- Titular Member (Division III), 2006-2017 (including as Secretary (2008-2011), Division Vice-President (2012-2013), Division President (2014-2015) and Past President (2016-2017); evaluation of project proposals; Associate member of Committee for Chemical Education (CCE) (2008-2012, 2016-2017).
- Creator and international convener *Women sharing a chemical moment in time*, global networking activity (2011); video presentation at Opening Ceremony of the International Year of Chemistry at UNESCO Paris.

- Co-coordinator, *IUPAC Global Women's Breakfast Network*, 2019-current;
- Executive Secretary organizing the IUPAC General Assembly, Brisbane, 2001; Member of Organizing Committee, IUPAC World Chemistry Congress, Brisbane, 2001.
- Co-chair, Organizing Committee, 27th International Symposium on the Chemistry of Natural Products/7th International Conference on Biodiversity, 2011.

#### ***Royal Australian Chemical Institute (RACI)***

- Chair, International Relations Committee RACI; Member National Committee for Chemistry, 1996-2004;
- President, Queensland branch and member of Full Council of RACI, 1996-1997; committee member (1991-1999) and secretary (1994-1995) of Queensland-RACI; committee member (1991-1997), Chemical Education Group of Queensland-RACI; committee member, Wollongong section, NSW-RACI, 1987-1989; organiser, RACI titration competition, Wollongong section, NSW-RACI, 1987-1989.

#### ***Australian Science Innovations (= Australian Science Olympiads)***

- Chair of Board, Australian Science Innovations/Rio Tinto Australian Science Olympiads, 2002-2005; member of Board, Rio Tinto Australian Science Olympiads, 2000-2002; accompanied competition teams to 4th Asian Physics Olympiad (2003) and 14<sup>th</sup> International Biology Olympiad (Belarus, 2003); hosted official visits involving industry partnership dinners and public lectures.
- Chair, Organizing Committee 15th International Biology Olympiad (Brisbane, July 2004).

#### ***UNESCO regional network for the Chemistry of Natural Products in SE Asia***

- National point of contact representative (NPCR) for Australia (1996-2003); member, Australian delegation to the World Conference on Science (UNESCO), Budapest, 1999.

#### **Other Professional Contributions (selection only)**

- Co-chair, CHEMBIOTEC symposium (World Chemistry Congress, Italy, August 2007; with Professor F. Nicotra); member, organizing committees, 13th Int. Conference on Metabolomics (2017); Australia-New Zealand Magnetic Resonance meeting (2017); 17th Int. Biotechnology Symposium (2016); Australian Coral Reef Society meeting (1997); 15th divisional meeting in organic chemistry, RACI (1991).
- Membership of International Advisory Boards: 17th IBS (2016), ICOS (2014, 2016); World Chemistry Congresses (2013, 2015); ISCNP/ICOB (2002-2018); MaNaPro (2004, 2007); ASOMPS (2003-2020).
- Member, panel reviewing the teaching of chemistry at Victoria University of Wellington, NZ (2016).
- Advocacy and mentoring for Women in Science includes: presentation to Ministerial Advisory Committee for Queensland Women (1998); discussion leader, RACI Heads of Department of Chemistry meetings (1997, 1995) and at career advancement workshops (2009, 1996, 1995); invited speaker, Conference on Status of Women in Universities, (1995); opinion articles, radio interviews, talks (1994-present); co-organiser "Women in Organic Chemistry" symposium RACI, Perth, December 2018.
- Advocacy on biodiversity issues includes: plenary speaker, Biobusiness conference (1998); presenter, UNESCO-funded workshop, Kuala Lumpur (1996); media forum on biodiversity, Sydney (1995); Round Table sessions in Asian Symposia on Medicinal Plants, Spices & Other Natural Products (1994, 1998, 2003); expert witness to Commonwealth-State working group *Access to Biodiversity* (1994).

