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40th PHILIPPINE CHEMISTRY CONGRESS

17TH EURASIA CONFERENCE ON CHEMICAL SCIENCES

EuAsC$_2$S-17

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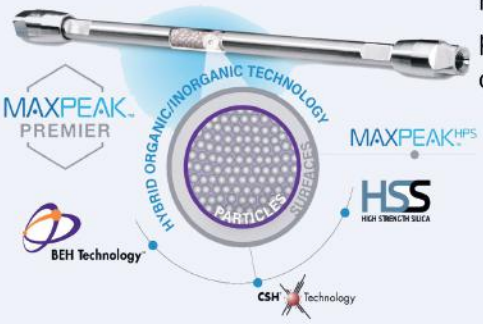

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MESSAGES

To all Speakers, Participants, Exhibitors, and Guests,

Throughout human history, chemistry has been one of the main drivers of development, providing the knowledge and technologies that enable society to meet its needs. At the same time, chemistry also teaches us the fundamental principles by which nature operates — the conservation of matter and energy and the inevitable consequences of entropy. With progress comes corresponding trade-offs and responsibilities.

The theme of this congress, "Solving Tomorrow's Problems Today Through Chemistry," aptly expresses the collective determination of the global chemistry community to continue advancing human progress while addressing the urgent challenges of environmental degradation and resource depletion. Indeed, chemistry plays a vital role in achieving all 17 United Nations Sustainable Development Goals (SDGs).

This congress brings together distinguished speakers who will present novel, effective, and sustainable chemical solutions to these pressing concerns. Equally important, this congress provides an opportunity to strengthen collaborations and foster partnerships among scientists, educators, industry leaders, and students, so that we may work together to address tomorrow's challenges through chemistry today.

The Integrated Chemists of the Philippines, which celebrates its 50th anniversary this year, is honored to organize the 40th Philippine Chemistry Congress in conjunction with the 17th Eurasia Conference on Chemical Sciences. The Philippines previously hosted the 10th Eurasia Conference in 2008 with the theme "Science and Innovation." The Eurasia Conference series was established by its founders — Bernd Michael Rode (Austria), Hitoshi Ohtaki (Japan), and Ivano Bertini (Italy) — to bring together outstanding chemists from across the region and the world to promote scientific exchange and meaningful collaboration.

It is my sincere hope that the 17th Eurasia Conference will continue this proud tradition and further strengthen the bonds within the international chemistry community.
With best wishes for a productive and meaningful conference experience!

Fabian M. Dayrit, PhD, RCh
Chair, Organizing Committee

MESSAGES

Distinguished Colleagues, Delegates, Students and Friends,

It is a privilege to welcome you to Manila for the 17th Eurasia Conference on Chemical Sciences — an enduring platform that has connected the scientific communities of Asia and Europe for more than thirty years.

My association with this conference series spans many decades, during which I have had the honor of serving in key leadership roles—including as Chairman, Co-Chairman, and Member of the International Advisory Committees in the earlier Eurasia meetings. It is therefore a special privilege to Chair this 17th Eurasia Conference and to be able to contribute again to this important event. Three of the Founders of this important series of conferences, Prof. Bernd Michel Rode, Prof. Hitoshi Ohtaki and Prof. Ivano Bertini are no longer with us but their contributions to the success of these events will always be remembered.

From its early beginnings as a modest gathering of committed chemists, the Eurasia Conference has grown into a global forum drawing participants from across continents. The importance of this gathering is underscored by the central role of chemistry in addressing the defining challenges of our time including recent advances in pharmaceuticals, genomics, energy, climate change, food security, and advanced materials. The program reflects this breadth, encompassing areas from catalysis and materials science to chemical biology and emerging intersections with artificial intelligence. Yet beyond just the science, the enduring strength of this conference lies in the mentorship it fosters, the collaborations it seeds, and the networks it sustains.

We are deeply honored by the presence of two Nobel Laureates in this event: Professor Jean-Marie Lehn, whose pioneering work laid the foundations of supramolecular chemistry, and Professor Susumu Kitagawa, recognized for his transformative contributions to metal-organic frameworks. Our program is designed to balance excellence with opportunity: plenary lectures from global leaders alongside contributions from emerging researchers, supported by interactive sessions and opportunities for dialogue.

I extend my sincere appreciation to the International Advisory Board, the local organizing committee in Manila, and our partners and sponsors for their dedication. In particular, I wish to express my deep gratitude to Prof. Fabian M. Dayrit, Chairman of the National Organizing Committee, Dr. Glenn V. Alea, Vice-Chairman of the National Organizing Committee as well as Prof. Hyunjoon Song and Prof. Tomas Hofer, Secretaries of the International Organizing Committee, for their tireless efforts.
I am confident that the participants of this conference will greatly benefit from a very stimulating and illuminating event.

Prof. Dr. Atta-ur-Rahman, FRS
Chairman,
International Organizing Committee
17th Eurasia Conference on Chemical Sciences
Manila, Philippines

MESSAGES

It is an honor to extend my warmest greetings to all participants of the 40th Philippine Chemistry Congress and the 17th Eurasia Conference on Chemical Sciences. I welcome our fellow chemists, chemical technicians, researchers, educators, students, industry leaders, and partners from the Philippines and abroad who have gathered for this important scientific event.

The theme, "Solving Tomorrow's Problems Today Through Chemistry," reminds us that chemistry remains central to building resilient and sustainable societies. As the world faces increasingly complex challenges in health, food systems, environmental protection, energy, and technology, the chemical sciences continue to drive innovation and provide practical solutions that improve the quality of life for communities worldwide. In this rapidly evolving landscape, emerging technologies such as artificial intelligence are also transforming the way chemical research is conducted—from data analysis and molecular design to process optimization and predictive modeling—opening new opportunities for discovery and innovation.

This conference not only showcases scientific advances and emerging research but also emphasizes the value of international cooperation and interdisciplinary engagement. By bringing together experts and professionals from diverse fields and countries, we strengthen connections that can lead to meaningful collaborations and transformative ideas.

On behalf of the Integrated Chemists of the Philippines and the Philippine Federation of Chemistry Societies, I express my deepest appreciation to the organizing committees, partner organizations, sponsors, exhibitors, and volunteers for their commitment and invaluable support in making this conference possible. I also thank every participant for sharing your knowledge, experiences, and passion for chemistry.

May this gathering serve as a catalyst for new discoveries, stronger partnerships, and continued excellence in the chemical sciences.
I wish everyone a fruitful and inspiring conference experience.

Glenn V. Alea, PhD, RCh
President
Integrated Chemists of the Philippines

President
Philippine Federation of Chemistry Societies

MESSAGES

On behalf of the Kapisanang Kimika ng Pilipinas (KKP), it is my distinct honor and pleasure to welcome all of you to the 40th Philippine Chemistry Congress (40PCC), held together with the 17th Eurasia Conference on Chemical Sciences (EuAsC2S-17).

Our theme this year, "Solving Tomorrow's Problems Today Through Chemistry," is not just a catchy phrase. It is the reality of our work. Whether we are tackling climate change, searching for sustainable energy, or improving global health, the "future" everyone talks about is actually being built right now in our labs and classrooms.

This gathering is special because it brings the best of the Philippines together with brilliant minds from across the globe. It is a chance for us to share what we have learned, spark new ideas, and build friendships that cross borders.

To our guests from abroad: Welcome to the Philippines! We hope you enjoy our hospitality as much as the science. To our local delegates: Thank you for your hard work and passion for moving Philippine Chemistry forward.

Let us use these few days to turn the challenges of tomorrow into the breakthroughs of today. Have a wonderful and inspiring congress!

Mabuhay!

Christina A. Binag, Ph.D.
President,
Kapisanang Kimika ng Pilipinas
(Chemical Society of the Philippines)

Distinguished guests, Nobel Laureates, eminent scientists, dear colleagues — a very warm welcome to all of you.

It is with great pride that we open this landmark gathering: the combined 40th Philippine Chemistry Congress and the 17th Eurasia Conference on Chemical Sciences. To our international delegates who have journeyed from across Asia, Europe, and beyond — maligayang pagdating — welcome to the Philippines. This convergence of two storied conferences is itself a testament to what chemistry does best: it brings things together. Elements, compounds, ideas, and now — people. For three days, this hall will be home to some of the brightest minds in the chemical sciences, united by the conviction that chemistry is not merely an academic discipline, but a living force for change in the world.

Our theme — "Solving Tomorrow's Problems Today Through Chemistry" — is a call to action. The challenges confronting humanity are urgent: climate change, food and water insecurity, emerging diseases, the demand for sustainable energy, and equitable access to life-saving medicines. Chemistry sits at the heart of every one of these challenges — and at the heart of every solution.

We are honored to welcome distinguished plenary speakers, including Nobel Laureates, whose work reminds us of what is possible when curiosity is pursued with rigor and courage. To our colleagues from the academe, government, and industry, this congress is at its most powerful when all three sectors speak to and learn from one another.

Over these three days, we invite you to engage with cutting-edge research, explore innovations at our exhibits, and forge collaborations that may define the next chapter of chemistry in our region and the world. We hope you take home not only new knowledge, but also the warmth and spirit of the Philippines.

Voltaire G. Organo, PhD, RCh
President,
Philippine Association of Chemistry Teachers
National Chapter, Inc.

MESSAGES

Greetings to all the participants of the 40th Philippine Chemistry Congress and 17th Eurasia Conference on Chemical Sciences!

With great pride and honor, the Philippine Association of Chemistry Students, Inc. (PACS, Inc.) extends its warmest welcome to everyone gathered for this momentous event.

Anchored on the theme "Solving Tomorrow's Problems Today Through Chemistry," this year's congress serves as a powerful reminder of the vital role chemistry plays in addressing the complex challenges of our rapidly changing world. With the efforts and dedication of passionate scientists, chemistry stands at the forefront of creating solutions that shape a better and more resilient future.

As we gather together with esteemed scientists, researchers, educators, and fellow students from across the globe, may this event inspire meaningful collaboration, exchange of transformative ideas, and the pursuit of knowledge that transcends borders. Let us take this opportunity to learn from one another, celebrate scientific excellence, and strengthen our shared commitment to promoting chemistry as a tool for progress.

Together, let us actively engage in discussions, broaden our perspectives, and continue advancing the field of chemistry.

Welcome to the 40th Philippine Chemistry Congress and 17th Eurasia Conference on Chemical Sciences, and thank you for being part of this remarkable event.

For the ever-growing field of chemistry,

CHRISTINE ELIZA E. MACARUBBO
President, AY 2025-2026
Philippine Association of Chemistry Students, Inc.

MESSAGES

The Professional Regulatory Board of Chemistry, together with the organizers of the 40th Philippine Chemistry Congress held in conjunction with the 17th Eurasia Conference on Chemical Sciences, warmly welcomes all participants—chemists, allied scientists, researchers, and educators—to this historic gathering.

This year's conference is especially distinguished by the participation of two Nobel Prize Laureates in Chemistry as plenary speakers, whose presence underscores the global significance and scientific excellence of this event. Their contributions inspire us to push the boundaries of knowledge and innovation.

The Congress serves as a dynamic platform to share ideas, discoveries, and innovations—advancing our collective goal of solving tomorrow's problems today through chemistry. It highlights key areas at the forefront of scientific progress, including nanoscience and technology, materials science, clean and sustainable energy, circular materials, molecular medicine and drug discovery, metabolomics and systems biology, structural and synthetic biology, innovations in chemical education, and the growing role of artificial intelligence in chemistry.

The collaboration among co-presenters and partner institutions has made this international convergence possible. Their dedication to advancing chemistry and fostering global partnerships strengthens scientific exchange and innovation across borders.

Together, we champion knowledge-sharing, research excellence, and the enduring spirit of collaboration that drives chemistry forward.

The 40th PCC and 17th Eurasia Conference stand as a true celebration of chemistry without limits—an occasion not only to learn, connect, and be inspired, but also an opportunity to earn 18 Continuing Professional Development (CPD) credit units.

We wish everyone a meaningful, productive, and enriching conference experience.

Hon. Adoracion P. Resurreccion
Chairperson of the Professional Regulatory Board of Chemistry

PROGRAM OVERVIEW

Progam Overview	
Day 0 : June 09, 2026 (Tuesday)	
02:00 PM – 05:00 PM	Registration
Day 1 : June 10, 2026 (Wednesday)	
08:00 AM - 09:00 AM	Registration
09:00 AM - 10:00 AM	Ribbon cutting | Opening of Exhibits | Opening of Poster Session | AM snacks available after ribbon cutting
10:00 AM - 10:45 AM	Opening program
10:45 AM - 11:30 AM	Plenary Talk 1: **Prof. Atta -ur-Rahman** "Some Fascinating Advances in Chemical Sciences"
11:30 AM - 12:15 PM	Plenary Talk 2: **Prof. Susumu Kitagawa** Chemistry – An Asian Journal Lecture "Chemistry and Application of Dynamic Metal -Organic Frameworks (MOF) / Porous Coordination Polymers (PCP)"
12:15 PM - 01:30 PM	Lunch
01:30 PM - 02:15 PM	Plenary Talk 3: **Prof. Baldomero M. Olivera** "A Multidisciplinary Framework for Natural Products Research; Examples from Cone Snail Venoms"
02:15 PM - 03:00 PM	Plenary Talk 4: **Prof. Rigoberto Advincula** "Nanostructured Polymers and Chemistry: AI/ML Workflows and Advanced Manufacturing"
03:00 PM - 03:45 PM	Plenary Talk 5: **Prof. Stephen Matlin** "Chemistry for sustainability – from systems thinking to material stewardship"
03:45 PM - 04:30 PM	Plenary Talk 6 (by zoom): **Prof. Jean-Marie Lehn** "Steps Towards Complex Matter: Chemistry!"
04:30 PM - 05:30 PM	Poster Session | Exhibitors Session
05:30 PM - 08:00 PM	Fellowship Night | Dinner | PFCS Awards
Day 2: June 11, 2026 (Thursday)	
08:00 AM – 12:00 PM	Parallel Oral Sessions | Parallel Exhibitor Lectures
12:00 PM – 02:00 PM	Parallel Exhibitor Lectures | General ICP Members Meeting & Board of Chemistry Session | Lunch | Poster Session
02:00 PM – 05:00 PM	Parallel Oral Sessions | Parallel Exhibitor Lectures | Eurasia IOC/IAC Meeting
Day 3: June 12, 2026 (Friday)	
08:30 AM – 09:15AM	Plenary Talk 7: **Prof. Lourdes J. Cruz** "Chemistry for Future Earth"
09:15 AM – 11:00 AM	Forum on Artificial Intelligence in Chemistry: Solving Tomorrow's Problems Today with Chemistry
11:00 AM – 01:00 PM	Lunch and Closing Program

