



## CURRICULUM VITAE

### Valliyappan David Natarajan, PhD

Faculty of Mechanical Engineering

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Contact information

## EDUCATION

### **PhD, Materials Science & Engineering - Mechanical Engineering, 2006 – 2009**

Department of Mechanical Engineering, Dwight Look College of Engineering,

Texas A&M University, College Station, Texas, USA

Dissertation: *Constitutive Behavior of a Twaron® Fabric/Natural Rubber Composite: Experiments and Modeling*

Advisor: Prof. Dr. Xin-Lin Gao

### **MSc, Mechanical & Materials Engineering, 1999 – 2001**

Department of Mechanical and Materials Engineering, Faculty of Engineering,

Universiti Kebangsaan Malaysia (UKM), Bangi, Selangor, Malaysia

Dissertation: *Evaluation of the Acoustical Absorption of Indigenous Materials using the Impedance Tube Method*

Advisor: Prof. Ir. Dr. Mohd Jailani Mohd Nor

### **BEng (Hons), Mechanical & Materials Engineering, 1996 – 1999**

Department of Mechanical and Materials Engineering, Faculty of Engineering,

Universiti Kebangsaan Malaysia (UKM), Bangi, Selangor, Malaysia

Thesis: *Characterisation of Natural Fibre Composites using Ultrasonic Techniques*

Advisor: Prof. Ir. Dr. Rozli Zulkifli

## EXPERIENCE

### **Associate Professor** (June 2002 – present)

Faculty of Mechanical Engineering, Universiti Teknologi MARA (UiTM) Shah Alam, Malaysia

### **Head of Research** (International & Private Grants) (May 2014 – August 2019)

Research Management Center, IRMI, Universiti Teknologi MARA (UiTM) Shah Alam, Malaysia

### **Research Fellow** (December 2011 – April 2014)

Research Management Institute, Universiti Teknologi MARA (UiTM) Shah Alam, Malaysia

### **Research & Teaching Assistant – Student Technician II** (August 2006 – December 2009)

Department of Mechanical Engineering, Dwight Look College of Engineering,

Texas A&M University, College Station, Texas, USA

### **Field Engineer & NDT-UT Specialist** (November 2001 – May 2002)\*

Oilfield Pipeline Inspection-SVT (M) Sdn. Bhd., Subang Jaya, Malaysia

### **Post-Graduate Research Assistant** (June 1999 – May 2001)

Department of Mechanical and Materials Engineering, Faculty of Engineering,

Universiti Kebangsaan Malaysia (UKM), Bangi, Selangor, Malaysia

### **Trainee Engineer** (March 1998 – May 1998)

Motorola (M) Bhd., Penang, Malaysia

\*Please refer Addendum far below for complete job descriptions.

## PROFESSIONAL AFFILIATIONS

- The Institute of Engineers Malaysia (Grad. IEM G45801), Title: Engr. Dr. (IEM designate)
- Board of Engineers Malaysia (Graduate Engineer 42230A)
- Associate ASEAN Engineers (AAE)
- American Society of Mechanical Engineers (Member 7278112)
- American Institute of Aeronautics and Astronautics (Member 292778)
- Malaysian Society for Engineering and Technology (Member 00675)
- Institute of Materials Malaysia (Member 5049)

## ACADEMIC BACKGROUND

### *Principal academic background – Applied Mechanics and Advanced Materials*

- Mechanics of Materials  
(Bio-composite materials; Analytical modeling of constitutive behavior; Experimental methods)
- Acoustics  
(Theory; Signal analysis; Noise control engineering)

### *Related educational and practical experience*

- Fabrication methods of natural fiber synthetic and bio-polymer composites
- Mechanical testing – tensile, compression, three-point bending and impact tests
- Shock absorption testing of cushioning materials
- Acoustics testing – impedance tube, reverberation room, anechoic chamber
- Vibrations testing – baseline measurement
- Signal processing and analysis – vibration and acoustics (sound) signals
- Materials characterization – SEM, SPM, TGA, DMA, XRD, XRF
- Non-destructive ultrasonic (UT) evaluation of materials and structures including engine condition monitoring (pneumatic line) for Malaysia Airlines 737-400 Boeing aircraft
- Condition-based monitoring of oil and gas structures and machines – UT, Eddy current, PMI
- Viscoelasticity constitutive modeling of polymer-based composites
- Finite element analysis and simulation of ballistic impact events
- Compositional analysis of light-rail and automotive brake materials

## COMPUTER KNOWLEDGE AND SKILLS

- *Computer programming languages*  
C++, Visual Basic, Unix/Linux (for nano-scale modeling)
- *CAD/CAM applications*  
AutoCAD (2000), Pro-Engineering (Rel.17), CATIA V5
- *Technical computing, numerical, simulation and FEA Applications*  
MATLAB® & Simulink (Rel.12, Ver. 6), SciLAB (Ver. 5.3.1), LUSAS FEM (Ver.13), Abaqus (Rel. 6.7.2), Ansys (Ver. 12) Fortran 77, Altair HyperWorks (Ver. 11)

## COURSES TAUGHT

- Solid Mechanics (Statics, Dynamics, Strength of Materials, Vibrations)
- Mechanics of Materials (Strength of Materials; Solid Mechanics)
- Fundamentals of Acoustics
- Environmental Noise and Control Technology
- Mechanical Engineering Design
- Manufacturing Systems Design (Operations Management) (*Masters level*)
- Maintenance Strategies (*Masters level*)
- Project Management, Planning and Control
- Engineers in Society
- Engineering Physics (*Diploma level*)
- Mechanics of Motor Vehicles (*Diploma level*)

