



IEEE Region 10 Conference

31 October - 3 November 2023

Chiang Mai Marriott Hotel, Chiang Mai, Thailand



www.tencon2023.org

Hosted by IEEE Thailand Section

Reported by Supavadee Aramvith, Ph.D.,
General Chair



BY THAILAND CONVENTION AND EXHIBITION BUREAU

CLIMATE IMPACT ACHIEVEMENT

Inspired by



IEEE TENCON 2023

31 October – 3 November 2023

Chiang Mai Marriott, Chiang Mai, Thailand



CO₂e AVOIDED

IEEE Thailand Section | IEEE Region 10

IEEE Region 10 Technical Conference 2023

"Engineering Tomorrow: The Sustainability-driven Innovation for Post Outbreak Era"

31 October to 3 November 2023, Chiang Mai, Thailand

ORGANIZING PARTNERS: Chulalongkorn University TCEB PEA

จำนวน CO₂e ที่ลดได้
CO₂e avoided at

1087.84

กิโลกรัมคาร์บอนเทียบเท่า (kgCO₂e)

เทียบเท่ากับการปลูกต้นไม้
Equivalent to planting

66

ต้น (Trees)





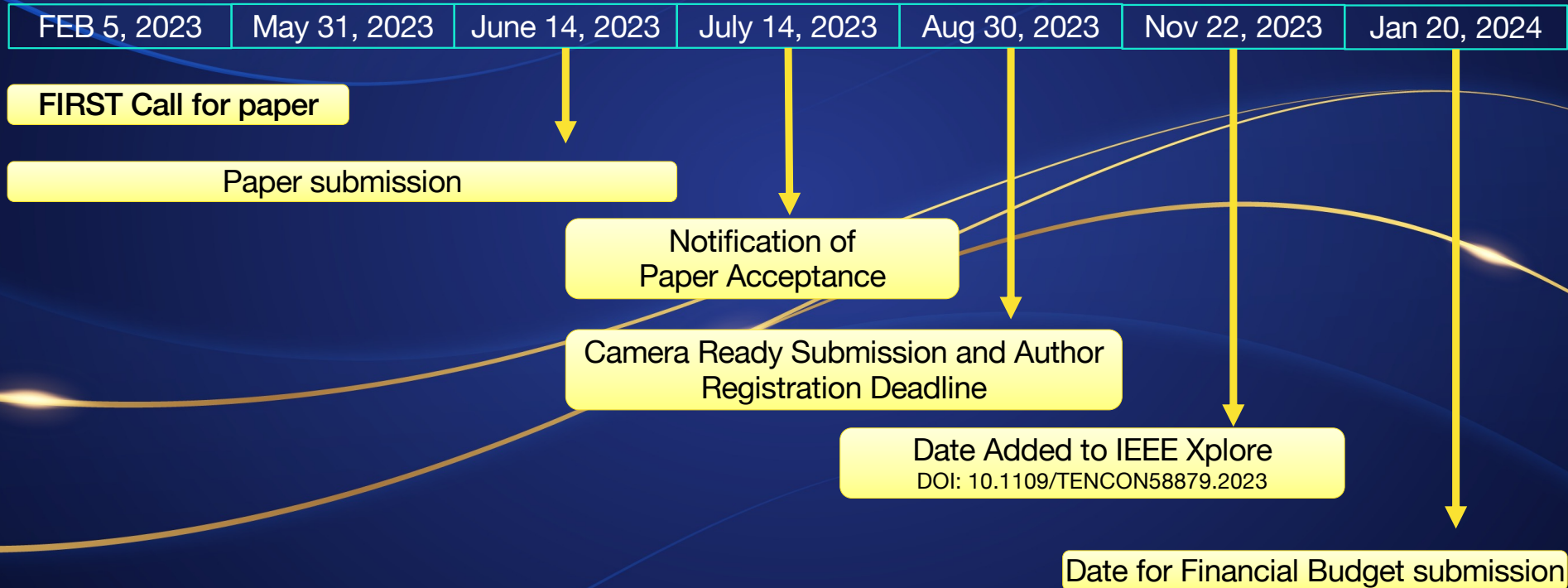
IEEE TENCON 2023

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Chiang Mai Marriott Hotel, Chiang Mai, Thailand