PROGRAM SCHEDULE

Day 1, June 10, 2026 (Wednesday)	
08:00 AM - 09:00 AM	**Registration**
09:00 AM - 10:00 AM	Ribbon cutting Opening of Exhibits Opening of Poster Session AM snacks available after ribbon cutting
10:00 AM - 10:45 AM	**Opening program**
10:45 AM - 11:30 AM	**Plenary Talk 1 : Some Fascinating Advances in Chemical Sciences** **Prof. Atta-ur-Rahman** Honorary Life Fellow, Kings College, University of Cambridge International Centre for Chemical and Biological Sciences, University of Karachi, Pakistan
11:30 AM - 12:15 PM	**Plenary Talk 2 :** Chemistry – An Asian Journal Lecture **Chemistry and Application of Dynamic Metal-Organic Frameworks (MOF) / Porous Coordination Polymers (PCP)** **Prof. Susumu Kitagawa** **2025 Nobel Laureate for Chemistry for the development of metal-organic frameworks (MOFs)** **Board Chair of Chemistry—An Asian Journal** Kyoto University Institute for Advanced Study (KUIAS), and Institute for Integrated Cell-Material Sciences (iCeMS) Kyoto University, Japan
12:15 PM - 01:30 PM	**Lunch**
01:30 PM - 02:15 PM	**Plenary Talk 3 : A Multidisciplinary Framework for Natural Products Research; Examples from Cone Snail Venoms** **Prof. Baldomero M. Olivera** Distinguished Professor School of Biological Sciences, University of Utah, USA Member, US Institute of Medicine and US National Academy of Sciences
02:15 PM - 03:00 PM	**Plenary Talk 4 : Nanostructured Polymers and Chemistry: AI/ML Workflows and Advanced Manufacturing** **Prof. Rigoberto C. Advincula** Governor's Chair Professor and Group Leader at Oak Ridge National Laboratory and University of Tennessee, USA Fellow, National Academy of Inventors
03:00 PM - 03:45 PM	**Plenary talk 5: Chemistry for sustainability – from systems thinking to material stewardship** **Prof. Stephen Matlin** Institute of Global Health Innovation, Imperial College London, UK Vice President for External Relations, International Organization for Chemical Sciences in Development
03:45 PM - 04:30 PM	**Plenary Talk 6 (by zoom): Steps Towards Complex Matter: Chemistry!** **Prof. Jean-Marie Lehn** **1987 Nobel Laureate in Chemistry for pioneering Supramolecular Chemistry** ISIS, Institute for Advanced Study, University of Strasbourg France
04:30 PM - 05:30 PM	**Poster session** **Exhibitors**
05:30 PM - 08:00 PM	**Fellowship Night** **Dinner (6:30 pm)** **PFCS Awards**

PROGRAM SCHEDULE

Day 2, June 11, 2026 (Thursday)						
Venue	**FR 1 & FR 2**	**FR 3**	**FR 4 (with zoom)**	**FR 5**	**MR 4-6 (90 capacity)**	**MR 7-9 (90 capacity)**
	Parallel Sessions					
Time	**Exhibitors' Booths**	Parallel FR3 AM Session **Molecular Medicine & Drug Discovery; Natural Products; Metabolomics; System and Synthetic Biology** Moderator: **Mylene Uy** Mindanao State University- Iligan Institute of Technology	Parallel FR4 AM Session **Materials Science; Molecular Medicine & Drug Discovery** Moderator: **Marlon Conato** University of the Philippines Diliman	Parallel FR5 AM Session **Nanoscience & Technology; Artificial Intelligence; Materials Science** Moderator: **Alan Rodelle Salcedo** University of Santo Tomas	Parallel MR 4-6 AM Session **Clean Sustainable Energy; Materials Science; Artificial Intelligence; Analytical Chemistry; Environmental Chemistry** Moderator: **Rafael Espiritu** De La Salle Univeristy	Parallel MR 7-9 AM Session **Drug Design; Nutrition; Environmental Chemistry; Chemical Metrology; Clean Circular Materials** Moderator: **Olivia Erin Buenafe** Ateneo de Manila University
08:00 AM -08:10 AM 08:00 AM - 8:20 AM 08:20 AM - 08:30 AM	Exhibitor lecture 01 Unravel the PFAS puzzle with comprehensive targeted & untargeted workflows **Huey Bing** DKSH / Agilent Technologies	Keynote FR3-01 **Srinivasan Chandrasekaran** Indian Institute of Science, Bangalore, India Recent Innovations in Natural Products Chemistry and Sustainability	Keynote FR4-01 **Michitaka Ohtaki** Kyushu University, Japan Metal Oxide Ceramics for Thermoelectric Power Generation Applications	Keynote FR5-01 **Hyunjoon Song** KAIST, Republic of Korea Controlled Electrodeposition of Nanocatalysts for Sustainable Electrochemical Reactions	Keynote MR4-01 **Chun-Hu Chen** National Sun Yat-Sen University, Taiwan Durable Anode Electrocatalysts through Acidic Redox-assisted Deposition for Direct Seawater Electrolysis	Keynote MR79-01 **Sotiris Hadjikakou** University of Ioannina, Greece Beyond Cisplatin to Next-Generation Metallotherapeutics: Mechanism-Driven Design of Hybrid Metallodrugs Targeting Breast Cancer Cells Proliferation
08:30 AM - 08:40 AM 08:40 AM - 08:50 AM 08:50 AM - 09:00 AM	Exhibitor lecture 02 TOC/TNb Analysis in Wastewater and Natural Water Monitoring **Dr. Rodtichoti Wannapob** ANALYTICAL AND SAMPLE PREP MACHINES INC.	Keynote FR3-02 **Xudong Zhou** Hunan University of Chinese Medicine, China Research and Demonstration Based on Several Special Hunan Ethnomedicines	Keynote FR4-02 **Thomas Hofer** University of Innsbruck, Austria Moving Beyond Static Calculations: Efficient Quantum Chemical Simulations of MOFs at Finite Temperature	Keynote FR5-02 **Vudhichai Parasuk** Chulalongkorn University, Thailand Applications of Theoretical Chemistry for the modeling of catalyst and novel materials	Keynote MR4-02 **Erwin P. Enriquez** Ateneo de Manila University, Philippines Chemistry-Driven Innovation for Green Electronics	Keynote MR79-02 **Shirley Paski** Cleveland Clinic Ohio USA Nutrition: Integration of Chemistry, Environment, and Medicine for a Sustainable Future

PROGRAM SCHEDULE

Day 2, June 11, 2026 (Thursday) Continued						
Venue	**FR 1 & FR 2**	**FR 3**	**FR 4 (with zoom)**	**FR 5**	**MR 4-6 (90 capacity)**	**MR 7-9 (90 capacity)**
	Parallel Sessions					
Time	**Exhibitors' Booths**	**Molecular Medicine & Drug Discovery;** Moderator: **Mylene Uy** Mindanao State University- Iligan Institute of Technology	**Materials Science; Molecular Medicine & Drug Discovery; Environmental Chemistry** Moderator: **Marlon Conato** University of the Philippines Diliman	**Nanoscience & Technology; Artificial Intelligence; Materials Science** Moderator: **Alan Rodelle Salcedo** University of Santo Tomas	**Clean Sustainable Energy; Materials Science; Clean Circular Materials; Environmental Chemistry** Moderator: **Rafael Espiritu** De La Salle Univeristy	**Environmental Chemistry;** Moderator: **Olivia Erin Buenafe** Ateneo de Manila University
09:00 AM - 09:10 AM	Exhibitor lecture 03 Integrated Food and Feed Testing: From Nutritional Accuracy to Mycotoxin Safety **Jan-Mari C. Cardenas** NEOGEN CORPORATION	OP-01 Regio-Specific Glycan Expression Within the Mammalian Brain and Tumors **Ea Kristine Clarisse B. Tulin** Visayas State University	OP-18 FePt-incorporated Metal–Organic Framework Nanoparticles for Drug Delivery and Sonodynamic Therapy **David S. Hinolan** National Cheng Kung University	OP-35 Molecular differentiation of trivalent – binding peptides through machine learning **Jose Isagani B. Janairo** De La Salle University	OP-52 Sustainable and Green Synthesis of Bimetallic MOF Polypyrrolle Composite for High-Performance Supercapacitors **Beaver Andrei F. Dayo** University of Santo Tomas	OP-69 Human Carcinogenic Toxicity Potential of Alkali-based Treatment of Bamboo (Bambusa blumeana) Textile Fiber using Life Cycle Analysis **Jenneli E. Caya** Department of Science and Technology - Philippine Textile Research Institute
09:10 AM - 09:20 AM						
09:20 AM - 09:30 AM		OP-02 Colorful and Complicated: Improving the Stability of Aminosugar Schiff Base Complexes of Cu(II), Pd(II), and Pt(II) Via C=N Reduction **Laurenzo DV Alba** De La Salle University - Manila	OP-19 Designing of Sulfonic-Functionalized Magnetic Metal-Organic Framework [Fe_3O_4-Hkust-1-So_3H] Towards The Removal of Cadmium Ions in Water **Alleyromae O. Indong** Polytechnic University of the Philippines, Sta. Mesa, Manila	OP-36 Beeswax-Coated Magnetic Iron Oxide-Loaded Sponge for Efficient Oil–Water Separation **Mary Grace A. Victorino** Institute of Chemistry, University of the Philippines	OP-53 Design of a β-Ketoenamine-Linked Conjugated Polymer as a Stable Organic Cathode for Lithium-Ion Batteries **Jashvant K. Kushwaha** National Cheng Kung University	OP-70 Assessment of Impacts of Air Quality Management Policies through EANET Data **Roger C. Evangelista, Jr.** Department of Environment and Natural Resources - Environmental Management Bureau Central Office
09:30 AM- 9:40 AM	Exhibitor lecture 04 Innovating Fiber Analysis: Automating Crude and Total Dietary Fiber Measurement **Junior Mendoza** DAKILA TRADING CORPORATION					
09:40 AM - 09:50 AM		OP-03 Assessment of the Analgesic activity, Nephrotoxicity, and Partial Protein Profiles of Region-Specific Venom Duct Extracts from Conus textile **Angel L. Baybayon** Caraga State University	OP-20 Advancing Food Safety through Chemistry: An Electropolymerized MIP-QCM Sensor for Rapid Trimethylamine Monitoring in Fish **Allysa Ross N. Almagro** National Fisheries Research and Development Institute	OP-37 Interfacial Chemical Evolution from Nanoscale Tuning to Biological Systems **Shuchen Hsieh** National Sun Yat-Sen University	OP-54 Adsorption of n:2 Fluorotelomer Alcohols (n:2-FTOHs) in Water and Headspace on Beads of β-Cyclodextrin-Chitosan (BCD-CS) Covalent Organic Framework **Riana Jasmin C. Fuentes** Ateneo de Manila University	OP-71 Characterization of Volatile Organic Compounds and their Contribution to Secondary Organic Aerosol and Ozone Formation in Biñan City, Laguna, Philippines **Sammy L. Aytona** Environmental Management Bureau Central Office
09:50 AM - 10:00 AM						

PROGRAM SCHEDULE

Day 2, June 11, 2026 (Thursday) Continued						
Venue	**FR 1 & FR 2**	**FR 3**	**FR 4 (with zoom)**	**FR 5**	**MR 4-6 (90 capacity)**	**MR 7-9 (90 capacity)**
	Parallel Sessions					
Time	**Exhibitors' Booths**	**Molecular Medicine & Drug Discovery; Natural Product Chemistry / Phytochemistry** Moderator: **Mylene Uy** Mindanao State University- Iligan Institute of Technology	**Materials Science** Moderator: **Marlon Conato** University of the Philippines Diliman	**Nanoscience & Technology; Materials Science; Clean Sustainable Energy; Clean Circular Materials; Environmental Chemistry** Moderator: **Alan Rodelle Salcedo** University of Santo Tomas	**Materials Science, Heritage Science/Art for Cultural Preservation; Artificial Intelligence (AI) in Chemistry** Moderator: **Rafael Espiritu** De La Salle Univeristy	**Chemical Metrology; Clean Circular Materials; Material Science; Clinical Bioanalytical Chemistry** Moderator: **Olivia Erin Buenafe** Ateneo de Manila University
10:00 AM - 10:10 AM	Exhibitor lecture 05 TLC Explorer: Simplify your TLC Analysis with Smart Technology **Nonette Aliman** MERCK INC.	OP-04 Microwave-Assisted Synthesis and In Vitro Evaluation of Dihydropyrimidinones as Direct Renin Inhibitors **Era Erg P. Bamba** Caraga State University	OP-21 Polarization-Resolved SHG Image Processing and Orientation Analysis of Collagen Thin Films for Sustainable Materials **Louise Francine S. De La Viga** Institute of Chemistry	OP-38 Green synthesis of palladium nanoparticles using rambutan peel extract as electrocatalyst for ethanol oxidation reaction in basic medium: Effect of synthesis parameters on the electrocatalytic activity **Mark Aljo F. Batuhan** University of Santo Tomas	OP-55 Development of an Off-Line Py-GC/MS Method for Synthetic Organic Pigment Analysis **Uriel U. Dolorfino** Ateneo de Manila University	OP-72 Development of a proficiency testing item for the determination of mass fractions of food additives in tomato sauce **Sean Angelo L. Del Rosario** Department of Science and Technology - Industrial Technology Development Institute
10:10 AM - 10:20 AM						
10:20 AM - 10:30 AM		OP-05 Integrated RAPD, FTIR, and Bioactivity Assessment of Impatiens balsamina L. Color Variants **Lucy P. Estioko** Bicol University	OP-22 Suppressed thermal transport in crystalline solids and lattice dynamic disorder phonon scattering **Yue Chen** The University of Hong Kong	OP-39 Fe2+-Mediated Oxidative Quenching of Boron-Doped Okra Peel Carbon Dots for Sensitive Hydrogen Peroxide Detection **Bryan Justine G. Dela Cruz** University of the Philippines Manila	OP-56 In Vitro Gastrointestinal Digestion of Optimized Sodium Alginate-Gelatin Encapsulated Pigmented Rice Bran Polyphenols **Anna Shekinah R. Molina** University of the Philippines- Los Banos	OP-73 Plate-Shaped Biogenic Aragonite Microparticles Derived from Asian Green Mussel Shells via a Zero-Waste Thermal Process **Carlito P. Basay, Jr.** University of Southern Mindanao - Kabacan
10:30 AM - 10:40 AM	Exhibitor lecture 06 How CRMs Aid Laboratory Accreditation **Kshitish Shukla and Brian Alexander** PROMAINTECH CONSULTANCY INC.					
10:40 AM - 10:50 AM		OP-06 Nutritional Analysis, Anti-inflammatory, and Cytotoxicity Study of Schismatoglottis sp. (Pusaw) Leaves from Lanao del Sur **Roeve Ann Mae M. Caneos** Mindanao State University-Main Campus	OP-23 Green Leaching of Gold Using Deep Eutectic Solvents (DES) and Quantification via ICP-MS/MS **Jessa Mae V. Estoque** Department of Science and Technology - Philippine Nuclear Research Institute	OP-40 Colorimetric Detection and Quantification of Chromium (III) Ions Using L-Tyrosine, L-Phenylalanine, and Gold Nanoparticles **Carl Arjan E. Ramos** University of the Philippines Manila	OP-57 Predictive Modeling of Phthalates Migration in Food Simulants: A Comparative Evaluation of Linear Regression and Artificial Neural Networks (ANN) **David J. Alcarde Jr** Industrial Technology Development Institute (Packaging Technology Division), Department of Science and Technology	OP-74 Detecting amino acidopathies in Filipino population via two-tier biochemical confirmatory testing using reversed-phase UPLC and GC-MS analytical techniques: a 10-year experience **Dahlia C. Apodaca** University of the Philippines-Manila
10:50 AM - 11:00 AM						

