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TRƯỜNG ĐẠI HỌC QUỐC TẾ MIỀN ĐÔNG
EASTERN INTERNATIONAL UNIVERSITY

15 Year Anniversary 2010 - 2025

TRƯỜNG ĐẠI HỌC KHOA HỌC TỰ NHIÊN ĐHQG-HCM

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ICEBA2025-EIU

THE 6TH INTERNATIONAL CONFERENCE ON ENGINEERING, PHYSICS, MEMS-BIOSENSORS AND APPLICATIONS

NOVEMBER 10-12, 2025

EASTERN INTERNATIONAL UNIVERSITY

HO CHI MINH CITY, VIETNAM

iceba.eiu.edu.vn

ICEBA 2025

WELCOME REMARK FROM THE GENERAL CO-CHAIR OF 6TH ICEBA2025-EIU

Dear all professors, colleagues and students,

We very pleased to attend the 6th International Conference on Engineering Physics, MEMS-Biosensors, and Applications (ICEBA2025), which host by Eastern International University (EIU) , Binh Duong, Ho Chi Minh city, Vietnam.

We are deeply honored to be part of this event, which brings together some of the most brilliant minds and innovative leaders in our fields. My sincere gratitude to Dr. Ngo Minh Duc, President of EIU and Program Chair of ICEBA2025 to invite me and other professors to have their plenary invited talks or invited talks of ICEBA2025.

ICEBA2025 is a platform for fostering global collaboration and knowledge exchange, encompassing disciplines such as Engineering Physics, Semiconductor, MEMS-Sensor, Optics&Photonics, Computing Science, Embedded Systems, Nanotechnology, IoT&AI,... The conference's objectives align closely with our collective vision of leveraging advanced technologies, from semiconductors and IC chips to biosensors, to drive progress in industries including electronics, automotive, and manufacturing.

In Tohoku University, Prof. Takahito Ono and his colleagues are the strong research group in micro/nano fabrication and nanomaterial technologies gives us a strong foundation in MEMS/NEMS, making this conference an exciting convergence of our shared expertise. Through this event, we aim to strengthen partnerships with the University of Science, supporting doctoral training and pioneering research in MEMS, sensors, and biosensors.

VNU-HCM-University of Science are well-recognized for their work in Physic Enginering, Applied Physics, MEMS-devices, IoT-AI, embedded systems, computer scicence,... which offers significant opportunities for research collaboration-from manufacturing innovations in MEMS and sensor technology to applications in biomedical, environmental, and precision agriculture sectors. We also look forward to facilitating exchange programs that will promote co-publications and enrich the learning and research experiences of faculty members, researchers, and students.
I would like to thank Dr. Nghiep and colleagues in Office of Science and Technology- EIU for preparing and coordinating with professors from Tohoku University and VNUHCM-University of Science to successfully organize ICEBA2025-NCU.

We also thank and welcome all professors, researchers, and students from Malaysia, Thailand, Vietnam, Japan, Arian,...and others to join ICEBA2025-EIU to share, discuss about their research works and enhance our future international cooperation.
Wishing you all health, success, and a memorable experience at this year's ICEBA2025.

General Co-Chair of 6th ICEBA2025: Prof. Takahito Ono (Tohoku Univ, Japan),
Assoc. Prof. Nguyen Van Hieu (IPTC-VNUHCM, Vietnam and
Assoc. Prof. Huynh Van Tuan (VNUHCM-US, Vietnam).

WELCOME REMARK
PROGRAM CHAIR OF ICEBA2025
AND PRESIDENT OF EASTERN INTERNATIONAL UNIVERSITY (EIU)

ICEBA 2025

Dear all authors,

The purpose of ICEBA2025 is to link the researchers and scientists from the world, especially Asian countries, in the fields of biomedical engineering, health sciences, optics, and hi-tech sensors. We aim to promote international cooperation by joining research projects and international co-publications for the participants. We would like to express heartfelt gratitude to the speakers, sponsors, and all those who have contributed to the planning and organization of the conference. Your dedication and support have been invaluable in making this event a reality. We look forward to meeting all of you and witnessing the enlightening discussions and remarkable discoveries that will unfold during our time together.

I am delighted to extend a personal invitation to you on behalf of the Organizing Committee and Program Committee of the 6th International Conference on Engineering, Physics, MEMS-Biosensors and Applications (ICEBA 2025). We would like to thank the General co-chair of ICEBA (VNUHCM-University of Science-Vietnam and Tohoku University- Japan) to entrust EIU as host of ICEBA2025-EIU in Binh Duong, Ho Chi Minh city, Vietnam.

It is with great pleasure that you can join us for this event in our EIU. Thank you, and I wish you a rewarding and memorable experience.

Dr. Ngo Minh Duc

Program Chair of ICEBA2025-EIU

and President of Eastern International University (EIU), Vietnam

ICEBA 2025

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ICEBA 2025

The purpose of the 6th ICEBA2025 is to link the researchers and scientists from Vietnam and countries around the world, especially Asian countries, in the fields of engineering, physics, microelectronics, semiconductors, and electronic engineering for their applications in biomedical engineering, health sciences, hi-tech agriculture, and smart cities. Besides, we also contribute to promoting international cooperation activities by joining research projects and international co-publications and proposing good solutions and applied technology for the development of education and technology of Vietnam.

This year, ICEBA 2025 is hosted by Eastern International University (EIU), in collaboration with University of Science – Vietnam National University Ho Chi Minh City (VNUHCM-US), and Tohoku University (Japan).

ICEBA 2025

EASTERN INTERNATIONAL UNIVERSITY (EIU) OVERVIEW

The Eastern International University (EIU), invested and developed by Binh Duong province-headquartered Becamex IDC Corporation, was established under Prime Minister Decision No. 1789/QD-TTg dated September 27, 2010. Eastern International University (EIU) was established with the mission of training a high-quality workforce to effectively meet the urgent demands for human resources in sustainable socio-economic development. At the same time, EIU aims to become a center for scientific research, applied innovation, and technology transfer, serving as a driving force for the development of both the Southern Key Economic Region and the nation as a whole.

EIU currently has four (5) Schools and ten (10) Majors focusing on Business Administration, Engineering, Technology, and Healthcare. Our curriculum is designed to keep up with the global industrial revolution 4.0 for global integration. After more than 14 years operating and developing, EIU has admitted 14 cohorts of undergraduate students, 9 of which have successfully completed university with a graduate employment rate of 94%. Notably, 100% of the graduates have a minimum IELTS band 6.0 before graduation.

As a key player in the trilateral linkage among the government, academia, and enterprises, Eastern International University (EIU) has also established and developed its own innovation ecosystem right on campus.

In September 2020, EIU achieved the Education Accreditation Certificate per Decision No. 06/QD-TTKD issued by the National Center for Accreditation and Evaluation of University Quality. This is a motivation for EIU to strive harder in improving educational quality and pursuing its development strategies.

COMMITTEES

ICEBA 2025

General Co-chairs for ICEBA2025_Vietnam

- Takahito Ono (Tohuku University-Japan)
- Nguyen Van Hieu (VNUHCM-Vietnam)
- Huynh Van Tuan (VNUHCM-Vietnam)
- Ngo Minh Duc (EIU-Eastern International University-Vietnam)

Scientific Committee_Vietnam

- Vu Thi Hanh Thu, VNUHCM - University of Science, Vietnam
- Doan Le Hoang Tan, VNUHCM - Institute of Innovative Materials Technology, Vietnam
- Nguyen Van Toan, Tohoku University, Japan
- Nguyen Van Hieu, IPTC-Vietnam National University Ho Chi Minh city, Vietnam
- Tran Hoang Linh, VNUHCM - University of Technology
- Le Duc Hung, VNUHCM- University of Science, Vietnam
- Nguyen Van Men, VNUHCM- An Giang University, Vietnam
- Nguyen Quang Khoi, VNUHCM- University of Science, Vietnam
- Nguyen Chi Nhan, VNUHCM- University of Science, Vietnam
- Nguyen Minh Son, VNUHCM- University of Information Technology, Vietnam
- Ho Manh Dung, Center for Nuclear Technologies (CNT), Vietnam Atomic Energy Institute (VINATOM)
- Dao Hong Nam, University of Medicine and Pharmacy at Ho Chi Minh City
- Nguyen Trung Nghiep, Eastern International University, Vietnam
- Nguyen Huu Tho, Nguyen Tat Thanh University, Vietnam
- Su Khac Huan, Eastern International University, Vietnam
- Bui Minh Phu, Eastern International University, Vietnam
- Vu The Dang, OMU-Japan and HSIA- HoChi Minh City-Vietnam
- Trinh Xuan Thang, SHTP labs, Ho Chi Minh City, Vietnam

