The Institution of Engineers, Malaysia

VIRTUAL HALF DAY COURSE ON

"BIOMETRICS IN ACTION: ENGINEERING SECURE AND SMART SYSTEMS"

ORGANISED BY:
ENGINEERING EDUCATION TECHNICAL DIVISION, IEM

BEM APPROVED CPD: 4
REF NO: IEM26/HQ/081/C(W)

SPEAKER:

Ir. Sukhairul Nizam bin Abdul Razak

20 June 2026, Saturday
(rescheduled from 2 May 2026)

9.00am - 1.00pm

CLOSING DATE: 13 JUNE 2026

	ONLINE (Log-in for registration & payment: www.myiem.org.my/member/login.aspx)	NORMAL FEE (by fax & email) Payment by cash, credit card and bank-in
IEM Student Member	40.00	50.00
IEM Graduate Member	75.00	90.00
IEM Corporate Member	125.00	150.00
Non-IEM Member	240.00	300.00

SYNOPSIS

This intensive half-day virtual workshop delves into the transformative role of biometric technology within modern engineering disciplines. Moving beyond theoretical concepts, we focus on practical application, integration challenges, and innovative solutions biometrics brings to fields like Cybersecurity, Computer Vision, Embedded Systems, Automation, and Smart Infrastructure.

Participants will gain a clear understanding of how physiological (fingerprint, iris, facial) and behavioral (gait, keystroke) traits are engineered into reliable, secure, and efficient systems.

KEY TOPICS COVERED FOR THIS WORKSHOP:

Participants will explore:

1. **The Engineering Pipeline:** From sensor data acquisition and signal processing to feature extraction, template matching, and decision algorithms.
2. **System Integration & Hardware-Software Co-Design**: Challenges of embedding biometric sensors into IoT devices, access control systems, and automotive applications.
3. **Performance Metrics for Engineers:** Analyzing False Acceptance Rate (FAR), False Rejection Rate (FRR), throughput, and computational efficiency.
4. **Security by Design:** Addressing engineering challenges like spoofing attacks (liveness detection), template security, and privacy-preserving architectures (e.g., homomorphic encryption).
5. **The Future Trajectory:** The convergence of biometrics with AI/ML, edge computing, and cloud-based authentication services.

WHO WILL BENEFIT WITH THIS WORKSHOP:

- Electronics, Computer, and Software Engineers
- Engineering Students (Undergraduate & Postgraduate)
- R&D Professionals in Security, Automotive, and Consumer Electronics
- System Architects and Integration Specialists
- Technical Project Managers in related fields

SPEAKER'S PROFILE

Ir. Ts. Sukhairul Nizam Abdul Razak holds a Bachelor's in Mechanical (Aeronautical) Engineering from UTM Skudai and an MBA from Charles Sturt University, Australia. He is a registered ASEAN Chartered Professional Engineer (ACPE) and a Professional Mechanical Engineer with a practicing certificate (PEPC) from the Board of Engineers Malaysia, in addition to being a certified Professional Technologist (MBOT).

With a career spanning over two decades, he began as a Body Design Engineer in R&D at Proton Manufacturing in 1995, later holding diverse roles including Branch Sales Manager, Warranty Operations Manager, and Head of Division at Proton Edar. He has also contributed to international projects, such as with Accenture Malaysia for the Daimler Group.

His extensive industry experience includes designing and developing automotive components, overseeing anti-corrosion and painting systems, aerodynamic refinement, and crash testing for the national automotive company. Beyond engineering, he specializes in automotive sales training, coaching, and product recall management.

In the academic sphere, he has served as a Senior Lecturer at City University Malaysia, Programme Coordinator at First City University College, and as Regional Director at Leanmax Pro Sdn Bhd. Currently, he is the Managing Director of Enviroklar Tech Sdn Bhd.

With a foundation in aeronautical engineering, Ir Ts Sukhairul Nizam has further pursued drone pilot training and regularly teaches autonomous robotics and drone technology to computer science and engineering students, graduate engineers, blending hands-on industry expertise with modern educational insight. Biometric Technology is one of the computer sciences subjects that he taught for Bachelor Degree in Computer Science programme.

PROGRAMME

Time slot	Session	Description
09:00 - 09:30	Welcome & Introduction	Kick-off, workshop objectives, and speaker introductions.
09:30 - 10:15	Session 1: Foundations & The Engineering Stack	Architectural overview of a biometric system. Focus on
10:15 - 11:00	Session 2: Deep Dive: Case Study in Access Control	A technical breakdown of designing a facial recognition or
11:00 - 11:15	Break	
11:15 - 12:30	Session 3: Security Challenges & Advanced Topics	Engineering solutions for anti-spoofing, template protection,
12:30 - 12:50	Panel Discussion & Live Q&A	Speakers address pre-submitted and live questions on
12:50 - 1:00	Closing Remarks & Next Steps	Summary of key takeaways, resources for further learning,

Cancellation Policy

No cancellation will be accepted prior to the date of the event. However, replacement or substitute may be made at any time with 7 days prior notification and substitute will be charged according to membership status.

Personal Data Protection Act

I have read and understood the IEM's Personal Data Protection Notice published on IEM's website at http://www.myiem.org.my and I agree to IEM's use and processing of my personal data as set out in the said notice.

Chairman,
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REGISTRATION FORM

VIRTUAL HALF DAY COURSE ON
"BIOMETRICS IN ACTION:
ENGINEERING SECURE AND SMART SYSTEMS"

20 June 2026 (Saturday) - (rescheduled from 2 May 2026) Closing Date : 13 June 2026

NAME	MEMBERSHIP NO. / GRADE	EMAIL ADDRESS	FEES (RM)
		Sub Total:	
		SST Added 8% :	
		Total Amount Payable :	

FULL PAYMENT must be settled before commencement of the course, otherwise participants will not be allowed to enter the hall. If a place is reserved and the intended participant fails to attend the course, the fee is to be settled in full. If the participant failed to attend the course, the fee paid is non refundable. The Registration Fee includes lecture notes, refreshment and lunch.

For **ONLINE REGISTRATIONS,** please note that payment **MUST** be made **BEFORE the closing date.** If payment is not received within the stipulated time, the registration fee will be reverted to the normal registration fee.

Contact Person: _____ Designation: _____

Name of Organization: _____

Address : _____

_____

Telephone No. : _____ (O) _____ (Fax No.)

_____ (H) _____ (HP)

Email : _____

_____ _____

Signature & Stamp Date