PROGRAM SCHEDULE

Day 2, June 11, 2026 (Thursday) Continued						
Venue	**FR 1 & FR 2**	**FR 3**	**FR 4 (with zoom)**	**FR 5**	**MR 4-6 (90 capacity)**	**MR 7-9 (90 capacity)**
	Parallel Sessions					
Time	**Exhibitors' Booths**	**Molecular Medicine & Drug Discovery; Analytical Chemistry; Biochemistry and Natural Products; Medicinal Chemistry** Moderator: **Mylene Uy** Mindanao State University- Iligan Institute of Technology	**Materials Science** Moderator: **Marlon Conato** University of the Philippines Diliman	**Nanoscience & Technology; Materials Science** Moderator: **Alan Rodelle Salcedo** University of Santo Tomas	**Artificial Intelligence (AI) in Chemistry; Machine Learning (ML) in Chemistry** Moderator: **Rafael Espiritu** De La Salle Univeristy	**Impurities in Drugs and Packaging; Method Validation; Clean Circular Materials** Moderator: **Olivia Erin Buenafe** Ateneo de Manila University
11:00 AM -11:10 AM	Exhibitor lecture 07 Multiscale Characterization of Materials for Advanced Battery Systems **Jonathan Wong** ANTON PAAR PHILIPPINES INC	OP-07 Effects of Oven Baking in the Chemical Contents and Bioactivities of Tiger Sawgill (Lentinus tigrinus) **Charleo S. Zapanta** Ateneo de Manila University	OP-24 Optimizing Water Output of a Solar Desalination Still: Quantifying the Effects of Wind Speed and Operating Temperature on Calcium Carbonate-Enhanced Condensation Using Response Surface Methodology **Joshua Johnn U. Carballo** Ateneo de Davao University	OP-41 Inkjet Deposition of Aqueous Graphene Ink for Photoswitch Application **Renz S. Bareo** Polytechnic University of the Philippines, Sta. Mesa, Manila	OP-58 Human-in-the-Loop AI for Retention-Time Binning and GC-FID Comparison of Methamphetamine Trace Impurities **Nieves Manuela A. Barbo** Philippine Drug Enforcement Agency	OP-75 PFAS in Pharmaceutical Industry **Napaporn Saensila** SCIEX
11:10 AM -1 1:20 AM						
11:20 AM - 11:30 AM		OP-08 Functional Insights into Philippine Pigmented Rice Phytochemicals: Antioxidant Activity and Anti-adipogenic Potential **Faye Marion C. Sebastian** Department of Agriculture - Philippine Rice Research Institute	OP-25 Cu-MOF@TMB Integrated Test Strips for Naked Eye Colorimetric Detection of a Critical Biomarker for Metabolic and Renal Disorders **Dr. Kafeel A. Siddiqui** National Institute of Technology Raipur	OP-42 MWCNT-Entrenched Bimetallic Sulfide/MXene Nanohybrids: A Multifunctional Platform for Energy Conversion and Environmental Remediation **Aravinthkumar Kombiah** National Sun Yat-sen University, Taiwan	OP-59 Prediction of Ceramic Slurry Extrudability for Robocasting Using Support Vector Machine and Ensemble Machine Learning Models **Adam H. Turner** Ateneo de Manila University	OP-76 Validation of a Graphite Furnace Atomic Absorption Spectrometry Method for Trace-Level Arsenic Determination in Salt **Kurt Nowell S. Libante** Department of Science and Technology - Industrial Technology Development Institute
11:30 AM - 11:40 AM	Exhibitor lecture 08 Sustainable Spaces: Sprayed Polyurethane Foam in Labs and Warehouse Storage **Nelson Samonte** HALLA CHEM PHILIPPINES, INC.					
11:40 AM - 11:50 AM		OP-09 Microwave-assisted Synthesis of Novel 1,4-Diazobycyclo [2.2.2] Ionic Liquid Derivatives with Antimicrobial Activity against Enterobacter cloacae and Staphylococcus epidermidis **Neil Tristan B. Sacayanan** University of the Philippines - Manila	OP-26 Synthesis of Cinnamomum cassia oil-loaded chitosan microbeads via a flow-focusing microfluidic droplet generator **Alexandra Melise D. Hulog** Ateneo de Manila	OP-43 Multifunctionalization and Coloration of Cotton Fabric with Selenium Nanoparticles (Se-NP) for UV-Protection and Antimicrobial Application **Ace B. Gapiza** Department of Science and Technology - Philippine Textile Research Institute	OP-60 Development of Crude Bit Counting (CBC) and Cluster Subtraction Bit Counting (CSBC) Machine Learning Models: CBC-ML and CSBC-ML For Classification of Molecules Activity Against HCT-116 **Raymond D. Cristobal** Institute of Chemistry University of the Philippines, Diliman	OP-77 High -Performance ZnO–GO Nanocomposite Catalyst for Simultaneous Decolorization and Glycolysis of Polycotton Textile Waste **Jeff Ryan S. Magalong** Department of Science and Technology - Philippine Textile Research Institute
11:50 AM - 12:00 PM						

PROGRAM SCHEDULE

Day 2, June 11, 2026 (Thursday) Continued					
Venue		**FR 1 & FR 2**	**FR 4 (with zoom)**	**MR 4-6 (90 capacity)**	
		Parallel Sessions			
Time		**Exhibitors' Booths**			
12:00 PM - 12:10 PM	Lunch Poster Session (Poster Area)	Exhibitor lecture 09 Cost-Effective & Reliable Ion Analysis with Water by Sykam Chromatography **Carlo A. Delos Santos** BROWNSTONE ASIA TECH CORP.	ICP General Membership meeting Board of Chemistry presentation	Free Wiley Workshop "AI Tools for Writing and Research" Wiley Publishing Workshop: 40th PCC / EuAsC2S-17 Dr. David Peralta Wiley-VCH 	
12:10 PM - 12:20 PM					
12:20 PM - 12:30 PM					
12:30 PM - 12:40 PM		Exhibitor lecture 10 Expanding the Frontiers of Electrochemical Research: State-of-the-Art Instrumentation and In-Situ Techniques **Alice Lee-Sie Eh** KIMIKA SOLUTIONS INC.			
12:40 PM - 12:50 PM					
12:50 PM - 01:00 PM					
01:00 PM - 01:10 PM		Exhibitor lecture 11 The Laboratory of the Future: Transforming LIMS into a Digital Quality Command Center **Charmayne Galang** LABWARE			
01:10 PM - 01:20 PM					
01:20 PM - 01:30 PM					
01:30 PM - 01:40 PM		Exhibitor lecture 12 Bridging the Gap Between Laboratory and Process: Optimization of Analytical Workflows in the Lab up to the Production Line for Future-Ready Results **Dr. Christine Tan** METTLER TOLEDO PHILS INC.			
01:40 PM - 01:50 PM					
01:50 PM - 02:00 PM					
02:00 PM - 05:00 PM	**Eurasia IOC / IAC Meeting** **Venue: Meeting Room 3**				

PROGRAM SCHEDULE

Day 2, June 11, 2026 (Thursday) Continued							
Venue	**FR 1 & FR 2**	**FR 3**	**FR 4 (with zoom)**	**FR 5**	**MR 4-6 (90 capacity)**	**MR 7-9 (90 capacity)**	**MR 1 (54 capacity)**
	Parallel Sessions						
Time	**Exhibitors' Booths**	Parallel FR3 PM Session **Molecular Medicine & Drug Discovery; Natural Products; Metabolomics; System and Synthetic Biology** Moderator: **Tabitha Amora** De La Salle Medical and Health Sciences Institute	Parallel FR4 PM Session **Materials Science; Molecular Medicine & Drug Discovery** Moderator: **Patrick Lim** University of San Carlos	Parallel FR5 PM Session **Analytical Chemistry; Nanoscience & Technology; Artificial Intelligence; Materials Science** Moderator: **Gladys Completo** University of the Philippines Los Baños	Parallel MR 4-6 PM Session **Clean Sustainable Energy; Materials Science; Artificial Intelligence; Analytical Chemistry; Environmental Chemistry** Moderator: **Fatima Joy Cruz** University of the Philippines Manila	Parallel MR 7-9 PM Session **Molecular Medicine & Drug Discovery; Chemical Education** Moderator: **Mario Tan** University of Santo Tomas	Parallel MR 1 PM Session **Drug Design, Discovery & Delivery; Metabolomics & System Biology; Food Chemistry;Materials Science** Moderator: **Jennifer Sy** Pamantasan ng Lungsod ng Maynila
02:00 PM - 02:15 PM 02:15 PM - 02:30 PM	Exhibitor lecture 13 Invisible Pollutants, Analytical Solutions: Advanced Spectroscopy for Microplastic Characterization **Chiara Mae O. Martinez** DYNALAB CORPORATION	Keynote FR3-13 **Mari Maeda-Yamamoto** National Agriculture and Food Research Organization, Tsukuba, Japan The Future of Functional Fresh Foods: Analytical Technologies and Market Insights from Japan	Keynote FR4-13 (by zoom) **Spas D. Kolev** University of Melbourne, Australia Application of polymer inclusion films for the determination of Cu(II) in liquid and solid samples	Keynote FR5-13 **Edgar Paski** British Columbia Institute of Technology, Canada Multianalyte Control Charts	Keynote MR79-19 **Lieza Danan** CEO, LiVeritas, South San Francisco, CA, USA Mass Spectrometry and the Development of Novel Biologics: A 28-Year Journey Grounded in Molecular Truth & Chemistry (Liber Veritas)	OP-78A Silver(I)-Antibiotic-Loaded PHEMA Contact Lenses As Therapeutic Hydrogels **Christina N. Banti** Department of Chemistry, University of Ioannina, Greece	OP-85 Oxa-azabenzobenzocyclooctynes (O-ABCs): Design and Mechanistic Insights into a Highly Reactive Cyclooctyne **Mark Aldren M. Feliciano** Central Luzon State University
02:30 PM - 02:40 PM 02:40 PM - 02:50 PM	Exhibitor lecture 14 Scanning Electron Microscopy: Imaging and Beyond **Dr. Ronn Goei** CHEMISPHERE LAB SCIENCES INC.	OP-10 Metabolomic Profiling of Active Fractions from Ethanolic Extracts of Sambong [Blumea balsamifera (L.) DC] **Carmelo E. Briones** Pascual Pharma Corp.	OP-27 Synthesis of a β-Cyclodextrin-Based Monomer for ADMET Polymerization Toward Tunable Drug Delivery Systems **Keith Marcx A. Gungon** Ateneo de Manila University	OP-44 Optimization of Measurement Conditions of Field-Emission Scanning Electron Microscope – Energy Dispersive X-ray Spectroscopy for Non-Destructive Elemental Analysis of Ti6Al4V **John Paul D. Arcilla** Advanced Device Materials and Testing Laboratory , DOST-ITDI	OP-61 Method Validation of Reversed-Phase High Performance Liquid Chromatography (RP-HPLC) using Photodiode Array Detector (PDA) for Simultaneous Analysis of Acetaminophen and Caffeine in Locally Available Pharmaceuticals **Amiel L. Valderrama** Institute of Chemistry, College of Arts and Sciences, University of the Philippines Los Baños	OP-78B Innovating from Within: An Autoethnographic Reflection on Faculty-Led Practice-Based Science Teacher Education **Angelo Mark Walag** University of Science and Technology of Southern Philippines	OP-86 ZamPen Native Chicken: Chemical Approaches for Collaboration and Sustainable Food Innovation **Jayson T. Francisco** Western Mindanao State University

PROGRAM SCHEDULE

Day 2, June 11, 2026 (Thursday) Continued							
Venue	**FR 1 & FR 2**	**FR 3**	**FR 4 (with zoom)**	**FR 5**	**MR 4-6 (90 capacity)**	**MR 7-9 (90 capacity)**	**MR 1 (54 capacity)**
	Parallel Sessions						
Time	Exhibitors' Booths	**Molecular Medicine & Drug Discovery; Metabolomics & Systems Biology** Moderator: **Tabitha Amora** De La Salle Medical and Health Sciences Institute	**Nano Science and Technology; Materials Science; Clean Circular Materials; Environmental Chemistry** Moderator: **Patrick Lim** University of San Carlos	**Nanoscience & Technology; Artificial Intelligence** Moderator: **Gladys Completo** University of the Philippines Los Baños	**Analytical Chemistry; Materials Science, Heritage Science/Art for Cultural Preservation; Agricultural Science** Moderator: **Fatima Joy Cruz** University of the Philippines Manila	**Chemical Education;** Moderator: **Mario Tan** University of Santo Tomas	**Parallel MR 1 PM Session** **Drug Design, Discovery & Delivery; Metabolomics & System Biology; Food Chemistry; Materials Science** Moderator: **Jennifer Sy** Pamantasan ng Lungsod ng Maynila
02:50 PM - 03:00 PM	(Continuation) Exhibitor lecture 14 Scanning Electron Microscopy: Imaging and Beyond **Dr. Ronn Goei** CHEMISPHERE LAB SCIENCES INC.	OP-11 Multi-Scale Computational Modeling Of Lysogenic Phage Therapy Against Antibiotic-Resistant Bacteria **Frederick Philps S. Batula** Polytechnic University of the Philippines	OP-28 Green Fabrication of Transparent Wood from Falcataria falcata **Jeremae C. Cutamora** University of the Philippines Los Baños	OP-45 Tuning of Optical Properties of Tin(IV) oxide(SnO2)/Zinc oxide (ZnO) as an Antireflection Coating **Rina Mae P. Catalogo** University of the Philippines Baguio	OP-62 Development and Validation of High-Performance Liquid Chromatography – Fluorescence Detector (HPLC – FLD) Method for the Determination of Polycyclic aromatic hydrocarbons (PAHs) in Coconut Oil **April Star L. Canonizado** Industrial Technology Development Institute	OP-79 Assessing conceptual understanding in high school chemistry: particulate nature of gas concept test (PNGCT) with Rasch modeling **Cynthia U. Talens** University of Santo Tomas	OP-87 Effects of Kappaphycus alvarezii on Physicochemical and Sensory Properties of Kimchi Paste **Ruselen Grace Angel Ellorda** Department Of Science And Technology Region VII
03:00 PM - 03:10 PM	Exhibitor lecture 15 Field-to-Lab Accuracy in Water Testing Best Practices and Solution **Kai Shuang Lim** YANA CHEMODITIES (Continued next page)						
03:10 PM - 03:20 PM		OP-12 Untargeted Metabolomics of Pseudomonas aeruginosa Strains from Different Shipworm Hosts Reveal Differences in Secondary Metabolite Production **Ernest Guiller S. Pineda** University of the Philippines - Marine Science Institute	OP-29 Electron Beam-Induced Grafting of 2-(dimethylamino)ethyl 2-methylprop-2-enoate onto Polypropylene Nonwoven Fabrics for Effective Phosphate Removal **Jannah Nicole N. Cortez** Philippine Nuclear Research Institute	OP-46 Ground State Energy Calculation of Dihydrogen (H2) and Lithium Hydride (LiH) Using DFT and VQE **Chloe Niña Christine Y. Dela Cruz** University of the Philippines Baguio	OP-63 ATR-IR Spectroscopy Coupled with Chemometrics for Quality Grading of Robusta (Coffea Canephora) Coffe in Dingle, Iloilo **Dianne Grace N. Panadero** West Visayas State University	OP-80 Chemistry Clash: The Card Game of Bonding and Naming **Merlyn G. Gonzales** University of Science and Technology of Southern Philippines	OP-88 Development and Validation of an R-based Statistical and Computational Framework for Mechanistic and Empirical Modeling for Drug Delivery Applications **Paul Angelo C. Manlapaz** Department of Science and Technology - Philippine Textile Research Institute
03:20 PM - 03:30 PM							