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- Nguyen Trung Nghiep, EIU-Eastern International University-Vietnam, Chair
- Huynh Van Tuan, VNUHCM-University of Science-Vietnam, Co-chair
- Nguyen Van Toan, Tohoku University-Japan, Co-chair
- Nguyen Chi Nhan, VNUHCM-University of Science-Vietnam
- Nguyen Quang Khoi, VNUHCM-University of Science-Vietnam
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- Bui Minh Phu, EIU-Eastern International University-Vietnam
- Nguyen Huu Tho, NTTU-Nguyen Tat Thanh University-Vietnam

Publication Committee

- Nguyen Van Hieu, Vietnam National University HCMC, Vietnam, Chair
- Ahmed A D Sarhan, KFUPM University-Saudi Arabia
- Takahito Ono, Tohoku University-Japan
- Huynh Van Tuan, VNUHCM-University of Science-Vietnam
- Duong Hoai Nghia, EIU-Eastern International University-Vietnam
- Nguyen Trung Nghiep, EIU-Eastern International University-Vietnam

Local Organizing Committee

- Ngo Minh Duc, EIU-Eastern International University-Vietnam
- Duong Hoai Nghia, EIU-Eastern International University-Vietnam
- Nguyen Trung Nghiep, EIU-Eastern International University-Vietnam
- Nguyen Xuan Hung, EIU-Eastern International University-Vietnam
- Su Khac Huan, EIU-Eastern International University-Vietnam
- Bui Minh Phu, EIU-Eastern International University-Vietnam
- Nguyen Phuoc Hoang Khang, VNUHCM-University of Science-Vietnam

Secretariats

- Nguyen Trung Nghiep, EIU-Eastern International University-Vietnam
- La Viet Ha, EIU-Eastern International University-Vietnam
- Nguyen Phuoc Hoang Khang, VNUHCM-University of Science-Vietnam

ICEBA 2025 PROGRAM

DAY 1 (NOVEMBER 10, 2025)		
16:00 - 17:00	ICEBA2025 Program Committee Meeting and Chairs/Co-Chairs Session	Location: B3.106, Eastern International University
18:00 - 20:30	Welcome Dinner	Location: Becamex Hotel New City
DAY 2 (NOVEMBER 11, 2025)		
Opening Ceremony and Plenary session		
08:00 - 09:00	Registration	B3.101
09:00 - 09:40	Opening Ceremony of ICEBA2025-EIU	B3.200
	1. Welcome Speeches for ICEBA	
	- Leader of host university of ICEBA	Dr. Ngo Minh Duc, President of EIU
	- Leader of VNUHCM-University of Science	Assoc.Prof. Tran Minh Triet, Vice President
	2. Opening Ceremony for ICEBA	
	- General chair of ICEBA	Prof. Takahito Ono, Tohuku University, Japan
	- General co-chair of ICEBA2025	Assoc. Prof. Nguyen Van Hieu IPTC- VNUHCM, Vietnam
	3. Gift Presentation	
	4. MoU Singing Ceremony for ICEBA2026	VNUHCM-US, TU-Japan, HSIA, VGU, SHPT Labs
	5. Group Photo	Plenary speaker, Program Committee, Organizer and Guests and participants
09:40 - 10:00	Tea break	Location: B3.200 All guests and participants
10:00 - 11:15	**Plenary Sesssion (20 min for talk and 5 mins for discussion)** . Chair: Prof. Takahito Ono (TU, Japan) . Co-chair: Assoc. Prof. Mohd Sayuti Ab Karim (Universiti Malaya, Malaysia)	
10:00 - 10:25	*** Plenary Invited Talk (code PL.01)** Perfectly Automated Modeling System Using 3D-Printer: Direct Energy Deposition	Speaker: Prof. Hideki Aoyama Keio University, Japan
10:25 - 10:50	*** Plenary Invited Talk (code PL.02)** Title of the presentation: Re-engineering Engineering In The Ara Of Pervasive Intelligence	Speaker: Mr. Nguyen Phuc Vinh, MSc. Senior Technical Director at Synopsys Vietnam
10:50 - 11:15	*** Plenary Invited Talk (code PL.03)** AI-Driven Computer-Aided Process Planning (CAPP) for Autonomous and Cost-Effective CNC Machining: Digital Manufacturing Approach	Speaker: Prof. Ahmed A D Sarhan Center of Intelligent Manufacturing and Robotics, KFUPM
11:15 - 11:30	Plenary Session Remarks	Prof. Takahito Ono (TU, Japan)
11:30 - 12:00	Poster Presentations & Judging	Location: B3.101
12:00 - 13:00	Lunch time	Location: B8.109 & B8.111
13:30 - 16:30	**Parallel sessions** - Engineering, Engineering Physics and Electrical & Electronic Engineering (B3.202) - MEMS (MicroElectronMechanical System), Sensors and semiconducting devices, Biomedical Engineering, Digital Microfluidics and their applications (B3.201) - Microelectronics, IC design, low consumption devices, Renewable Energy (B3.106) - Computing Science, Simulations and Modeling (B3.103) - Embedded systems, Internet of Things, Machine Learning, Artificial Intelligence, etc. (B3.204) - Medical Physics and Nuclear Engineering (B3. 203) - Mechanical Engineering and Advanced Manufacturing (B3.301) - Robotic, Automation and Intelligent System (B3.302)	
17:00 - 18:00	**Plenary session (cont') & Closing ceremony (B3 200)** . Chair: Prof. Ahmed A D Sarhan (King Fahd University of Petroleum and Minerals, Saudi Arabia) . Co-chair: Assoc. Prof. Huynh Van Tuan (VNUHCM-US, Vietnam)	
17:00 - 17:25	*** Plenary Invited Talk (code PL.04)** Introduce to the Alliance for Research and Training of human resources in Semiconductor and Microelectronics Industry in Vietnam (ARTSeMi)	Speaker: Assoc. Prof. Nguyen Van Hieu President of Ho Chi Minh City Semiconductor Industry, Vietnam
17:25 - 17:50	*** Plenary Invited Talk (code PL.05)** Nanoengineered Microsystems: Concepts and Demonstrations	Speaker: Assoc. Prof. Nguyen Van Toan Tohoku University, Japan
17:50 - 18:00	Plenary Session Remarks	Prof. Ahmed A D Sarhan (King Fahd University of Petroleum and Minerals, Saudi Arabia)
18:00 - 18:25	Award Presentation Ceremony	
18:25 - 18:30	Closing Ceremony	
Gala Dinner (& Culture Exchange)		
18:30 - 20:30	Gala Dinner	Location: Becamex Hotel New City
DAY 3 (NOVEMBER 12, 2025)		
08: 00 - 11:45	Visits & Tours	