## CURRENT RESEARCH INTERESTS

- Edutech and pedagogical innovations in Education 5.0
- Psycho-acoustics and brainwave entrainment
- Polymeric materials constitutive modeling and analysis
- Materials engineering and development including biocomposites for various applications including body armor, ballistic helmet, noise and vibration control and brake friction materials
- Non-destructive ultrasonic testing of structural components

## FUNDED RESEARCH PROJECTS

{Accumulated grant amount = RM3,310,635.00}



1. Effectiveness of GenAI-powered Platform for Hyper-Personalized Blended Learning and Skilling: A Pilot Study on Automated Assessments and Virtual Mentoring, **RM250,000** – funded by OmniSkills Pte. Ltd. (in-kind), 2025 – 2026, Project Leader (PI)
2. Study on the National Action Plan to Address the Threat of Drugs and Substances, **RM280,000** – funded by the Institute of Public Security of Malaysia, Ministry of Home Affairs Malaysia, 2025, Project Member
3. Instrument Development and Malaysian Integrity Index Study, **RM500,000** – funded by the Institute of Integrity Malaysia (IIM), 2024 - 2025, Project Member
4. Development and Interactivity Assessment of XR-enabled 3D Models for Immersive Learning Systems, **RM20,000** – funded by MyRA Research Grant, UiTM, 2022 – 2024, Project Leader (PI)
5. Investigation of Impact Resistance of Open-cell Metal Foams to High Acceleration Mechanical Shock, **RM220,000**– funded by BESTARI (M) Grant, UiTM, 2018 - 2019, Project Leader (PI)
6. New Ballistic Limit Model of Recht and Ipson Type in Hydrodynamic Ram, **RM91,200** – funded by Fundamental Research Grant Scheme (FRGS), Ministry of Higher Education Malaysia, UiTM, 2017 – 2019, Project Member
7. Creative Approaches to Increasing Visibility and Research Collaboration, **RM20,000** – funded by LESTARI KHAS Research Grant, UiTM, 2017 – 2018, Project Member
8. Development of z-Reinforced Three-Dimensional Laminated Basalt Woven Fabric Composites for Anti-Ballistic Body Armor Application, **RM50,000** – funded by BESTARI Research Grant, UiTM, 2017 – 2019, Project Leader (PI)
9. Transferring Expertise to Oriental Summit Industries Sdn. Bhd. on Automotive Innovation in Sheet Metal Stamping Process to Increase Productivity and Produce High Quality of Lower Arm Assembly Suspension Part, **RM150,675** – funded by Knowledge Transfer Programme (KTP), Ministry of Education Malaysia, UiTM, 2015 – 2017, Project Member
10. Mathematical Thinking for Teaching Research Group, **RM32,000** – funded by Research Entity Initiative (REI), UiTM, 2015 – 2018, Project Member
11. Time-temperature Dynamic Mechanical Characteristics of Reactive Polyhydroxyalkanotes/Epoxidized Natural Rubber Blends, **RM50,000** - funded by Research Acculturation Collaborative Effort (RACE), Ministry of Education Malaysia, UiTM, 2015 - 2017, Project Leader (PI)
12. Flow Characterization through Acoustic Signal Processing in a Ranque-Hilsch Vortex Tube, **RM97,200** – funded by Fundamental Research Grant Scheme (FRGS), Ministry of Higher Education Malaysia, UiTM, 2014 – 2016, Project Member

13. Effect of Heat Ageing on the Puncture Resistance and Ballistic Energy Absorption Characteristics of Latex – Coated Unidirectional Fabrics, **RM100,000** – funded by Cumulative Impact Factor Initiative (CIFI), UiTM, 2014 – 2016, Project Leader (PI)
14. Smoothed Particle Hydrodynamics Approach to Analyzing Structural Failure of Hydrodynamic Ram, **RM60,000** – funded by Principal Investigator Support Initiative (PSI), UiTM, 2013 – 2015, Project Leader (PI)
15. Impact Response of Obliquely Positioned Triggered Tubes, **RM65,000** – funded by Research Grant Scheme (RAGS), Ministry of Higher Education Malaysia, 2013 – 2015, Project Member
16. Structural Failure Analysis in Hydrodynamic Ram using Smoothed Particle Hydrodynamics, **RM155,400** – funded by ScienceFund, Ministry of Malaysia, 2012 – 2014, Project Leader (PI)
17. Determination of Tensile and Friction Properties of High Performance Latex-coated Single Yarns, **RM50,000** – funded by UiTM Research Cluster Fund, 2012 – 2014, Project Leader (PI)
18. Investigation of Binaural Beats and Isochronic Tones on Brain Wave Frequency Patterns, **RM77,000** – funded by Exploratory Research Grant Scheme (ERGS), Ministry of Higher Education Malaysia, 2011 – 2013, Project Leader (PI)
19. Experimental Response Spectrum Investigation of the Shock Characteristics of Bio-based Foam Composites, **RM48,160** – funded by Fundamental Research Grant Scheme (FRGS), Ministry of Higher Education Malaysia, 2010 – 2012, Project Leader (PI)
20. Development of Novel Bio-ceramics using MgO and ZrO<sub>2</sub>, **RM12,000** – funded by UiTM Short Term Grant by IRDC (now known as RMI), 2005 – 2006, Member
21. Performance Analysis of a Frictionless Inertial Torque Transfer Device for Automotive Transmission, **RM14,000** – funded by UiTM Short Term Grant by IRDC (now known as RMI), 2005 – 2006, Member
22. Beam Structure Made of Oil Palm Fiber-Epoxy Composite – Investigation of Mechanical Properties, **RM12,000** – funded by UiTM Short Term Grant by IRDC (now known as RMI), 2005 – 2006, Project Leader (PI)
23. Determination of Mechanical and Chemical Properties of Brake Pads for Light Rail Transit Application, **RM936,000** – funded by IRPA (PR-Top/Down), Ministry of Science, Technology & Innovations Malaysia, 2003 – 2006, Member
24. Development of a Motorcycle Suspension System Test Rig, **RM20,000** – funded by UiTM Short Term Grant by IRDC (now known as RMI), 2002 – 2004, Member

