

Proposal for a Half-Day Workshop for IECBES2026

Title

Medical Electronics & Ultrasound: Beginner's Practical Insights with Canon Medical Systems Malaysia

Participants: 15 person (due to limited ultrasound systems)

Duration: 4 hours

1. Background

Medical electronics is one of the fastest-growing multidisciplinary fields, integrating electronics, biomedical engineering, artificial intelligence, medical imaging, and digital healthcare. Among all diagnostic imaging modalities, ultrasound has become one of the most widely used due to its safety, portability, affordability, and real-time imaging capabilities. Despite its widespread clinical use, many engineering students, biomedical engineers, researchers, and early-career medical professionals have limited exposure to the electronic systems that power modern ultrasound technology. This workshop aims to bridge the gap between engineering concepts and clinical applications by combining academic learning with industrial expertise through collaboration with Canon Medical Systems Malaysia.

2. Objectives

The workshop aims to:

- Introduce the fundamentals of medical electronics in diagnostic imaging.
- Explain the working principles of ultrasound systems.
- Demonstrate how electronics convert ultrasound echoes into digital medical images.
- Introduce various ultrasound probes and clinical applications.
- Expose participants to modern ultrasound technologies including Doppler imaging, and 3D/4D imaging
- Provide hands-on experience using industrial-grade ultrasound equipment.

3. Canon Medical Systems Malaysia Support - The collaboration with Canon Medical Systems Malaysia is expected to include:

(a) technical speaker to deliver a technical talk on:

- Canon *Aplio me* workflow functions and advantages (*ApliGate* and AI-automation)
- Basic abdominal, vascular, cardiac scanning/demonstration

(b) clinical application specialist to conduct a hands-on session where participants have opportunity to:

- Operate different ultrasound probes
- Compare image quality using different frequencies
- Explore machine presets
- Learn probe handling techniques
- Perform basic scanning under expert guidance

4. Exhibition Booth (Optional)

Canon Medical Systems Malaysia may also set up an exhibition area featuring:

- Latest ultrasound technologies
- Product brochures
- Clinical application videos

5. Equipment Requirements

The organizer is requested to provide:

- LCD projector and screen
- Tables and chairs for the demonstration area
- Adequate floor space for the ultrasound system

Canon Medical Systems Malaysia may provide:

- Ultrasound system
- Ultrasound probes
- Demonstration phantom or approved demonstration setup
- Technical and clinical application specialist
- Promotional materials and brochures

Proposed Tentative

Time	Activity	PIC
8.30–8.55 am	Registration	Organizer
8.55–9.00 am	Opening	Organizer
9.00–9.30 am	Session 1: Fundamentals of Medical Electronics	Nabilah Ibrahim
9.30–10.00 am	Session 2: Ultrasound Physics & Electronic Systems	Nabilah Ibrahim
10.00–10.20 am	Coffee Break	
10.20–11.00 am	Session 3: Canon Medical Technologies <i>Aplio me</i> & Clinical Applications	Canon Technical Specialist
11.00–12.00 pm	Live Demonstration by Canon Medical Systems Malaysia	Canon Clinical Specialist
12.00–1.00 pm	Hands-on Experience, Q&A and Networking	Canon Technical and Clinical Specialist

MEDICAL ELECTRONICS & ULTRASOUND

Beginner's Practical Insights
with Canon Medical Systems Malaysia



For Medical Professionals &
Biomedical Electronics Engineers
(Beginner Level)



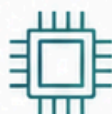
SEE MORE
CARE
BETTER

DISCOVER. LEARN. CONNECT.



UNDERSTAND THE BASICS

Ultrasound physics,
imaging modes,
and image quality
made simple.



EXPLORE THE ELECTRONICS

From sound pulses
to digital images –
see how electronics
makes it happen.



KNOW YOUR PROBES

Linear, Curved,
Sector – choose
the right probe for
the right purpose.



POINT-OF-CARE ULTRASOUND

Portable, powerful
and at the bedside –
transforming
patient care.



FUTURE OF ULTRASOUND

AI, 3D/4D imaging,
handheld devices
and smarter
workflows.



LEARN FROM THE EXPERTS

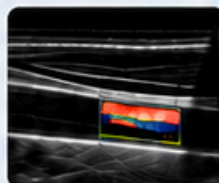
Hands-on insights
and real-world
experience from
industry experts.

WHAT YOU WILL GAIN

- ✓ Fundamental understanding of ultrasound technology
- ✓ How medical electronics powers modern ultrasound
- ✓ Hands-on learning & interactive activities
- ✓ Insights into innovative solutions
- ✓ Networking with experts and peers



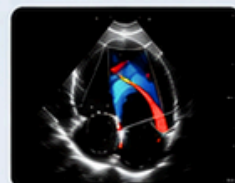
INTERACTIVE SESSIONS & HANDS-ON DEMO



Live Scanning
Demonstrations



3D/4D Imaging
Experience



Point-of-Care
Applications



BETTER TECHNOLOGY. BETTER IMAGING. BETTER PATIENT CARE.



Simplify
Complex Concepts



Connect
with Experts



Learn.
Practice.
Apply.



Transform
Patient Care