POSTER SESSION

Chair:
1/ Assoc. Prof. Nguyen Van Toan
2/ Dr. Nguyen Chi Nhan

Time: 11:30-12:00, November 11, 2025
Location: B3.101

NO.	PAPER ID	TITLE	AUTHOR
		ENGINEERING, ENGINEERING PHYSICS AND ELECTRICAL & ELECTRONIC ENGINEERING	
1	21	Synergistic Enhancement of Photoelectrochemical Water Splitting Efficiency of $BiVO_4$ via CoOOH, NiOOH, and Co–NiOOH Cocatalysts	Nguyen Thi Huyen, Dang Huu Phuc and Le Tran
2	39	Utilization of Crushed Stone and Fine Sand as Fine Aggregates in the Production of High-Strength 1x2 Concrete (Grades 350 and 400) without Admixtures	Nhan Huynh Phan and Tuong Nguyen Thi Cat
3	44	Application of convolutional neural network in High-resolution Seismic Data Analysis for Classification of Holocene Sediments at Southern Vietnam offshore	Ha Thi Hong Nguyen, Cuong Van Anh Le, Dung Quang Nguyen, Anh Huynh Tuan Nguyen and Thuan Van Nguyen
4	68	Application of Near infrared imaging in accesment of the optical and thermal properties of white LED	Trọng-Nam Tran, Vo-Hoang-Phuc Nguyen, Chi-Linh Nguyen, Thanh-Nhan Huynh, Van-Tuan Huynh, Nguyet-Thuan Phan, Huynh-Tuan Anh Nguyen and Quang-Khoi Nguyen
5	69	Development of optical model of green light converted phosphor with verification by normalized cross correlation algorithm	Quoc Cuong Nguyen, Vo-Hoang-Phuc Nguyen, Van-Tuan Huynh, Nguyet-Thuan Phan, Huynh-Tuan-Anh Nguyen and Quang-Khoi Nguyen
6	78	Integrated Seismic and Magnetotelluric Imaging of Deep Geological Structures in Australia	Thuan Van Nguyen, Cuong Van Anh Le, Lieu Nguyen Nhu Vo and Tan Trong Vu
		MEMS (MICROELECTRONMECHANICAL SYSTEM), SENSORS AND SEMICONDUCTING DEVICES, BIOMEDICAL ENGINEERING, DIGITAL MICROFLUIDICS AND THEIR APPLICATIONS	
7	23	A Simulation Analysis of a Thin Silicon Micro-Beam Type of an Ultra-High Performance MEMS Piezoresistive Strain Sensors	Nguyen Chi Cuong, Li Wang Long and Duong Thi Kim Lien
8	54	Synthesis and Investigation of the Photocatalytic Properties of ZnO/rGO Nanomaterials	Vy Nguyen, Chi Tran, Giang Huynh, Nguyen Tran, Thanh Nguyen, Trung Tran and Giang Le
9	57	Electrodeposited CuI and Cs-Doped CuI Films with Tunable Thermoelectric Properties	Natsuki Oda, Kei Sakamoto, Nguyen Van Toan, Jakrit Gobpant, Nattharika Theekhasuk, Aparporn Sakulkalavek and Takahito Ono
10	64	Hydrogen Thermogalvanic Cell via Catalyst-Integrated Nafion and Thermal Conduction Design	Huu Nghia Tran, Van Toan Nguyen, Van Hieu Nguyen and Takahito Ono
11	79	Investigating for Ammonia Gas Sensing performance of reduced Graphene Oxide - Phosphorene hybrid	Nguyen Thanh Danh, Tran Minh Ngoc, Nguyen Thi Kim Hue, Nguyen Thi Phuong Thanh, Le Duc Anh, Nguyen Manh Bao, Tran Quang Nguyen, Huynh Van Giang and Tran Quang Trung
12	82	The novel of impedance measurement for Digital Micro Fludic (DMF) with 128 celld for the biomedical engineering application	Nguyen Van Hieu, Hoang Nhat Son, Le Van Thang, Tran Duy Khang, Nguyen Phuoc Hoang Khang, Nguyen Hoang Nhat Khang, Vo Khac Truong, Kieu Tri Dang, Huynh Chan Khon and Congo Tak Shing Ching
13	16	Controlling sugar in sugarcane	Chon Trinh, Ha Tu and Nghiem Trinh
14	96	The Effect of Cutting Parameters to Surface Roughness and The Vibration Level of End Mill with Wireless Vibration Monitoring Device	Hiep Nguyen Hoang, Trong Dang Huu, Toan Nguyen Van and Khoa Tran Ngoc Dang
		COMPUTING SCIENCE, SIMULATIONS AND MODELING	
15	38	Effect of the Constant-Volume Biaxial Strain Intrinsic on the Anomalous Hall Conductivity of hcp Co	Thi Ly Trinh and Duc Cuong Do
16	55	Introducing a novel surface electromyography signal dataset for hand movement classification	Nguyen Thi Le Thuy, Thuan Phan Nguyet and Huynh Van Tuan
17	10	Electronic structure and thermoelectric properties of 2-dimensional semiconductors: A first principles study	Hai Hung Tran, Thi Hoang Yen Hua and Duc Cuong Do
		EMBEDDED SYSTEMS, INTERNET OF THINGS, MACHINE LEARNING, ARTIFICIAL INTELLIGENCE, ETC.	
18	75	Comparative Evaluation of U-Net, DC-U-Net, and DUCK-Net for Polyp Segmentation on CVC-ClinicDB and Kvasir-SEG Datasets	Anh Thu Nguyen and Van Tuan Huynh
19	74	Development of a handheld hot spot detecting device based on YOLOv5 application on thermal images of photovoltaic panels	Khang Nguyen Phuoc Hoang, Hai Duong Minh and Nhan Nguyen Chi
		ROBOTIC, AUTOMATION AND INTELLIGENT SYSTEM	
20	52	Digital Twin-Based Inverse Kinematic Simulation for Risk-Aware Operation of Industrial Robot Arms	Minh Phu Bui, Thanh Cong Ung and Huy Lam Vo
21	12	A Model Predictive Controller for A Single Water Tank System	Vinh Quang Nguyen

ICEBA 2025 AGENDA

ENGINEERING, ENGINEERING PHYSICS AND ELECTRICAL & ELECTRONIC ENGINEERING

Chair:
1/ Assoc. Prof. Vu Thi Hanh Thu
2/ Assoc. Prof. Doan Le Hoang Tan
Secretary: Mr. Nguyen Tri Cuong

Room: B3 202

TIME	PAPER ID	TITLE	AUTHOR
13:30 - 13:50	61	**Invited talk 1 (S1.I1)** Ultra-sensitive, on-site detection on curved surface of fruit using flexible-sandwich architecture SERS sensors	Ton Nu Quynh Trang, Nguyen Tran Gia Bao, Nguyen Van Hieu and Vu Th Hanh Thu
13:50 - 14:10	31	**Invited talk 2 (S1.I2)** AI-Based Prediction and Verification of Rack Cell Coordinates in a Smart Warehouse System	Ngoc Huan Le, Vu Hai Vân, Nguyen Quoc Anh Minh, Tran Phan Thien Phuc, Nguyen Xuan Doanh and Huỳnh Văn Ý
14:10 - 14:25	11	**Oral Presentation 1 (S1.01)** Fabrication of ZnO Nanorods/MoS_2 Heterostructures for Photocatalytic Applications	Trâm Đỗ, Anh Phạm and Loan Phan
14:25 - 14:40	20	**Oral Presentation 2 (S1.02)** Magnesium potentiometric sensor	Tatsuru Tobisawa and Takahito Ono
Teabreak (14:50 - 15:00)			
15:00 - 15:15	29	**Oral Presentation 3 (S1.03)** Developing a Smart Building Management System at a high-quality educational institution	Thien Phuc Tran Phan, Hoang Duc Nguyen, Xuan Doanh Nguyen, Chi Cao Ha and Ngoc Huan Le
15:15 - 15:30	53	**Oral Presentation 4 (S1.04)** The enhancement of NH_3 gas sensitivity at room temperature by the ZnO/Ag/rGO composite.	Cẩm Lê, Chi Trần, An Nguyễn, Giang Huỳnh, Trâm Trần, Hân Trương, Nguyên Trần, Thanh Nguyễn, Trung Trần and Giang Lê
15:30 - 15:45	67	**Oral Presentation 5 (S1.05)** Study of the optical properties of white light with using blue laser as an excitation source	Minh-Triet Nguyen, Quoc-Cuong Nguyen, Chi-Linh Nguyen, Thanh-Nhan Huynh, Van-Tuan Huynh, Nguyet-Thuan Phan, Huynh-Tuan Anh Nguyen and Quang-Khoi Nguyen

AGENDA

MEMS (MICROELECTRONMECHANICAL SYSTEM), SENSORS AND SEMICONDUCTING DEVICES, BIOMEDICAL ENGINEERING, DIGITAL MICROFLUIDICS AND THEIR APPLICATIONS

Chair:
1/ Assoc. Prof. Nguyen Van Toan
2/ Assoc. Prof. Nguyen Van Hieu
Secretary: Mr. Tran Huu Nghia