## CONSULTATION AND EXPERTISE SERVICES

1. Lead Subconsultant, Development of Mechanical and Electrical Procedure (MEP) Documents (Radial Gate Type) for Jabatan Pengairan dan Saliran, Malaysia, 2025 – 2026
2. Strategic Advisor, IBM Innovation Center for Education (IBM ICE) Malaysia, 2025
3. Institutional Program Director, CADS-YP-UiTM Upskill in Artificial Intelligence and Data Industry Certified Program, 2025 – 2026
4. External Supervisor for Final Year Project, Jassper Lawrence (Student ID: 20WGR11787 | Project title: Vibro-acoustic Characterization of Biomimetic Honeycomb Core Designs), Bachelor of Mechanical Engineering (Hons), Faculty of Engineering and Technology, Tunku Abdul Rahman University of Management and Technology, Malaysia, 2024
5. External Assessor for BE in Mechanical Engineering Programme, College of Science and Technology, Royal University of Bhutan, Rinchending, Bhutan, 2024.

6. External Examiner for Final Year Project, Bachelor of Mechanical Engineering (Hons), UOW Malaysia KDU University College, Glenmarie, Malaysia, 2023.
7. Panel Member, Discussion Meet for Identification of Thematic Areas for Kerala Science Parks, Kerala State Council for Science, Technology and Environment, India, 2022
8. Expertise services (journal indexing in PubMed database including XML scripting for PubMed and CLOCKSS, and Crossref DOI content registration), Tropical Biomedicine, published by the Malaysian Society of Parasitology and Tropical Medicine, Malaysia, 2020.
9. Expertise services (design and structural analysis), Teeptam Medical Sdn. Bhd., Malaysia, 2020.
10. Advisory Board Member, Zenletics Cyber Security Solutions Pvt. Ltd., India, 2019.
11. External Assessor for Diploma (Mechanical Engineering), B.Eng (Mechanical Engineering) and B.Eng (Automotive Engineering), SEGi College, Subang Jaya, Malaysia, 2019.
12. Technical expertise service for Accelerated Weathering Testing of Natural Fibre Composites for Universiti Kebangsaan Malaysia, 2018.
13. Mentor, Trivandrum Technolodge, Trinity College of Engineering, Kerala, India, 2017.
14. External Assessor for Diploma (Mechanical Engineering), B.Eng (Mechanical Engineering) and B.Eng (Automotive Engineering), SEGi College, Subang Jaya, Malaysia, 2016.
15. External Assessor for B.Tech (Mechanical Engineering), Nirma University - Institute of Technology, Ahmedabad, India, 2014.
16. External Assessor for Diploma (Mechanical Engineering), B.Eng (Mechanical Engineering) and B.Eng (Automotive Engineering), SEGi College, Subang Jaya, Malaysia, 2014.
17. Expertise services (sound absorption performance test on industrial grade polyurethane foams) for Wansern Technologies Sdn. Bhd., Balakong, Selangor, Malaysia, 2013.
18. Workshop on Condition Monitoring – “Theory, Measurement and Analysis of Sound Signals,” MR Technology Sdn. Bhd., 2012.
19. MOHE Research Proposals – “Mentoring Polytechnic Lecturers: Literature Review Methods and Tools,” Higher Education Leadership Academy (AKEPT), 2012.
20. Evaluation of Product Quality and Production Machine in Harvik Rubber Industries Sdn. Bhd. (a subsidiary of Golden Hope Plantations), Perai, Penang, Malaysia, 2006.
21. Expertise services (i.e., baseline and operational vibration measurements and data analysis) for UiTM Short Term Grant Research Project “Removal of Discomfort by The Reduction of Machine Vibration” at Masasinar Holdings Sdn. Bhd., Pandamaran, Selangor, Malaysia, 2003.
22. Technical expertise services (i.e., baseline vibration and sound pressure level measurements and data analysis) to Environmental Impact Assessment (EIA) studies for (i) Jimah Power Plant, Port Dickson, (ii) the proposed Labuan Incinerator Plant, Labuan, Sabah, and (iii) the proposed Electrified Double Track Project (Kuala Lumpur – Penang), Sentul, Kuala Lumpur, 2000 – 2001.

