38TH PHILIPPINE CHEMISTRY CONGRESS (38PCC)

IN TANDEM WITH

2024 INTERNATIONAL CONFERENCE ON CHEMISTRY (IC²)

CHEMINNOVATION:
Sustaining a Better Tomorrow
New Ideas, New Developments, New Technologies

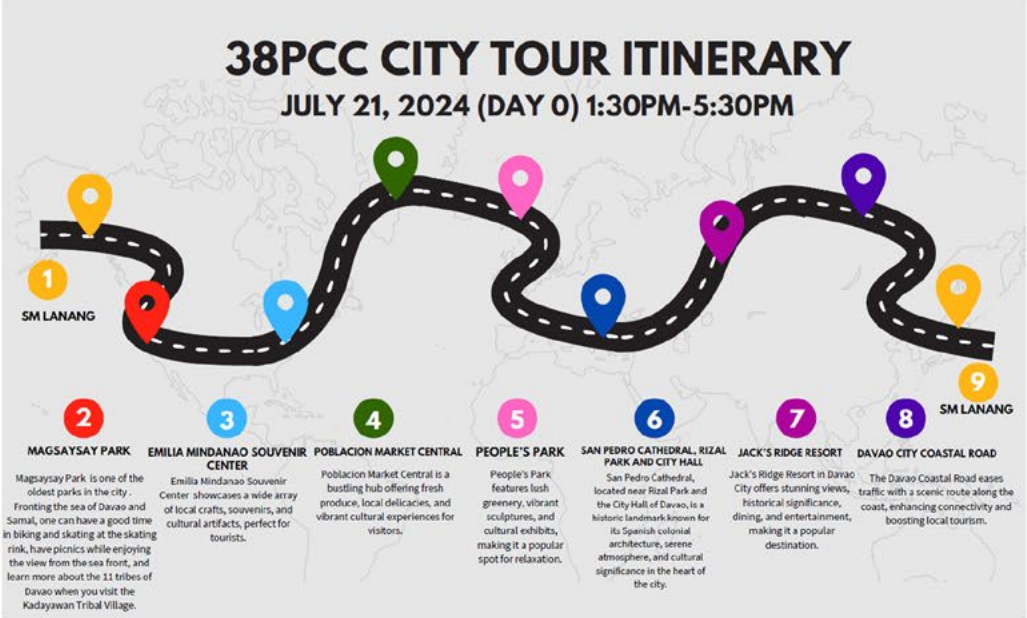
22-24 JULY 2024
SMX Convention Center, Lanang, Davao City