Room: B3 201

TIME	PAPER ID	TITLE	AUTHOR
13:30 - 13:50	81	**Invited talk 1 (S2.I1)** The study of MQW structures of Ultraviolet Light-Emitting Diodes (UVLEDs) for ozone concentration 's application	Nguyen Van Hieu, Vu The Dang, Le Tran Gia Bao, Ho Thi Nhu Nguyet, Ho Thanh Huy, Huynh Hoang Trung, Nguyen Hoang Phuc and Mai Thanh Tan Cuong
13:50 - 14:10		**Invited talk 2 (S2.I2)** Engineering $Bi_4O_4SeCl_2$-Enhanced Thermoelectric Materials: From Low Thermal Conductivity Design to Device-Level Applications	Aparporn Sakulkalavek
14:10 - 14:30		**Invited talk 3 (S2.I3)** Hybrid Graphene/Cellulose Nanofiber–Bismuth Telluride Nanocomposites for Enhanced Thermoelectric Performance	Khairul Fadzli Samat, Muhd Aliff Ikhwan Che Azman, Nik Ahmad Luqman Hakim Nik AbdulRashid, Muhd Afiff Alias, Nguyen Van Toan, Takahito Ono
14:30 - 14:45	40	**Oral Presentation 1 (S2.01)** Development of a Phantom Model for Lymphedema for Electrical Impedance Tomography (EIT) Image Reconstruction and Evaluation	Hai Dang Nguyen Tran, Ha Anh T. Nguyen, Ngoc Luan Tran, Ying Ying Wu, Diep Quoc Tuan Nguyen, Duc Huy Nguyen, Peng-Ta Liu, Thien Luan Phan and Congo Tak Shing Ching
Teabreak (14:50 - 15:00)			
15:00 - 15:15	22	**Oral Presentation 2 (S2.02)** Cellulose Nanofiber-Bismuth Telluride Nanocomposite for Micro Thermoelectric Generator	Tian Jianghan, Nguyen Van Toan, Nguyen Van Hieu and Ono Takahito
15:15 - 15:30	47	**Oral Presentation 3 (S2.03)** Tuning Magnetic Sensor Performance through Fabrication Conditions	Xuan Bao Tran, Thanh Nha Nguyen, Nhut Ly Dinh, Lam Giang Phan, Duc Anh Le and Quang Trung Tran
15:30 - 15:45	87	**Oral Presentation 4 (S2.04)** EEG-Based Emotion Recognition Using Optimized Logit Boost and Relief Feature Selection	Huy Tran Do, Viet Quoc Huynh, Thinh Xuan Huynh and Tuan Van Huynh
15:45 - 16:00	83	**Oral Presentation 5 (S2.05)** Repurposed passive RFID tag as wireless NH3 gas detectors at room temperature using Bio-enhanced ZnO-Hedychium neocarneum nanocomposite	Tam Van Nguyen, Khoa Dang Nguyen, Chanh Minh Nguyen, Trong-Nhat Phan, Van Thanh Le, Phat Thuan Truong, Han Gia Nguyen, Mai Duong-Huynh Nguyen, Dai Thi-Trang Chau, Chinh Dung Trinh and Ngan Nguyen Le
16:00 - 16:15	63	**Oral Presentation 6 (S2.06)** Structural and Fill Factor Optimization for High-Performance Multi-layer Flexible Thermoelectric Cooler	Jakrit Gobpant, Aparporn Sakulkalavek, Nguyen Van Toan and Takahito Ono
16:15 - 16:30	80	**Oral Presentation 7 (S2.07)** The MATLAB study of the motion for separation and integration of droplets via Electrowetting for DMF modeling	Nam Dao Hong, Vinh Vu Thien, Nguyen Van Toan and Nguyen Van Hieu

MICROELECTRONICS, IC DESIGN, LOW CONSUMPTION DEVICES, RENEWABLE ENERGY

Chair:
1/ Dr. Tran Hoang Linh
2/ Assoc. Prof. Le Duc Hung
Secretary: Mr. Nguyen Phan Thien Phuc

Room: B3 106

TIME	PAPER ID	TITLE	AUTHOR
13:30 - 13:50	86	**Invited talk 1 (S3.I1)** Design of a Secure Multi-core System based on RISC-V CPU and Lightweight Cryptography Cores on FPGA	Duc Hung Le, Huy-Hoang Trinh and Khai-Minh Ma
13:50 - 14:05	43	**Oral Presentation 1 (S3.01)** Forecasting Load And Solar Power Using Machine Learning In Microgrids	Trong Nghia Nguyen, Nguyen Anh Tuan Do, Tri Cuong Nguyen, Le Nam Pham, Xuan Hung Nguyen and Van Luan Tran
14:05 - 14:20	45	**Oral Presentation 2 (S3.02)** Field-Free Magnetization Switching via Magnetization Tilting in Ferrimagnetic Alloys for Spintronics Applications	Xuan Bao Tran, Thanh Nam Tran, Le Phuong Nghi Vo, Van Giang Huynh and Quang Trung Tran
14:20 - 14:35	46	**Oral Presentation 3 (S3.03)** Magnetic Skyrmion Formation through External Field Control for Next-Generation Spintronic Devices	Xuan Bao Tran, Nhac Nguyen, Quang Huy Hong, Thanh Danh Nguyen and Quang Trung Tran
14:35 - 14:50	42	**Oral Presentation 4 (S3.04)** Investigating A New Type Of Graphene-Based Thermal Interface Materials In Three-Dimensional Semiconductor Packaging Technology	Lien Duong, Nam Tran and Y Nguyen

COMPUTING SCIENCE, SIMULATIONS AND MODELING

Chair:
1/ Assoc. Prof. Nguyen Van Men
2/ Dr. Nguyen Quang Khoi
Secretary: Dr. Vu Duc Ly

Room: B3 103

TIME	PAPER ID	TITLE	AUTHOR
13:30 - 13:55	85	**Invited talk 1 (S4.I1)** A high-accuracy optical model for improving the color rendering index of white light in laser lighting applications	Ai Than, Quoc-Cuong Nguyen, Vo-Hoang-Phuc Nguyen and Quang-Khoi Nguyen
13:55 - 14:15	65	**Oral Presentation 1 (S4.01)** Temperature-dependent plasmon modes in Silicene–Q2DEG heterostructures	Men Nguyen Van and Kim Phuong Dong Thi
14:15 - 14:35	76	**Oral Presentation 2 (S4.02)** Enhancing The Response Time Based On Changing Temperature Sensor Properties By Using Comsol Software	Bao Nguyen Manh, Nguyen Tran Quang, Danh Nguyen Thanh, Anh Le Duc and Trung Tran Quang
14:35 - 14:55	25	**Oral Presentation 3 (S4.03)** Immersive Virtual and Augmented Reality in Engineering Education: A Study on Student Experience and Assembly Performance	Lai Lai Win, Faieza Abdul Aziz, Abdul Aziz Hairuddin, Lili Nurliyana Abdullah, Hwa Jen Yap, Hideo Saito and Norhisham Seyajah

EMBEDDED SYSTEMS, INTERNET OF THINGS, MACHINE LEARNING, ARTIFICIAL INTELLIGENCE, ETC.

Chair:
1/ Dr. Nguyen Chi Nhan
2/ Dr. Nguyen Minh Son
Secretary: Mr. Vo The Duy

Room: B3 204

TIME	PAPER ID	TITLE	AUTHOR
13:30 - 13:50	33	**Invited talk 1 (S5.I1)** Dynamic GNN+ with Contrastive Pre-Training and Mixture-of-Experts for Multi-Task HVAC Forecasting in Smart Buildings	Duy Tan Le, Duc Dat Pham, Anh Kiet Do, Thien Phuc Tran Phan, Ngoc Huan Le and Kha Tu Huynh
13:50 - 14:10	72	**Invited talk 2 (S5.I2)** A machine learning approach for Syringomyelia Syrinx detection on MRI images using YOLOv8	Anh Pham Hoang, Khang Nguyen Phuoc Hoang, Thien-Luan Phan, Congo Tak Shing Ching and Nhan Nguyen Chi
14:10 - 14:25	49	**Oral Presentation 1 (S5.01)** Real-Time RBF-Based Adaptive Gain Sliding-Mode Speed Control for BLDC motor Drives	Duc Pham Minh and Ly Thi Ly
14:25 - 14:40	18	**Oral Presentation 2 (S5.02)** Machine Learning-Driven Experimental Design for the Synthesis of Magnetic Nanoparticles	Cuong Luong Hoang, Lan Duc Vu, Hao Duc Nguyen, Son Hoa Vo, Hoa Trung Phuoc Nguyen, Top Khac Le and Hieu Van Le
Tea break (14:50 - 15:00)			
15:00 - 15:15	32	**Oral Presentation 3 (S5.03)** Acquisition and Classification of a Surface EMG Dataset for Finger Movement	Thuan Phan Nguyet, Tuan Van Huynh and Thuy Le Nguyen Thi
15:15 - 15:30	14	**Oral Presentation 4 (S5.04)** Acoustic Side-Channel Attack Detection Using LSTM	Tasnim Mahdiya
15:30 - 15:45	17	**Oral Presentation 5 (S5.05)** Stefani Kumala Dewi Wijayanti and Achmad Pratama Rifai	Multi-Class Waste Detection Using Convolutional Neural Network Algorithms for Sorting Process

MEDICAL PHYSICS AND NUCLEAR ENGINEERING

Chair:
1/ Assoc. Prof. Ho Manh Dung
2/ Asst.Prof. Dr. Vu The Dang
Secretary: Ms. Nguyen Hai Lan Anh