## ACADEMIC ADVISING

### *Graduate Student Advising*

Puteri Effanur Hidayah, B.Eng (Co-Supervisor – MSc Student; registered June 2019; Advanced Materials and Applied Mechanics)

Zurina Ahmad, MSc (**PhD** Student; registered November 2017; Advanced Materials and Applied Mechanics) – *quit in 2025*

Mohd Arifhakim Azizan, B.Eng (**Masters** Student; registered July 2015; Applied Mechanics and Materials)

Khairil Muhaimin, B.Eng (**Masters** Student; registered November 2014; Applied Mechanics and Signal Processing)

Norhafizah Hashim, MSc (**PhD** Student; registered March 2013; Applied Mechanics and Signal Processing)

Rozaini Othman, MSc (**PhD** Student; registered November 2012; Advanced Materials and Applied Mechanics)  
Syarifah Noor Deraman, B.Eng (**Masters** Student; registered September 2012; Applied Mechanics)  
Siti Syahidah Mohd Rum, B.Eng (**Masters** Student; registered September 2011; Engineering Materials)  
Ir. Abdul Malik Hussein, MSc (**Co-Supervisor – PhD** Student; registered September 2011; Applied Mechanics)  
Mohd Azlan Mustaffa, MSc (**PhD** Student; registered September 2010; Advanced Materials and Applied Mechanics)  
Mohd Rozaiman Aziz, MSc (**Co-Supervisor – PhD** Student; registered September 2010; Applied Mechanics)

### ***Thesis and Post-graduate Research Proposal Examiner***

Khairul Aiman Bin Khairul Anuar, *MSc thesis*, “Experimental Identification of Nonlinearity in Bolted Beam Structure using Force-Controlled Stepped-Sine Testing and Response-Controlled Stepped-Sine Testing,” School of Mechanical Engineering, UiTM Shah Alam, June 2025.

Muhammad Zaki bin Abdul Rahim, *PhD proposal*, “Experimental and Numerical Analyses of A Wideband Frequency Vibration Energy Harvester by Using Multi-Frequency Design,” School of Mechanical Engineering, UiTM Shah Alam, January 2024.

Mohamad Azam Shah bin Aziz Shah, *PhD thesis*, “Perturbation Stochastic Model Updating of A Bolted Structure,” School of Mechanical Engineering, UiTM Shah Alam, July 2022.

V. Manjunath, *PhD thesis*, “Crash Analysis and Weight Optimization of Laser Welded Blanks (LWBS) in Automotive Applications,” Visvesvaraya Technological University, India, April 2022.

Lim Shing Chee, *MMEng thesis*, “Development of Electrospinning Machines for the Production of Homogeneous and Functionally Graded Multilayer Polymeric Nanofibers”, Faculty of Mechanical and Manufacturing Engineering, UTHM, February 2022.

S. Ramani, *PhD thesis*, “Enhancement of Properties using Composite Filler Rod (Al 4043 + B4C/TiB2) in Gas Tungsten Arc Welding of Al 6061,” Karunya Institute of Technology and Sciences, India, August 2021.

Muhamamd Nasrun Faris Mohd Zulkifli, *PhD thesis*, “Mechanical Tensile Strength and Low-Velocity Impact Response on 2D Woven Fabric Reinforced Composite,” Faculty of Applied Sciences, UiTM Shah Alam, June 2020.

James Sathya Kumar, *PhD thesis*, “Characterisation of Magnetorheological Fluid Damper for Variable Frequency Applications,” Karunya Institute of Technology and Sciences, India, March 2020.

Ajay Vasanth, *PhD thesis*, “Investigation on Suppression of Tool Vibration using Smart Damper During Turning of Hardened SS410,” Karunya Institute of Technology and Sciences, India, January 2020.

Chung She Man, *MMEng thesis*, “Fracture of Multilayer Fibrous Materials by using Finite Element Analysis”, Faculty of Mechanical and Manufacturing Engineering, UTHM, July 2019.

Ali Asghar, *PhD thesis*, “Effect of Conductive Filament Spirality on Physical, Mechanical, Thermal and Electromagnetic Shielding Properties of Woven Conductive Fabrics”, Faculty of Applied Sciences, UiTM Shah Alam, November 2018.

Hafizan Hashim, *PhD thesis*, “Bending Collapse and Energy Absorption of Conventional and Insert-Reinforced Closed-Hat-Section Beams”, Faculty of Mechanical Engineering, UiTM Shah Alam, May 2017.

Mustafa Jabbar Hayawi, *PhD thesis*, “Development of Real-Time Adaptive Learning Algorithm for Controlling a 3-DOF Parallel Robot Manipulator”, Faculty of Mechanical Engineering, UiTM Shah Alam, September 2015.

Normala Hassim, *PhD thesis*, “Investigation on the Ballistic Impact Performance of Unidirectional Coated in the Fabric System”, Faculty of Applied Sciences, UiTM Shah Alam, March 2015.

Haizuan Abd Rahman, *MSc thesis*, “Development of Dynamic Models for Damage Detection in Composite Materials”, Faculty of Mechanical Engineering, UiTM Shah Alam, January 2013.

Ahmad Fathi bin Ghazali, *MSc to PhD conversion thesis*, “Parametric Study on Interval Shift Variation in Single Station Time Domain Technique for Experimental Modal Analysis”, Faculty of Mechanical Engineering, UiTM Shah Alam, February 2012.