#### **Research Contributions (ORCID 0000-0001-8670-1075)**

- >200 research publications in international quality peer-reviewed journals.
- Plenary (15) and invited (45) lecture presentations at international meetings in chemistry or marine science; invitations to Gordon research conferences include short talks (2); main lectures (2); discussion leader (2); invited or plenary speaker at regional or national meetings in marine science, biodiversity and biobusiness.
- Research funding (Australia Research Council etc.) totaling >\$5m (AUD).
- Member, editorial boards *ACS Omega* (2016-), *J. Nat. Prod.* (2014-), *Phytochemistry* (2008-2019), *Comp. Biochem. Physiol.* (1994-1995); reviewer for >20 journals and for grant agencies.

#### **Teaching and Mentoring Contributions**

- Research supervision of 32 PhD or MSc candidates, 21 Honours students; mentoring of 6 postdoctoral fellows and of 22 international visiting scholars; undergraduate teaching in organic chemistry (UQ: 1990-2020; UoW 1986-1990) and in field-based marine chemical ecology (UQ).
- Regional workshops on marine natural products (Thailand 2007, 1999, Malaysia 2001, Brazil 1999).
- Member of award-winning UQ first year chemistry teaching team – winner of Australian Awards for University Teaching Award for Programs that Enhance Learning (APEL, 2017).

## Ehud Keinan: 2022 Vice Presidential Candidate Statements

This statement outlines the main goals I wish to achieve during my service as IUPAC Vice President and later as President. Most of these ideas are not new but based on my years of experience in public service. In a way, I intend to extrapolate from my previous and current responsibilities listed below and use them as a pilot for the proposed larger-scale goals.

1. Israel Chemical Society: President, since 2009, reelected for the 5<sup>th</sup> term until 2023.
2. IUPAC Bureau member, two terms (2016-2023). Member of the Evaluation Committee.
3. *Israel Journal of Chemistry*, Wiley-VCH, Editor-in-Chief, since 2008.
4. *Israel Chemist and Chemical Engineer* (ICE magazine), Founder and first Editor.
5. *AsiaChem* Magazine, Founder and Editor-in-Chief, since 2020.
6. Federation of Asian Chemical Societies (FACS), ExCo member and Communications Director, since 2020.
7. European Chemical Society (EuChemS), member of the Executive Board, 2012-2015.
8. American Chemical Society Chapter in Israel, Founder and President, since 2020.
9. Wolf Foundation, Council Member, the Wolf and Krill Prizes committees, since 2016.
10. Israel Ministry of Education, Advisory Council for Chemistry, Chairman, since 2008.
11. Technion Institute of Catalysis, Founder and first Head, 1998-2002.
12. Technion – Israel Institute of Technology, Dean of Chemistry, 2002-2003.
13. GTIIT, Shantou, Guangdong, China, Pro-Vice-Chancellor and Dean of Sciences, 2015-2016.
14. Founder of Israeli national projects: Archimedes, Chemistry Olympiad, Negev-Nobel, science stamps.

Some of my proposed plans concerning finance, membership, prizes, and publications are listed below.

**Finance:** I consider IUPAC's current financial situation as the most urgent challenge we need to meet. In my view, IUPAC is underfunded, too dependent on income from national subscriptions, and financially insecure for the long term. Rather than severe budget cuts, I propose seeking income from additional sources. Rather than reduction, I suggest expanding activities, new initiatives, new prizes, and enhanced global stature, which will eventually increase revenues. I intend to apply strategies I've found useful in my abovementioned experience:

- As Founder of the Technion ICST, I raised over \$10 million from philanthropic sources in California.
- As Dean of Chemistry, I have initiated a \$50 million naming gift for the Faculty of Chemistry.
- As ICS President, I have increased the ICS financial assets by 15-fold, established two endowment funds and other assets that secure income-independent operation for the foreseeable future.