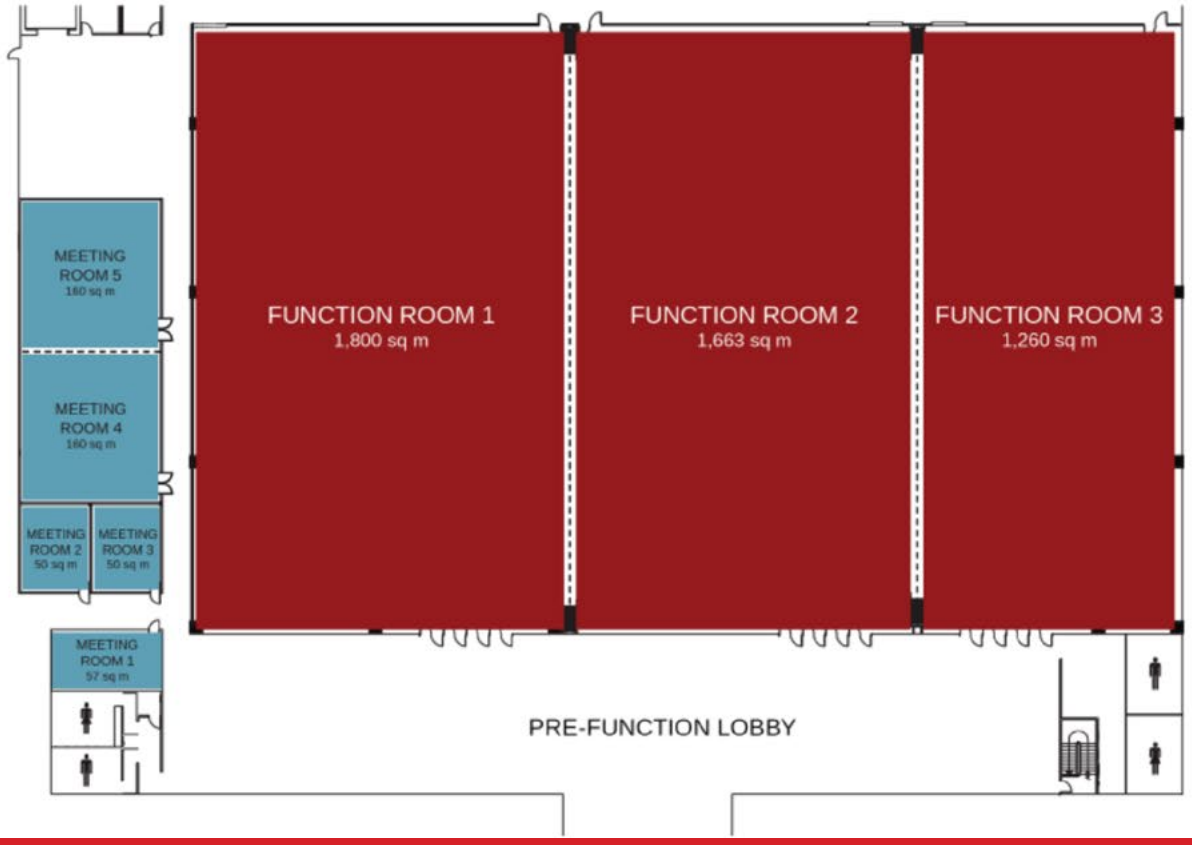
Conference Schedule in One Glance

	Day 0 July 21, 2024 (Sunday)	Day 1 July 22, 2024 (Monday)	Day 2 July 23, 2024 (Tuesday)							Day 3 July 24, 2024 (Wednesday)
		Plenary Session	**Parallel Sessions**							**Plenary Session**
		FR 2 & 3	**A FR-2**	**B FR-3**	**C MR-2&3**	**D MR-5**	**E MR-4**	**F FR-1**	**G***	**FR 2 & 3**
7:30-8:00		*Registration/ Poster set-up*								
8:00-8:30			*A-K1*	*B-K1*	*C-K1*	*D-K1*	*CHED-KKP Workshop on Electro-chemistry*	*Product Demo Presentation F-P1 to F-P3*		
8:30-9:00			*A-O1 to A-O6*	*B-O1 to B-O6*	*C-O1 to C-O6*	*D-O1 to D-O6*				
9:00-9:30		*Opening Program* *Plenary Session 1*								*Forum on AI*
9:30-10:00										
10:00-10:30			*A-K2*	*B-K2*	*C-K2*	*D-K2*		*Product Demo Presentation F-P4 to F-P7*	**CHED** Consultative Meeting *CHED Technical Panel in Chemistry and Department Chairs*	
10:30-11:00			*A-O7 to-A-O12*	*B-O7 to B-O12*	*C-O7 to C-O12*	*D-O7 to D-O12*				*Closing Program*
11:00-11:30										
11:30-12:00										
12:00-12:30		**LUNCH, POSTER SESSION**	**LUNCH and POSTER SESSION**							**LUNCH**
12:30-1:00										
1:00-1:30	**Lobby** *Distribution of Conference Materials* *Booth and Poster Set-up*		*A-K3*	*B-K3*	*C-K3*	*D-K3*	*Workshop on Environ-mental Chemistry*	*Product Demo Presentation F-P8 to F-P11*		
1:30-2:00			*A-O13 to-A-O18*	*B-O13 to B-O18*	*C-O13 to C-O18*	*D-O13 to D-O18*				
2:00-2:30		*Plenary Session 2* *Plenary Session 3*								**City Tour** *(Optional)*
2:30-3:00										
3:00-3:30			*A-K4*	*B-K4*	*C-K4*	*D-K4*		*Product Demo Presentation F-P12 to F-P14*		
3:30-4:00			*A-O19 to A-O24*	*B-O19 to B-O24*	*C-O19 to C-O24*	*D-O19 to D-O24*				
4:00-4:30										
4:30-5:00		**Poster Session** *(Poster Area)*	*PRC Board of Chemistry and ICP Meeting*			*PACT Meeting*	*KKP Meeting*			
5:00-5:30										
5:30-6:00										
6:00-6:30		*PFCS Awards* *Fellowship Night and Socials*								
6:30-7:00										
7:00-7:30										
7:30-8:00										
8:00-9:00										

FR = Function Room (see SMX Map)
MR = Meeting Room (see SMX Map)
**To be conducted in a separate hotel, details will follow.*

DAY 0	21 July 2024 • Sunday
1:00 – 5:00 PM	Distribution of conference materials to participants (pre-registered) SMX Lobby City Tour (Optional) *A free city tour is offered by the Local Organizing Committee (LOC) on limited slots on a first-come-first-serve basis. Registration will be done at the Secretariat Table on July 21, 2024. The bus will depart at 1:30 pm. For more information, contact the LOC Socials Committee at the Secretariat Table on July 21, 2024.*





DAY 1	22 July 2024 • Monday
	OPENING PROGRAM *Function Rooms 2 & 3* *Moderators:* ***Julita Robles, Ph.D. & Patrick John Lim, Ph.D.***
7:30–8:30	**Registration**
8:30–9:30	**Entrance Parade** **Welcome Addresses** **Christine Marie Tupaz, R.Ch.**, *Chair, Local Organizing Committee* **David Peñaloza Jr., Ph.D.**, *Chair, National Organizing Committee* **Christina Binag, Ph.D.**, *President, Kapisanang Kimika ng Pilipinas* **Glenn Alea, Ph.D.**, *President, Philippine Federation of Chemistry Societies* **Anthony Sales, Ph.D.**, *Regional Director, Department of Science and Technology, Region XI* **Hon. Sebastian Duterte**, *Mayor, Davao City*
9:30–10:00	**Opening Speech** **Hon. Renato Solidum Jr., Ph.D.** *Secretary, Department of Science and Technology*
10:00–10:30	**Opening of the Exhibits**
	PLENARY SESSION 1 *Moderator:* ***Professor Emerita Maribel Nonato, Ph.D.***
10:30–11:15	***Keynote Lecture:*** PAGTANAW 2050 and Sustainability: A Clarion Call for Chemists in the Philippines **Academician William Padolina** *National Academy of Science and Technology*
11:15–12:00	***Plenary Lecture 1:*** A Game of Terpenes: Structure, Stereochemistry, and Biosynthesis of Marine Terpenoids **Emerita Professor Mary Garson** *University of Queensland, Australia*
12:00–1:30	**LUNCH, POSTER SESSION**
	PLENARY SESSION 2 *Moderator:* ***Voltaire Organo, Ph.D.***
1:30–2:10	***Plenary Lecture 2:*** Systems Thinking and Textbooks Analyses in Chemistry Education **Emerita Professor Mei-Hung Chiu** *National Taiwan Normal University, Taiwan*
2:10–2:50	***Plenary Lecture 3:*** Traditional versus innovative cacao bean fermentation and drying: Comparative analysis with implications to production of high-quality cacao beans **Professor Emeritus Edward Barlaan** *University of Southern Mindanao, Philippines*
2:50–3:20	**BREAK, POSTER SESSION**
	PLENARY SESSION 3 *Moderator:* ***Drexel Camacho, Ph.D.***
3:20–4:00	***Plenary Lecture 4:*** Chemical Innovations in Advanced Nanostructured Materials **Professor Rigoberto Advincula** *University of Tennessee Knoxville, U. S. A.*
4:00–4:40	***Plenary Lecture 5:*** Metrology and Interlaboratory Comparison (ILC): A Key to Improving Quality of Testing Laboratories **Dr. Charun Yafa** *National Institute of Metrology Thailand (NIMT), Thailand*

4:40–6:00	**POSTER SESSION**
6:00–9:00	**FELLOWSHIP NIGHT** ***Hosts: Julita Robles, Ph.D. & Eric Punzalan, Ph.D.*** ***Theme:*** *Sparkle & Shine in a Metallic Night** **PFCS OUTSTANDING ACHIEVEMENT AWARDS 2024** • Chemistry Education • Chemical Research • Chemical Industry • Service to the Chemistry Profession **SOCIALS** **Come in your Best Sparkling and Shining Metallic attire to enjoy the night.*

DAY 2	**23 July 2024 ● Tuesday**
8:00–10:00	**PARALLEL SESSION A: CHEMINNOVATION IN ANALYTICAL & SURFACE SCIENCE** *Function Room 2* *Moderator:* ***Bernard John Tongol, Ph.D.***

A-K1 *Invited Keynote Lecture:* How to make nonstick coatings out of thin air and shining a light on how they work
Professor Robert Lamb
University of Melbourne, Australia

A-O1 Screen printed electrode modified with silver nanoparticles (AgNP)-polydopamine (PDA)-reduced graphene oxide (GR) nanocomposite as sensor for the determination of uric acid
Francis Angelo Dominguez, Rowell Jones Matabilas, Jan Pierre Montecillo, Allan Christopher Yago
University of the Philippines Diliman, Philippines

A-O2 In situ Raman investigation on Ni surface in alkaline media: fabrication of nano-amplifiers and characterization of water electrolyzer catalyst
Akiyoshi Kuzume, Akihiro Suzuki, Heito Hiroshima, Koki Yaita
University of Yamanashi, Japan

A-O3 Electrochemical reduction of carbon dioxide in imidazolium-based FAP ionic liquid using gold as working electrode
Manuel Edison Mañago, Carl Angelo Caluag, Imee Martinez
University of the Philippines Diliman, Philippines

A-O4 Development of a gas-free detector in wavelength dispersive XRF for light element analysis
Elvy Grigolato
Bruker Australia Pty Ltd, Australia

A-O5 Laser-induced biochar for the solid-phase extraction of organophosphorus pesticides
Sherwin Hugo Tan Lu, Puttaruksa Varanusupakul
Chulalongkorn University, Thailand

A-O6 Influence of droplet volume on contact angle
Rachel Anne F. Yadao
DKSH Market Expansion Services Philippines Inc.