Room: B3 203

TIME	PAPER ID	TITLE	AUTHOR
13:30 - 13:55	97	**Invited talk 1 (S6.I1)** Thirty-five years of k0-NAA at the Dalat Research Reactor: advancements and achievements in Vietnam	Ho Manh Dung, Pham Duy Hien, Nguyen Tac Anh, Cao Dong Vu, Ho Van Doanh, Tran Quang Thien, Tran Tuan Anh, Nguyen Huu Nghia, Truong Truong Son, Phonesavanh Lathdavong
13:55 - 14:15	35	**Oral Presentation 1 (S6.01)** A Multi-Scale Monte Carlo Framework For Assessing The Biological Impact Of Out-Of-Field Secondary Radiation In Proton Therapy	Hong Huynh Thi Yen, Thy Truong Huu Ngan, Hai Vo Hong and Lang Trinh Hoa
14:15 - 14:35	6	**Oral Presentation 2 (S6.02)** Radiographic Imaging Of Used Iridium-192 Sources With A Rigaku Rf-200egm X-Ray Generator For Waste Storage	Giang Pham Quynh, Hai Pham Xuan, Ngoc Le Van, Phuong Hoang Sy Minh and Trieu Dang Quoc
14:35 - 14:55	18	**Oral Presentation 3 (S6.03)** Automated Dose Prediction For Head And Neck Radiotherapy Using Attention Residual 3d U-Net On The Openkbp Dataset	Quang Dang, Tao Chau, Trang Hoang, Nghi Pham Ngoc Phuong, Sang Phan Le Hoang and Cong Nguyen

MECHANICAL ENGINEERING AND ADVANCED MANUFACTURING

Chair:
1/ Dr. Nguyen Trung Nghiep
2/ Assoc. Prof. Nguyen Huu Tho
Secretary: Mr. Huynh Trung Dung

Room: B3 301

TIME	PAPER ID	TITLE	AUTHOR
13:30 - 13:50	70	**Invited talk 1 (S7.I1)** Lithography-based additive manufacturing of Fe-based metallic glass: a novel approach	Mahmoud Ibrahim, Christian Gierl-Mayer, Gyoergy Harakaly, Gerald Mitteramskogler, Tsung-Yuan Kuo, Kuan-Wei Chen, Ahmed Sarhan and Farazila Yusof
13:50 - 14:10	90	**Invited talk 2 (S7.I2)** Optimal Job Scheduling of Multiple Rail Cranes in Rail Stations	Nguyen Vu Anh Duy
14:10 - 14:25	24	**Oral Presentation 1 (S7.01)** Particle Classification in Automotive Transmission Manufacturing by Artificial Neural Network – Genetic Algorithm	Thuan Tran Minh, Sung-Lim Ko, Bao Phan Quoc, Thuc Nguyen Van, Dat Huynh Trong and Son Nguyen Thanh
14:25 - 14:40	48	**Oral Presentation 2 (S7.02)** A computational fluid dynamic analysis for evaluating the impact of inlet velocity on the accuracy of metal-plastic composite models	Huu Nghi Huynh, Trong Bach Nguyen and Trong Hieu Bui
Tea break (14:50 - 15:00)			
15:00 - 15:15	92	**Oral Presentation 3 (S7.03)** Development of an Augmented Reality Training Application for Conventional Machining	Abdul Aziz, Azarina Afni Mat Isa and Lai Lai Win
15:15 - 15:30	98	**Oral Presentation 4 (S7.04)** Identification of blunting behavior for graphene sheet using atomic model	Ky Nguyen Minh
15:30 - 15:45	50	**Oral Presentation 5 (S7.05)** Induction-cured resin using Fe_3O_4 magnetic nanoparticles	Giang Huynh, Kiet Quach, Anh Le, Nguyen Tran and Trung Tran
15:45 - 16:00	99	**Oral Presentation 6 (S7.06)** Piecewise Dynamic Analysis of a Vibration Isolation Model with Constant-Force Characteristics	Minh Ky Nguyen, Van Chon Trinh and Thanh Danh Le
16:00 - 16:15	95	**Oral Presentation 7 (S7.07)** Bridging Laboratory Tasks and Manufacturing Demands: Validation of Tangram Exercises with Multimodal Mental Workload Assessment	Muhammad Adam Umar Zaman and Nurul Izzah Abd Rahman

ROBOTIC, AUTOMATION AND INTELLIGENT SYSTEM

Chair:
1/ Assoc. Prof. Le Thanh Danh
2/ Dr. Su Khac Huan
Secretary: Mr. Huynh Tan Hung

Room: B3 302

TIME	PAPER ID	TITLE	AUTHOR
13:30 - 13:55	77	**Invited talk 1 (S8.I1)** Development of Neural Network Training Algorithm for Nonlinear Control System	Nghia Duong
13:55 - 14:15	37	**Oral Presentation 1 (S8.01)** The performance of Actor-Critic PPO model based on the probability of Gaussian distribution	Pham Xuan Hien
14:15 - 14:35	51	**Oral Presentation 2 (S8.02)** Performance Evaluation of Visual Odometry under Varying Sensor Configurations for Mobile Robot Navigation	Minh Phu Bui, Phuong Nam Tran, Baptiste Poncet, Tan Hung Huynh and Thi Kim Lien Duong
14:35 - 14:55	94	**Oral Presentation 3 (S8.03)** Development of an Intelligent Methadone Dispensing System with Integrated Patient Database for Clinical Efficiency	Mohd Sayuti Ab Karim, Abdul Halim Muhamad Ramzi, Rusdi Abd Rashid and Precin Kalisalvan

ICEBA 2025

PLENARY SPEAKER BIOGRAPHIES

Prof. Hideki Aoyama

Hideki Aoyama had become an Assistant Professor in Keio University, Japan since 1994. He alternatively received positions of Associate Professor in 1996 and full Professor in 2004 from Keio University. He is now a member of ASME (American Society of Mechanical Engineers), SME (Society of Manufacturing Engineers), JSPE (Japan Society for Precision Engineering), JSME (Japan Soceity of Mechanical Engineers), JSDE (Japan Society for Design Engineering) and JSAT (Japan Society for Abrasive Technology). He had a lot of contribution and publications in the felds of Digital Design System (CAD), Digital Manufacturing System (CAM), Manufacturing System, Die and Mold.

Title of the presentation: Perfectly Automated Modeling System Using 3D-Printer: Direct Energy Deposition

Prof. Ahmed A D Sarhan

Dr. Sarhan graduated with a PhD. in Precision Engineering Department, Kyoto University, Japan. During his work in Japan, he gained an experience in the field of intelligent manufacturing processes with multiple industrial and academic partners.
Dr. Sarhan is a core member of the Center of Intelligent Manufacturing and Robotics, KFUPM, which is considered an international authority in manufacturing and is known for its high rates of citation.
Throughout his engineering career, Dr. Sarhan completed more than 55 research projects funded by the public and private sectors and has undertaken various consulting assignments in manufacturing. Thus far, Dr. Sarhan has published more than 250 peer-reviewed articles in leading high impact ISI journals and reputable conference proceedings in a wide variety of manufacturing-related disciplines. Dr. Sarhan has been granted 23 patents and has won several gold, silver and bronze medals in local and international exhibitions. Currently, he is undertaking 5 projects at the commercialization stage. In addition, Dr. Sarhan successfully overseen the graduation of 19 PhD and 25 M.Sc. students. Furthermore, he is an editor for many journals including Arab J Sci Eng. (AJSE) (ISI – Q2), reviewer for many M.Sc. and PhD theses, many reputable engineering journals with high impact factors and refereed international conferences. Dr. Sarhan is a member of many professional bodies, JSME, ASME, CEng. (UK), M-IMechE (UK), M-IET (UK), M-IPENZ (NZ), M-BE (My), M-BE (Eg). Dr. Sarhan is consistently ranked by Research.com and AD Scientific Index 2022 as prominent academic platform for scientists, as one of the top most productive researcher in global ranking lists. In addition, Dr. Sarhan is also listed as one of the Top 2% Scientist by Stanford University in 2020-2025.

Title of the presentation: AI-Driven Computer-Aided Process Planning (CAPP) for Autonomous and Cost-Effective CNC Machining: Digital Manufacturing Approach

Mr. Nguyen Phuc Vinh

Mr. Nguyen Phuc Vinh is a Senior Technical Director at Synopsys Vietnam. He earned his Master's degree in Electronics Engineering – Microelectronics and IC Design from the University of Science, Vietnam National University Ho Chi Minh City, in 2018. With nearly two decades of experience in the semiconductor industry, he has held senior positions at companies such as Applied Micro, Ampere Computing, and eSilicon Vietnam. His research interests include low-power ASIC implementation and advanced microprocessor design, and he has presented at international conferences such as IEEE MCSoC.