### ***Undergraduate Student Advising (Final Year Project Supervision at UiTM)***

Zulaikha Sonia Mohamad Abdul Zamil (Oct 2023 – July 2024)  
Experimental Investigation of Crashworthy Properties of Polymer Composite Components for Consumer Electronics

Muhammad Hanif Aduini (Oct 2023 – July 2024)  
Design of Semi-Rotatable Ventilating Acoustic Louver for a Winnower Machine

Muhammad Danial Mohd Zamzuri (Oct 2023 – July 2024)  
Design of a Hybrid Sound Isolating Door System for Hydro-Turbine Noise Control

Noor Dhahiyyah Shafia Md Radzi (Oct 2022 – July 2023)  
Finite Element Analysis of the Shock Response Characteristics of Crashworthy Components

Wan Ahmad Afiq Amin Wan Mohd Suhaimi (Oct 2022 – July 2023)  
Development of Gas Level Detection System for Household LPG Tank

Adelin Khairina binti Mohd Salleh (Mar 2022 – Feb 2023)  
Experimental Determination of High-Acceleration Shock Characteristics of Crashworthy Components

Muhamad Farhan Muhammad Sabberi (Oct 2021 – Feb 2022)  
Numerical Simulation Study of High Acceleration Mechanical Shock of Crashworthy Components

Mohamad Danial Darjat (Oct 2020 – July 2021)  
Design and Strength Analysis of a Hydropool Platform Lifting Mechanism

Ahmad Muzakkir Mohd Nasir (Sept 2017 – July 2018) *Removed due to non-performance*  
Degradation of Mechanical Properties of Basalt Fiber Reinforced Polymer Composites due to Accelerated Weathering

Muhamad Nabil Afiq Baharudin (Sept 2017 – July 2018)  
Assessment of Noise Control Strategies at a Construction Site in UiTM Shah Alam

Wan Akmal Hisyam Zainal Abidin (Sept 2016 – July 2017)  
(Ergonomic Study on Noise Control in the Research and Development Department of An Automotive Manufacturer Company in Malaysia)

Sarah Balqis Yussoff (Mar 2016 – July 2017)  
(Design and Fabrication of a Motor-powered Fiber Threading Roller for an Electrospinning Machine)

Lt. Kol. Jori Roslan bin Mohd Johari (Mar – December 2016)  
(Development and Performance Testing of Enhanced Anti-Ballistic Protective Fabric)

Ahmad Akmal Abd. Rahaman (Sept 2015 – July 2016)  
(Auto-Cropping and Alphanumeric Character Identification using Matlab® Median Filter)

Ahmad Fadzil Ismail (Sept 2015 – July 2016)  
(Volumetric and Damping Effect of a Side Branch Helmholtz-resonator on Sound Attenuation in a Duct System)

Muhammad Nasir Ibrahim (Sept 2015 – July 2016)  
(The Effect of Airflow Resistance and Air Gap on Low-Frequency Sound Absorption of Perforated Acoustic Panels)

Azlina Yahya (Sept 2015 – July 2016)  
(Development of a Matlab® Algorithm for Lane Estimation and Warning System for C-segment Medium Cars)

Muhammad Asfa Adzmin (Sept 2015 – July 2016)  
(Audio Signal Processing for Voice Recognition Algorithm using Matlab®)

Mohd Izham Zulkifli (Mar – December 2015)  
(Sound Absorption Properties of Helmholtz-Resonator Type Perforated Acoustic Panels)

Nurul Zahin Binti Arshad (Mar – December 2015)  
(Determination of the Creep Properties of a Body Armor Material)

Mohamad Farhamin Ismail (Sept 2014 – July 2015)  
(Lane Tracking Coordinator for Intelligent Transport System)

Muhammad Nazrin Thajudin (Sept 2014 – July 2015)  
(Motion Object Tracking based on Kalman Filter)

Muhammad Abdillah Alwi (Sept 2014 – July 2015)  
(Audio Signal Processing for Voice Recognition Algorithm using Matlab)

Muhammad Ashraf Zulkafli (Sept 2014 – July 2015)  
(Ultrasonic Test Bench Upgrading and System Interfacing for Bearing Health Monitoring)

Mohamad Syukry Ishak (Sept 2013 – July 2014)  
(Development of a Tracking Device for Parabolic Solar Collector)

Nur Fasihah Zainol Azhar Suhaimi (Sept 2013 – July 2014)  
(Design and Performance Analysis of Sound Barriers for a Power Generating Gas Turbine)

Azahari Razali (Sept 2013 – July 2014)  
(Determination of the Sound Absorption Properties of Perforated Panel Absorbers Using Impedance Tube Method)

Aliafarhana Mohd Tanzizi (Sept 2013 – July 2014)  
(Characterization of Recyclate Bulk Molding Compound Industrial Waste)

Mohamad Hairi Zazli (Sept 2013 – July 2014)  
(Development of a Solar-powered Portable Car Ventilation Device)

Muhammad Azrie Ahmad (Mar – December 2013)  
(Impact Resistance and Thermal Insulation of Bio-based Composites for Packaging Applications)

Mohamad Akmal Md Rosman (Mar – December 2013)  
(Design, Development and Qualification of a Guarded-Hot-Plate Thermal Test Apparatus)

Arif Ashraf Ayob (Mar – December 2013)  
(Effects of Ovality on External and Internal Pressure of a Subsea Pipeline)

Muhammad Imran Osman (Sep 2012 – May 2013)  
(Assessment and Implementation of Occupational Noise Control Strategies in a Gas Turbine Power Plant)