PARALLEL SESSION B: CHEMINNOVATION IN NATURAL PRODUCTS CHEMISTRY
Function Room 3
Moderator: ***Professor Emerita Irene Villaseñor, Ph.D.***

B-K1 *Invited Keynote Lecture:* Exploring Philippine plants and their natural products for neuroprotective strategies against Alzheimer's disease
Professor Mario Tan
University of Santo Tomas, Philippines

DAY 2	23 July 2024 ● Tuesday

B-O1 Scalardysin B, β-sitosterol, and thymidine from the Philippine marine sponge *Biemna* sp.
Roeve Ann Mae Mazo, Chona Gelani, Shinji Ohta, Emi Ohta, Mylene Uy
Mindanao State University-Iligan Institute of Technology, Philippines; Mindanao State University-Marawi, Philippines; Hiroshima University, Japan

B-O2 Determining the antibacterial activity of endophytic fungal extracts from the lahar-altered mangrove forests of Sasmuan, Pampanga
Trishia Rabino, Mica Joy Castillo, Nico Paolo Fernandez, Esnairah Unos, Fleurdeliz Maglangit, Royce Marjheane Arcigal, Kevin Jace Miranda
Adamson University, Philippines; University of the Philippines Cebu, Philippines

B-O3 Novel antibiotic, anti-inflammatory, and anti-cancer naphthoketal and cytochalasin derivatives from *Sparticola junci* and *Sparticola triseptata*
Katherine Yasmin Garcia, Mark Tristan Quimque, Chayanard Phukhamsakda, Kevin Hyde, Hans Martin Dahse, Frank Surup, Marc Stadler, Allan Patrick Macabeo
University of Santo Tomas, Philippines; Mae Fah Luang University, Thailand; Hans-Knöll-Institute, Germany; Helmholtz Centre for Infection Research, Germany

B-O4 Evaluation of the anti-angiogenic property of uvaol: in silico, in vitro, and in ovo models
Jibrielle Simpauco, Junie Billones, Ross Vasquez, Agnes Castillo
University of Santo Tomas, Philippines; University of the Philippines Manila, Philippines

B-O5 Assessment of the chemical diversity of marine sponge-associated *Streptomyces* sp. in monoculture and coculture
Michelle Marie Ochoa, Hiyas Junio, Lilibeth Salvador-Reyes
University of the Philippines Diliman, Philippines

B-O6 BUCHI Laboratory equipment promotes green chemistry for sustainable drug and natural product research
Manish Thakur
BÜCHI Labortechnik AG, Switzerland

PARALLEL SESSION C: CHEMINNOVATION IN PHYSICAL CHEMISTRY & INSTRUMENTATION
Meeting Rooms 2 & 3
Moderator: ***Gil Claudio, Ph.D.***

C-K1 *Contributed Keynote Lecture:* Development of a second harmonic generation microscope
Allen Marbert Lee, Imee Su Martinez
University of the Philippines Diliman, Philippines

C-O1 Letting innovation flow: Enabling wider access to microfluidics research through subtractive manufacturing of lab-on-a-chip devices
Miguel Francisco Jose Ordoñez, Alexandra Melise Hulog, Jude Reyes, Rafael Pangilinan, Ralph Maru Grande, Ricardo Jose Guerrero
Ateneo de Manila University, Philippines; University of the Philippines Diliman, Philippines

C-O2 Optimization of a microfluidic flow-focusing droplet generation method for the production of cross-linked chitosan biopolymer microbeads
Alexandra Melise Hulog, Miguel Francisco Jose Ordoñez, Jude Reyes, Ricardo Jose Guerrero
Ateneo de Manila University, Philippines

C-O3 Printed RFID antenna for contactless and personalized body temperature monitoring
Fatimah Nasra Hamoy, Diana Romero, Lea Macaraig, Noel Patron, Harry Lagunsad, Erwin Enriquez
Ateneo de Manila University, Philippines; SparkSoft Solutions, Inc., Philippines

C-O4 Bentonite-reinforced gelatin-κ-carrageenan scaffold with hydration-induced shape memory behavior for minimally invasive bone tissue engineering
Paul Gabrielle Tarnate, Soma Chakraborty, Ronaldo Fabicon
Ateneo de Manila University, Philippines

C-O5 Carbon dioxide reduction in methoxy- and nitrile-functionalized imidazolium-based FAP ionic liquids using different types of electrodes
Carl Angelo Caluag, Manuel Edison Mañago, Imee Martinez
University of the Philippines Diliman, Philippines

C-O6 Innovations in column technology to increase confidence in your analytical results
Maria Sofel Taway,
RainPhil Inc., Philippines

PARALLEL SESSION D: CHEMINNOVATION IN SYNTHETIC SCIENCE
Meeting Room 5
Moderator: ***Glenn Alea, Ph.D.***

D-K1 *Contributed Keynote Lecture:* A decade of synthesis of potential peptide therapeutics from Philippine marine sources
Professor Aaron Joseph Villaraza
University of the Philippines Diliman, Philippines

D-O1 Synthetic analysis of amino acids inducing metabolic errors using Hitachi Amino Acid Analyzer LA8080 AminoSAAYA
Kiyofumi Kanai, Angelica Buenaventura, Yoko Inoue
Hitachi High-Technologies Corporation Tokyo, Japan

D-O2 Antimicrobial activity of cysteine-substituted Anoplin analogs
Magdalena Bobier, Aaron Joseph Villaraza, Portia Mahal Sabido
University of the Philippine Diliman, Philippines; Bicol University, Philippines

D-O3 Synthesis of potential anti-hypertensive pyrimidine-thione derivatives via Biginelli reaction using *N*-bromosuccinimide as an almost neutral catalyst
Dixie Dumaguing, Mark Tristan Quimque
Mindanao State University-Iligan Institute of Technology, Philippines; Caraga State University, Philippines

D-O4 Phosphorylated *N*-glycans ovo-expression predict avian influenza virus prevalence in waterfowls
Bryan Montalban, Hiroshi Hinou
De La Salle University, Philippines; Hokkaido University, Japan

D-O5 Synthesis and characterization of antitubercular 2-substituted 5-(2-hydroxybenzoyl)pyridines
Franklin Amandy, Hans Christian Arturo, Allan Patrick Macabeo
University of Santo Tomas, Philippines

D-O6 Synthetic strategy and method exploration for the access of 4-carboxylated 2-phenylquinazoline from Isatin
Jeanette Durante, Merhyl Kit Angeline Paraluman, Mark Tristan Quimque
Mindanao State University-Iligan Institute of Technology, Philippines

