The NRCT International Research Network (IRN) on "Strengthening and Expansion of International Research Network on Microfluidic Analytical Technology" is hosting joint symposiums

International Symposium for Strengthening Research Network on Microfluidics and Sensor Innovation
and
International Student Symposium in Analytical Sciences

April 22-23, 2024

Faculty of Science, Mahidol University
(Phayathai Campus),
Rama 6 Road, Bangkok, Thailand

Organized by
National Research Council of Thailand (NRCT)
Faculty of Science and Faculty of Graduate Studies
Mahidol University
and
Center of Excellence for Innovation in Chemistry
(PERCH-CIC PERDO)

Overall Program

"International Symposium for Strengthening Research Network on Microfluidics and Sensor Innovation" and "International Student Symposium in Analytical Sciences"

April 22-23, 2024

Faculty of Science Mahidol University (Phayathai Campus)
Rama 6 Road, Ratchathewi District, Bangkok, Thailand

Monday, April 22nd, 2024

8:15 – 9:00	Registration on ground floor of the Lecture Building *(The circular building)*
9:00 – 9:30	Opening Ceremony in the Lecture Hall L-01, *at the Lecture Building*
9:30 – 11:10	Session 1, *Lecture Hall L-01*
11:10 – 12:00	Poster Session 1, Ground floor, Lecture Building *(The Circular Building)* and Coffee Break
12:00 – 13:00	*Lunch (under the Lecture Building)*
13:00 – 14:40	Session 2, *Lecture Hall L-01*
14:40 – 14:55	*Coffee Break (under the Lecture Building)*
14:55 – 16:05	Session 3, *Lecture Hall L-01*
16:45	Leave for Banquet
18:00 – 21:00	*Banquet at Waterside Resort Restaurant*

Tuesday, April 23rd, 2024

9:00 – 11:10	Session 4, *Stang Mongkolsuk Conference Room Stang Mongkolsuk Building*
11:10 – 12:00	Poster Session 2, Ground floor, Lecture Building (The Circular Building) and Coffee Break
12:00 – 13:00	*Lunch (under the Lecture Building)*
13:00 – 14:40	Session 5, *Stang Mongkolsuk Conference Room Stang Mongkolsuk Building*
14:40 – 14:55	*Coffee Break (at the Stang Mongkolsuk Conference foyer)*
14:55 – 16:20	Session 6, *Lecture Hall L-01*
16:20 – 17:00	Award and Closing Ceremony

Symposium Venue

Faculty of Science, Mahidol University (Phayathai Campus)
Rama 6 Road, Ratchathewi District, Bangkok

Lecture Hall L-01, Lecture Building
and
Stang Mongkolsuk Building

Phayathai Campus Map

1. **Lecture Building (L)** อาคารปาฐกถา / อาคารบรรยายรวม
2. **Chemistry Building (C)** อาคารเคมี
3. **Computer Building** อาคารคอมพิวเตอร์
4. **Biology Building (B)** อาคารชีววิทยา
5. **New Biology Building (N)** อาคารชีววิทยาใหม่
6. **Research Building (R)** อาคารวิจัย
7. **Physics Building (P)** อาคารฟิสิกส์
8. **Preclinic Building (Pr)** อาคารปรีคลินิก
9. **Anatomy Building 1 (AN1)** อาคารกายวิภาค 1
10. **Anatomy Building 2 (AN2)** อาคารกายวิภาค 2
11. **Multidisciplinary Building (M)** อาคารอเนกประสงค์
12. **Biotechnology Building (BT)** อาคารเทคโนโลยีชีวภาพ
13. **Chalermphrakiet Building (K)** อาคารเฉลิมพระเกียรติ
14. **Laboratory Animal Facility Building (AF)** อาคารสัตว์ทดลอง
15. **Stang Mongkolsuk Building (ST)** อาคารสตางค์ มงคลสุข
16. **Venture Club@MUSC Building (V)** อาคารเวนเจอร์คลับ
17. **National Doping Control Centre (NDCC)** สถาบันวิทยาศาสตร์การวิเคราะห์และตรวจสารในการกีฬา

Information for Presenters

Please be punctual regarding the duration of your presentation and confirm the time allocated for your presentation from the detailed program.