IEEE Thailand Section

Important Dates





IEEE TENCON 2023

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The topics of interest for IEEE TENCON 2023 include the 10 technical tracks:

1. Artificial Intelligence and Machine learning

59/102 Accepted

2. Communications and Networking

30/41 Accepted

3. Power, Energy, and Power Electronics

10/21 Accepted

4. Biomedical Engineering and Healthcare Technologies

30/44 Accepted

5. Robotics, Control, Instrumentation, and Automation

17/29 Accepted

6. Multimedia Signal Processing and Analytics

16/23 Accepted

7. Devices, Circuits, and Materials

24/35 Accepted

8. RF Circuits, Systems, and Antennas

8/19 Accepted

9. Data Science and Computing Technologies

14/24 Accepted

10. Education in Engineering and Technology

9/12 Accepted

Special Sessions

27/35 Accepted



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IEEE Thailand Section

ORGANIZING COMMITTEE

ADVISORY COMMITTEE

- Lance Fung (Murdoch University, Australia)
- Deepak Mathur (IEEE Region 10, India)
- Kirapat Jiemset (MEA, Thailand)
- Viboon Rerksirathai (EGAT, Thailand)
- Vidhya Rakpong (EGAT, Thailand)
- Piyapan Hannarkin (OEG Co Ltd, Thailand)

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- Datchakorn Tancharoen (PIM, Thailand)

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- Jirabhorn Chaiwongsai (University of Phayao, Thailand)
- Napa Rachata (University of Phayao, Thailand)
- Krittika Kantawong (University of Phayao, Thailand)



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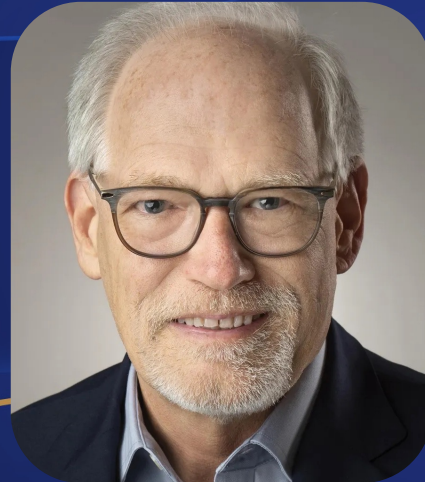
IEEE Thailand Section

Planary Keynote Speakers

1st November 2023



Saifur Rahman, PhD,
2023 IEEE President & CEO



Thomas M. Coughlin
2023 IEEE President-Elect



Joanne Wong
Chair, IEEE Entrepreneurship
Partner, REDDS Capital



Yu Yuan
President,
IEEE Standards Association



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Planary Keynote Speakers



Jeff Adie
HPC Specialist,
NVIDIA Singapore



Jing Dong
Institute of Automation,
Chinese Academy of Sciences



Emi Yuda
Graduate School of Information Science
and Technology.
Tohoku University, Japan



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Special Session Keynote Speaker

Special Session 2: Education Technology and Innovation



Shall We Grow Hand In Hand?: The University's Challenges In The World of Disruption

Professor Parichart Sthapitanonda, Ph.D.

Vice President for Academic Affairs and Social Outreach
Chulalongkorn University, Bangkok, Thailand



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IEEE Thailand Section

Pre-Conference Workshops

IEEE Region 10 Women in Engineering Board
IEEE Humanitarian Technologies Board
IEEE region 10 Humanitarian Technology Institute

2030 SDGs GAME

SUSTAINABLE DEVELOPMENT GOALS

Participate in a multiplayer, in-person, card-based game designed in Japan that simulates taking the world into the year 2030. Play in parallel with IEEE TENCON Participants as well as IEEE Presidents and Region 10 Director!