Title of the presentation: Re-engineering Engineering In The Ara Of Pervasive Intelligence

PLENARY SPEAKER BIOGRAPHIES

ICEBA 2025

Assoc. Prof. Nguyen Van Toan

He received his B.S. degree in Physics in 2006 and his M.S. degree in Electronics in 2009 from Vietnam National University, Ho Chi Minh City, Vietnam. He earned his Doctor of Engineering degree from Tohoku University in 2014 for his research on silicon technologies capable of integrating LSI for timing device applications. He is currently an Associate Professor at the Graduate School of Engineering, Tohoku University. He has authored 85 peer-reviewed journal papers, four patents, one book, and four book chapters. His research has been presented at over 100 international conferences. He has received multiple awards, including the Research Travel Awards for IEEE-MEMS (2017, 2020) and IEEE-Transducers (2017), Outstanding Paper Awards from IEEE-NANO and IEEE-NEMS, the Best Paper Award from IEEJ in 2019, and the Electrical Science Promotion Award in 2022. His research aims to develop an all-in-one micro/nano energy system, encompassing energy harvesting, energy storage, and sensing. His current research interests include capacitive silicon resonators, optical modulator devices, thermal-to-electric power generators, gas sensing, micro-batteries, and metal-assisted chemical etching.

Title of the presentation: Nanoengineered Microsystems: Concepts and Demonstrations

Assoc. Prof. Nguyen Van Hieu, Ph.D

In 2007, Mr. Hieu received his Ph.D degree in Physics from Graduate School of Science, Osaka University (Japan). May 2007, He was head of Department of Physics and Electronic Engineering. From Dec 2008 to Sep 2010, he was also Dean of Faculty of Electronics and Telecommunications. From 2010 and 2011, he came Ritsumeikan Univ (Jp) as visiting professor for the research field of UVLEDs. Moreover, since 2011, he has also appointed as inviting researcher for Lab of Semiconducting Technology (Saigon Hi-Tech Park) for microelectronic projects. Dr. Hieu was appointed an associate professor position in 2011.

Moreover, He is a member of Institute of Electrical and Electronic Engineering in Japan (Since 2012); member of editor board of Korean Institution of Electrical and Electronic Engineer- KIEEE (Since Jan2013); member of Physics Society of Vietnam (Since 2008), vice chair of the National Development Microelectronics program in Hochiminh City (since Oct 2012).

In Nov. 2008, he took the International Dean Course 's South East Asian which organized by DAAD (Germany). He became an alumnus and co-coordinator of DAAD for education program in Hochiminh City. He was also a guest of the 2nd Roundtable under the European Union – Asian Higher education Platform, Organization by EUA & DAAD (Belgium; Jul, 2009). He was also an alumnus of Osaka University as JUACH, JAV,... in Vietnam.

He was also invited talk in ASPA2013 (in SHTP, Vietnam), 4S international Conference 2010, 2012, member of Scientific council of Saigon Hi-Tech Park (Since Feb2013); researchers for Vietnam-United Photonics Co. Ltd in Vietnam (UVP).

He had more than 30 talks in domestic and international conferences. His research group had around 40 Journal papers and proceeding of international conferences in the field of physics, magnetism, semiconducting devices, MEMS, microelectronics,... from 2004 up to now. He was a program chair, member of PC of many seminar, international workshop, conference: VJSE2005, VJSE2006 (Japan),4SForum (2012, SHTP), IWTDMT2013, 1stVCWRE2015 (VNU-Vietnam and CNU-Korea), IWNA, ICEBA...

Prof. Hieu is now Vice Director of IPTC-VNUHCM and President of Ho Chi Minh city Semconductor Industry Associate (HSIA).

Title of the presentation: Introduce to the Alliance for Research and Training of human resources in Semiconductor and Microelectronics Industry in Vietnam (ARTSeMi)

ICEBA 2025

INVITED SPEAKER BIOGRAPHIES

Session: Engineering, Engineering Physics and Electrical & Electronic Engineering

Dr. Le Ngoc Huan

Dr. Le Ngoc Huan holds a PhD from Sungkyunkwan University, Korea, and has over 5 years of experience working with automation companies in Korea. With 10 years at EIU, he has specialized in innovation and Industry 4.0 technologies, driving digital transformation initiatives. In 2023, he earned the SIRI assessor certification and has since shared his expertise on Industry 4.0 and the SIRI framework with numerous companies and universities. Dr. Huan has led several industry projects focused on digitalization, using the SIRI framework to assess digital transformation readiness and guide companies in adopting advanced technologies (IoT, AI, ...) to enhance operational efficiency and competitiveness.

Title of the presentation: AI-Based Prediction and Verification of Rack Cell Coordinates in a Smart Warehouse System

Assoc. Prof. Dr. Vu Thi Hanh Thu

Dr. Vu Thi Hanh Thu is an Associate Professor and Vice Head of the Department of Applied Physics at the University of Science, Vietnam National University Ho Chi Minh City (VNUHCM). She also leads the Photonics Laboratory. Her research focuses on photocatalysis, renewable energy, nanomaterials, and photonics for sensing and optoelectronic applications. She has led several national projects funded by NAFOSTED and VNUHCM and supervised numerous graduate students. Her recent work explores plasmonic semiconductor nanostructures for enhanced Raman spectroscopy and photocatalytic hydrogen generation.

Title of the presentation: Ultra-sensitive, on-site detection on curved surface of fruit using flexible-sandwich architecture SERS sensors

Session: Medical Physics and Nuclear Engineering

Assoc. Prof. Dr. Ho Manh Dung

Assoc.Prof.Dr. Ho Manh Dung is currently a Senior Researcher and Chair of the Council of Science, Technology, and Training at the Center for Nuclear Technologies (CNT), Vietnam Atomic Energy Institute (VINATOM). He obtained his Ph.D. in Physics (Nuclear Physics) from the University of Science, Vietnam National University Ho Chi Minh City (VNUHCM-US), and later completed postdoctoral research at the Institute for Nuclear Technology (Portugal) and the Korea Atomic Energy Research Institute (South Korea).
Dr. Dung has over 35 years of experience in nuclear physics and reactor research. Before his current position, he served as Executive Director of CNT (2018–2023) and Deputy Director of the Dalat Nuclear Research Institute (2016–2017). His research has also taken him to international institutions such as the Center for Nuclear Reactors in Canada and the Institute for Nuclear Technology in Portugal. His expertise spans physics and nuclear science, with extensive contributions to the development of Vietnam's nuclear research and technology.

Title of the presentation: Thirty-five years of k0-NAA at the Dalat Research Reactor: advancements and achievements in Vietnam

INVITED SPEAKER BIOGRAPHIES

ICEBA 2025

Session: MEMS (MicroElectronMechanical System), Sensors and semiconducting devices, Biomedical Engineering, Digital Microfluidics and their applications

Assoc. Prof. Dr.Aparporn Sakulkalavek

Associate Professor Dr. Aparporn Sakulkalavek is a physicist specializing in thermoelectric materials and energy harvesting, thin film coatings, surface engineering, and nanostructured functional materials. She earned her Ph.D. in Physics and currently serves as a lecturer and researcher, with extensive contributions in solid-state synthesis and the study of optical and electrical properties of advanced materials. Dr. Sakulkalavek has received significant recognition for her work, including the National Research Council of Thailand (NRCT) Researcher Award in 2023 and 2024, as well as Young Researcher and Outstanding Researcher Awards from KMITL. Her achievements include successful technology transfer, patents, and the development of innovative materials and devices for energy applications. She has published extensively in leading journals, with recent works focusing on thermoelectric generators, Cu2Se-based materials, and GeTe thin films.