Type	Symbol	Time (for presentation + for Q&A)
Invited Lecture	F-INV	20 min (15 min + 5 min)
	T-INV	15 min (12 min + 3 min)
Poster Presentation	P	60 min

Preparing your presentation

Oral Presentation:

[1] The presentation room is equipped with a screen, chairing table and notebook for the speaker.
[2] Oral presentations are required to be made by PowerPoint 2007 or higher.
[3] Standard fonts, such as Arial, Times New Roman or Cordia New are preferable for the PowerPoint presentation.
[4] All speakers are required to upload the file into the central notebook during the break before the presentation.
[5] A notebook and an LCD projector will be provided.
[6] USB to VGA, Mini DisplayPort to VGA (for Mac) and Mini DisplayPort to VGA (for Microsoft Surface laptop) will be available.

Poster Presentation:

[1] Recommended poster orientation size: Portrait, A0 size, 84 cm wide x 118 cm tall.
[2] There is no template for the poster.
[3] Double-sided tape for mounting posters onto the display board will be provided.
[4] The poster area is located in the foyer in front of the conference room, L-01 at the Circular Building.
[5] All posters must be displayed during the symposium event - mount before 11:00 am on April 22nd and remove before 6:00 pm on April 23rd.
[6] The poster presentation is held in separate sessions as follows so please stand by your poster during those periods (Nonetheless, the posters are mounted on the display board over the period of the conference).

Poster Session 1: Odd numbers - Monday, April 22nd, from 11:00 to 12:00.
Poster Session 2: Even numbers - Tuesday, April 23rd, from 11:00 to 12:00.

Scientific Program

Monday, April 22nd, 2024

Time	Speaker		Title
9:00 – 9:30	Opening Ceremony in the Lecture Hall L-01, *at the Lecture Building*		
Session 1: Lecture Hall L-01, at the Lecture Building			
			Chairperson: Atitaya Siripinyanond, Purim Jarujamrus
9:30 – 9:50	F-INV1	Yan Xu	Nanofluidics: Evolving and Pioneering the Future of Analytical Sciences
9:50 – 10:10	T-INV1	Orawon Chailapakul	Sequential Flow Capillary-Driven Microfluidic Device for Nucleic Acid Amplification Testing
10:10 – 10:25	T-INV2	Nattapong Chantipmanee	Advancing Exosome Research: Single Exosomal Membrane Sensing Using Nanofluidic FRET
10:25 – 10:40	T-INV3	Leena Suntornsuk	Polydiacetylene-Based Paper Devices for Exosome
10:40 – 10:55	T-INV4	Sudkate Chaiyo	Advanced Lateral Flow Immunosensors During the COVID-19 Pandemic
10:55 – 11:10	T-INV5	Jaruwan Mettakoonpitak	Portable Microfluidic Paper-Based Analytical Devices for On-Site Agricultural Analysis
11:10 – 12:00	*Poster Session 1, Ground floor, Lecture Building (The Circular Building) and Coffee Break*		
12:00 – 13:00	*Lunch (under the Lecture Building)*		
Session 2: Lecture Hall L-01, at the Lecture Building			
			Chairperson: Kriangsak Songsrirote, Nuchutha Thamsumet
13:00 – 13:20	F-INV2	Peter C. Hauser	Electrospray-Ionization Drift-Tube Ion-Mobility Spectrometer with Ultra-High Resolving Power: Design and Optimization
13:20 – 13:40	F-INV3	Hong Heng See	Unveiling the Dynamics: Electrokinetic Migration of Organic Ions in Polymer Inclusion Dry Film Membrane – A New Solid State Electrophoresis Perspective

Time	Speaker		Title
13:40 – 13:55	T-INV6	Piyaluk Nurerk	Alternative Nanomaterials as Composite Adsorbents for Enhancing Sample Preconcentration in Chromatographic Separation
13:55 – 14:10	T-INV7	Waleed Alahmad	Gel Electromembrane Extraction: The Movement from Electro-Extraction to Electro-Sensing
14:10 – 14:25	T-INV8	Chongdee Buranachai	Sensor Innovation @TAB-CoE, Prince of Songkla University
14:25 – 14:40	T-INV9	Warakorn Limbut	Frontiers in Sensor Innovation: A Wireless Smartphone-Based 'Tap-and-Detect' Approach for Healthcare Diagnosis, Aquaculture, Food Safety, and Environmental Monitoring
14:40– 14:55	*Coffee Break (under the Lecture Building)*		
Session 3: Lecture Hall L-01, at the Lecture Building			
		Chairperson:	***Takashi Kaneta, Patcharin Chaisuwan***
14:55 – 15:15	F-INV4 (online)	Daniel Citterio	Paper-Based Analytical Devices with CRISPR/Cas Signaling
15:15 – 15:35	F-INV5	Akhmad Sabarudin	Microfluidic Paper-based Analytical Devices for Rapid Detection of Nephropathy
15:35 – 15:50	T-INV10	Purim Jarujamrus	Tailored Nitrogen-Doped Carbon Dots (N-CDs) on microfluidics paper-based analytical device (mPAD) for Innovative Point-of-Care and Food Monitoring Sensing
15:50 – 16:05	T-INV11	Yupaporn Sameenoi	Paper-Based Test Strip for User-Friendly and Rapid Detection of Pesticides
16:45 – 18:00	*Leave for Banquet*		
18:00 – 21:00	*Banquet at Waterside Resort Restaurant*		