Tengku Muhamad Dzahir bin Tengku Zainal (Jan – Dec 2012)  
(Non-destructive Evaluation of Defects in a Pressure Vessel Component using Ultrasonic Waves)

Mohamad Faiez Abd Rahman (May 2012)  
(Investigation of the Acoustical Comfort of Different Proton Models)

Mohd Khairuddin Ismail (December 2011)  
(Investigation of Sound Levels and Air Quality around the Engineering Complex UiTM Shah Alam)

Muhammad Fickri Hafriz Razali (December 2011)  
(Analysis of Placement and Dimensions of Tone Holes in a Flute)

Siti Khairiyah Zulkifli (May 2011)  
(Determination of Processing Parameters and the Mechanical Properties of Kenaf/Polypropylene Composites)

Ahmad Safwan Sulian (May 2011)  
(Experimental Impact Resistance Study of a Conventional Ballistic Helmet)

Mohamad Norzaini Zainal (May 2011)  
(Determination of the Effects of Air Gap and Hind Support on the Sound Absorption Coefficient of Bio-based and Foam Materials)

Farhana Samil (May 2011)  
(An Ergonomic Study of a Conventional Ballistic Helmet)



Halil Izran Zahid (May 2011)

(Determination of Sound Absorption Coefficient and Transmission Loss of Malaysian Woods using Two-Microphone Impedance Tube Method)

Rizuan Eusoff (May 2006)

(Noise Assessment at PTAR II Library)

Mohd Syihan Mohamad (May 2006 – Co-Supervisor)

(Design and Fabrication of an Automobile Clutch Test Rig)

Faizal Ashikien Idros & Ahmad Fauzi Jantan (April 2005)

(Design and Development of a Model of Electric-Powered Scrubber for Household Application)

Shahril Firdaus Shuib & Mohd Hairul Mat Husin (April 2005)

(Development of Short Span Bridge Structures using Indigenous Agro-based Material Resources: Design Experimentation using FEA)

Nor Hayati Kudiran & Ahmad Hussein Abdul Hamid (April 2005)

(Development of Composite Panels for Short Span Bridge Construction using Indigenous Agro-based Resources: Fabrication and Mechanical Testing)

Mohd Irwan Abu Bakar & Suhaimi Haji Mohammad (March 2004 – Co-Supervisor)

(Development of Motorcycle Suspension System Testing Set Up)

Mohd Zaki Bahrom (December 2003 – Co-Supervisor)

(Improvement of Motorcycle Suspension Test Set Up)

## SCHOLARLY AND SYNERGISTIC ACTIVITIES

### *Journal Editorial and Reviews*

Technical Reviewer, *Composites Part B: Engineering*, published by Elsevier, B. V. (e-ISSN: 1879-1069), 2024 – present {indexed in Scopus; JCR impact factor = 13.1/2022}

Technical Reviewer, *Mechanics of Materials*, published by Elsevier, B.V. (ISSN: 0167-6636), 2022 – present {Scopus CiteScore = 5.2/2021; JCR impact factor = 4.137/2021}

Technical Reviewer, *Periodica Polytechnica Mechanical Engineering*, published by Budapest University of Technology and Economics, 2023 {indexed in Scopus and Clarivate WoS}

Technical Reviewer, *International Journal of Damage Mechanics*, published by SAGE Publications, Inc. (ISSN: 1056-7895), 2020 – present {indexed in Scopus; JCR impact factor = 5.029/2021}

Technical Reviewer, *Materials and Design*, published by Elsevier, B.V. (ISSN: 0261-3069), 2015 – present {ISI and Scopus indexed; JCR impact factor = 7.991/2020}

Technical Reviewer, *Mechanics of Advanced Materials and Structures*, published by Taylor & Francis Group LLC. (ISSN: 1537-6494), 2011 – present {Scopus; impact factor = 4.030/2020}

Technical Reviewer, *Polymer Testing*, published by Elsevier, B.V. (ISSN: 0142-9418), 2018 – present {ISI and Scopus indexed; JCR impact factor = 4.282/2020}

Technical Reviewer, *Advances in Mechanical Engineering*, published by SAGE Publications, Inc. (ISSN: 1687-8132), 2019 – present {Web of Science and Scopus indexed; impact factor = 1.316/2020}

Technical Reviewer, *Journal of Applied Polymer Science*, published by Wiley Periodicals, Inc. (ISSN: 0021-8995), 2011 – present {ISI and Scopus indexed; impact factor = 3.125/2020}

Technical Reviewer, *Journal of Industrial Textiles*, published by SAGE Publications, Inc. (ISSN: 1528-0837), 2011 – present {CAS, Compendex, ProQuest indexed; impact factor = 3.732/2020}

Technical Reviewer, *Defence Technology*, Elsevier, B.V. {indexed in Chemical Abstracts, CSA, DOAJ; Scopus CiteScore = 1.74/2018}

Technical Reviewer, *Sains Malaysiana*, published by Penerbit UKM. (ISSN: 0126-6039), 2013 – present {ISI and Scopus indexed; impact factor = 0.480/2014}

Technical Reviewer, *Jurnal Teknologi (Science and Engineering)*, published by UTM Press. (e-ISSN: 2180-3722), 2012 – present {Scopus indexed; SNIP = 0.137/2014}

Technical Reviewer, *Journal of Medical and Bioengineering*, published by ET Pub. (ISSN: 2301-3796), 2013 – present {EBSCO, MELib and Google Scholar indexed}

Technical Reviewer, *International Journal of Automotive & Mechanical Engineering*, published by The Automotive Excellent Center, University Malaysia Pahang (ISSN: 1985-9325), 2010 – present

Editorial Board, *Journal of Mechanical Engineering*, published by UiTM Press, Malaysia (ISSN: 1823-5514), 2011 – present, {Scopus indexed; SNIP = 0.785/2014}

Editorial Board, *International Journal of Institute of Materials Malaysia*, published by Institute of Materials, Malaysia, 2014 – 2015.