TENCON 2023 Pre-conference workshop
31 October 2023 9:00 - 12:00
@Grand Ballroom (2nd Floor), Chiang Mai Marriott Hotel
Only 50 Seats available. Reserve your seat now.

<https://bit.ly/TENCON23WS>

IEEE TENCON 2023
IEEE region 10
IEEE Region of Engineering Women

IEEE Region 10 WIE Affinity Group Chairs and Volunteers Meetup

WIE Workshop @TENCON'23

Celia Shannaz
IEEE WIE Chair

Khanita Duangchaemkarn
IEEE Region 10 WIE Chair

DATE 31 OCT 2023
TIME 13:00 Bangkok Time

REGISTER NOW

<https://bit.ly/tencon23wies>

Interactive Workshop

Climate Change: Causes, Effects and Potential Solutions

31st October Tuesday 1:00 PM-4:00 PM Voyage (Floor 3)
Organized by IEEE Region 10 Adhoc on Climate Change & TENCON 2023

IEEE SA STANDARDS ASSOCIATION



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IEEE Entrepreneurship Asia Forum

Sponsored by IEEE Entrepreneurship



Mr. Andy Chen

Asia Pacific Region Team Lead



Dr. Shaoshan Liu

China Region Team Lead



Dr. Ishkandar Baharin

Southeast Asia Region Team Lead



Mr. Chintan Oza

India Region Team Lead



Ravikiran Annaswamy

Global board member and
Vice President of Membership
and Marketing for IEEE
Technology and Engineering
Management Society



Mohamed El Dallal

Vice-Chair – Programs & the
Africa, Europe Middle East
Region Team Lead

The workshop features IEEE Entrepreneurship facilitated collaboration of technology entrepreneurs in Asia. With the recent leapfrog development of technology, these special sessions will generate great interest in technology transfer and entrepreneurial activities.

The special forum will be a reference for entrepreneurs and investors.



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IEEE Thailand Section

WICE PANEL

Panel Discussion on Sustainable Innovations: Use Cases & Importance

2023 IEEE Region 10 Technical Conference (TENCON)

November 3rd, 2023 // 02:00 PM -03:00 PM , @ Lè Meridien Hotel, Chiang Mai, Thailand