Tuesday, April 23rd, 2024

Time	Speaker		Title
Session 4: Stang Mongkolsuk Conference Room, Stang Mongkolsuk Building			
		Chairperson: Rattikan Chantiwas, Jaruwan Mettakoonpitak	
9:00 – 9:20	F-INV6 (online)	Charles Henry	Electrochemistry Plus Microfluidics for High-Performance Chemical Analysis
9:20 – 9:40	F-INV7 (online)	Damien Arrigan	Ion transfer electrochemistry of "forever chemicals" as a basis for their electrochemical sensing
9:40 – 9:55	T-INV12	Kamonwad Ngamchuea	Development of Microelectrode Array Platforms for Sensing Applications
9:55 – 10:10	T-INV13	Nadnudda Rodthongkum	Smartphone Based Wearable Sweat Glucose Biosensor Correlated with Machine Learning for Diabetes Screening
10:10 – 10:25	T-INV14	Itthipon Jeerapan	Reshaping On-Body Microsystems for Modern Analytical Chemistry: Sustainable Solutions through Convenient Sensor and Energy Innovation
10:25 – 10:40	T-INV15	Chanpen Karuwan	Printed Graphene-Based Electrochemical Sensing Platform and Its Applications
10:40 – 10:55	T-INV16	Korbua Chaisiwamongkhol	Determination of Promethazine in Forensic Samples Using Multi-Walled Carbon Nanotubes-Gold Nanoparticles Electrochemical Sensor
10:55 – 11:10	T-INV21	Sanoe Chairam	Application of Microfluidics to Demonstrate the Chemistry Concepts
11:10 – 12:00	*Poster Session 2, Ground floor, Lecture Building (The Circular Building) and Coffee Break*		
12:00 – 13:00	*Lunch (under the Lecture Building)*		

Time	Speaker		Title
Session 5: Stang Mongkolsuk Conference Room, Stang Mongkolsuk Building			
		Chairperson: Nathawut Choengchan, Nuanlaor Ratanawimanwong	
13:00 – 13:20	F-INV8	Takashi Kaneta	Paper-Based Analytical Devices for Onsite Environmental Analysis
13:20 – 13:40	F-INV9	Hermin Sulistyarti	A New Analysis Techniques Based on μ-PAD-Smartphone for Fast and Easy Chemical Detection
13:40 – 13:55	T-INV18	Saowapak Teerasong	Determination of Sucrose Concentration Using Imbibition Length Through Paper
13:55 – 14:10	T-INV19	Anchalee Samphao	A Paper Chromatographic-Based Electrochemical Analytical Device for the Separation and Simultaneous Detection of Carbofuran and Carbaryl Pesticides
14:10 – 14:25	T-INV20	Phetvilay Khattiyavong	Fabrication of Continuous-Flow Microfluidic Thread-Based Device for Nanocatalytic Reduction of Nitrophenol
14:25 – 14:40	T-INV17	Sumonmarn Chaneam	Microfluidic Device for Electrochemical and Optical Dual-Mode Detection of Ammonium Ion
14:40 – 14:55	*Coffee Break (at the Stang Mongkolsuk Conference foyer)*		
Session 6: Stang Mongkolsuk Conference Room, Stang Mongkolsuk Building			
		Chairperson: Akhmad Sabarudin; Apichai Phonchai	
14:55 – 15:15	F-INV10	Chang Kah Haw	Detection and Discrimination of Drug Substances by Attenuated Total Reflectance-Fourier Transform Infrared (Atr-Ftir) Spectroscopy in Couple with Chemometrics
15:15 – 15:35	F-INV11	Huong Thi Anh Nguyen	Recent Applications of Capillary Electrophoresis with Capacitively Coupled Contactless Conductivity Detector (CE-C^4D) In