To achieve a robust financial basis for IUPAC, I plan to apply three experimentally proven strategies:

- A. Visit presidents or CEOs of major global corporations to explore overlapping interests and establish mutually agreed collaboration modes.
- B. Establish an endowment fund for IUPAC by seeking contributions from the private sector, family foundations, and other philanthropic entities.
- C. Explore long-term relations and specific funding opportunities with national and international organizations, such as NIST (nomenclature), OPCW (inspection labs), World Bank (information philanthropy), United Nations (educational and cultural programs), etc.

**Membership:** Work with the potential NAOs to find specific solutions to their financial problems and allocate either corporate or governmental sponsors to help with their National Subscription.

**Prizes:** Establish new, prestigious IUPAC prizes, all supported by endowment funds.

**Publications:** Enhance IUPAC publications' global visibility. Create an IUPAC body to support national scientific journals worldwide, help them achieving internationally recognized standards, unified software, and enhanced reputation.

**Prof. Ehud Keinan** is Benno Gitter & Ilana Ben-Ami Professor of Chemistry at the Schulich Faculty of Chemistry, Technion - Israel Institute of Technology. He was born and educated in Israel, Ph.D. from the Weizmann Institute of Science with Prof. Y. Mazur and postdoc at the University of Wisconsin with Prof. B.M. Trost. His interest fields include biocatalysis with antibodies and synthetic enzymes, organic synthesis, molecular-computing, supra-molecular chemistry, improvised explosives, and drug discovery. He has published nearly 200 research papers, 22 patents, and four books. He was Dean of the Technion Schulich Faculty of Chemistry, was an Adjunct Professor at The Scripps Research Institute, La Jolla, California (1991-2014), was the founder and first Head of the Institute of Catalysis Science and Technology (ICST) in the Technion and founded two startup companies. He served as Pro-Vice-Chancellor and Dean of Sciences, GTIIT, Guangdong, China (2015-2016), and since 2020 he holds a Distinguished Visiting Chair at the Academia Sinica, Taiwan. Keinan initiated and led several national projects in Israel, including the Archimedes and Negev-Nobel projects, promoting gifted high-school pupils, and the Chemistry Olympiad. He designed and produced four Israeli stamps commemorating the Nobel Prizes in Chemistry awarded to 6 Israeli scientists. Keinan is a public writer and activist on science education, higher education, public policy on energy and chemical industry.

Keinan's public service includes: Editor-in-Chief of the Israel Journal of Chemistry (Wiley-VCH), since 2009, President of the Israel Chemical Society (since 2009), Member of the Executive Committee and Director of Communications at the Federation of Asian Chemical Societies (FACS), Editor-in-Chief of the AsiaChem magazine, Founder and first Editor of the ICE magazine, was Member of the Executive Board of EuChemS (2012-2015), Member of the Council of the Wolf Foundation, Chairman of the Advisory Council of High School Chemistry at the Ministry of Education (since 2009), Chairman of the Scientific Advisory Board of the Bowei Research Conferences, Member of the IUPAC Bureau (2016-2023), and Member of IUPAC Evaluation Committee.

Keinan received the New England Award for Academic Excellence, the Shannon Award, the CapCure Award, the Herschel-Rich Award, the Technion Prize for security technologies, the Henri Taub Prize for scientific excellence, and the Schulich Prize, the Engagement Leader of the Year Award from the Asia-Pacific Triple E Awards, and Award of Service from EuChemS. The Makor Rishon magazine selected him as "Man of the Year" of 2017. Since 2010 he is an AAAS Fellow.