PROGRAM SCHEDULE

Day 2, June 11, 2026 (Thursday) Continued							
Venue	**FR 1 & FR 2**	**FR 3**	**FR 4 (with zoom)**	**FR 5**	**MR 4-6 (90 capacity)**	**MR 7-9 (90 capacity)**	**MR 1 (54 capacity)**
	Parallel Sessions						
Time	**Exhibitors' Booths**	**Metabolomics; System Biology; Structural and Synthetic Biology** Moderator: **Tabitha Amora** De La Salle Medical and Health Sciences Institute	**Materials Science; Artificial Intelligence (AI) in Chemistry** Moderator: **Patrick Lim** University of San Carlos	**Nano Science and Technology; Materials Science; Clean Sustainable Energy; Environmental Chemistry** Moderator: **Gladys Completo** University of the Philippines Los Baños	**Environmental Chemistry** Moderator: **Fatima Joy Cruz** University of the Philippines Manila	**Chemical Education** Moderator: **Mario Tan** University of Santo Tomas	**Parallel MR 1 PM Session** **Drug Design, Discovery & Delivery; Metabolomics & System Biology; Food Chemistry; Materials Science** Moderator: **Jennifer Sy** Pamantasan ng Lungsod ng Maynila
03:30 PM - 03:40 PM	Exhibitor lecture 16 SO_2 Determination in Food Using the Monier-Williams Method: A New Approach **Lukas Brieger** LABTRADERS, INC.	OP-13 Elucidation of Mechanism of Protein Marker Transthyretin in Urinary Proteome and Peptidome of Prostate Cancer Before Radical Prostatectomy **Leonora A. Geniston** UNILAB and St Paul University Quezon City	OP-30 Gamma Radiation-Induced Grafting of Poly(N-vinylimidazole) onto Polylactic Acid Nonwoven Fabric for Enhanced Antimicrobial Properties **Jerri Mae T. Aquino** Polytechnic University of the Philippines - Manila	OP-47 Plant-Mediated Synthesis of Fe–Mn Oxide Nanoparticles as Dual-Mode (T1/T2) MRI **Anlee A. Refuerzo** Technological University of the Philippines / De La Salle University	OP-64 Field-Deployable Smartphone-Integrated Paper Analytical Device for Selective Colorimetric Monitoring of Pb^{2+} in Agricultural Soil **Ian Joseph F. Halim** University of Santo Tomas	OP-81 Online Resources for GC Method Development and Validation **Maria Cristina A. Dancel** Chemisol Inc.	OP-89 Hydrothermal Synthesis of Cellulose Acetate from Saba Banana Pseudostem (Musa acuminata x balbisiana) **Gian Marco S. Tendenilla** Department of Science and Technology-Philippine Textile Research Institute
03:40 PM - 03:50 PM							
03:50 PM - 04:00 PM		OP-14 Network Pharmacology Refined with Decoy-Controlled Molecular Docking Reveals Momordica charantia Triterpenoids are Probable Binders of HSD11B1 and Other Insulin Resistance Targets **Armi Katrina S. Enriquez** University of the Philippines Manila	OP-31 Upscaling Post-radiation Reactive Extrusion of Recycled Polypropylene and High-Density Polyethylene Blends **John William N. Montojo** Philippine Nuclear Research Institute	OP-48 Bamboo Science Technology and Innovation: Harnessing the Potential of Bamboo in Solving Tomorrow's Problems Today through Chemistry **Jennifer P. Tamayo** Department of Science and Technology-Forest Products Research and Development Institute	OP-65 Method Validation and Optimization of Steroid Hormone 17β-Estradiol (E2) Detection in Sediment Samples from Pasig River **Janlie Charles M. Gautane** Adamson University	OP-82 Undergraduate Students' Preferences and Motivations in Selecting Professional Organizations within the Philippine Federation of Chemistry Societies **Ralph Lauren M. Alomia** CAS Institute of Chemistry, University of the Philippines Los Baños	OP-90 Multi-Scale Computational Modeling of Lysogenic Phage Therapy Against Antibiotic-Resistant Bacteria **Flint Kofi S. Regaspi** Polytechnic University of the Philippines, Manila
04:00 PM - 04:10 PM	Exhibitor lecture 17 Maximized Separations and High-Resolution Discovery: An Overview of LECO's GCxGC Paired with TOFMS **Christina Carcamo** BIHIS-MAALA BASICS (Continued next page)						

PROGRAM SCHEDULE

Day 2, June 11, 2026 (Thursday) Continued							
Venue	**FR 1 & FR 2**	**FR 3**	**FR 4 (with zoom)**	**FR 5**	**MR 4-6 (90 capacity)**	**MR 7-9 (90 capacity)**	**MR 1 (54 capacity)**
	Parallel Sessions						
Time	**Exhibitors' Booths**	**Structural and Synthetic Biology, Computational Chemistry; Biochemistry and Molecular Diagnostics** Moderator: **Tabitha Amora** De La Salle Medical and Health Sciences Institute	**Materials Science; Artificial Intelligence (AI) in Chemistry; Environmental Chemistry; Computational Chemistry** Moderator: **Patrick Lim** University of San Carlos	**Nano Science and Technology; Molecular Medicine & Drug Discovery; Materials Science, Clean Sustainable Energy** Moderator: **Gladys Completo** University of the Philippines Los Baños	**Environmental Chemistry; Analytical Chemistry** Moderator: **Fatima Joy Cruz** University of the Philippines Manila	**Synthetic Chemistry; Metabolomics & Systems Biology; Food Chemistry** Moderator: **Mario Tan** University of Santo Tomas	**Parallel MR 1 PM Session** **Drug Design, Discovery & Delivery; Food Chemistry; Materials Science** Moderator: **Jennifer Sy** Pamantasan ng Lungsod ng Maynila
04:10 PM -04:20 PM	(Continuation) Exhibitor lecture 17 Maximized Separations and High-Resolution Discovery: An Overview of LECO's GCxGC Paired with TOFMS **Christina Carcamo** BIHIS-MAALA BASICS	OP-15 Anionic Phospholipid Modulation of Wild-Type EGFR Kinase Activity in a Membrane-Reconstituted System **Ronald Arlet P. Villaber** Visayas State University	OP-32 Quantum Topological Descriptor-based Few-Shot Learning Model: A Machine Learning Framework for Cellulose Pyrolysis **Keneth Cole Audencial** Department of Science and Technology - Philippine Textile Research Institute	OP-49 Geometry and strain effects on the electronic properties of graphene **Alladin C. Jasmin** University of the Philippines Baguio	OP-66 On the Thermodynamic Feasibility of Peroxyacetyl-Phosphorus Monoxide Adduct Formation: A Comparative DFT Study with Peroxyacetyl Nitrate **Ruel B. Cayona** Western Mindanao State University	OP-83 Integrating Ethical Reflection and Logical Framework Approach in Senior High School Research Education **Rev Fr. Jayvee U. Delos Santos** Sto. Nino Seminary	OP-91 Design and In Silico Screening of N-alkylated Pyridinyl-benzimidazole Derivatives for Hypertension Therapy via Renin and ACE Inhibition **Jeanette V. Durante** Mindanao State University- Iligan Institute of Technology
04:20 PM - 04:30 PM							
04:30 PM-04:40 PM	Exhibitor lecture 18 Shatterproof: The Forensic Science of Glass Stress & Failure Analysis. **Dr. Reena** Mascarenhas-Varma BOROSIL SCIENTIFIC LTD	OP-16 Computational Characterization of FLT3TKD Mutation-Induced Changes in Acute Myeloid Leukemia Drug Targeting **Mark Lester C. Galicia** University of the Philippines Diliman and De La Salle Medical and Health Sciences Institute	OP-33 Physics-Informed Machine Learning Framework for Cellulose Phase Deconvolution via XRD Analysis **Jherby Kyle C. Teodoro** Department of Science and Technology - Philippine Textile Research Institute	OP-50 Divergent Therapeutic Potentials of a Seaweed-Derived Extract and its Nanoparticle Form **Kirby Feller M. Lagas** Caraga State University	OP-67 Comparative Evaluation of WDXRF, Portable XRF, and ICP-MS/MS for Multi-Element Geochemical Analysis **Angel T. Bautista VII** Philippine Nuclear Research Institute (DOST-PNRI)	OP-84 Participant Evaluation of the PFCS Leadership Camp: Insights from the 2024 and 2026 Implementations **Edwehna Elinore S. Paderna** University of the Philippines, Diliman; Philippine Association of Chemistry Teachers, National Chapter	OP-92 Progress in the Analysis of Starch Fine Structure: From Unit Chain Profiles to Supramolecular Assembly **James A. Patindol** Visayas State University
04:40 PM-04:50 PM							
04:50 PM - 05:00 PM		OP-17 Development of Loop-Mediated Isothermal Amplification (LAMP) Assay for Banana Anthracnose Agent, Colletotrichum musae **Jan Bernel P. Padolina** University of the Philippines - Los Baños	OP-34 In Silico Investigation on the Effects of Martensitic Transformation of Iron to its Surface Properties, and its Adhesion to Chromium **Mario Cirilo E. De Mesa III** Bangko Sentral Ng Pilipinas	OP-51 Alkoxysilyl Anchoring Groups in Dye-Sensitized Solar Cells: A Review of Binding Chemistry, Device Performance, and Emerging Challenges **Liezel E. Pajulas** Siquijor State College	OP-68 A Low-Cost and Simple Smartphone-Based Digital Image Colorimetry Approach for the Determination of Capsaicinoids in Chili-Derived Products **Kristine Jean C. Laput** Department of Agriculture RFO VII		OP-93 Fabrication, Characterization, and In-silico Analysis of Drug-Loaded Cellulose Acetate Membrane from Musa acuminata × balbisiana for Potential Electrospun Wound Healing Scaffolds **Alecsanndra L. Gonzales** DOST-Philippine Textile Research Institute
05:00 PM - 05:10 PM							

PROGRAM SCHEDULE

Day 3, June 12, 2026 (Friday)	
08:00 AM - 09:00 AM	Plenary Talk 7: Prof. Lourdes J. Cruz National Scientist, National Academy of Science and Technology Philippines Marine Science Institute, University of the Philippines Diliman Chemistry for Future Earth
09:00 AM - 10:45 AM	Solving Tomorrow's Problems Today with Chemistry: Forum on Artificial Intelligence in Chemistry 1. Atta-ur-Rahman: Applications of AI in Chemistry 2. Erwin Enriquez: Machine Learning in Material Science 3. Thomas Hofer: Applied Neural Networks in Chemistry 4. Edgar Paski: AI in the Analytical Chemistry Laboratory Moderator: Kevin Sison
10:45 AM - 01:00 PM	Closing Program Lunch

LIST OF POSTER PRESENTATIONS

Poster Codes	Title and Presenter
	Analytical Chemistry
P001	Quantitative Determination of Quercetin, Eriodictyol, and Tamarixetin in Sambong (Blumea Balsamifera) Leaves and Preparations through Non-Densitometric High-Performance Thin Layer Chromatography **Noel S. Quiming** University of the Philippines Manila
P002	Feasibility of In Vitro SPF Testing: Investigating the Impact of Active Ingredient Concentration on SPF Accuracy Using UV-Vis Spectrophotometry **Jessa Mae G. Bajar** Polytechnic University of the Philippines, Sta Mesa, Manila
P003	Rare Earth Element Fingerprinting of Camarines Norte Uranium Ores by Triple Quadrupole ICP-MS for Nuclear Forensic Source Attribution. **Genie Belle M. Bulaong** Philippine Nuclear Research Institute
P004	Self-Built Gas Chromatograph with MQ-3 Alcohol Sensor for the Determination of Methanol and Ethanol **Angello Louise M. Salvador** Pamantasan ng Lungsod ng Maynila
P005	Comparison between Bottom-up and Top-down Approaches in the Estimation of Measurement Uncertainty of Benzoic Acid in Sauces **Isaiah U. Sta. Ana** Industrial Technology Development Institute
P006	Comparative Evaluation of Bradford and Bicinchoninic Acid (BCA) Assays for Protein Quantification in Cookies Following Extraction and Reduction–Alkylation **Harlene B. Cardos** Department of Science and Technology (DOST) Compound, General Santos Avenue, Bicutan, Taguig City, Metro Manila
P007	An Interpretable Neural Network to Distinguish Virgin Coconut Oil (VCO) and Refined, Bleached and Deodorized Coconut Oil (RBDCO) **Godwyn Idris L. Lozada** Ateneo de Manila University
P008	Authentication and Identification of Common Adulterants in Black Pepper (Piper nigrum L.) Using ATR-FTIR Spectroscopy and DD-SIMCA One-Class Modeling **Kimnard Joseph M. Duat** Department of Science and Technology Northern Mindanao
P009	Identification of predictors for the activities of PET-degrading enzymes via in silico methods **Andrei Mikael R. Silverio** Ateneo de Manila University
P009A	Validation of a Quantitative Method for the Determination of Morphine and Codeine in Human Urine by Solid Phase Extraction and Gas Chromatography/Mass Spectrometry **Arben L. Dacuba** East Avenue Medical Center National Reference Laboratory for Environmental and Occupational Health, Toxicology, and Micronutrient Assay
P009B	Evaluation of DD-SIMCA as a One-Class Model for Screening Sugar Adulteration in Coconut Water Using ^{1}H NMR Spectroscopy **Joel I. Ballesteros** Institute of Chemistry, University of the Philippines, Diliman
	Biochemistry/Bioinformatics/Biosensors/Chemical Sensors
P010	Makapuno Lipases **Hosea L. Matel** Cavite State University
P011	Computational Evaluation of Secondary Metabolites from Crescentia cujete Against Dihydrofolate Reductase (DHFR) for Drug -loading of Cellulose Acetate Membranes **Joyce Mell L. Angeles** Department of Science and Technology - Philippine Textile Research Institute
P012	Development of an Amplification Free Aptamer Based Electrochemical Biosensor for Early Detection of Ovarian Cancer Via Microrna Biomarkers **Wendell S. Palaroan** The Graduate School, University of Santo Tomas

LIST OF POSTER PRESENTATIONS

P013	Electrochemical Sensor for Sodium Dodecyl Sulfate Based on Molecularly Imprinted Polypyrrole **Abbey Nicole V. Franco** University of Santo Tomas
Clean Circular Materials	
P014	Process Optimization, Physicochemical Characterization, and Halal Authentication of Virgin Coconut Oil (VCO) for Innovative Wellness and Nutraceutical Product Development **Queennie L. Rufino** University of Southern Mindanao
P015	Colorimetric Detection of Mercury (II) Using Anthocyanin Extract from Fragaria x Ananassa **Immanuel G. Fabellon** Adventist University of the Philippines
P016	Application of Deep Eutectic Solvents (DES) for the Green Extraction of Bioactive Compounds from Philippine Cocoa Byproducts **Andrea Nicole Y. Abarcar** Department of Science and Technology - Industrial Technology Development Institute
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P166	Community Engagement in Electron Beam Technology and Environmental Stewardship in Aklan. **Raymond J. Sucgang** Philippine Nuclear Research Institute
P167	A Smartphone Camera Approach for Demonstrating the Beer–Lambert Law **Eufrates G. Ansok** Negros Oriental State University
P168	Optimizing Antioxidant Activity in Allium chinense (Sibujing): Effects of Harvest Time and Extraction Method **Mylene M. Uy** Mindanao State University, Iligan Institute of Technology

Some Fascinating Advances in Chemical Sciences

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Keywords: Medicinal plants, Enzyme inhibitors, Spectroscopy, Epilepsy, Memory

Over the last 50 years, we have investigated several hundred terrestrial and marine organisms for their chemical and biological significance and isolated and identified over 2,000 compounds of which about 840 compounds turned out to be new and novel constituents with interesting biological activity profiles. Synthesis of some complex and challenging structures have also been accomplished. State-of-the-art spectroscopic techniques, especially modern multi-dimensional NMR techniques, were utilized to elucidate the structures of bioactive natural molecules, rapidly and accurately (1). Several potent aromatase inhibitors have been prepared by biotransformation studies (2-4). Our work on the synthesis of the anti-cancer alkaloids of Catharanthus roseus, vinblastine and vincristine, has led to novel synthetic approaches to vinblastine analogues (5-7). Some interesting rearrangements were also encountered. Our work on neurodegenerative diseases such as epilepsy have led to the discovery of exciting compounds effective against epileptic seizures (8-10) and Parkinson's Disease (11). The molecular basis of memory has also been investigated leading to the development of a theory that is based on hydrogen bonding of glycoproteins in the brain hypothalamus, leading to partly folded glycoprotein patterns that can be the basis of storage of facts in the brain. An overlap of these patterns can lead to the process of logic (12,13).