Editorial Executive, *Journal of Faculty of Mechanical Engineering*, Vol. 1 & 2 (ISSN: 1823-5514), 2004 – 2005, published by UPENA-UiTM {Scopus indexed}

### **Event Organizer**

(Unit for Research, Development and Commercialization, Faculty of Mechanical Engineering, UiTM Shah Alam is contracted as URDC-FKM below)

Organizer of International Outbound Student Exchange Program with Mar Baselios College of Engineering and Technology, Kerala, India, November 22 – 29, 2025

Organizer of International Inbound Student Exchange Program with Mar Baselios College of Engineering and Technology, Kerala, India, July 3 – 10, 2025

Convener, Industry Insights Sessions, organized by ASHRAE CST Bhutan Student Branch College of Science and Technology, Royal University of Bhutan, Rinchending, Bhutan March 20 & 21, 2025.

Organizer of International Outbound Student Exchange Program with St. Thomas College of Engineering and Technology, Kerala, India, November 16 – 23, 2024

Organizer of International Inbound Student Exchange Program with St. Thomas College of Engineering and Technology, Kerala, India, June 16 – 22, 2024

Conference Chair, International Conference on Advanced Materials for Sustainable Innovation, IC-AMSI 2024 ([IC-AMSI2024](#)), August 2024, New Delhi, India

Co-organizer of Design Hackathon 2022 in collaboration with St. Thomas College of Engineering and Technology, Kerala, India, September 19 – 23, 2022 (Hybrid)

Co-organizer of Session 11-36-1, 2019 ASME International Mechanical Engineering Congress and Exposition (IMECE2019), November 2019, Salt Lake City, Utah, USA

Co-organizer of Session 12-32-24, 2017 ASME International Mechanical Engineering Congress and Exposition (IMECE2017), November 2017, Tampa, Florida, USA

Co-chair of Special Session, “Poly(hydroxyalkanoates) and Natural Rubber: Synthesis and Properties”, International Symposium on Advanced Polymeric Materials 2016 (ISAPM 2016), May 2016, Kuala Lumpur, Malaysia.

Co-organizer of Session 12-36-4, 2015 ASME International Mechanical Engineering Congress and Exposition (IMECE2015), November 2015, Houston, Texas, USA

Chairperson, Technical Publication, International Materials Technology Conference and Exhibition 2016 (IMTCE2016), Institute of Materials (IMM), Malaysia, Kuala Lumpur, May 2016 (*July 2014 - May 2015*)

Chairperson, Technical Publication, International Materials Technology Conference and Exhibition 2014 (IMTCE2014), Institute of Materials (IMM), Malaysia, Kuala Lumpur, May 2014

Co-organizer of Session 9-20-5, 2012 ASME International Mechanical Engineering Congress and Exposition (IMECE2012), November 2012, Houston, Texas, USA

Publication Co-Chair – International Conference on Advances in Mechanical Engineering 2010 (ICAME2010), December 2010

Publication Co-Chair – National Conference on Advances in Mechanical Engineering 2005 (NAME2005), May 2005

Organizing Committee (URDC-FKM) – Workshop on Writing Research Proposal, Faculty of Mechanical Engineering, UiTM Shah Alam, July 2002 (Committee Member) & May 2005 (Chair)

Organizing Committee (URDC-FKM) – Research and Consultancy Seminar 2003 (SERAC2003), Faculty of Mechanical Engineering, UiTM Shah Alam, March 2003

Organizing Committee (URDC-FKM) – Workshop on Generating Research Titles, Faculty of Mechanical Engineering, UiTM Shah Alam, August 2003

Organizing Committee (URDC-FKM) – Workshop on Research Paper Writing, Faculty of Mechanical Engineering, UiTM Shah Alam, December 2002

Organizing Committee (URDC-FKM) – Workshop on IRPA Research Proposal Writing, Faculty of Mechanical Engineering, UiTM Shah Alam, July 2002

#### ***Technical Program Committee-Paper Review (TPC) and International Advisory Committee (IAC)***

IAC, International Conference on Advanced Materials for Sustainable Innovation, IC-AMSI 2026, August 2026, New Delhi, India

IAC, International Conference on Advanced Materials for Sustainable Innovation, IC-AMSI 2024 (IC-AMSI2024), August 2024, New Delhi, India

IAC, 3<sup>rd</sup> International Conference on Sustainable Materials, Manufacturing and Renewable Technologies 2023 (i-SMaRT2023), May 2023, Angamaly, Kerala, India

IAC, International Conference on Innovative Technology, Engineering and Sciences 2020 (iCITES2020), December 2020, Universiti Malaysia Pahang, Malaysia

IAC, International Conference on Applied Mechanics and Optimisation (ICAMeO2019), June 2019, Trivandrum, Kerala, India

TPC, 2017 ASME International Mechanical Engineering Congress and Exposition (IMECE2017), November 2017, Tampa, Florida, USA