MS. PAULINA CHAN
MODERATOR



MR. PRASHANTH
PANELIST



**DR. THITTAPORN
GANOKRATTANA**
PANELIST



DR. THIDA MYO
PANELIST

ComSoc
WICE



**IEEE
ComSoc**[®]
IEEE Communications Society

TENCON 2023 Technical Program Statistics

7 Keynotes

53 Technical Sessions

5 Special sessions

6
Non-Technical Sessions

381 Submissions

281 Accepted

18 Countries

74%
Acceptance rate

560
Reviewers

28 Associate editors

243 Final Presented Papers

235 Oral Presented

8 Poster Presented

336 Registered Participants

Date Added to IEEE Xplore = 22 Nov 2023

19 Days after the conference ends

DOI: 10.1109/TENCON58879.2023

TENCON 2023 Technical Program Wednesday November 1, 2023

IEEE Track	Technical Session 1	Technical Session 2	Technical Session 3	Technical Session 4	Technical Session 5	Technical Session 6
08:30-09:00 Suthep Hall (Floor 4) Plenary Session WedOCS <u>Opening Ceremony</u>						
09:30-11:45 Suthep Hall (Floor 4) Plenary Session WedKNS <u>Keynote Speakers 1</u>						
13:00-14:15 Suthep Hall 1 Invited Session WedA1SA <u>IEEE Entrepreneurship Asia Forum (1)</u>	13:00-14:15 Suthep Hall 3 Regular Session WedA1SB <u>Special Session 2 Education Technology and Innovation</u>	13:00-14:15 Voyage (Floor 3) Regular Session WedA1V <u>AI in Social Media 1</u>	13:00-14:15 Journey (Floor 3) Regular Session WedA1J <u>AI in ICT 1</u>	13:00-14:15 Expedition (Floor 3) Regular Session WedA1XP <u>Networks</u>	13:00-14:15 Passage (Floor3) Regular Session WedA1P <u>Medical Image Processing 1</u>	13:00-14:15 Excursion (Floor 3) Regular Session WedA1XC <u>Audio / Speech / Spoken Language Processing</u>
14:30-16:00 Suthep Hall 1 WedA2SA <u>IEEE Entrepreneurship Asia Forum (2)</u>	14:30-16:00 Suthep Hall 3 Regular Session WedA2SB <u>Digital Transformation & Future-Oriented Educational Concepts</u>	14:30-16:00 Voyage (Floor 3) Regular Session WedA2V <u>AI in Social Media 2</u>	14:30-16:00 Journey (Floor 3) Regular Session WedA2J <u>AI in ICT 2</u>	14:30-16:00 Expedition (Floor 3) Regular Session WedA2XP <u>Multimedia and Security</u>	14:30-16:00 Passage (Floor3) Regular Session WedA2P <u>Medical Image Processing 2</u>	14:30-16:00 Excursion (Floor 3) Regular Session WedA2XC <u>Advanced CMOS Devices and Process</u>
16:15-17:30 Invited Session WedA3SA <u>IEEE Entrepreneurship Asia Forum (3)</u>	16:15-17:30 Suthep Hall 3 Regular Session WedA3SB <u>Multidisciplinary and Transdisciplinary Education</u>	16:15-17:30 Voyage (Floor 3) Regular Session WedA3V <u>Big Data Analytics & Data Mining</u>	16:15-17:30 Journey (Floor 3) Regular Session WedA3J <u>AI in Business and Industrial</u>	16:15-17:30 Expedition (Floor 3) Regular Session WedA3XP <u>Control System Modeling and Networked Control Systems</u>	16:15-17:30 Passage (Floor3) Regular Session WedA3P <u>Medical Image Recognition & Classification</u>	16:15-17:30 Excursion (Floor 3) Regular Session WedA3XC <u>Analog and Mixed Signal ICs</u>

TENCON 2023 Technical Program Thursday November 2, 2023

Technical Session 1	Technical Session 2	Technical Session 3	Technical Session 4	Technical Session 5	Technical Session 6	Technical Session 7
09:00-10:30 Suthep Hall (Floor 4) Plenary Session ThuKK <i>Keynote Speaker 2</i>						
10:45-12:00 Suthep Hall 1 Regular Session ThuMoSA <i>AI in Environments</i>	10:45-12:00 Suthep Hall 3 Regular Session ThuMoSB <i>Machine Learning 1</i>	10:45-12:00 Voyage (Floor 3) Regular Session ThuMoV <i>Coding and Algorithms</i>	10:45-12:00 Journey (Floor 3) Regular Session ThuMoJ <i>Electronic Devices, Materials and Fabrication Process 1</i>	10:45-12:00 Expedition (Floor 3) Regular Session ThuMoXP <i>Antennas, Propagation and Computational EM</i>	10:45-12:00 Passage (Floor3) Regular Session ThuMoP <i>Industrial Automation</i>	10:45-12:00 Excursion (Floor 3) Regular Session ThuMoXC <i>High Performance Computing</i>
13:00-14:30 Suthep Hall 1 Regular Session ThuA1SA <i>Special Session 3 Industry 4.0 Adoption towards Sustainable Manufacturing</i>	13:00-14:30 Suthep Hall 3 Regular Session ThuA1SB <i>Machine Learning 2</i>	13:00-14:30 Voyage (Floor 3) Regular Session ThuA1V <i>NOMA, IRS and Energy Harvesting</i>	13:00-14:30 Journey (Floor 3) Regular Session ThuA1J <i>Electronic Devices, Materials and Fabrication Process 2</i>	13:00-14:30 Expedition (Floor 3) Regular Session ThuA1XP <i>RF and Microwaves in Medicine and Biology</i>	13:00-14:30 Passage (Floor3) Regular Session ThuA1P <i>Applications of Intelligent, Neuro, and Fuzzy Control in Robotics</i>	13:00-14:30 Excursion (Floor 3) Regular Session ThuA1XC <i>Image / Video / Multimedia Signal Processing</i>
14:45-16:05 Exhibition Hall Regular Session ThuA2SA <i>Poster Session 1</i>	14:45-16:05 Exhibition Hall Regular Session ThuA2SB <i>Poster Session 2</i>	14:45-16:05 Voyage (Floor 3) Regular Session ThuA2V <i>Mobile Robotics and Humanoid</i>	14:45-16:45 Journey (Floor 3) Regular Session ThuA4J <i>Special Session 5 Anomaly Detection</i>	14:45-16:05 Expedition (Floor 3) Regular Session ThuA2XP <i>Biomedical Signal Processing and Instrumentation 1</i>	14:45-16:45 Passage (Floor3) Regular Session ThuA4P <i>Gait Analysis & Rehabilitation Engineering</i>	14:45-16:45 Excursion (Floor 3) Regular Session ThuA4XC <i>Pattern Recognition, Object Tracking, and Algorithm</i>
		16:05-17:05 Voyage (Floor 3) Regular Session ThuA3V <i>Special Session 4 Autonomous Robotics, Industrial Automation, and Control Systems</i>		16:05-17:05 Expedition (Floor 3) Regular Session ThuA3XP <i>Biomedical Signal Processing and Instrumentation 2</i>		
18:00-20:00 Suthep Hall (Floor 4) ThuBQK <i>Banquet</i>						