PARALLEL SESSION E: WORKSHOP ON ELECTROCHEMISTRY
Meeting Room 4
Moderator: ***Professor Emeritus Fortunato Sevilla, Ph.D.***

Workshop Lecture: CHED-KKP workshop: Electrochemistry experimentation at the microscale level
Professor Emeritus Jorge Ibañez
Universidad Iberoamericana, Mexico

PARALLEL SESSION F: INSTRUMENT & PRODUCT DEMO/PRESENTATION
Function Room 1
Moderator: ***Marissa Noel, Ph.D.***

F-P1 Efficient HPLC analysis with Shimadzu Advanced i-Series AI functions
(Product Demo: Advanced i-Series HPLC)
Lyka Monserrat, *Shimadzu*

F-P2 Think smart and work better: ChroZen GC at a glance
(Product Presentation)
Jesus Dumelod, *Chemhub Technologies Phils., Inc.*

F-P3 Synthetic analysis of amino acids inducing metabolic errors using Hitachi Amino Acid Analyzer LA8080 AminoSAAYA
(Product Presentation)
Kiyofumi Kanai, *Sigmatech*

DAY 2 (AM)	23 July 2024 • Tuesday
10:00–12:00	**PARALLEL SESSION A: CHEMINNOVATION IN INORGANIC CHEMISTRY** *Function Room 2* *Moderator:* ***Analyn Asok, Ph.D.***

A-K2 *Invited Keynote Lecture:* Molecular magnetic switches: Rational design of spin crossover materials

Professor David Harding
Suranaree University of Technology, Thailand

A-O7 Enhanced photodegradation performance of bimetallic copper-iron oxide catalysts through precise control of precursor stoichiometry for water decontamination

Senfred Matthew Merca, Julius Caezar Damo II, Hannah Kristel Vargas, Ramel John Anthony Biñas, Catherine Angeli San Jose, Sean Benson See, **Yasmin Edañol**, Ken Aldren Usman, Marlon Conato
University of the Philippines Diliman, Philippines; Deakin University, Australia

A-O8 Photocatalytic activity of zeolite-embedded iron-copper oxide particles

Ranver Castillo, John Rae Escosio, Jose Gabriel Javellana, **Simond Lars Darwin Lenon**, Jedd Bernardo Ramos, Cris Angelo Pagtalunan, Marlon Conato, Yasmin Edañol
University of the Philippines Diliman, Philippines; DOST-Philippine Textile Research Institute, Philippines

A-O9 Crystallographic and photomagnetic properties of $[Fe(qsal\text{-}F)_2]OTs.0.5H_2O$

Sharon Lazaro, Phimphaka Harding, Shane Telfer, Guillaume Chastanet, David Harding
Central Luzon State University, Philippines; Suranaree University of Technology, Thailand; Massey University, New Zealand; University of Bordeaux, France

A-O10 Hydrothermal synthesis of photothermally active copper sulfide nanostructures using a single-source precursor complex

Laarnie Tengco, Luce Vida Sayson, Michelle Regulacio
University of the Philippines Diliman, Philippines

A-O11 Structural, electronic, and mechanical properties of lead-free cubic M-based tellurium nitride antiperovskites, M_3NTe (M = Na, K, Mg, Ca): A DFT approach

Mark Ryan Tripole, Ryan Arevalo, Roland Emerito Otadoy, Patrick John Lim
Visayas State University, Philippines; University of Limerick, Ireland; University of San Carlos, Philippines

A-O12 Biphasic synthesis of metal oxide thin films for the construction of stacked oxygen evolution electrocatalysts

Virgilio Ebajo, Jr., Jing-Wei Chen, Yanita Devi, Chun-Hu Chen
De La Salle University, Philippines; National Sun Yat-sen University, Taiwan

PARALLEL SESSION B: CHEMINNOVATION IN MATERIALS & NANOSCIENCE
Function Room 3
Moderator: ***Joel Garcia, Ph.D.***

B-K2 *Invited Keynote Lecture:* Nanomaterials functionalized with metallodrugs: Design of effective theranostic systems against cancer or bacteria

Professor Santiago Gomez-Ruiz
Universidad Rey Juan Carlos, Spain

B-O7 A green and facile synthetic approach to branched Ag nanoarchitectures with infrared-responsive photothermal activity

John Voltaire Jalalon, Michelle Regulacio
University of the Philippines Diliman, Philippines

B-O8 Synthesis of ATMS-modified TiO_2 nanoparticles to improve water repellency of styrene-acrylic-based paint formulations

Aldrin Phillip Trance, Luce Vida Sayson, Michelle Regulacio
University of the Philippines Diliman, Philippines

B-O9 Biogenic synthesis of plasmonic Ag mesostructures for SERS and photothermal applications

John Rae Louis Escosio, Karl Lance Gabriel Canlas, Michelle Regulacio
University of the Philippines Diliman, Philippines

B-O10 Green synthesis of zinc oxide nanoparticles using rice husk extract and evaluation of their UV-protective and photocatalytic activities

Michael Angelo Arturo, Maritess Lacquio, Amelia Hizon-Fradejas, Mariam Recuenco
University of the Philippines Los Baños, Philippines

B-O11 Nanotexturing of stainless steel 316L by electrochemical etching for biological implants

Abegail Santillan, Jane Cathleen Gabunada, John Lemuel Untalasco, Ian Valiente, Marianne Therese Bauca, John Kenneth Valerio, Lumen Milo, Araceli Monsada, Rene Catan
DOST-Industrial Technology Development Institute, Philippines; Southwestern University, Philippines

B-O12 Development of a gold nanoparticle-based lateral flow test strip for *Mycoplasma bovis* (I) detection

Florencio Cacho Jr., Jim Andreus Mangahas, Lawrence Belotindos, Gabriel Alexis Tubalinal, Marvin Villanueva, Claro Mingala
DA-Philippine Carabao Center, Philippines

PARALLEL SESSION C: CHEMINNOVATION IN CHEMOMETRIC SCIENCE

Meeting Rooms 2 & 3
Moderator: ***Anna Karen Laserna, Ph.D.***

C-K2 *Invited Keynote Lecture:* OMICS technologies in developing functional food supplements

Professor Gladys Cherise Completo
University of the Philippines Los Baños, Philippines

C-O7 Chemometrics with R programming language using wine dataset

Maria Cristina Dancel, Steve Turita
Liveritas Philippines, Inc.; University of the Philippines Visayas, Philippines

C-O8 Exploring the intricacies of biological systems through Shimadzu mass spectrometry solutions for Metabolomics

Chua Chun Kiang
Shimadzu (Asia Pacific) Pte Ltd.