Title of the presentation: Engineering $Bi_4O_4SeCl_2$-Enhanced Thermoelectric Materials: From Low Thermal Conductivity Design to Device-Level Applications

Assoc. Prof. Dr. Nguyen Van Hieu

Assoc. Prof. Dr. Nguyen Van Hieu obtained his bachelor degree (1994) and mater degrees (2000) in Physic from University of Hochiminh City and VNUHCM-University of Science in 1994 and 2000, respectively. In 2007, he received his Ph.D degree in Physics from Graduate School of Science, Osaka University (Osaka, Japan). May 2007, He was appointed a head Department of Physics and Electronic Engineering. From Dec 2008 to Sep 2010, he was dean position in Faculty of Electronics and Telecommunications. From 2010 and 2011, he came Ritsumeikan Univ (Jp) as visiting professor for the research field of UVLEDs. Moreover, since 2011, he has also appointed as inviting researcher for Lab of Semiconducting Technology (Saigon Hi-Tech Park) for microelectronic projects. Since 2011, Dr. Hieu was appointed an associate professor position, senior lecturer in Department of Physics and Electronic Engineering, VNUHCM- University of Science. From April 2007 to Oct 2022, Dr. Nguyen Van Hieu was head Department of Physics and Electronic Engineering, Faculty of Physics- Engineering Physics, VNUHCM- University of Science (VNUHCM-US). Moreover, he was also incharge as head Office of International Relations-Projects Management, VNUHCM-US during 2011-2019.

Title of the presentation: The study of MQW structures of Ultraviolet Light-Emitting Diodes (UVLEDs) for ozone concentration's application

Dr. Khairul Fadzli Samat

Dr. Khairul Fadzli Samat is a Senior Lecturer at Universiti Teknikal Malaysia Melaka (UTeM). He obtained his Doctor of Philosophy in Mechanical System Engineering from Tohoku University, Japan, in 2020. He also holds both a Master of Engineering and a Bachelor of Engineering in Mechanical Engineering from Universiti Teknologi Malaysia (UTM).
His research focuses on advanced nanocomposite films, thermoelectric materials, and micro-crack structural analysis. Over the years, Dr. Khairul has received several recognitions for his research contributions, including the Gold Award at ITEX 2023 (KLCC Convention Centre, Kuala Lumpur) and the Gold Award at Jejak Inovasi 2023 (UTeM). He was also the recipient of the Silver Award at Utemex 2022 and the Best Paper Award at the 12th Malaysian Technical Universities Conference on Engineering and Technology (MTUCE) in 2021.

Title of the presentation: Hybrid Graphene/Cellulose Nanofiber–Bismuth Telluride Nanocomposites for Enhanced Thermoelectric Performance

ICEBA 2025

INVITED SPEAKER BIOGRAPHIES

Session: Computing Science, Simulations and Modeling

Dr. Quang-Khoi Nguyen

Doctor Quang-Khoi Nguyen is currently a Lecturer at Faculty of Physics and Engineering Physics, VNUHCM-University of Science, Hochiminh City, Vietnam.
He has received Doctor of Philosophy degrees, Major in Optics and Photonics from National Central University, Taoyuan, Taiwan. He graduated Master of Science, Major in Optics, from Vietnam National University Ho Chi Minh, Hochiminh City, Vietnam. He has graduated Bachelor of Physics, QuyNhon University, Vietnam.
He has invited to review for many journals including Optics Express, Results in Engineering, Photonics Letter of Poland, Symmetry, IEEJ Transactions on Sensors and Micromachines (E), IEEE Photonics journal, Electronics, Processes, Optics Letters, and Optical and Quantum Electronics.
He has published about 50 peers reviewed and conference paper. His research interests includes Optics and Photonics, Semiconductor Packaging, Phosphor, LED packaging, Spectrum design and modeling, Optical modeling, Colorimetry, Photometry, Thermal modeling for Semiconductor Technology.

Title of the presentation: A high-accuracy optical model for improving the color rendering index of white light in laser lighting applications

Session: Embedded systems, Internet of Things, Machine Learning, Artificial Intelligence, etc.

Dr. Le Duy Tan

Dr. Le Duy Tan is a lecturer and researcher at the School of Computer Science and Engineering, International University – VNU-HCM, Vietnam, and a co-founder of AIoT Lab VN. He earned his PhD in Information Science from the Japan Advanced Institute of Science and Technology (JAIST) in March 2021, with research centered on smart grid cybersecurity.
His current work focuses on AIoT systems, spanning smart home, smart healthcare, smart grid, and network security. Dr. Tan has received several prestigious awards, including Outstanding Young Educator of Ho Chi Minh City 2024 and Outstanding Young Staff Member of International University – VNU-HCM 2025. He was also a participant in the 10th Global Young Scientists Summit (GYSS) in 2022.

Title of the presentation: Dynamic GNN+ with Contrastive Pre-Training and Mixture-of-Experts for Multi-Task HVAC Forecasting in Smart Buildings

MSc. Nguyen Phuoc Hoang Khang

MSc. Nguyen Phuoc Hoang Khang, graduated at Ton Duc Thang University in 2019 and got MSc. degree from VNUHCM – University of Science in 2023. He has been working at Faculty of Physics – Engineering Physics, VNUHCM – University of Since, since 2020. His research focuses on machine learning applications in engineering, agriculture, and medical images. He is currently pursuing PhD in Engineering Physics at VNUHCM - University of Science.

Title of the presentation: A machine learning approach for Syringomyelia Syrinx detection on MRI images using YOLOv8

INVITED SPEAKER BIOGRAPHIES

ICEBA 2025

Session: Mechanical Engineering and Advanced Manufacturing

Dr. Mahmoud Zakaria Ibrahim

Mahmoud Zakaria is a Senior Lecturer at Universiti Malaya, Malaysia. He obtained his PhD in 2019 in the field of engineered biomaterials for biomedical implants. His strong passion towards metallic glasses, metal additive manufacturing and surface engineering drive his research direction. With a 12 h-index and more than 26 documents published, he established his impactful research work. He is leading national and international projects, focusing on treatment and additive manufacturing of Fe-based metallic glass for biomedical applications. Throughout his career, Mahmoud succeeded in expanding his collaboration network internationally in Taiwan, Austria, China, Egypt and Saudi Arabia. Also, he established connections with a number of industrial players in their fields, collaborating with them in research projects. He aims to build a world-class research team able to carry out cutting-edge research and advance the knowledge in his research fields.

Title of the presentation: Lithography-based additive manufacturing of Fe-based metallic glass: a novel approach

Dr. Nguyen Vu Anh Duy

Dr. Nguyen Vu Anh Duy is a lecturer at the Faculty of Engineering and Technology, Nguyen Tat Thanh University. He received his Bachelor's in Mechanical Engineering (2007) and Master's in Mechanical Engineering (2010) from the Ho Chi Minh City University of Technology, followed by a Ph.D. in IT-based Logistics Engineering from Pusan National University, South Korea (2015). His primary research interest is the application of optimization models and information technology to enhance operational efficiency in container terminals.

Title of the presentation: Optimal Job Scheduling of Multiple Rail Cranes in Rail Stations

Session: Robotic, Automation and Intelligent System

Assoc. Prof. Dr. Duong Hoai Nghia

Assoc.Prof.Dr. Duong Hoai Nghia was born in 1957 in Ben Tre, Vietnam. He received the degree of bachelor of electrical engineering in 1981 from Ho Chi Minh City University of Technology, the master degree in control engineering and signal processing in 1989 and the PhD in control engineering and automation in 1995 from Grenoble Institute of Technology, France. He was promoted to Associate Professor in 2007. He is currently the Dean of the School of Engineering, Eastern International University, Binh Duong, Ho Chi Minh city. His research interests include control of electromechanical systems and applications of soft computing in control systems.

Title of the presentation: Development of Neural Network Training Algorithm for Nonlinear Control System

Session: Microelectronics, IC design, low consumption devices, Renewable Energy

Assoc. Prof. Dr. Le Duc Hung

Duc-Hung Le received the B.Sc. degree in physics and the M.Sc. degree in electronic physics from the University of Science, Vietnam National University Ho Chi Minh City, in 2001 and 2005, respectively, and the Ph.D. degree in advanced science and engineering from The University of Electro-Communications (UEC), Tokyo, Japan, in 2013. He is currently an Associate Professor with the University of Science - Vietnam National University of Ho Chi Minh City. He is also currently the Head of the Electronics Department and the DESLAB, Faculty of Electronics and Telecommunications, University of Science, Vietnam National University Ho Chi Minh City. His research interests include IC design, SoC design, digital signal processing, neuromorphic computing, and biomedical electronics.

Title of the presentation: Design of a Secure Multi-core System based on RISC-V CPU and Lightweight Cryptography Cores on FPGA

ICEBA 2025

OVERVIEW OF BINH DUONG NEW CITY

Binh Duong New City Administrative Center

Located in Binh Duong New City, the Provincial Administrative Center Building is a modern, environmentally friendly structure that includes two towers, each with 20 floors, a two-story parking lot, and a helipad. The Administrative Center gathers nearly 60 administrative bodies, including agencies, unions, Communist Party units, political organizations, state management agencies, departments, branches, and non-business units.