The rapid advances in the field of chemical sciences are transforming the landscape of industry and agriculture the world over. These fascinating changes range across many fields including materials science, biotechnology, artificial intelligence and neuroscience. Metamaterials have the amazing characteristic of bending light so that they can make objects covered with such materials invisible to the naked eyes! Devices have been developed that restore partial eyesight to the blind through images that can be transferred through the nervous system of the tongue to the brain. Anti-ageing compounds are being developed that slow down the process of ageing. Graphene has been developed which is 200 times stronger than steel and it is finding many applications. 3D printing is now being used to print parts of living human organs such as liver and kidneys. Artificial intelligence is paving the way for new drug development and for advanced agriculture. We have been fascinated by the functioning of the human brain and have proposed a basis of the molecular basis of memory based on pattern formation by the freezing of conformational mobility of glycoproteins.

The remarkable transformation of the higher education, science and technology sectors in Pakistan under my stewardship as the Federal Minister of Science, Federal Minister of Education and as Chairman Higher Education Commission have been described in a book authored by Fred Hayward [14]. Some of the developments will be presented.

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Chemistry – An Asian Journal Lecture

Chemistry and Application of Dynamic MOF Beyond Rigidity and into the Realm of Soft Porous Crystals

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As promising materials to address global issues of clean energy technologies and environmental sustainability, the emerging class of crystalline microporous materials, metal-organic frameworks (MOFs),1 have been applied in fields of gas storage and separation, delivery vessels, sensors, catalysis, supercapacitors, FETs, batteries, proton conduction, and so on. We have found the 3rd-generation (3G) MOFs (Soft porous crystals, SPCs2) that possess flexible or dynamic porous frameworks and reversibly respond to external stimuli, not only chemical but also physical, unlike robust MOFs (2G).3,4 In particular, by controlling the local motion of organic ligands that construct the framework, we discovered and developed an effective mechanism for separating gas mixtures with similar properties, such as oxygen/argon, alkane/alkene, and light water/heavy water isotopologue mixtures.5 This talk provides an essential and accessible overview of the chemistry of SPCs, their current features, and the outlook of further developed materials as 4th generation PCPs/MOFs, which exhibit multi-functions simultaneously or alternately in combination.6,7

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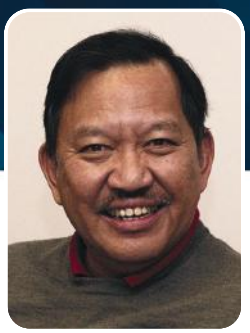
Key words: Metal-Organic Framework, Soft Porous Crystal, Separation, Storage



A Multidisciplinary Framework for Natural Products Research; Examples from Cone Snail Venoms

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Abstract

Cone snails are venomous predators; the ca.1000 different species are found worldwide in tropical marine habitats. They prey on fish, other snails or marine worms; each species has its own complement of 200-400 different bioactive venom components. Although small molecules and larger polypeptides are found, the majority of the bioactive constituents are small, disulfide rich peptides ("conotoxins") that modulate the function of ion channels, receptors and transporters found on the plasma membrane of specific cells.

One natural product from these venoms, the κMRIIIJ conotoxin from a fish-hunting cone snail, has been comprehensively characterized. The peptide selectively binds a specific voltage gated K channel with high affinity and blocks its function. This K channel is found only on the plasma membrane of a specific sensory neuron, the proprioceptor, which becomes non-functional. As a result, sensory/motor integration is impaired in the envenomated fish, leading to an inability to swim. This greatly facilitates its capture by the predatory snail. This illustrates how each conotoxin, after biochemical characterization, can be defined through the macromolecule and cell that it targets, leading to insights into its physiological effects, and a rationale for why it was advantageous for the organism that produces it to evolve such a bioactive compound.

Nanostructured Polymers and Chemistry: AI/ML Workflows and Advanced Manufacturing

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ABSTRACT:

Creating and curating new data appends the way we approach chemistry and materials science. With artificial intelligence and machine learning (AI/ML), it is possible to optimize chemical design, synthesis, formulation, and manufacturing methods. Using sensors capable of forming a feedback loop in self-driving laboratories (SDL) and the ability to create digital twins enables optimizing properties in record time. Statistical and logic-derived design, including regression analysis, is a starting point for designing experiments (DOE) or performing principal component analysis (PCA) in optimization and analysis, rather than trial-and-error approaches when working with polymer materials. In additive manufacturing (AM), the fabrication of complex, high-performance parts and objects is particularly advantageous compared to other methods. Using nanocomposites can deliver significant improvements in properties, even with "commodity polymers," without requiring high-temperature processes or extensive reformulation. In this talk, we demonstrate approaches to materials chemistry and hierarchical nano-structuring via AI/ML and other training/learning sets for specific properties and applications, such as 3D printing and flow chemistry reactions. Introducing more sensors (monitoring instruments) into processes and enabling real-time ML with online monitoring creates a feedback loop and enables for future deep learning (DL) for autonomous fabrication and data analytics.

Chemistry for sustainability – from systems thinking to material stewardship

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Vice-President, International Organization for Chemical Sciences in Development

Systems thinking was introduced into chemistry for the first time in 2016 by the Chemists for Sustainability (C4S) group at the International Organization for Chemical Sciences in Development (IOCD). Recognised as an essential competence for achieving sustainability, systems thinking was included by C4S as a key component of a new approach, 'one-world chemistry', formulated to strengthen chemistry's capacity to contribute to tackling global challenges such as the UN Sustainable Development Goals (SDGs). Subsequently, the introduction of systems thinking into chemistry education has become a worldwide movement, valuable as a tool in several ways. First, systems thinking helps unite the highly fragmented components of the chemistry discipline itself, supporting both educators and learners in analysing, understanding and seeing more clearly the connections among the siloed domains of knowledge that have developed within the field. Second, systems thinking assists chemists to understand the connections between molecular-level processes and the global environmental impacts of making, using and disposing of anthropogenic chemicals. IOCD has been a partner to two global projects of the International Union of Pure and Applied Chemistry (IUPAC) in the period 2017-2025, which have developed tools, curriculum materials and teaching aids to help infuse systems thinking into chemistry education. Third, systems thinking enables the connections to be explored between chemistry and other disciplines and goals – for example, C4S has pioneered the examination of connections between chemistry and human security and between chemistry and resilience. The utility of systems thinking to help the chemical industry to intensify its contributions to sustainability is the subject of a third IUPAC project, with IOCD again as a partner.

Chemistry's great success as the science of transformation of matter has led to an exponential increase in the total number of chemical substances known, rising from a few dozen at the beginning of the 19th Century to around 200 million today. It has also contributed to the total amount of anthropogenic mass in use globally, which has doubled every 20 years since 1900 and now totals about 1.1 trillion tonnes, while material extraction had accelerated since the year 2000 and overall tripled over the last 50 years. Impacts caused by resource extraction, processing, waste and pollution include biodiversity loss and water stress, as well as ocean acidification and global warming. In response to the unsustainable levels of anthropogenic transformation of matter that are depleting usable stocks of the Earth's minerals and damaging the physical and ecological Earth systems on which we depend, C4S has proposed that chemistry should adopt material stewardship as its mission to guide its contributions to sustainability. Key principles for this mission and examples of its use will be set out in the presentation.

Steps Towards Complex Matter: Chemistry !

Jean-Marie LEHN
ISIS, University of Strasbourg Institute for Advanced Study

The evolution of the universe has generated more and more complex forms of matter through self-organization, from particles up to living and thinking matter. Mankind has created science to unravel the ways and means by which matter has become organized up to a thinking organism in particular on our planet earth. Self-organization is the process by which steps towards life and thought have emerged. Animate as well as inanimate matter, living organisms as well as materials, are formed of molecules and of the organized entities resulting from the interaction of molecules with each other. Chemistry provides the bridge and unravels the steps from the molecules of inanimate matter and the highly complex molecular architectures and systems which make up living and thinking organisms. Molecular chemistry has developed very powerful methods for constructing ever more complex molecules from atoms. Supramolecular chemistry seeks to understand and control the formation and behaviour of complex molecular assemblies. The field of chemistry is the universe of all possible structures and transformations of molecular and supramolecular matter, of which those actually realized in nature represent just one world among all the worlds that await to be created. Conceptual considerations on science in general will be presented.

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CHEMISTRY IN THE AGE OF EARTH SYSTEM SCIENCE

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National Scientist, NAST-DOST

This talk anchors contemporary sustainable chemistry trend by tracing early environmental problems to present-day systems-oriented chemical design. Rachel Carson's Silent Spring marked a decisive ethical turning point for modern chemistry by revealing how substances celebrated for their technical effectiveness could generate profound, persistent, and cascading ecological harm through bioaccumulation and transfer across species. Carson's work challenged the dominant paradigm of mid-20th-century chemistry, which prioritized function and efficiency while largely ignoring the unintended consequences to ecological and human health. It laid the foundations of green and sustainable chemistry by insisting that chemical innovation must be evaluated for its environmental impact on ecological systems.

The **Montreal Protocol**, triggered by the discovery that chlorofluorocarbons were depleting the stratospheric ozone layer, demonstrated that chemistry, regulation, and industry could be aligned to address planetary-scale risk. Through the redesign, substitution, and eventual phase-out of ozone-depleting substances such as the CFC refrigerants, the treaty provided empirical proof that environmental protection and technological progress are not mutually exclusive. Instead, it established a precedent for chemistry as a proactive instrument of planetary repair rather than a source of irreversible harm.

Building on these historical foundations, the planetary boundaries framework developed by the Stockholm Resilience Institute offers a systems-level scientific context for contemporary chemical innovation. By defining a "safe operating space" for humanity across Earth-system processes, this framework reframes chemistry as a discipline that must operate within biophysical limits. Sustainable chemistry trends emerging in 2025, including AI-guided molecular design, bio-based and renewable feedstocks, enzyme catalysis, solvent-free and water-based processes, circular chemistry, flow systems, and life-cycle assessment, can be understood as practical, molecular-scale responses to operating within the planetary boundaries. Eventually this led to a paradigm shift: from chemistry focused on isolated reactions and products to chemistry as an enabling discipline for circularity, and sustainability.

Beyond Cisplatin to Next-Generation Metallotherapeutics: Mechanism-Driven Design of Hybrid Metallodrugs Targeting Breast Cancer Cells Proliferation

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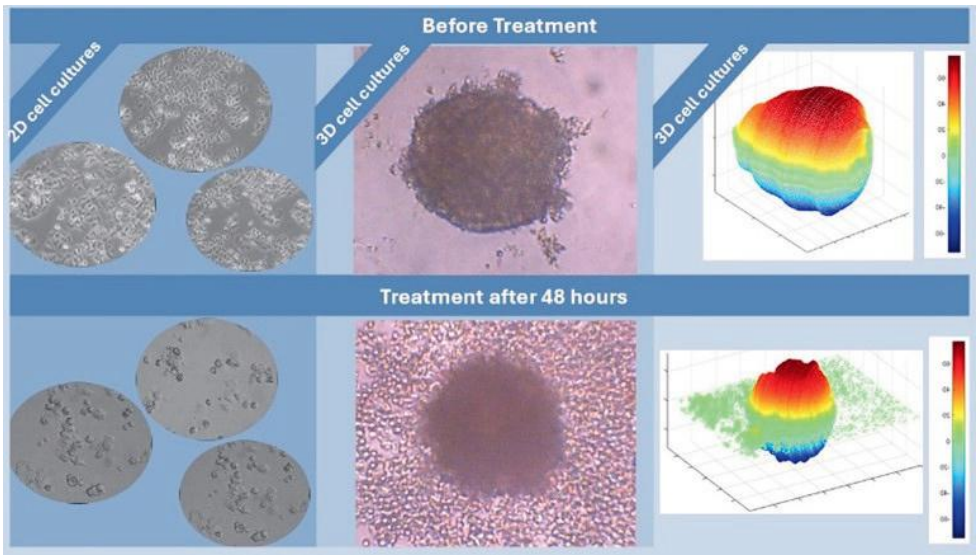
Breast cancer is a highly heterogeneous disease comprising distinct molecular subtypes, including hormone receptor–positive (ER/PR+), HER2-enriched, and triple-negative breast cancer (TNBC), each characterized by different biological behaviors and therapeutic responses. Despite advancements in targeted therapies and chemotherapeutic regimens, a major clinical challenge remains the development of drug resistance, which allows cancer cells to evade treatment through mechanisms such as altered drug uptake, enhanced DNA repair, metabolic reprogramming, and activation of survival pathways. This acquired or intrinsic resistance significantly limits therapeutic effectiveness, leading to tumor relapses, disease progression, and reduced patient survival, thereby underscoring the urgent need for novel therapeutic strategies capable of overcoming these barriers.

Our research focuses on the development of next-generation metal-based chemotherapeutics, aiming to overcome drug resistance in cancer cells. This approach integrates multiple biologically active components into a single therapeutic entity, either by employing metal ions as structural linkers or by exploiting their intrinsic cytotoxic properties. These metal centers are conjugated to carefully selected carrier moieties that target specific intracellular biomolecules, enabling multi-targeted action within key subcellular compartments. Through this strategy, we aspire to create innovative chemotherapeutic agents capable of bypassing resistance mechanisms and achieving enhanced anticancer efficacy.

Thus, a wide range of bioactive molecules—including anti-inflammatory drugs, antibiotics, natural-product components, metabolites, antimetabolites, and amino acids—are conjugated to potent cytotoxic agents (e.g., mitochondriotropic groups or toxic metal ions), enabling simultaneous targeting and inactivation of multiple intracellular biomolecules.



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Metal Oxide Ceramics for Thermoelectric Power Generation Applications

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Recuperation of waste heat energy, which amounts to two-third of the total primary energy supply in our modern society, is attracting more and keener interests, because diversification of energy resources is becoming more and more of vital importance for better energy security options.

Thermoelectric conversion directly converts heat energy to electricity or vice versa via the Seebeck effect in semiconductor solid materials over which a temperature gradient exists, and is hence obviously promising for recuperating waste heat energy. The efficiency of the thermoelectric conversion is evaluated by the dimensionless figure-of-merit of the semiconductors, $ZT = S2\sigma T/\kappa$, where S is the Seebeck coefficient, σ is the electrical conductivity, κ is the thermal conductivity of the materials, and T is the average operating temperature in K. The criterion generally accepted for thermoelectric materials to be practically competitive is $ZT \approx 1$. Selective scattering of phonons without affecting transport of conduction electrons is therefore an ultimate target for thermoelectric material research. Candidate materials are hence required to overcome a difficult trade-off between heat and charge transport.