C-O9 Discrimination and quantification of coconut water adulteration with sugars using ^{1}H NMR spectroscopy and machine learning

Joel Ballesteros, Harriet Jane Caleja-Ballesteros, Marte Villena, Rajelle Hernandez, Len Herald Lim, Rheo Lamorena-Lim
University of the Philippines Diliman, Philippines

C-O10 Exploring COVID-19's viral evolution: A genomic surveillance study

Nicole Ann Tuberon, Francisco Heralde III, Catherine Reportoso, Arturo Gaitano III, Wilmar Elopre, Kim Claudette Fernandez
University of the Philippines Manila, Philippines; University of the East Ramon Magsaysay Memorial Medical Center, Philippines; Adamson University, Philippines; Central Mindanao University, Philippines

C-O11 Cinnamon species discrimination using HS-GC-MS and ATR-FTIR combined with chemometric methods

Melody Alcantara, Jay Picardal, Anna Karen Laserna, Mariafe Calingacion
De La Salle University, Philippines; Cebu Normal University, Philippines

C-O12 Urine metabolic profiling for inborn errors of metabolism in Filipino children by gas chromatography-mass spectrometry

Dahlia Apodaca, Beah Davee Marie Somozo, Cristine Lopez, Sheryl Apacible
University of the Philippines Manila, Philippines

PARALLEL SESSION D: CHEMINNOVATION IN POLYMERS

Meeting Room 5
Moderator: ***Fr. Antonio Basilio, SJ, Ph.D.***

D-K2 *Invited Keynote Lecture:* Dynamics of polymer chains adsorbed onto solid surfaces

Professor Keiji Tanaka
Kyushu University, Japan

D-O7 Enhancing solar-driven seawater desalination through polyamide(PA)-modified polyethersulfone (PES) membranes

Lorenz Inri Banabatac, Noel Peter Tan
University of San Agustin, Philippines

D-O8 Sustainable chemical recycling of waste polyethylene terephthalate (PET) via microwave-assisted glycolysis and repolymerization of bis(2-hydroxyethyl)terephthalate (BHET)
Ed Ivan Bardoquillo, Antonio Basilio SJ
Ateneo de Davao University, Philippines

D-O9 RAFT-mediated poly(glycidyl methacrylate) grafting onto polypropylene fabric via X-ray radiation
John Andrew Luna, Ning Narudee, Thitirat Rattanawongwiboon, Jordan Madrid
DOST-Philippine Nuclear Research Institute, Philippines; Nuclear Research and Development Center, Thailand Institute of Nuclear Technology, Thailand

D-O10 Formulation of chitosan-graft-polyaniline co-polymer ink for printed electronics
Lance Go, Ana Margarita San Juan, Erwin Enriquez
Ateneo de Manila University, Philippines

D-O11 Demonstrating the versatility of low-energy electron beam for polymer modification
Bin Jeremiah Barba, Naotsugu Nagasawa, Noriaki Seko, Tomoko Oyama, Mitsumasa Taguchi, Patrick Jay Cabalar, Lucille Abad, Jordan Madrid
DOST-Philippine Nuclear Research Institute, Philippines; Takasaki Institute for Advanced Quantum Science, National Institutes for Quantum Science and Technology, Japan

D-O12 Development of *p*(HEMA-co-NIPAM)/TiO_2 hydrogels for heavy metal ion adsorption
Chlee Casundo, Shaira Mae Maeda, Mary Jayper Mangao, John Lloyd Gildo, Mark Anthony Lavapiez, Christina Loquere, Brigette Orog, Temmy Vales
Caraga State University, Philippines

PARALLEL SESSION E: WORKSHOP ON ELECTROCHEMISTRY *(continuation)*
Meeting Room 4
Moderator: ***Jose Bergantin, Jr., Ph.D.***

Workshop Lecture: CHED-KKP workshop: Electrochemistry experimentation at the microscale level
Professor Emeritus Jorge Ibañez
Universidad Iberoamericana, Mexico

PARALLEL SESSION F: INSTRUMENT & PRODUCT DEMO/PRESENTATION
Function Room 1
Moderator: ***Julita Robles, Ph.D.***

F-P4 Quick and easy mercury analysis: Turning enormous Hg measurement time into your time
(Product Demo: NIC Nippon Instruments Corporation MA-3 Solo Direct Mercury Analyzer)
Tan Mei Shin, *Nippon Instruments Corporation; Dynalab Corporation*

F-P5 The role of HPLC for sustainable improvement
(Product Presentation)
Luisito Capua Jr., *Sigmatech*

F-P6 McGraw Hill ALEKS chemistry: Closing learning gaps and achieving mastery through artificial intelligence
(Product Presentation)
Myla Katzav, *McGraw-Hill*

F-P7 Light element analysis using low kV energy dispersive X-ray spectrometer on a cold field scanning electron microscope.
(Product Presentation)
Marlon Llana, *Sigmatech*

12:00–1:00	**LUNCH BREAK, POSTER SESSION**

DAY 2 (PM)	23 July 2024 • Tuesday
1:00–3:00	**PARALLEL SESSION A: CHEMINNOVATION IN ENVIRONMENTAL SCIENCE** *Function Room 2* *Moderator:* ***Ludivina Porticos, M.Sc.***

A-K3 *Invited Keynote Lecture:* Microplastic menace: Investigating impacts on Mindanao's aquatic ecosystems and biota
Professor Rey Capangpangan
Mindanao State University Naawan, Philippines

A-O13 Towards sustainability: CO_2 fixation and greener synthesis methods through mechanochemical and microwave approaches
Amirhossein Ebrahimi, Ahmed Al-Harrasi, **Ali Rostami**
University of Nizwa, Sultanate of Oman

A-O14 Facile green synthesis of MIL-53(Fe) metal–organic frameworks (MOFs) and its zinc oxide (ZnO) composite for the adsorption and photocatalytic degradation of perfluorooctanoic acid (PFOA)
Hans Denzel Natividad, Ian Ken Dimzon
Ateneo de Manila University, Philippines

A-O15 Discrimination of soot and mineral dust in aerosol samples by light scattering using a robust optical aerosol monitor
Patrick Lejan Danan, Paul Alexander Darvin, Rheo Lamorena-Lim, Len Herald Lim
University of the Philippines Diliman, Philippines; University of the Philippines Los Baños, Philippines

A-O16 Method validation study for the analysis of dioxins and furans in stationary source emissions by pressurized fluid extraction and isotope dilution technique-based gas chromatography – high-resolution mass spectrometry
Roger Evangelista, Jr., Sammy Aytona, **Erick Rubi**, Pamela Diaz, Lyle Shanne Dichoso, Ma. Fatima Anneglo Molina
DENR - Environmental Management Bureau, Philippines

A-O17 Online, real-time, mobile mass spectrometer for environmental pollutants in air and water
Jesus C. Dumelod
Young In Ace & Chemhub Technologies Inc., Philippines

4-O-18 Whole genome analysis of *Pediococcus acidilactici* 3G3 reveals cobalt-zinc-cadmium resistance genes: An in silico study on probiotic potential for heavy metal removal
Sean Carlo Palomares, Zachary Lara, Joseph Bechayda, Mia Beatriz Amoranto, Francisco Elegado, Leslie Michelle Dalmacio
University of the Philippines Manila, Philippines