📍 Le Loi Street, Binh Duong Ward, Ho Chi Minh City

World Trade Center Binh Duong New City (WTC BDNC)

WTC BDNC is a permanent member of the World Trade Centers Association. WTC Binh Duong New City connects to an international community of more than 314 World Trade Centers across over 91 countries on 5 continents, with over 1 million members."
It is a new destination for international trade activities in the Southern Key Economic Region of Vietnam. Its mission is to promote sustainability and innovation for industrial activities and act as a dynamic platform for the development of the Science & Industrial Park.
WTC BDNC is the complex which includes a commercial area, office building, multi-use purpose stadium, walking area, exhibition and convention centers, central square, shopping malls and metro station which offer direct transportation to the vibrant Ho Chi Minh City.

📍 B11 Hung Vuong Blvd, Binh Duong Ward, Ho Chi Minh City
📞 (+84) 779 373 339
🌎 wtcbinhduong.vn/

Park in Binh Duong New City

Binh Duong New City Park is built according to Singapore standard not only the green lung of the city but also the entertainment and picnic area with many beautiful scenes that are loved by many people.

📍 Binh Duong Ward, Ho Chi Minh City
$ Free
📞0966 227 632
Duration: 120 minutes
Opening and closing time: 6:00 AM - 10:00 PM

OVERVIEW OF BINH DUONG NEW CITY

ICEBA 2025

Food Court in Binh Duong New City

Hikari Food Court

Hikari meaning "Light" in Japanese, and the circular food court in the center of the facility resembles the sun, shining all customers and the city itself with bright light, and warmly welcoming customers in a space full of smiles.
Hikari is located in the center of New City adjacent to the Binh Duong Provincial Administrative Center, and has a full range of service functions to enrich the food and livelihoods of the government building, workers in the adjacent industrial zone, and local residents.

Cuisine: Asian, European, Fast Food, Italian, Japanese, Korean, Thai, Vietnamese, Western
Meals: Breakfast, Dinner, Lunch
$ Mid-range
📍 A12-A16, Ly Thai To Street, Binh Duong Ward, Ho Chi Minh City
📞 0274 380 1401

Sora Gardens SC in Binh Duong New City's

Sora Gardens SC in Binh Duong New City's first shopping center, offering an ideal location for a variety of well-known brands like Starbucks, KFC, Dookki, Gogi House, ABC-Mart, and a wide range of entertainment stores.
Restaurants are located on the ground floor of the SORA Gardens residential area with a great culinary variety for everyone.

📍 Lot C19, Hung Vuong Blvd, Binh Duong Ward, Ho Chi Minh City

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ACCOMMODATION CLOSED TO EIU

Hotel suggestions closed to EIU include:

HOTEL	DISTANCE FROM EIU	PHONE
Becamex Hotel New City B2 Hung Vuong Street, Phu Chanh, Thu Dau Mot, Binh Duong, Vietnam https://newcity.becamexhotels.com/	2.7 km	0274 3801 118
Elizabeth Hotel 39A Tran Van On, Phu Hoa, Thu Dau Mot, Binh Duong 75000, Vietnam http://elizabethhotel.com.vn/	9.9 km	0274 3888 688
THE MIRA BOUTIQUE HOTEL 318A Binh Duong Boulevard, Phu Hoa, Thu Dau Mot, Binh Duong, Vietnam https://themiraboutiquehotel.com.vn/	10.1 km	0274 3628 888
Anna Hotel NE8 Duong KL3, My Phuoc, Binh Duong, 75000, Vietnam	10.8 km	0941 561 295
Hong Trang Motel 153 DX-085 Street, Hiep An Commune, Thu Dau Mot, Binh Duong 820000, Vietnam Smileyapartment.com	6.1 km	037 666 5436
Khang Dien Hotel L6 An Duong Vuong, Phu Chanh, Thu Dau Mot, Binh Duong 820000, Vietnam	4.7 km	085 870 0522
Hoang Phuc Hotel Road No. 13, Resettlement Area Road, Dinh Hoa, Thu Dau Mot, Binh Duong 590000, Vietnam	1.9 km	098 198 81 66
HIIVE by Fusion Binh Duong New City 32A7 Tao Luc 5 street, Vietnam-Singapore Industrial Park 2, Thu Dau Mot, Binh Duong	2.4 km	0274 3801 771
Trần Long Hotel 6-7, Block K, Unitown, Phu Hoa, Thu Dau Mot, Binh Duong 75000, Vietnam	2.6 km	0274 2220 970

ACCOMMODATION CLOSED TO EIU

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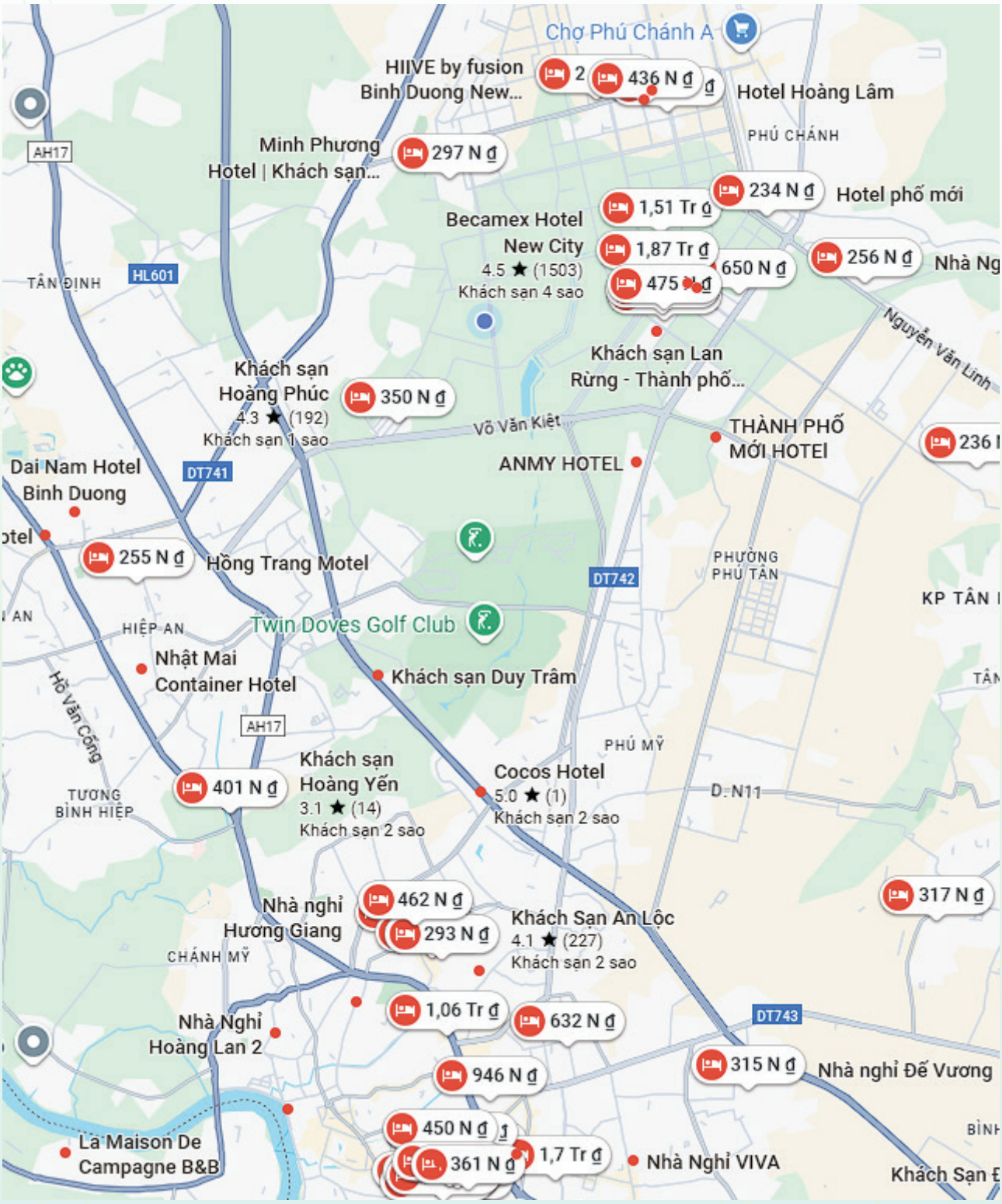

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15 Year Anniversary 2010 - 2025

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