TENCON 2023 Technical Program Friday November 3, 2023

Technical Session 1	Technical Session 2	Technical Session 3	Technical Session 4	Technical Session 5
09:00-10:30 Voyage (Floor 3) Regular Session FriMo1V <u>Special Session 1 Next Generation of Affective Computing (NGAC) 1</u>	09:00-10:30 Journey (Floor 3) Regular Session FriMo1J <u>AI in Agriculture 1</u>	09:00-10:30 Expedition (Floor 3) Regular Session FriMo1XP <u>Optical Communications</u>	09:00-10:30 Passage (Floor3) Regular Session FriMo1P <u>Micro Grids & Distributed Generation</u>	09:00-10:30 Excursion (Floor 3) Regular Session FriMo1XC <u>Biomedical and Health Informatics</u>
10:45-12:00 Voyage (Floor 3) Regular Session FriMo2V <u>Special Session 1. Next Generation of Affective Computing (NGAC) 2</u>	10:45-12:00 Journey (Floor 3) Regular Session FriMo2J <u>AI in Agriculture 2</u>	10:45-12:00 Expedition (Floor 3) Regular Session FriMo2XP <u>Multi-User and Multi-Hop Communications</u>	10:45-12:00 Passage (Floor3) Regular Session FriMo2P <u>Switching Circuits & Power Converters</u>	10:45-12:00 Excursion (Floor 3) Regular Session FriMo2XC <u>AI in Healthcare 2</u>
13:00-14:30 Voyage (Floor 3) Regular Session FriA1V <u>Beyond CMOS Device Technology</u>	13:00-14:30 Expedition (Floor 3) Regular Session FriA1XP <u>Materials and Structures</u>		13:00-14:30 Passage (Floor3) Regular Session FriA1P <u>Data, Text, Web Mining, & Visualization</u>	13:00-14:30 Excursion (Floor 3) Regular Session FriA1XC <u>AI in Healthcare 1</u>
14:45-16:05 Journey (Floor 3) FriA2T1 <u>TENCON Organizing Committee Meeting</u>				



IEEE TENCON 2023

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Chiang Mai Marriott Hotel, Chiang Mai, Thailand

IEEE Thailand Section

Registrant categories



336
participants

94

• IEEE Members

142

• Non-IEEE Members and
Non-IEEE Student

34

• IEEE Student Members

66

• speakers, committee, session
chairs, and supporting staffs



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Conference Delegates Statistics

Asia-pacific	No. of Papers
Australia	1
Bangladesh	14
China	16
India	95
Indonesia	8
Japan	40
Singapore	9
Sri Lanka	2
Thailand	88
Vietnam	2
Korea	6
Malaysia	13
Philippines	34