PARALLEL SESSION B: CHEMINNOVATION IN FOOD
Function Room 3
Moderator: ***Heide Rabanes, Ph.D.***

B-K3 *Contributed Keynote Lecture:* A national call to fight honey adulteration: experiences, insights, and way forward
Remjohn Aron Magtaas, Andrei Joshua Yu, Joshua Kian Balaguer, Mary Margareth Bauyon, Rachelle Clien Reyes, Jessica Baroga-Barbecho, Cleofas Cervancia, John Leonard Labides, Roland Rallos, Norman Mendoza, Angel Bautista VII
DOST-Philippine Nuclear Research Institute, Philippines; University of the Philippines Los Banos [IBS], Philippines

B-O13 Reactivity of the glucosinolate sinigrin with copper ions: Implications in the dietary consumption of glucosinolate-rich food
Laurenzo De Vera Alba, Tsubasa Hatanaka, Yasuhiro Funahashi
De La Salle University, Philippines. Osaka University, Japan

B-O14 Enhancing quality and efficiency: Si-ware neospectra's handheld FT-NIR impact on food, beverage, and agriculture industries
Kremlin Reyes
XPRT Ventures INC, Philippines

B-O15 Inter-individual variability of ß-carotene concentration in human adipose tissue: characterization, genetic variants involved, and relation with fasting plasma carotenoid concentration

Mark Pretzel Zumaraga, Charles Desmarchelier, Beatrice Gleize, Marion Nowicki, Djaffar Ould-Ali, Patrick Borel
Aix-Marseille University, France; DOST - Food and Nutrition Research Institute, Philippines; Clinique Internationale du Parc Monceau, France

B-O16 Protein hydrolyzates and dietary fiber fermentation products from lemongrass (*Cymbopogon citratus* Stapf.) as inhibitors of enzymes associated with diabetes mellitus and cardiovascular diseases

Mizpah Villalobos, Marilou Nicolas, Trinidad Trinidad, Rosario Sagum
Central Philippine University, Philippines; University of Santo Tomas, Philippines; University of the Philippines Manila, Philippines

B-O17 Assessment of the homogeneity and stability of biscuit candidate material for water activity interlaboratory comparison

Admer Rey Dablio, Jan-Ervin Guerrero, Nida Autor
DOST-Industrial Technology Development Institute, Philippines; ASCXENT Knowledge Resources, Inc., Philippines

B-O18 Chlorine dioxide: the ideal biocide

Kevin Salamanez
Labserv Inc., Philippines

PARALLEL SESSION C: CHEMINNOVATION IN NUCLEAR SCIENCE

Meeting Rooms 2 & 3
Moderator: ***Faustino Tarongoy Jr., Ph.D.***

C-K3 *Invited Keynote Lecture:* Unraveling air pollution sources and their potential health risks through nuclear and related analytical techniques (NATs) and receptor modeling

Dr. Preciosa Corazon Pabroa
Philippine Nuclear Research Institute, Philippines

C-O13 Strengthening national security: advancements in nuclear forensics methodologies in the Philippines

Jennyvi Ramirez, Cheri Anne Dingle, Arvin Jagonoy, Ryan Joseph Aniago, Ronald Piquero, Girlie Eunice Lopez, Patrick Jay Cabalar, Rafael Miguel Dela Cruz, Vallerie Ann Samson
DOST-Philippine Nuclear Research Institute, Philippines

C-O14 Exploring marine radioactivity monitoring policies in the Philippines: structuring the problem and developing alternatives for national safety and security

Angela De Guzman, Rachelle Clien Reyes, Angel Bautista VII
DOST-Philippine Nuclear Research Institute, Philippines

C-O15 An investigation into ideal high-temperature gas-cooled reactor positioning in Isabel, Leyte for uranium recovery process heat needs

Botvinnik Palattao, Jennyvi Ramirez, **Danicah Agub**, Ryan Joseph Aniago, Genie Belle Bulaong, Estrellita Tabora, Socorro Intoy
DOST-Philippine Nuclear Research Institute, Philippines

C-O16 Nondestructive uranium measurement in wet-process phosphoric acid from phosphate fertilizer industry by gamma ray spectrometry

Ryan Joseph Aniago, Botvinnik Palattao, Estrellita Tabora, Socorro Intoy, John Conrad Ramirez, April Caitlin Dadibalos, Jennyvi Ramirez
DOST-Philippine Nuclear Research Institute, Philippines

C-O17 Determination of the geographical origins of Philippine honey using nuclear techniques and machine learning

Joshua Kian Balaguer, Mary Margareth Bauyon, June Hope Aznar, Remjohn Aron Magtaas, Andrei Joshua Yu, Jervee Punzalan, Jessica Baroga-Barbecho, Cleofas Cervancia, John Leonard Labides, Roland Rallos, Norman Mendoza1, Angel Bautista VII
DOST-Philippine Nuclear Research Institute, Philippines; University of the Philippines Manila, Philippines; University of Otago, New Zealand; University of the Philippines Los Banos, Philippines

C-O18 Stable carbon abundance analysis of oils in Philippine-made Spanish sardines to reveal misdeclaration of oil content

Raymond Sucgang, Norman Mendoza, Joseph Michael Racho, April Tagari, Dave Gabriel Cadungog, Clare Marie Bernadette Luces, Billy Joe Arcilla, Jaylene Cardinales, Maria Socorro Bendo, Khent Jeorge Murillo, Karlen Dawal, John Robin Yee
DOST-Philippine Nuclear Research Institute, Philippines

PARALLEL SESSION D: CHEMINNOVATION IN CAPACITY BUILDING
Meeting Room 5
Moderator: ***Evangeline Amor, Ph.D.***

D-K3 *Invited Keynote Lecture:* Capacity building regional academic institutions: the DDHP9 and PGC Mindanao projects
Dr. Joel Hassan Tolentino
Philippine Genome Center Mindanao, Philippines

D-O13 Metabolomics research efforts through DMSFI DOST-NICER ReDMatCH mass spectrometry facility in Mindanao, Philippines
Genevieve Dable-Tupas, Leah Jane Ofima, **Jason Alcano**, John Lennon Calorio, Jestoni Bracero, Jessica Enciso, Ariane Blanch Maraon, Lovelle Mae Galia-Marasigan, John Mark Revilla, Nelly Grace Toñacao
Davao Medical School Foundation Inc, Philippines; Ghent University, Belgium

D-O14 Performance assessment of soil laboratories in the Philippines through proficiency testing
John Adrian Pascua, Gina Nilo, Florfina Sanchez
DA-Bureau of Soils and Water Management, Philippines

D-O15 Bacterial odyssey: A journey of building an open-source bioreactor for recombinant protein production
John Daniel Magsalin, Ray Noel Delda, Christiane Oriana, Ricardo Jose Guerrero, Armando Guidote Jr., Danielle Lapinig
Ateneo de Manila University, Philippines