## **Ehud Keinan - CV**

DOB: July 6, 1947, Ramat Hasharon, Israel  
Marital status: Married, 6 children, 9 grandchildren  
Citizenship: Israel, USA  
Address: Schulich Faculty of Chemistry, Technion, Haifa 3200003 Israel.  
Home Add.: 8 Moran Street, Timrat 365760, Israel.  
Phone: +972-54-4526623 E-mail: keinan@technion.ac.il  
Website: <http://www.ehudkeinan.com>

### **Academic Degrees**

1968-1971 B. Sc. in Chemistry, Tel Aviv University, Israel.  
1971-1972 M. Sc. in Chemistry, Ben Gurion University, Beer Sheva, Israel.  
1972-1977 Ph. D. in Organic Chemistry, Weizmann Institute of Science (Y. Mazur), Israel.  
1977-1980 Post-doc University of Wisconsin (B. M. Trost), Madison, Wisconsin.

### **Academic Appointments**

2020- Distinguished Visiting Chair, Academia Sinica, Taiwan  
2015-2016 Pro-Vice Chancellor and Dean of Sciences, GTIIT, Guangdong, China.  
2004-2006 Dean, Faculty of Chemistry, Technion, Israel.  
1999-2004 Founder and Head, Institute of Catalysis Science and Technology, Technion.  
1991-2014 Adjunct Professor, The Scripps Research Institute, La Jolla, CA.  
1995- Professor of Chemistry, Department of Chemistry, Technion.  
1987-1995 Associate Professor, Department of Chemistry, Technion, Israel.  
1980-1988 Senior Scientist, Associate Prof., Dept. Organic Chemistry, Weizmann Institute.

### **Research interests**

Biocatalysis with antibodies and with synthetic enzymes, organic synthesis, molecular-computing devices, supra-molecular chemistry, improvised explosives and drug discovery.

### **Teaching experience**

Main-group organometallics in organic synthesis, Transition-element organometallics in organic synthesis, General Chemistry, General Chemistry laboratory, Introductory chemistry, Advanced organic chemistry – Biocatalysis, Advanced organic chemistry lab, Structure determination by physical methods.

### **Technion activities**

2008-2012 Member of the Inter-Senate Committee of the Israeli Universities.  
2006-2012 Chairman of professional committees for Tenure and Promotions.  
1999-2004 Founder and Head, Institute of Catalysis Science and Technology.  
2001-2003 Member of permanent committee for Tenure and Promotions.  
1999-2001 Member of the Senate preparatory committee for Tenure and Promotions.  
1999-2004 Member of professional committees for Tenure and Promotions.  
1995-1999 Vice-Dean and Chairman of the Teaching Committee of Chemistry,  
1995-1999 Head of Graduate and undergraduate programs of Chemistry, Technion  
1995- Member of the Technion Senate.  
1989-1991 Representative of the Department of Chemistry to the Senate.  
1988-1991 Member of the Interdisciplinary Committee for Biotechnology.  
1988-1991 Member of the Teaching Committee of Chemistry, Dept. of Chemistry.

### **Main public professional activities**

2020- Chairman, Scientific Advisory Board, Bowei Research Conferences, Taiwan.  
2020- Editor-in-Chief, *AsiaChem*, official magazine of the FACS  
2019- Member of the Executive Committee, FACS  
2016- Member of the Bureau, IUPAC (two terms).  
2015- Member of the Council of the Wolf Foundation.  
2009- President of the Israel Chemical Society (5 terms of 3 years each).  
2008- Chairman, Advisory Council of High School Chemistry, Ministry of Education.



2012-2015 Member of the Executive Board, EuCheMS.  
 2008- Editor-in-Chief, *Israel Journal of Chemistry*, Wiley-VCH, Weinheim, Germany.  
 2003- President, International Forum of Bio-Inspired Engineering (ISBIE), Boston.  
 1999- President, Middle East Research Institute (MERIT Foundation), New York.

Other activities: founder of the Archimedes national project, the Negev-Nobel national project the new format of the Chemistry Olympiad, initiated bilateral agreements between the ICS and the chemical societies of Germany, The Netherlands, Spain, Czech Republic, Japan and the USA. Initiated and designed four Israeli stamps commemorating the Nobel Prizes in Chemistry awarded to 6 Israeli scientists. Public writer and activist on topics of science education, higher education, public policy on energy and chemical industry.