Time	Speaker		Title
			Environmental and Food Analysis in Vietnam
15:35 – 15:50	T-INV22	Opas Bunkoed	Nanocomposite Fluorescent Probes and Adsorbents Based on Graphene Quantum Dots Incorporated in Molecularly Imprinted Polymer
15:50 – 16:05	T-INV23	Chaiya Prasittichai	Electrochemical Sensors from Surface-Modified Halloysite Nanotubes
16:05 – 16:20	T-INV24	Chanika Pinyorospathum	Analytical Sciences in Doping Control
16:20 – 17:00	*Award and Closing Ceremony*		

List of Posters

Poster Session 1: **Odd *numbers*** on Monday, April 22nd, from 11:00 to 12:00.
Poster Session 2: ***Even numbers*** on Tuesday, April 23rd, from 11:00 to 12:00.

P-01 **Advancement of Screen-Printed Electrode Integrating with Portable Surface-Enhanced Raman Spectroscopy for Low-Explosive Identification**
Thinnapong Wongpakdee

P-02 **Determination of Phosphorus in Water and Chemical Fertilizer Samples Using a Simple Drawing µPAD**
Piyawan Phansi

P-03 **Magnetic Bead-Based Electrochemical Immunoassay for Rapid Detection of SARS-CoV-2 -Nucleocapsid Protein**
Nutnaree Fukana

P-04 **A Simple and Reliable Smartphone-Based Colorimetric Digital Images for Determination of Carbaryl Residues in Andrographis paniculata Herbal Medicines Using Simple Peroxidase Extract from Senna siamea Lam. Bark and Dispersive Liquid-Liquid Microextraction**
Kraingkrai Ponhong

P-05 **Hydrophobic Barrier-Free Laminated Paper-Based Analytical Device (LPAD) Using a Diameter-Based Measurement for Determination of Iodide in Pharmaceutical Products**
Nakarin Noirahaeng

P-06 **NS1 Epitope-Based Imprinted Polymers for Dengue Detection Using QCM Sensor**
Kitima Sirivibulkovit

P-07 **Sequential Injection Analysis System with Spectrophotometric for Determination of Ethylenediaminetetraacetic Acid**
Wipawee Chayman

P-08 **Highly Sensitive and Disposable Screen-Printed Graphene-Based Electrochemical Sensor Coupled with Monolithic Micro-Solid-Phase Extraction for the Determination of 3,4-Methylenedioxymethamphetamine in Forensic**
Wichayaporn Kamsong

P-09 **Determination of Salicylic Acid Content in Pharmaceuticals Using Chitosan@Fe_3O_4/CPE Electrode via SWV Technique**
Sasithorn Muncharoen

P-10 **Taylor Dispersion Analysis Based on Light Scattering for Non-UV Absorbing Compound**
Supanut Prom-in

P-11 **Screen-Printed Copper-Organic Framework-Modified Graphene as Electro-Chemical Sensor for Detection of Glutathione**
Anawin Promkaew

P-12 **Smartphone Assisted Digital Image Colorimetric Determination of Andrographolide and Analogues in *Andrographis Paniculata* Extract**
Hathaichanok Karanasophonphun

P-13 **Highly Selective and Sensitive Dual Imprinted Sensor for Carcinoid Tumors Using Graphene Quantum Dots Coated with Molecularly Imprinted Polymer (GQDs@dual-MIP)**
Kanpitcha Somnet

P-14 **Multiplexed Detection of SARS-CoV-2 Genes Using Inkjet-Printed Nanostructured Electrodes and Battery-Free Potentiostat**
Chawin Srisomwat

P-15 **Simultaneous Electrochemical Sensing of Cd(II) and Pb(II) Using Screen-Printed Ionic Liquid/Graphene Electrode**
Patiya Pasakon

P-16 **Enhancing Phenolic Acid Separation in Capillary Electrophoresis through Surface Modification Using Polyethyleneimine**
Nadia Kusumaningtyas

P-17 **Reduced Graphene Oxide-Gold/Methylene Blue Composite-Based Immunosensor for Voltammetric Determination of Hepatitis B Surface Antigen**
Aulia Ayuning Tyas

P-18 **Highly Sensitive Ratiometric Fluorometry by Using O-Phenylenediamine (OPD) and Nitrogen-Doped Graphene Quantum Dot (N-Gqds) on a Simple Microfluidic Paper-Based Analytical Device (μpad) for Simultaneous Glucose and Total Cholesterol Determination in Whole Blood**
Nattasa Kitchawengkul