D-O16 Development of a reference material for the determination of mass fraction of nitrofuran metabolite 3-amino-2-oxazolidinone (AOZ) in fish
Aaron Dacuya, Alleni Junsay, Angelica Deopante, Benilda Ebarvia
University of Santo Tomas, Philippines; DOST-Industrial Technology Development Institute, Philippines

D-O17 Production of Philippine reference material (PRM 2801) for multi-residue analysis of organochlorine pesticides in cucumber: Material processing, homogeneity, and stability assessment
Abigail Grace Bion, Johanna Andrea Valdueza, Aaron Dacuya, Alleni Junsay, Benilda Ebarvia
DOST-Industrial Technology Development Institute, Philippines

D-O18 Development of powdered leaves reference materials through interlaboratory comparison
Leah Dajay, Jolly Cotara, Jennifer Laurea, Mylene Martin, Maricar Giel Parcarey
DOST-Food and Nutrition Research Institute, Philippines

PARALLEL SESSION E: WORKSHOP ON ENVIRONMENTAL CHEMISTRY
Meeting Room 4
Moderator: ***Francis Dela Rosa, Ph.D.***

Workshop / Lecture on integrating environmental and citizen science in Chemistry education
Dr. Eric Punzalan
De La Salle University, Philippines

PARALLEL SESSION F: INSTRUMENT & PRODUCT DEMO/PRESENTATION
Function Room 1
Moderator: ***Marissa Noel, Ph.D.***

F-P8 Chemical identification through barriers
(Product Demo: Agilent Raman Resolve)
Neil Cagumbay, *Molave Trading Incorporated*

F-P9 Changing how you think about ultrapure water
(Product Presentation: Milli-Q® SQ 2Series Water Purification System)
Chekky Jean Fortich, *Krypton International Resources, Inc.*

F-P10 Print: Preview on upcoming title *Chemistry Principles in the Laboratory* by Slowinski (Sep 2024)
(Product Presentation)
Juliet Mae Braceros, *Cengage PH, Davao*

	F-P11 Thermal analysis of polymers using simultaneous thermal analyzer (Product Presentation) **Marlon Llana**, *Sigmatech*
3:00–5:00	**PARALLEL SESSION A: CHEMINNOVATION IN MATERIALS SCIENCE** *Function Room 2* *Moderator:* ***Juliet Dalagan, Ph.D.***
	A-K4 *Invited Keynote Lecture:* Asymmetric supercapacitors based on aqueous electrolytes **Professor Junji Inukai** *University of Yamanashi, Japan*
	A-O19 Electrical performance of a novel 3D-printed tubular-plant microbial fuel cell (T-PMFC) in *Canna indica* dominated soils **Vladimir William**, Hilbert Magpantay, Chao-Chin Chang, Chang-Ping Yu *De La Salle University, Philippines; National Taiwan University, Taiwan*
	A-O20 Synthesis and characterization of gold nanoparticle/thiophene acetic acid modified carbon paste electrode as potential electrochemical sensor for arsenate Patricia Nyn Heruela, **Marjorie Balmori**, Kurt Louis Solis, Allan Christopher Yago *University of the Philippines Diliman, Philippines; DOST-Philippine Nuclear Research Institute, Philippines*
	A-O21 Development of an impedimetric biosensor for the simultaneous detection of *Listeria monocytogenes* and *Salmonella enterica* using gold screen-printed electrodes Pia Marie Arceo, Bea Francine Delos Santos, Beatrice Marie Carreon, Donna May Dela Cruz-Papa, Pia Marie Arceo, Bea Francine Delos Santos, Beatrice Marie Carreon, Donna May Dela Cruz-Papa, **Jose Bergantin Jr.** *University of Santo Tomas, Philippines*
	A-O22 Synthesis, characterization, and electrochemical evaluation of iron oxide - graphitic carbon nitride on reduced graphene oxide (FexOy-g-C_3N_4@rGO) ORR electrocatalyst prepared via semi-closed pyrolysis **Jonyl Garcia**, Toshihiro Miyao, Junji Inukai, Bernard John Tongol *University of Santo Tomas, Philippines; Adamson University, Philippines; University of Yamanashi, Japan*
	A-O23 Droplet-based iodate amperometric sensor using screen-printed carbon electrode **Dave Gabriel Cadungog**, Jose Bergantin, Fortunato Sevilla III, *DOST-Philippine Nuclear Research Institute; University of Santo Tomas, Philippines*
	A-O24 Water hyacinth-cotton fabric modified with polypyrrole/zinc oxide/mung bean shell biochar composite: A sustainable and green supercapacitor electrode material **Jephine Michelle Hidalgo**, Christina Binag *University of Santo Tomas, Philippines*
	PARALLEL SESSION B: CHEMINNOVATION IN FOOD *Function Room 3* *Moderator:* ***Allan Christopher Yago, Ph.D.***
	B-K4 *Invited Keynote Lecture:* Geographical origin identification of coffee: A Philippine perspective **Dr. Emmanuel Garcia** *De La Salle University, Philippines*
	B-O19 Development and characterization of plant-based protein-rich halal feeds for broiler chicken production Jurhamid Imlan, Mary Ann Rama, **Queennie Rufino** *University of Southern Mindanao, Philippines*
	B-O20 X-ray fluorescence elemental analysis coupled with machine learning as a tool for tracing the entomological origin of Philippine honey **Angel Bautista VII**, June Hope Aznar, Remjohn Aron Magtaas, Mary Margareth Bauyon, Andrei Joshua Yu, Joshua Kian Balaguer, Jervee Punzalan, Jessica Baroga-Barbecho, Cleofas Cervancia *DOST-Philippine Nuclear Research Institute, Philippines; University of the Philippines Manila, Philippines; University of Otago, New Zealand; University of the Philippines Los Banos, Philippines*

B-O21 Simultaneous determination of preservatives in commercial sauce products using HPLC-PDA
Ma. Rachel Parcon, Cyril Ramil, **Grace Amandy**, Ruth Damian, Alma Cruz
DOST-Industrial Technology Development Institute, Philippines

B-O22 Differentiation of aromatic rice cultivars using Fourier-transform infrared spectroscopy combined with multivariate analysis
Michael Serafico, Fortunato Sevilla III
DOST-Food and Nutrition Research Institute, Philippines; University of Santo Tomas, Philippines

B-O23 From farm to fork: Neogen® innovative solutions for rapid and accurate detection of food manufacturing hazards
Jenny Trinidad
Neogen Corporation, Philippines

B-O24 The role of rheology in the art and science of food product development
Maria Myrelle Quiambao, Danilo Laplana Jr., Grace Marie Dizon, Angelica Jancon, Henry Siy, Sonia Salvador, David Penaloza Jr.
Chemrez Technologies, Inc., Philippines; D&L Industries, Inc., Philippines; De La Salle University, Philippines

PARALLEL SESSION C: CHEMINNOVATION IN COMPUTATIONAL CHEMISTRY
Meeting Rooms 2 & 3
Moderator: ***Agnes Aranas, Ph.D.***