### **Awards and Honors**

Joseph and Madeleine Nash Career Development Chair, Fondation Madelon (1985). New England Award for Academic Excellence (1990), Shannon Award, NIH (1992), CapCure Award (1995), Benno Gitter and Ilana Ben Ami Chair in Biotechnology (1997), Technion Prize for security technologies (2004), Henri Taub Prize for Academic Excellence (2006), Fellow, AAAS (2010), Schulich Prize for the Promotion of Extraordinary Academic Activities (2012), Makor Rishon magazine: "Man of the Year" (2017), Asia-Pacific Triple E Awards: Engagement Leader of the Year Award (2020), EuCheMS Award of Service (2020).

### **Conference organizing committees**

Since 1980: over 100 national and international conferences, including nearly 40 Annual Meetings of the ICS, all ICS Symposia in honor of the Wolf Prize Laureates, such as S.L. Buchwald and J. F. Hartwig (2019), M. Fujita and O.M. Yaghi (2018), R.G. Bergman (2017), K.C. Nicolaou and S.L. Schreiber (2016), C.H. Wong (2014), R. Langer (2013), A.P. Alivisatos and C.M. Lieber (2013), S.A. Rice, C.W. Tang and K. Matyjaszewski (2011), H.B. Gray (2004), H.B. Kagan, R. Noyori and K.B. Sharpless (2001), F.A. Cotton (2000), G. Stork and S.J. Danishefsky (1996), R.A. Lerner and P.G. Schultz (1995). Chairman of all International Symposia on Bio-Inspired Engineering, Chairman: The International Year of Chemistry 2011, Knesset, Jerusalem. Chairman of the special meeting celebrating 20 years of Wolf Prizes and 50 years of Israel independence, Jerusalem, 1998. Chairman, Scientific Advisory Board, Bowei Research Conferences, Taiwan.

### **Publications**

About 200 research papers in high profile journals (*Nature*, *Nature Communications*, *Nature Biotechnology*, *Proc. Natl. Acad. Sci. USA*, *J. Am. Chem. Soc.*, *Chem. Sci.*, *Angewandte Chemie*, *ChemBioChem*, *Chem. Eur. J.*, *Chem. Commun.*, *Chemistry & biology*, *Langmuir*, *Development*, *PCCP*), 22 patents, 4 books, over 25 editorials, and over 40 OpEd articles on higher education policy, science education policy, natural gas policy, and safe chemical industry and government policy. Several Affidavits submitted to the Israeli Supreme Court, over 20 detailed Conference Reports, over 100 articles covering prize laureates. Over 200 presentations in international conferences and symposia, including plenary and keynote lectures.



## SOON Ting-Kueh (Ph. D.)

If I were to be elected as **Vice President** of International Union of Pure & Applied Chemistry (IUPAC) .....

To me, IUPAC is more than the naming of organic compounds, inorganic complexes, macromolecules and new elements. IUPAC is **global chemistry**, **inclusive** and **diversified** and covers all aspects of life.

IUPAC is advancing chemistry for new knowledge, feeding the world, improving the quality of life and sustaining life on earth for an infinite time. But in order for us to do all these, we must start right from the bottom.

IUPAC means **inclusiveness**. We must cover all areas of humanity, from people in the rich economies to those living in the poorest conditions. First thing is for IUPAC to reach out to countries with poor science education and resources, but with a potential to develop their chemistry capacity and capability. IUPAC, together with other corporate giants, can help to improve their chemistry capability in providing basic and university education, research grants, equipment and other resources including IT infrastructure. We must assist in providing chemistry education in schools, increasing scientific capacity and capability in university and facilitate research and development in science and technology.

IUPAC also means **diversity**, covering all people irrespective of race, gender, religion and social status. We have to reach out to the minority in each community, the very poor or neglected, to provide them with basic education and understanding of chemistry and what chemistry means in everyday life. Chemistry is for the common good to provide food on the table, clothes to keep you warm and safe, a comfortable place to live in, good physical and mental health, and a good and meaning full life.