In order to exploit mid-to-high temperature waste heat, excellent stability of oxide materials at high temperature in aerobic conditions is definitely prospective. Although strongly ionic characters of oxide materials have been regarded as an inherent disadvantage leading to low carrier mobility and high lattice thermal conductivity, it has been revealed that such disadvantages are not always the case with all oxides. Recent findings strongly suggest that the simple picture of ionic compound no longer holds for some oxide materials. In this lecture, development of metal oxides for thermoelectric energy conversion is surveyed along with their steep progress in their history in thermoelectrics, showcasing some examples of oxide materials with nanosized inhomogeneity in the bulk, and those with cage-like crystal structure. High durability of metal oxides at high temperature under aerobic conditions as well as their low cost and minimal environmental impact are definitely advantageous for thermal energy recuperation toward a globally sustainable society with improved energy utilization.

Controlled Electrodeposition of Nanocatalysts for Sustainable Electrochemical Reactions

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Electrocatalysis has recently attracted much attention, especially for environmentally benign green processes. The focus of this field is to design electrocatalysts with high efficiency and selectivity toward desired products. Conventional colloidal synthesis is popular for producing uniform nanostructures with a high surface area, but electrodeposition also offers several advantages for electrode fabrication: Additional treatments are unnecessary due to synthetic media analogous to catalytic reaction conditions. The deposition rates are controllable precisely by adjusting currents and potentials during the reaction. Moreover, electrodeposition eliminates the need for surfactants to prevent aggregation, creating direct conductive junctions on the electrode and exposing clean sites to the reaction media.

In this talk, I will present shaping individual nanoparticles by selective electrodeposition of copper oxide onto silver and gold nanoparticles on the indium tin oxide electrode. Fine-tuning of deposition potentials, sweep rates, surface regulating additives, and seed densities provides discrete nanoparticle ensembles with tailored morphologies and surface structures on the ten-to-hundred nm scale. Furthermore, potentiodynamic electrodeposition allows exclusive control over both the oxidation state and surface density of catalyst nanoparticles on high-surface-area carbon electrodes. These electrodes have been directly applied to electrochemical carbon dioxide reduction (CO2RR) and nitrate reduction reactions (NitRR). For CO2RR, we elucidate the role of grain boundary density in determining catalytic performance, while for NitRR, the influence of components on reaction efficiency is highlighted. In addition, I will show an example of synthetic optimization using a lap-in-loop algorithm. Overall, this work demonstrates that controlled electrodeposition offers a versatile and scalable platform for rational catalyst design with enhanced performance and sustainability.

Theoretical suggestions for impractical organic synthesis: A case study of non-psychoactive CBD synthesis from marijuana

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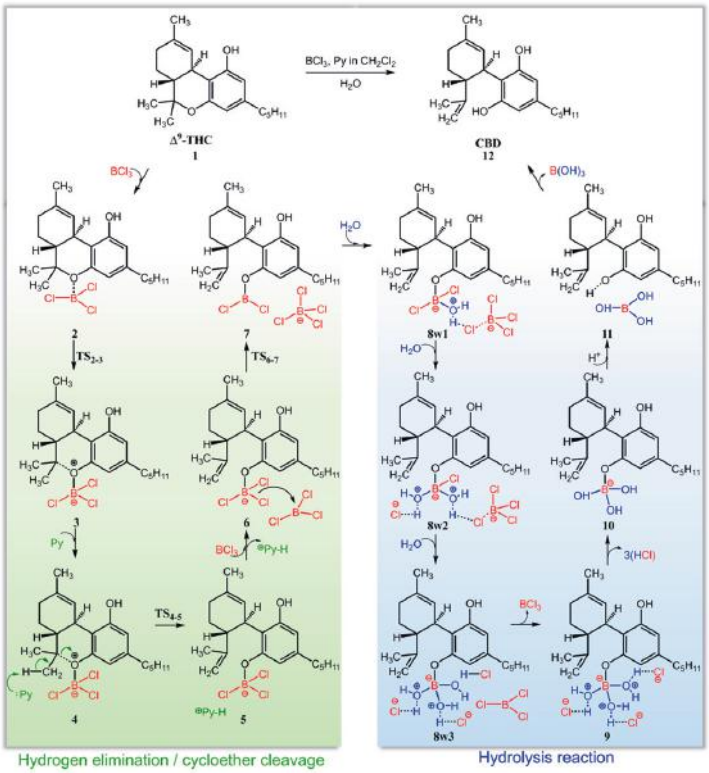
This study proposes a viable reaction pathway for converting the psychoactive compound Δ^9-THC into the non-psychoactive cannabidiol (CBD), while also evaluating related cannabinoids such as Δ^8-THC and cannabinol (CBN). The transformation proceeds through two key steps: hydrogen elimination with cyclic-ether cleavage, followed by hydrolysis to generate hydroxyl groups, promoted by BCl_3 and a sterically hindered pyridine base. Computed activation barriers identify TS2–3 as the rate-determining step for Δ^9-THC (17.6 kcal mol^{-1}) and Δ^8-THC (19.4 kcal mol^{-1}), whereas CBN reacts through TS4–5 (20.3 kcal mol^{-1}). The overall process is strongly exergonic (ΔG_{rxn} = –26 to –22 kcal mol^{-1}), indicating spontaneous conversion under mild conditions. These findings highlight a promising route for efficient, scalable production of non-psychoactive cannabinoids and support their development as safe, commercially viable therapeutics. 🌿

Keywords: Cannabinoid, Ether cleavage, DFT, Δ^9-THC, Cannabidiol, Hydrolysis



Moving Beyond Static Calculations: Efficient Quantum Chemical Simulations of MOFs at Finite Temperature

Thomas S. Hofer, Felix R. S. Purtscher, Stefanie Kröll, Vicky R. Listyarini, Josef M. Gallmetzer and Armin Penz,

Department of General, Inorganic and Theoretical Chemistry, University of Innsbruck, Innsbruck, Austria

Abstract

Background: Metal–organic frameworks (MOFs) are a highly versatile and rapidly expand-ing class of materials with applications ranging from gas storage and catalysis to sensing and functional material science. Owing to their structural complexity and large number of atoms per unit cell, theoretical investigations of MOFs are computationally demanding and often limited in scope. Moreover, conventional approaches based on density functional theory (DFT) structure optimizations typically correspond to a static description at 0 K, thereby neglecting finite-temperature effects that are essential for many experimentally relevant properties.

Methods: To overcome these limitations, an efficient and robust simulation workflow based on semi-empirical quantum chemical methods was established, with a particular focus on density functional tight binding (DFTB). This framework enables the accurate treatment of a broad range of pristine MOFs and guest@MOF systems at significantly reduced computa-tional cost. By incorporating concepts from biomolecular simulations, the approach was further extended to perform long-timescale molecular dynamics simulations, allowing the investigation of MOF systems under finite-temperature conditions at the nanosecond scale.

Results: The workflow yields accurate structural and dynamical descriptions of representa-tive MOFs, including MOF-5, ZIF-8, and UiO-66. In addition, a variety of guest@MOF systems were successfully studied, such as CO_2@MOF-5, H_2@UMCM-9, along with several photoswitch@MOF materials.

Conclusions: Based on key system properties, including computationally derived X-ray diffraction (XRD) patterns, thermal expansion coefficients, bulk moduli, adsorption energies, and diffusion activation barriers, we demonstrate that the presented DFTB-based molecular dynamics framework provides a reliable and transferable methodology. This approach effectively bridges the gap between computationally expensive DFT calculations and overly simplistic classical force-field models, enabling realistic finite-temperature simulations of complex MOF systems.

Keywords: Metal-organic Frameworks, Quantum Chemistry, Molecular Dynamics Simulations, Finite-Temperature Effects, Structure–Property Relationships

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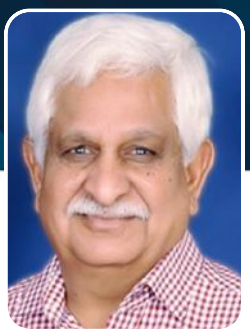

Recent Innovations in Natural Products Chemistry and Sustainability

S.Chandrasekaran
Department of Organic Chemistry
Indian Institute of Science, Bangalore, India

Natural products are metabolites produced by living organisms and they are relatively small molecules with diverse structures that are very complex. But turning one of these into a viable synthetic route requires strong problem-solving capabilities and plenty of creativity. The innovative methods that come out in the process find their way into the envelope of methods that people use for design and development of new drugs. From structure authentication to improvements of methodology, making complex natural products has motivated innovation in organic synthesis for decades.

Recent innovations in Natural Products Chemistryfocus on bridging the gap between traditional isolation and characterization and modern computational biology. The key innovations include automated structure elucidation, the activation of "silent" genes, sustainability and green chemistry taking centre-stage, mechanochemistry and bio-based surfactants. Additionally evolving goals in total synthesis, technological and methodological advances including AI's emerging role and the integration of machine learning into drug discovery have had a major impact in recent years.

Recent innovations in natural products chemistry emphasize advanced screening technologies and biosynthetic pathways, while sustainability efforts focus on greener feedstocks and eco-friendly synthesis. These developments address challenges like resource depletion and environmental impact in drug discovery and manufacturing.

Assimilation of sustainability is an important component that will address issues related to renewable feedstocks like plant biomass and agricultural waste produce, biodegradable bioplastics and safer pesticides, reducing reliance on fossil fuels. Water-based reactions and safer reagents, replace toxic solvents in synthesis, lowering carbon footprints in pharmaceuticals. In situ cultivation and pico-droplet technology-based screening minimize ecological disruption in natural product sourcing.

The lecture will highlight some of the salient features of natural products chemistry in relation to sustainable development.

Nutrition: Integration of Chemistry, Environment, and Medicine for a Sustainable Future

Dr. Shirley Paski
Cleveland Clinic, Ohio USA

Durable Anode Electrocatalysts through Acidic Redox-assisted Deposition for Direct Seawater Electrolysis

Chun-Hu Chen*

Department of Chemistry, National Sun Yat-sen University, Kaohsiung, Taiwan
Green Hydrogen Research Center, National Sun Yat-sen University, Kaohsiung, Taiwan
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Direct seawater electrolysis is attractive for scalable green H_2 production but remains constrained by rapid materials corrosion and the risk of toxic chlorine evolution. To address both challenges, we developed redox-assisted deposition (ARD) (first reported in 2018) as a simple route to conformal multimetal-oxide coatings with high elemental homogeneity, improved conductivity, and strong adhesion across diverse substrates. The robust adhesion enables long-term operation by suppressing catalyst and substrate delamination and, importantly, protecting the gas diffusion layer that underpins stable cell performance.

Using ARD-coated electrodes, we achieved stable alkaline seawater electrolysis for >250 h at 100 mA cm^{-2} with 55–65% energy efficiency; in contrast, uncoated metal components corroded within 1–2 h under identical conditions. Operando/in situ mass spectrometry detected no chlorine gas throughout testing, highlighting ARD's ability to mitigate Cl_2 formation during direct seawater operation. Collectively, these results position ARD as a practical coating strategy to enable durable, chlorine-safe seawater electrolyzers, and we discuss its chemical basis, synthesis, and operating mechanisms.

Keywords: seawater; alkaline water splitting; anion exchange membrane; bilayer; adhesion

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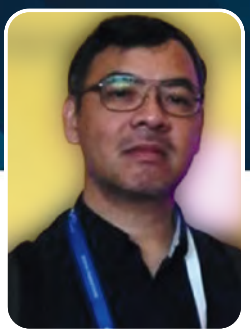


Chemistry-Driven Innovation for Green Electronics

Erwin P. Enriquez, Ph. D.
Department of Chemistry and Program in Materials Science & Engineering
Schmitt Hall, Ateneo de Manila University, Quezon City, Philippines

Abstract:

Our dependence on electronic devices is now inescapable since the beginning of a connected world and the push of emerging technologies such as the Internet of Things (IoT) and more recently, artificial intelligence (AI). This dependence is accelerating concerns over environmental impact including mineral depletion and the irreversible loss of valuable metals dispersed across vast numbers of short-lived products. Our research focuses on inkjet printing electronic devices with additive manufacturing and solution processes, using eco-friendly materials and methods. This presentation will provide an example of how agricultural biomass can be utilized to advance green chemistry and employ machine learning to improve processes related to these printable electronics. We specifically demonstrate the development of electronic sensors—from agricultural waste to potential devices for aquaculture applications.

BIO:

Dr. Erwin P. Enriquez is professor of Chemistry and Materials Science & Engineering at the Ateneo de Manila University. He obtained his PhD in Physical Chemistry from the University of North Carolina at Chapel Hill under Professor Edward T. Samulski and was postdoctoral research associate at the Materials Research Laboratory at the University of Illinois at Urbana-Champaign prior to joining the Ateneo in 1995. He obtained his undergraduate degree in Chemistry (cum laude) from the University of
the Philippines at Los Baños in 1987 and in that same year, he placed 1st in the Chemistry Licensure Examinations. He was recipient of the 2016 CHED Republica National Award, 2015 Leaders in Innovation Fellowship at the Royal Academy of Engineering under the UK Newton Fund and DOST, 2015 Federation of Chemistry Societies Award for Chemistry Research, and recognized as one of the 2004 OYS of the NAST. His current research interests include nanofabrication using solution-processing techniques for various applications such as in DNA biosensors, solar energy generation, and printed electronics. He received the 2020 Julian A. Banzon Medal by the DOST-NAST and inducted as a Professional Materials Engineer (Luminary) by the Institute of Materials Engineers of the Philippines.

The Future of Functional Fresh Foods: Analytical Technologies and Market Insights from Japan

Dr. Mari Maeda-Yamamoto
National Agriculture and Food Research Organization, Tsukuba, Japan

National Agriculture and Food Research Organization (NARO), Tsukuba, Japan

Background: In 2015, Consumer Affairs Agency of Japan (CAA) launched a food labeling system known as "Foods with Function Claims (FFC)". The system is characterized by the fact that in addition to general processed foods and supplements, fresh foods are also subject to labeling; businesses themselves, not the government, are responsible for safety and functionality; this is a registration system, and reported information is disclosed on the CAA's website before it is sold; and functionality includes "expression of a specific part of the body" and "evaluation by subjective indicators" can be used. As of January 21, 2026, 10,398 FFCs are registered, of which 267 are fresh food items such as Satsuma mandarin, tomato, spinach, soybean sprout, kale, eggplant, pumpkin, avocado, perilla leave, garlic, broccoli, green pepper, mushroom, apple, grape, pineapple, banana, bilberry, lemon, melon, barley, chicken, pork, egg, and fish. FFC has been in effect for over 10 years, and its market growth has gradually slowed to around 5 billion dollars. Going forward, we should consider incorporating these products into self-care diets that promote health through food, rather than simply selling individual agricultural products.

Results and conclusion: NARO is developing an AI algorithm that contributes to designing and proposing self-care meals. By inputting their daily meals, individuals can have the algorithm calculate the nutrients and functional ingredients they are lacking for health improvement, and it will suggest foods they should consume. To make accurate dietary recommendations, it is necessary to quantitatively analyze the nutrients and functional components in food and agricultural products and to establish a database of their content levels. Regarding functional components, establishing standardized analytical methods is also necessary. Simply quantifying individual compounds will not advance database development. Therefore, establishing methods for comprehensive quantitative analysis and rapidly analyzing commonly consumed foods and agricultural products are crucial points for proposing personalized diets.