P-19 **Development of Screening Method Based on Microfluidic Paper-Based Analytical Device for Protein Determination in Natural Rubber Latex and Products**
Pattama Kasornsuwan

P-20 **Enhanced Peroxidase-Like Activity of Synergistic Aptamer -Gold Nanoparticles for Highly Selective and Sensitive Fluorescence Detection of Low-Density Lipoprotein**
Akarapong Prakobkij

P-21 **Synthesis of Silver Nanoparticles Using Gamma-Irradiated Chitosan: A Colorimetric Sensor for Determination of Iron in Water and Supplement Tablet Samples**
Konbongkot Khunthongchan and Yanisa Thepchuay

P-22 **Use of SP-ICP-MS for The Study of Parameters Affecting Sensing Performance of Gold Nanoparticles as Colorimetric Sensor for Lead Detection**
Atitaya Suratsawadee

P-23 **Quantification of Cannabidiol (CBD) in Medical Cannabis Using Screen-Printed Graphene Electrode**
Vitsarut Primpray

P-24 **Enhanced Electrochemical Detection of 5-Hydroxymethylfurfural in Honey Using Screen-Printed Carbon Electrode Modified with Nickel Oxide Nanoparticles**
Supada Khonyoung

P-25 **Gold Leaf Electrochemical Sensor Modified with a Nanoporous Gold Layer**
Supakorn Kittikomoldej

P-26 **Micro-Well Platform Coupled Fluorometric Detection for Assessment of Preservatives in Skincare Products Using Layered Double Hydroxides as Peroxidase-Like Catalysts**
Kanokwan Sakunrungrit

P-27 **A Double-Layered Paper-Based Analytical Device for Simultaneous Determination of Iron(II) and Iron(III) in Water Samples**
Surachet Thongchan

P-28 **Preparation of Rice-Straw Nanocellulose Fibrils and Their Applications for Determination of Fluorescein Injection Medicine and Bismuth (III)**
Ratchanon Sangsriboonrueng

P-29 **Investigation of Carbon Dots (CDs)-Based Fluorescence Turn-on and Turn-off Sensing for Detection of Aspartame**
Rewat Nakwisai

P-30 **A Barrier-Free Laminated Paper-Based Analytical Device (LPAD) with Heated-Based Colorimetric Ninhydrin Reaction for Aspartame Analysis**
Hutthakarn Phapumma

P-31 **Voltammetric Detection of Chloride on an In-House Gold Leaf Electrochemical Sensor**
Kumpirada Khamjoy

P-32 **Simultaneous Detection of Casein and Gliadin in Food Using Lateral Flow Immunoassay**
Supawee Banthoeng, Kodchaphan Singho and Aya Phuangsup

P-33 **Development of Ionic Liquid-Graphene Screen-Printed Electrode and Its Application to Electrochemical Sensing for Detection and Quantification of Biomarker in Dengue Fever**
Chanakarn Sangsum

P-34 **Determination of Potassium in Toothpaste Based on Turbidimetric Measurement of Tetraphenylborate Precipitation Using Flow Injection Analysis**
Pariyapat Jiranurakwong

P-35 **Development of a New Electrochemical Platform Based on Poly(L-Histidine) Assembled on Printed Graphene as an Innovative Sensor for Tyramine Determination**
Kantima Kaewjua

P-36 **Distillation of The Nitric Acid for Trace and Ultra Trace Elemental Analysis and Its Quality Control**
Wanida Suwanroek

P-37 **Development of Pinostrobin Pure Substance Certified Reference Material**
Nongluck Tangpaisarnkul

P-38 **Development of Colorimetric Test Kit-Based Biuret Reagent for Aspartame Detection**
Afham Julyanon

P-39 **A Barrier-Free Paper Device for Distance-Based Measurement of Ni(II)**
Siriporn Thongnantakun

P-40 **Growth and Morphological Study of Nanoneedles-on-Microneedles Using Hydrothermal Method**
Sasikarn Seetasang

P-41 **A paper-based device for protease activity assay with time as the readout**
Jianchao Ren

P-42 **Enzyme-Free Nano Glucose Sensor by Utilizing Glucose as a Reducing Agent for Silver Ions and Extract *Capsicum chinensie* Jacq as Capping Agents**
Boyfannie Ivan Putra