Non-Asia-pacific	No. of Papers
Saudi Arabia	1
United State	3
Canada	2
France	1
Kenya	1

The number of total countries that participated = 18



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Conference Financial Overview

Expenses

•US\$172,233.78

Revenue

•US\$195,496.11

Surplus / Loss

•US\$23,262.33

FINAL

% Share	\$ Distributed
• 70% IEEE Thailand Section	16,283.63
• 30% IEEE Region 10	6978.70



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Academia Supporting Organizations





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Planary session – 1 Nov 2023





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Technical Sessions





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Registration & Backdrop



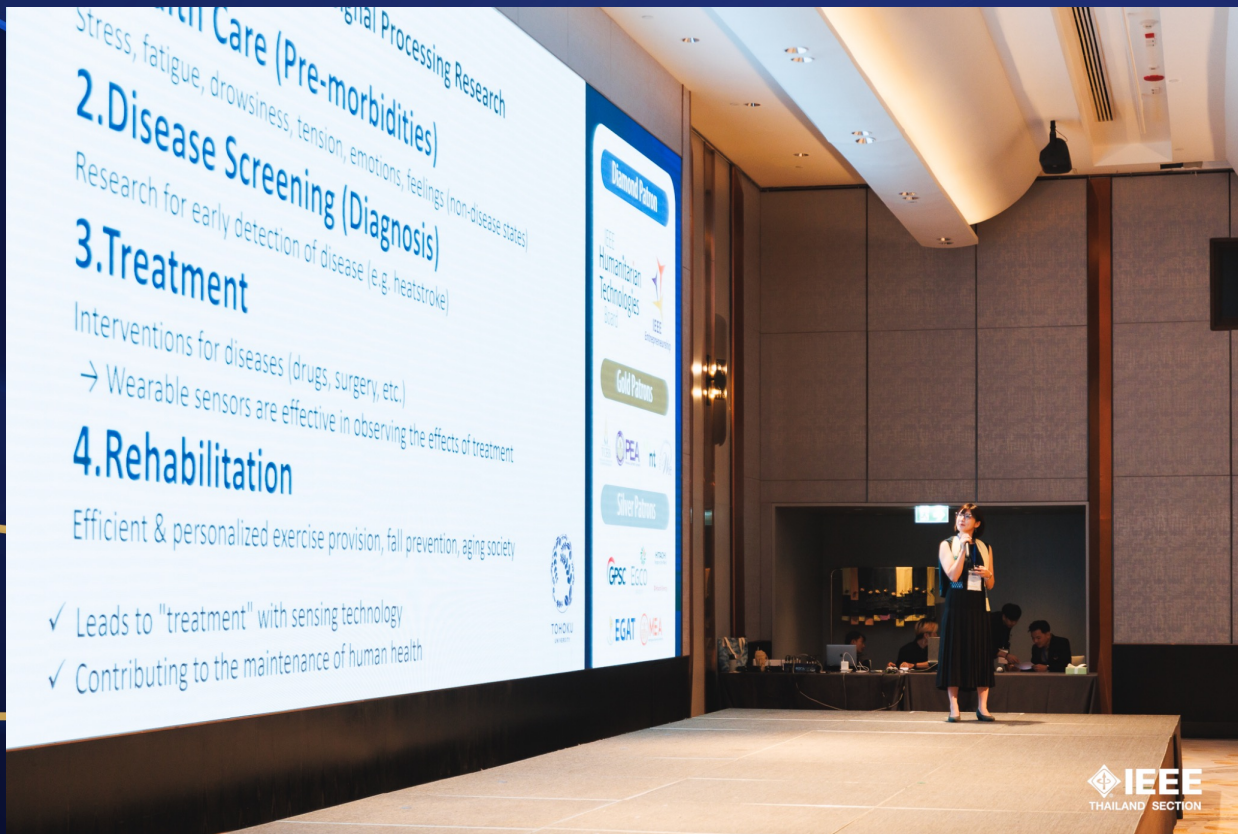


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Plenary session – 2 Nov 2023





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Organizing partners



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Thank you