YOUR PARAGRAPH TEXT

Keywords: Foods with Function Claims. Self-care diets, Dietary Nutrients Analysis System, comprehensive quantitative analysis

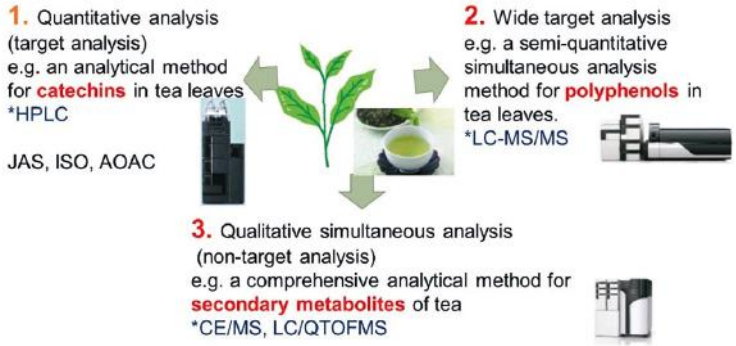


Figure 1. Analysis of functional components using green tea as an example

From Molecules to Meaning: Engineering Trust as the Missing Data Infrastructure of Modern Chemistry

Dr. Lieza Danan
Co-founder and CEO, LiVeritas Biosciences
South San Francisco, California, USA

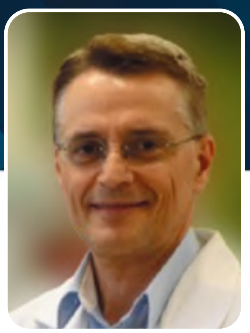
Advances in mass spectrometry have dramatically expanded our ability to characterize complex biological, environmental, and material systems. Yet across regulated domains such as biopharma, diagnostics, food safety, and environmental monitoring, the translation of chemical data into reliable decisions remains increasingly constrained by fragmented workflows, software silos, and manual interpretation.

This plenary examines how trust has emerged as the limiting infrastructure of modern chemistry. Drawing on more than two decades of experience in analytical chemistry, biological mass spectrometry, 21 CFR Part 11 compliant laboratory operations, and FDA-facing workflows, Dr. Lieza Danan argues that contemporary challenges in reproducibility, traceability, and regulatory readiness are not failures of measurement, but failures of execution systems.

The talk introduces a systems-level framework in which traceability, transparency, and quality are treated as engineered properties rather than procedural afterthoughts. Central to this approach is the emergence of agentic, chemistry-aware AI systems that do not merely analyze data, but execute analytical workflows, verify outputs, and generate documentation suitable for regulatory review.

By integrating chemical context, workflow logic, and compliance requirements into automated execution layers, such systems enable faster translation of analytical results without compromising rigor. Case-driven insights illustrate how this paradigm applies across the entire biopharma drug development process of novel protein therapeutics for cancer and autoimmune diseases from early research to development to FDA regulatory submissions to enable first in human clinical trials.

Grounded in laboratory practice rather than abstraction, this plenary challenges chemists to view themselves not only as generators of data, but as architects of systems that ensure chemical knowledge remains reliable, auditable, and actionable at scale. The future impact of chemistry, the talk concludes, depends not only on what we can measure, but on how reliably our systems can be trusted to act.



Polymer inclusion materials in flow analysis and microfluidic paper-based sensing

Spas D. Kolev[1,2,3]

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[2] Department of Chemical Engineering, The University of Melbourne, Victoria 3010, Australia
[3] Faculty of Chemistry and Pharmacy, Sofia University "St. Kl. Ohridski", Sofia 1164, Bulgaria

Abstract

Polymer inclusion materials in the form of membranes, films, beads, and extractive polymeric networks have attracted significant research interest in recent years because separation involving these materials is an attractive green alternative to conventional solvent extraction by eliminating the use of solvents and minimizing the use of extractants. This paper discusses the application of polymer inclusion materials in flow analysis, electrokinetic extraction and paper-based sensing for analyte separation, preconcentration and detection. These applications include polymer inclusion membrane-based flow injection and continuous flow determination of Zn(II) [1], orthophosphate [2] and V(V) [3]. Other flow analysis applications involve the use of polymer inclusion beads for the sequential injection determination of Au(III) and polymer inclusion films for the flow injection determination of thiocyanate [4] and Zn(II) [5]. Polymer inclusion films have been also applied in the electrokinetic determination of Cu(II) [6]. Selective and sensitive microfluidic paper-based determination of Cu(II) has been achieved by utilizing polymer inclusion films [7] and extractive polymeric networks [8].

Keywords: polymer inclusion membrane, polymer inclusion film, polymer inclusion bead, extractive polymeric network, electrokinetic separation

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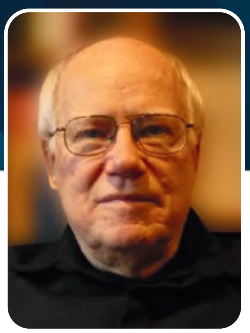

Control Charts for Multianalyte Tests

Edgar F. Paski
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Control charting is an essential tool for quality management in testing laboratories.Control charting techniques in current use are geared for single analyte tests, when applied to multianalyte tests such as ICP-OES, XRF the Type I inference error increases as the number of analytes increases, resulting in very high numbers of QC failures.Current practice is to chart only a few selected “important” analytes for control charting, resulting in minimal, if any, QC for most analytes tested – does this meet ISO/IEC 17025:2017 requirements?

Using Euclidian Distance approach for charting multianalyte tests has been shown to have the same Type I inference error regardless of the number of analytes tested. In this presentation inference error properties of the Euclidian Distance approach is shown. The experimental situation examined is 50 analytes for a control sample on 500 test runs, a total of 25,000 test results. The data matrix was populated with Gaussian distributed random numbers.Bias was added from 0.1 z units to 5.0 z units to selected analytes ranging from all 50 analytes biased to only one analyte biased. This approach simulates commonly encountered situations such as dilution error, calibration error, contamination, selective analyte extraction errors during sample digestion / dissolution.

CHEMISTRY EDUCATION
(SECONDARY LEVEL)

ROHIT C. TILWANI
Philippine Science High School–Central Luzon Campus

Dr. Rohit C. Tilwani is a distinguished Special Science Teacher V and the current Research Unit Head at the Philippine Science High School–Central Luzon Campus, where he has served since 2012. A licensed chemist and a cum laude graduate of BS Chemistry, he also holds a Ph.D. in Materials Science and Engineering from Mapúa University and a Diploma in Science Education from Aichi University of Education in Japan as a MEXT scholar. Throughout his tenure within the Department of Science and Technology (DOST), he has occupied significant leadership roles, including Chief of the Curriculum and Instruction Division from 2020 to 2022, and he currently serves as a part-time Associate Professor III at National University – Clark Campus. His extensive academic contributions include publishing research on nanocomposite hydrogels and cellulose-based materials in international journals, as well as presenting his research findings at global conferences. Recognized for his excellence, he has received the NAST Intellectual Property Award and was featured as a "Bayaning Chemist" in 2020 for his initiatives as a frontliner during the COVID-19 pandemic. Beyond the classroom, he frequently serves as a resource speaker and judge for international scientific fora and has coached students for the International Chemistry Olympiad, demonstrating a career-long commitment to advancing chemistry education and scientific research.

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CHEMISTRY EDUCATION
(TERTIARY LEVEL)

JOEL R. SALAZAR
Central Luzon State University

Dr. Joel R. Salazar, Professor VI at Central Luzon State University's Department of Chemistry, has devoted over 35 years to advancing chemistry education through teaching, research, and institutional leadership. He earned his BS in Chemistry from CLSU (1991), MS in Chemistry (2006), and PhD from UP Diliman (2012), completing dissertation work in Taiwan under the CHED Sandwich Program, which strengthened his expertise in advanced chemical research and international collaboration.
He teaches Physical, Analytical, Inorganic, and Organic Chemistry, and guided CLSU to multiple quiz competition victories, including Hall of Fame recognition. He also served as Coordinator and Reviewer for the Chemists Licensure Examination, helping produce consistently high-performing graduates.

Dr. Salazar was a key proponent of the ladderized BS Chemistry curriculum and sustained Level IV accreditation under AACCUP, ensuring innovation and quality in instruction. His research in nanomaterials and analytical chemistry includes a patented kit for detecting tilapia pathogens, with publications in WoS and Scopus journals linking fundamental science to practical applications.

Through decades of service, Dr. Salazar has distinguished himself as educator, researcher, innovator, and academic leader, shaping future chemists and upholding excellence in tertiary education.

CHEMICAL RESEARCH

JOSE ISAGANI B. JANAIRO

De La Salle University - Manila

The PFCS Outstanding Achievement Award in Chemical Research is conferred on Dr. Jose Isagani B. Janairo, RCh for his significant contributions to the chemical sciences through the integration of peptide chemistry, molecular machine learning, and chemical ecology. He is recognized for decoding molecular information in biological systems and applying data-driven methods to understand peptide behavior and ecological chemical signals. His work demonstrates consistent scholarly productivity and the use of computational and experimental tools to address environmental and agricultural challenges, advancing chemical research in the Philippines.

Dr. Janairo is a Full Professor and Chair of the Department of Biology at De La Salle University. He earned his BS Biochemistry (cum laude) and MS Chemistry from DLSU, and his PhD in Chemical Science from Hokkaido University as a Japanese Government Scholar. His academic excellence has been honored with awards such as NAST Outstanding Young Scientist and the St. Jean Baptiste De La Salle Pillar of Excellence Award.

Beyond research, he advocates for institutional growth through editorial leadership. He serves as Editor-in-Chief of the NRCP Research Journal and Associate Editor for international journals including BMC Artificial Intelligence, PeerJ, and Network Modeling Analysis in Health Informatics and Bioinformatics. Through these roles, he promotes ethical publishing, editorial governance, and high standards, viewing editorial work as vital to shaping the discipline and elevating Philippine research and graduate education. By bridging molecular intelligence with scholarly stewardship, Dr. Janairo continues to shape digital chemistry and the future of open, ethical scientific discourse.

CHEMICAL INDUSTRY

DONNABEL KUIZON-CRUZ

Prime Energy Resources Development B.V.

Donnabel Kuizon Cruz is the President and CEO of Prime Energy Resources Development B.V., the natural gas exploration and development company of Prime Infrastructure Capital Inc., the infrastructure arm of the Razon Group. She leads the Malampaya Deep Water Gas-to-Power Project Phase 4 while driving the company's expansion and diversification strategy.

With more than 23 years of experience in the oil and gas industry, Donna has led transformational initiatives in profitability, operational capability, and organizational culture through partnerships across the public and private sectors.

She began her career with Shell Philippines, where she led a refinery power transition project that shifted operations from diesel to natural gas, generating approximately USD 15 million in annual value improvement. She later held regional and global leadership roles with Shell Global Solutions and Shell International Exploration and Production in Malaysia and Netherlands, supporting cumulative business improvements exceeding USD130 million, overseeing operations contributing more than USD4 billion in annual revenue, and helping advance decarbonization and organizational transformation initiatives.

Donna graduated Magna Cum Laude with a degree in Chemistry from the University of Santo Tomas and topped the 2000 National Chemistry Licensure Examination. She is also the first female head of Prime Energy.

A strong advocate of servant leadership, Donna believes that energy security is fundamental to national development and that purposeful leadership can create meaningful impact for communities, industries, and future generations.

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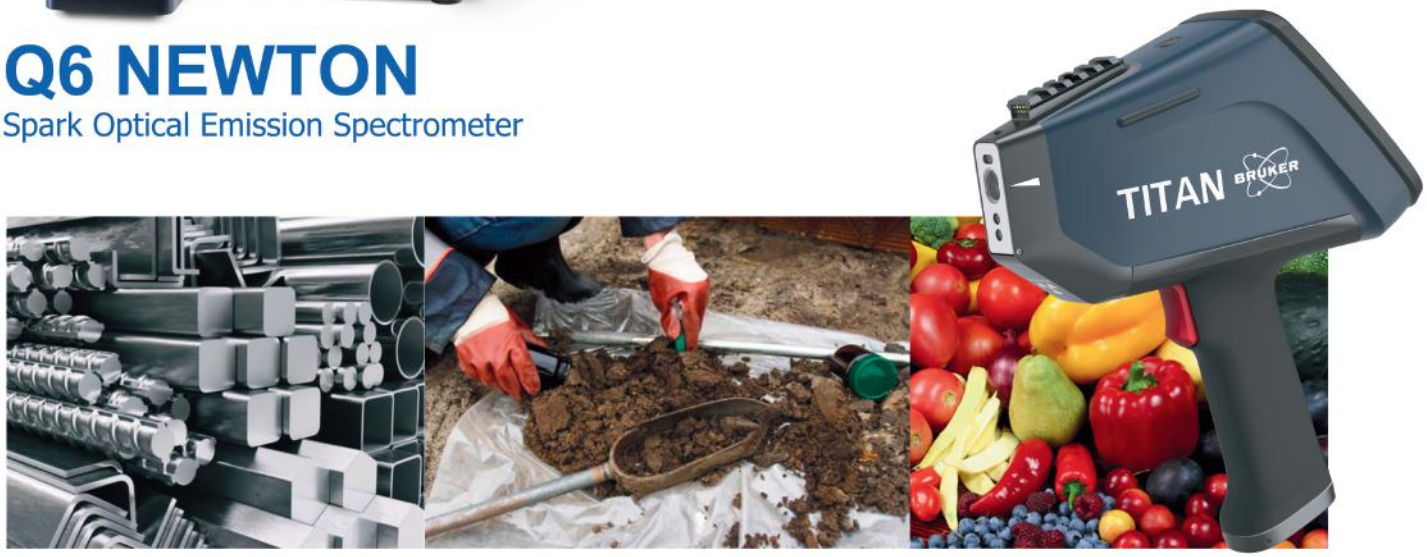

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The Philippine Federation of Chemistry Societies was organized in 1988 to serve as an umbrella organization for the four chemistry societies in the Philippines: Kapisanang Kimika ng Pilipinas (KKP), Integrated Chemists of the Philippines (ICP), Philippine Association of Chemistry Teachers (PACT), and Philippine Association of Chemistry Students (PACS). Through the four organizations, the PFCS is able to reach and provide service to professional chemists, chemical technicians, educators, students, and professionals in the allied disciplines.