IUPAC also means **chemistry sustaining life** on earth. Chemistry must play its roles in improving the quality of life on earth, ensure sustainable development and a clean and safe environment and ecosystem.

After saying all these glamorous things, what should IUPAC do?

First is closer communication and collaboration with our NAOs. IUPAC forming a Network of IUPAC/NAOs to maintain close communication, collaboration and partnerships with NAOs including an e-Newsletter. Assisting the NAOs in developing economies to further develop their chemistry capacity and capability.

IUPAC working closely with regional chemistry groupings such as the Federation of Asian Chemical Societies (FACS), the European Association for Chemical and Molecular Sciences (EUChMS), the Federation of African Societies of Chemistry (FASC) and Latin American Federation of Chemical Societies (FLAQ) in further developing chemical sciences in various regions of the world and maintaining close communication on the latest development of chemistry and industry in various regions.

IUPAC identifying a few least developing countries in Africa, Latin America and Asia in the coming years and assisting them to set up chemical societies and developing their chemistry resources and infrastructure. Our final target will be that every country must have a chemistry society or group that can engage with the government to put chemistry to work for better quality of life for all.

This is in addition to what IUPAC has been doing at this moment. We may have to take a generation to do all of the above but every journey starts with the first step.



## 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 **K<sub>3</sub>M** 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 (K<sub>2</sub>M)** 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.

## Statement by Supawan Tantayanon

### Vice President Candidate

I am truly humbled and greatly honored to be nominated as a candidate for a Vice-President of IUPAC.

The world today is changing more rapidly than ever before, so it is quite challenging how to move towards a world that is changing for the better future. IUPAC, as a global leader with arguably the most worldwide resource for chemistry, can provide the solutions for achieving the sustainability in this world.

For more than four decades, I have led efforts at several local, national, and international societies and organizations, in various kinds of tasks and activities. My wide range of such substantive experiences, together with my involvement in IUPAC for over 13 years, 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.

If elected, I will focus on four vital matters, while maintain and enhance all the continued tasks and activities of IUPAC:

1. **Expand and maintain membership in IUPAC:** The strength of IUPAC is the cooperation among its members. IUPAC must reach out the non-member national chemical societies, particularly the small societies, and help advise the possible way for them to become the National Adhering Organizations. This will expand its members which will enable IUPAC to serve humankind by advancing chemistry more worldwide.
2. **Engage young generations to learn science:** IUPAC must engage and motivate the young generations at all levels to love science and stay in science for many years beyond their scholarly career. More number of fun and interesting educational programs, and the online educational activities, would be created to attract the students and nurture their attractions. IUPAC has been a strong advocate for chemistry education and public outreach, so IUPAC can address and resolve this matter. The power of young generations is required for the fulfilment of IUPAC mission.
3. **Foster the sustainable development:** IUPAC must move towards the sustainable development through chemical sciences, like green chemistry. By collaboration with other scientific organizations and stakeholders, IUPAC can play a crucial role to create valuable and exciting programs and initiatives in research, cooperation, network, education, and courses.
4. **Build the financial strength:** IUPAC must acquire enough budget to afford new projects, activities, and tasks. It is thus worth to seek for the partnership from the private sectors who are willing to financially support some certain projects. The fundraising program is another potential approach, particularly for supporting public activities.

Finally, I believe I have the passion, enthusiasm, experiences, and time for the important work ahead. I ask for your support and would be most honored to service as Vice-President of IUPAC.

## 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 Coordinator, ACS Green Chemistry Institute (Thailand Chapter).  
2003-present Member, the Editorial Board of Polymer International, 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, IGCS, 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	Director, Small Scale Chemistry Center, Chulalongkorn University
2003-2017	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 Synchrotron 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.