C-K4 *Contributed Keynote Lecture:* Lessons from using in silico enhanced sampling techniques to evaluate the stability of transmembrane Clavanin A in an *E. coli* outer membrane model
Dr. Searle Aichelle Duay
De La Salle University, Philippines

C-O19 Structural dynamics of neighboring water molecules of *N*-isopropylacrylamide pentamer
Gil Claudio, Ricky Nellas, Kenee Kaiser Custodio
University of the Philippines Diliman, Philippines

C-O20 Multi-spectroscopic analysis and molecular docking study on the interaction of three organic acids with acetylcholinesterase
Olivert Sitoy, Marvin Jose Fernandez, Charlie Lavilla, Ellen Inutan
Mindanao State University-Iligan Institute of Technology, Philippines; Xavier University-Ateneo de Cagayan, Philippines

C-O21 In silico inhibitory studies of bioactive components of therapeutic plants against avian influenza neuraminidases
Nowelyn Cahigal, **Danilet Vi Mendoza**
HiAdvance Philippines Incorporated, Philippines; Nueva Ecija University of Science and Technology, Philippines

C-O22 In silico evaluation of the inhibitory potential of polyphenols from Philippine medicinal plants against neprilysin (NEP) and angiotensin II type I receptor (AT1R) in heart failure
Shelow Monares, Mariam Recuenco
University of the Philippines Los Baños, Philippines

C-O23 In silico-guided synthesis, characterization, and in vitro anticancer activity on MCF-7 breast cancer cell line of a ruthenium-curcumin complex
Kurt Nathaniel Baligod; Junie Billones
University of the Philippines Manila, Philippines

C-O24 Immunoinformatics analysis shows the potential immunogenic cores of experimentally validated B-cell epitopes of human amyloid-beta precursor protein
Michelle Dungo, Arturo Gaitano III
Adamson University, Philippines

PARALLEL SESSION D: CHEMINNOVATION IN CHEMISTRY EDUCATION
Meeting Room 5
Moderator: ***Vic Marie Camacho, M.Sc.***

D-K4 *Invited Keynote Lecture:* Student-generated contexts: foundations for R.E.A.L. Chemistry learning
Dr. Edwehna Elinore Paderna
University of the Philippines Diliman, Philippines

D-O19 Reflective practices of pre-service teachers in integrating PEOE in teaching science (Chemistry)
Vic Marie Camacho
Philippine Normal University, Philippines

D-O20 Go Carb Deck: a card game for teaching classification of simple monosaccharides
Shia Badajos, Trisha Kate Obsioma, Tharah Tibette Tungal, **Angelo Mark Walag**
University of Science and Technology of Southern Philippines, Philippines

D-O21 Analysis of the teacher's perspective needs assessment survey determined the gaps in Chemistry education among DepEd special science programs and DOST science high schools
Stephen Bryan Asenjo, Jayfe Antony Abrea, Vennessa Carbon, Gee Elle Carumba, Lucas Omboy, Marjhun Ricarte, Mary Joy Vilamora
Philippine Science High School-Central Visayas Campus, Philippines

D-O22 Student's level of performance in Chemistry in the spiral progression approach
Reggie Gutierrez, **Sheeva Yahcob-Saddalani**
DepEd-Sinunuc National High School, Zamboanga City, Philippines; Western Mindanao State University, Zamboanga City, Philippines

D-023 Leveraging laboratory digital transformation to meet ESG (Environmental, Social, and Governance) goals
Chamnong Ingsathit
LabWare Singapore Pte Ltd, Singapore

D-O24 8 Steps to GMP-compliant mapping of storage rooms
Allan Javier, Sebastian Schwarz
Chemisphere Lab Sciences Inc., Philippines; Xylem Analytics, Germany

PARALLEL SESSION E: WORKSHOP ON ENVIRONMENTAL CHEMISTRY (*Continuation*)
Meeting Room 4
Moderator: ***Francis Dela Rosa, Ph.D.***

Workshop / Lecture on integrating environmental and citizen science in Chemistry education
Dr. Eric Punzalan
De La Salle University, Philippines

PARALLEL SESSION F: INSTRUMENT & PRODUCT DEMO/PRESENTATION
Function Room 1
Moderator: ***Julita Robles, Ph.D.***

F-P12 A-TEEM molecular fingerprinting: A novel analytical method beyond fluorescence
(Product Demo: Horiba Aqualog)
Boyang Che, *Horiba Instruments Singapore, ALV Technologies Phils., Inc*

F-P13 Introduction to PIC/s GMP for veterinary and feed quality control laboratories for regulatory compliance
(Product Presentation)
Pinky Tobiano, *Progressive Laboratories*
Association of BAI Registered Laboratories (ABAIL)

F-P14 Advanced laboratory equipment for research and analysis
(Product Demo)
Patrick Suh, *Daihan Scientific*
DKSH Market Expansion Services Philippines Inc.

5:00–7:00 PM	**GENERAL ASSEMBLY MEETINGS** **KKP** *Meeting Room 4* KKP President: **Christina Binag, Ph.D.** *KIMIKA* Editor-in-Chief: **Drexel Camacho, Ph.D.** **PACT** *Meeting Room 5* PACT President: **Voltaire Organo, Ph.D.** **PRC BOARD OF CHEMISTRY AND ICP** *Function Room 2* *Resource Persons:* Chair, PRC Board for Chemistry: **Adoracion Resurreccion, Ph.D**. Member, PRC Board for Chemistry: **Soledad Castañeda, Ph.D.** Member, PRC Board for Chemistry: **Ma. Teresa Cayton, M.S.** ICP President: **Fabian Dayrit, Ph.D**.

DAY 3	**24 July 2024 • Wednesday**
	FORUM ON Artificial Intelligence in Chemistry *Function Rooms 2 & 3* *Moderator:* ***Jaime Raul Janairo, Ph.D.***
9:00–9:30	***Plenary Lecture 6:*** Artificial Intelligence in Chemistry **Kevin Anthony Sison** • *St. Luke's Medical Center, Philippines*
9:30–9:50	*Lecture 1:* Artificial Intelligence in Drug Discovery **Professor Junie Billones** • *University of the Philippines Manila, Philippines*
9:50–10:10	*Lecture 2:* Artificial Intelligence in Materials and Physical Chemistry **Professor Erwin Enriquez** • *Ateneo de Manila University, Philippines*
10:10–10:30	*Lecture 3:* Artificial Intelligence in Analytical Chemistry **Professor Emeritus Fortunato Sevilla III** • *University of Santo Tomas, Philippines*
10:30–11:00	**Open Forum**
11:00–12:00	**CLOSING PROGRAM** *Function Rooms 2 & 3* *Moderators:* ***Julita Robles, Ph.D. & Faustino Tarongoy Jr., Ph.D.***
	Presentation of the 38th PCC and 2024 IC^2 photo and video coverage Acknowledgment of sponsors Recognition of the Best Poster presentations Turn-over ceremony to the next PCC host Announcement of upcoming 39th PCC Closing remarks: **David Peñaloza Jr., Ph.D.,** *Chair, National Organizing Committee*