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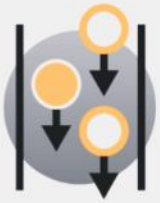

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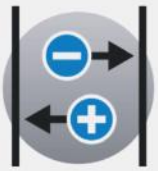

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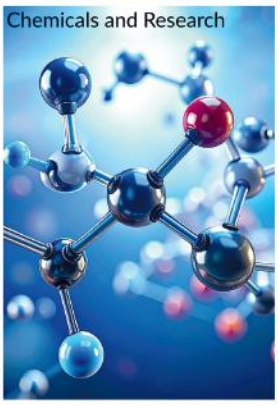

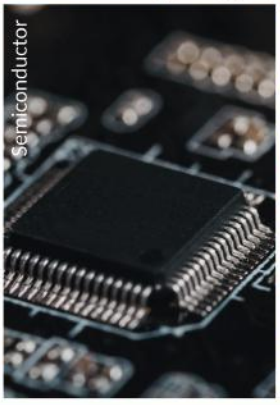

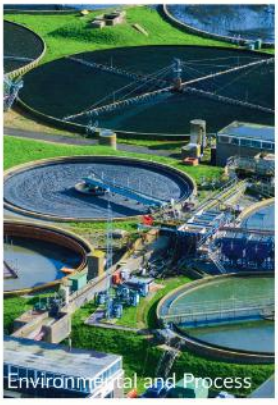

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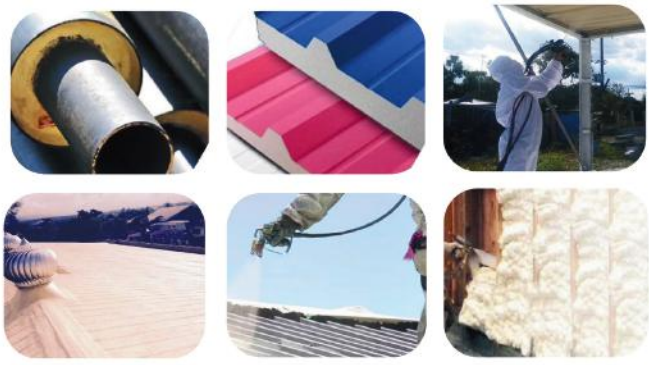

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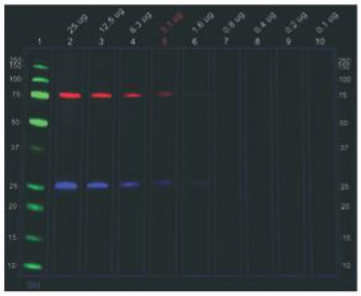

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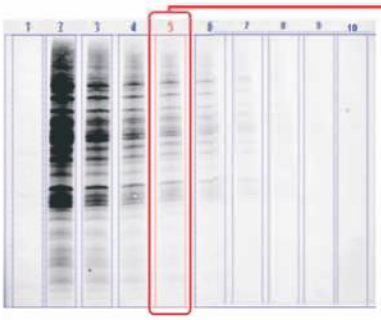
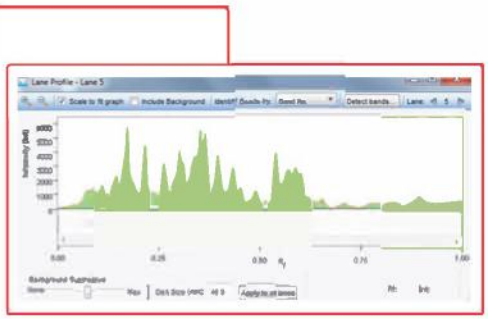


Stain-Free imaging allows for total protein normalization.



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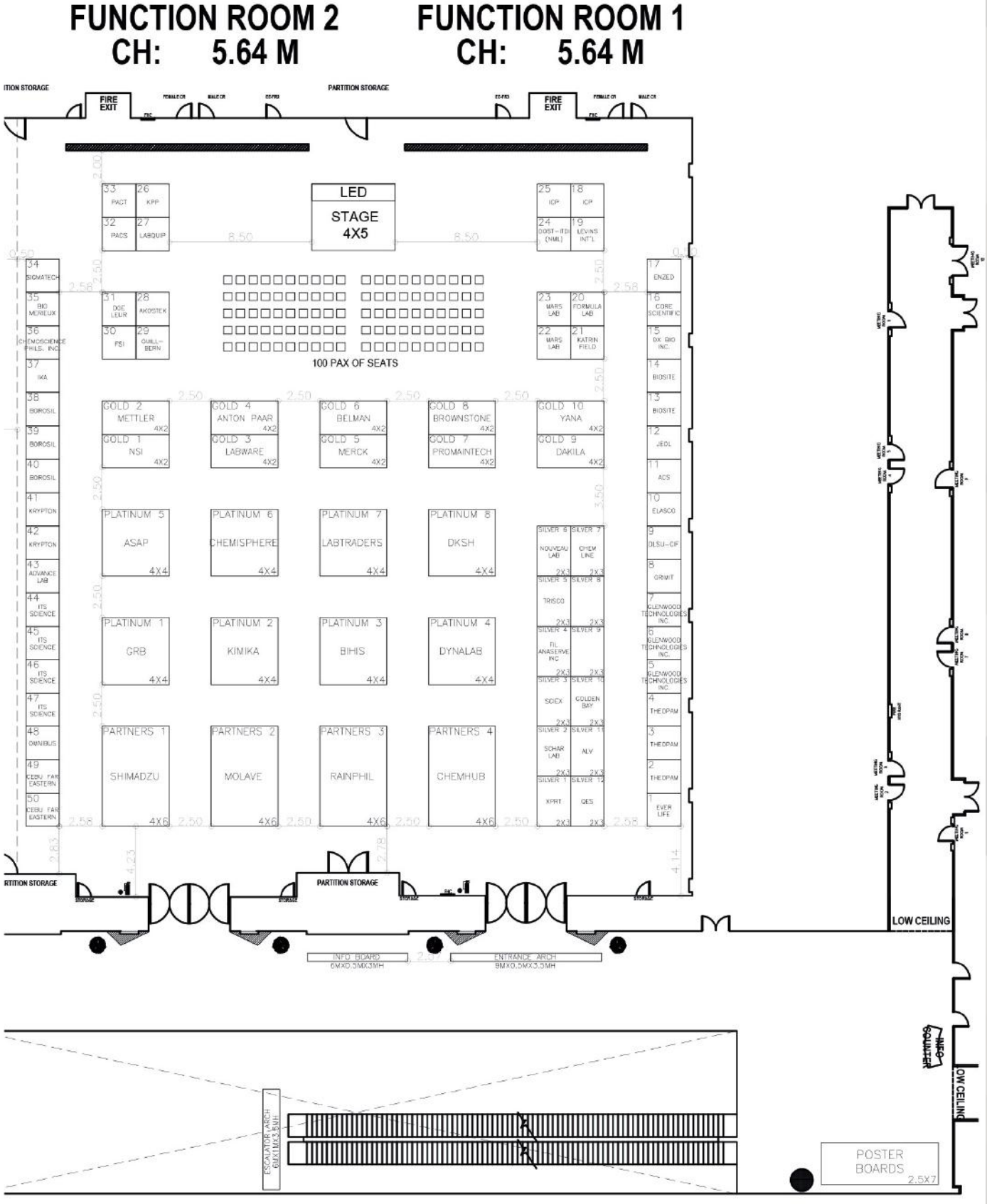
The Integrated Chemists of the Philippines (ICP) is proud to announce the winner of the Logo Making Contest for the 40th Philippine Chemistry Congress!

Winner: Jhon Paul C. Casiple

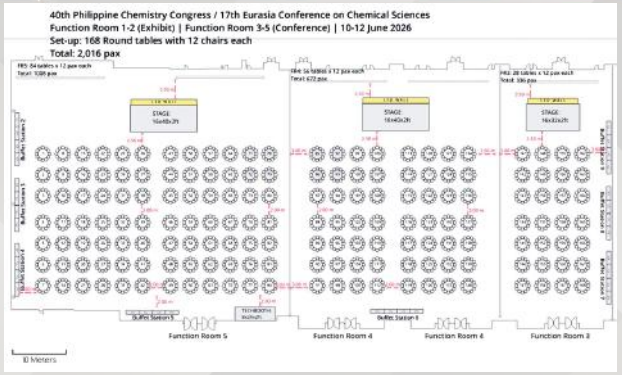
Winning Logo Concept: A simple and modern design that represents the idea of chemistry in action, symbolized by a [flask] pouring out and building up the Philippine flag. This powerful imagery reflects how chemistry contributes to solving our nation's future problems today**.**

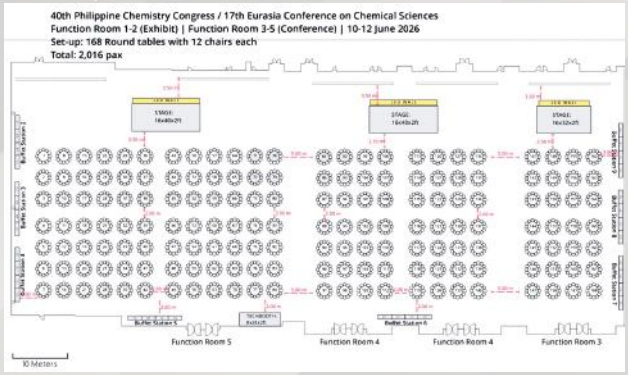
Mr. Casiple's design will be the official emblem of this milestone event, embodying the congress theme: "Solving Tomorrow's Problems Today with Chemistry."
We extend our heartfelt thanks to all participants for their creativity and passion, and we congratulate Mr Casiple for his exceptional work!

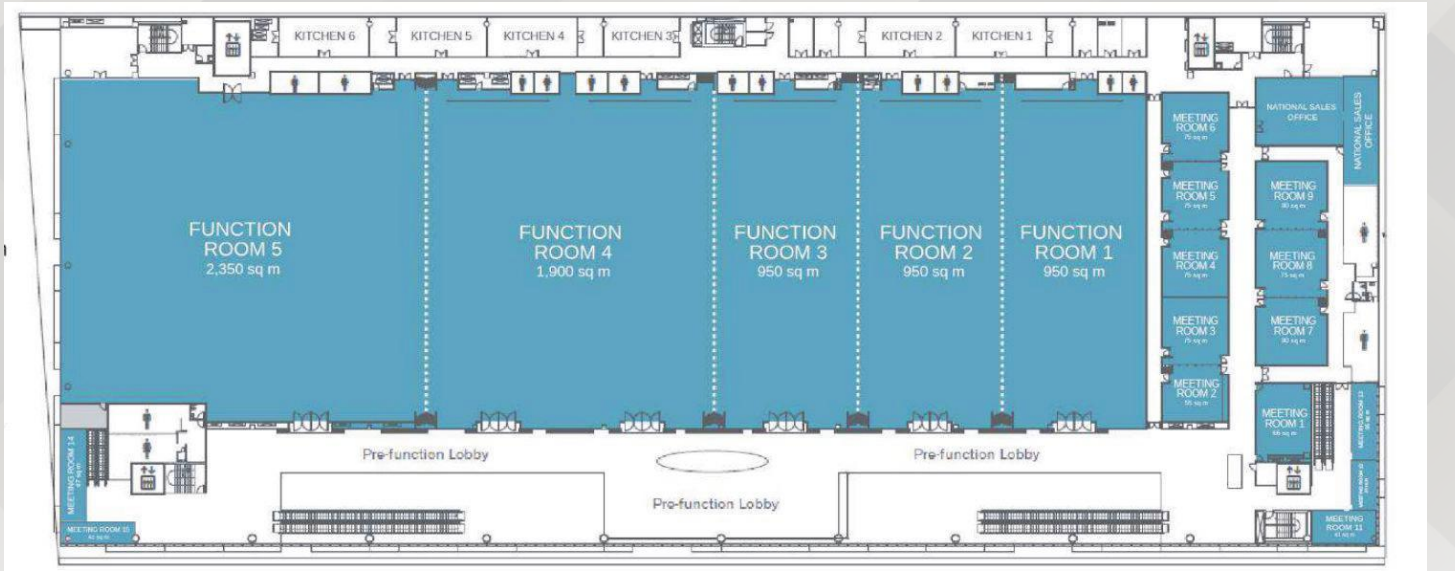
EXHIBITOR'S BOOTH FLOOR PLAN



SMX FLOOR PLAN

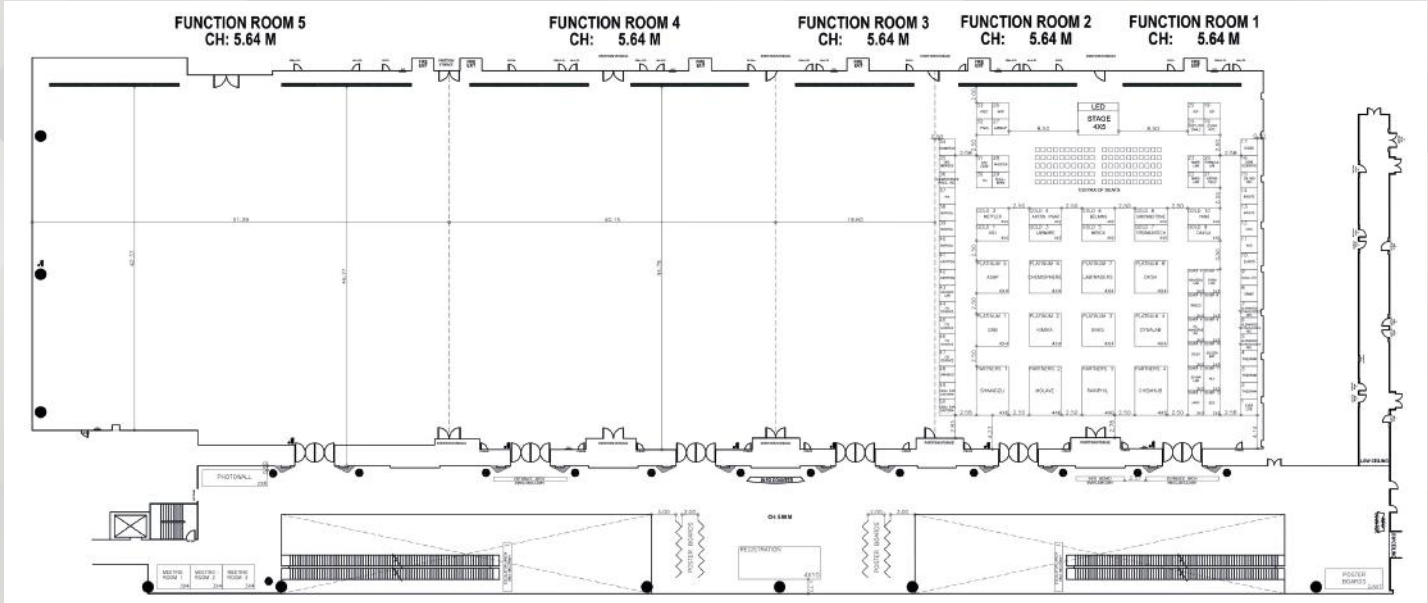






SECOND FLOOR

(FUNCTION ROOMS 1-5, MEETING ROOMS 1-15, NATIONAL SALES OFFICE)



PARTNERS (4X6) - 4 UNITS
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SILVER (2X3) - 12 UNITS
2X2 - 53 UNITS
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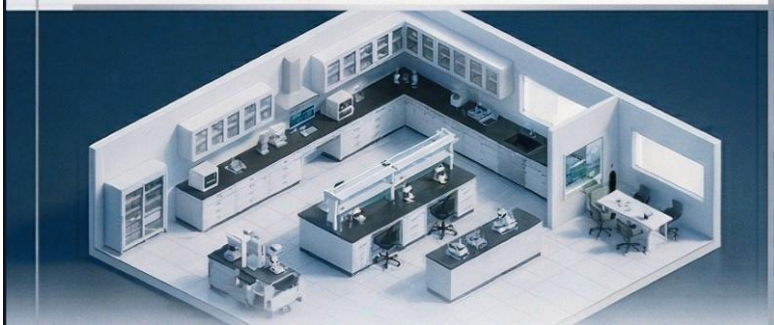

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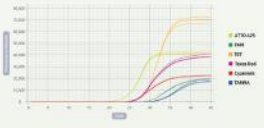

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