IAC, International Conference on Innovative Approaches in Mechanical Engineering and Management Studies 2017 (IAMM2017), June 2017, Trivandrum, Kerala, India

TPC, 3<sup>rd</sup> International Conference on Science and Social Research 2016 (CSSR2016), December 2016, Putrajaya, Malaysia

TPC, 3<sup>rd</sup> International Conference on Recent Advances in Automotive Engineering and Mobility Research 2015 (ReCAR2015), December 2015, Malacca, Malaysia

TPC, 2015 ASME International Mechanical Engineering Congress and Exposition (IMECE2015), November 2015, Houston, Texas, USA

TPC, 2<sup>nd</sup> International Conference on Science and Social Research 2015 (CSSR2015), October 2015, Selangor, Malaysia

TPC, 2014 International Colloquium on Textile Engineering, Fashion, Apparel and Design (ICTEFAD2014), April 2014, Penang, Malaysia

TPC, 2014 IEEE International Colloquium on Humanities, Social Science and Engineering (CHUSER2014), April 2014, Penang, Malaysia

IAC, 2013 International Conference on Advances in Building Sciences, February 2013, Indian Institute of Technology (IIT) Chennai, India

IAC, 2012 International Symposium on Robotics and Intelligent Sensors (IRIS2012), September 2012, Sarawak, Malaysia

TPC, 2012 ASME International Mechanical Engineering Congress and Exposition (IMECE2012), November 2012, Houston, Texas, USA

TPC, 2012 1<sup>st</sup> Joint Symposium on System-integrated Intelligence, June 2012, Hannover, Germany

TPC, 2011 IEEE International Colloquium on Humanities, Social Science and Engineering (CHUSER2011), December 2011, Penang, Malaysia

TPC, 2011 Regional Conference on Automotive Research (ReCAR2011), December 2011, Kuala Lumpur, Malaysia

TPC, 2011 IEEE International Symposium on Business, Engineering and Industrial Applications (ISBEIA2011), September 2011, Langkawi, Malaysia

TPC, 2011 IEEE International Symposium on Humanities, Social Science and Engineering (SHUSER2011), June 2011, Kuala Lumpur, Malaysia

TPC, 2010 ASME International Mechanical Engineering Congress and Exposition (IMECE2010), November 2010, Vancouver, Canada

TPC, International Conference on Advances in Mechanical Engineering 2010 (ICAME2010), December 2010, Kuala Lumpur, Malaysia

TPC, 2009 ASME International Mechanical Engineering Congress and Exposition (IMECE2009), November 2009, Florida, USA

TPC, National Conference on Advances in Mechanical Engineering 2005 (NAME2005), May 2005, Kuala Lumpur, Malaysia

### ***Conference Session Chair***

Co-chair of Session 01-02-03, ASME 2024 Aerospace Structures, Structural Dynamics, and Materials Conference (SSDM2024), May 2024, Renton, Washington, USA

Chair of Session, 3<sup>rd</sup> International Conference on Sustainable Materials, Manufacturing and Renewable Technologies 2023 (i-SMaRT2023), May 2023, Angamaly, Kerala, India

Chair of Keynote and Plenary Sessions, 2020 Virtual Conference on Trends in Mechanical Engineering Analysis, Tools and Applications (MANTAP 2020), December 2 – 3, 2020, UiTM Shah Alam, Malaysia.

Chair of Session 11-36-1, 2019 ASME International Mechanical Engineering Congress and Exposition (IMECE2019), November 2019, Salt Lake City, Utah, USA

Chair of Session 8-Track 6, 5<sup>th</sup> International Conference on Science and Social Research 2018 (CSSR2018), December 2018, Sabah, Malaysia

Chair of Session 12-32-24, 2017 ASME International Mechanical Engineering Congress and Exposition (IMECE2017), November 2017, Tampa, Florida, USA

Chair of Session G2, 3<sup>rd</sup> International Conference on Science and Social Research 2016 (CSSR2016), December 2016, Putrajaya, Malaysia

Session Chair, International Conference on Innovative Approaches in Mechanical Engineering and Management Studies 2016 (IAMM2016), June 2016, Trivandrum, Kerala, India

Chair of Session 5, 3<sup>rd</sup> International Conference on Recent Advances in Automotive Engineering and Mobility Research 2015 (ReCAR2015), December 2015, Malacca, Malaysia

Chair of Session 12-36-4, 2015 ASME International Mechanical Engineering Congress and Exposition (IMECE2015), November 2015, Houston, Texas, USA

Chair of Session D2, 2015 2<sup>nd</sup> International Conference on Science and Social Research (CSSR2015), October 2015, Shah Alam, Selangor, Malaysia

Chair of Session D3, International Conference on Advances in Mechanical Engineering 2015 (ICAME2015), August 2015, Bali, Indonesia

Chair of Session 2 (Biomeasurement & Bioinstrumentation 1), IASTED & IEEE-EMB's 11th International Conference on Biomedical Engineering (BioMed2014), June 2014, Zurich, Switzerland

Chair of Session B21, 2014 IEEE International Colloquium on Humanities, Science and Engineering Research (CHUSER2014), April 2014, Penang, Malaysia

Chair of Session 3-B, 2013 2<sup>nd</sup> International Conference on Mechanical Engineering Research (ICMER2013), July 2013, Bukit Gambang Resort City, Pahang, Malaysia

Chair of Session 9-20-5, 2012 ASME International Mechanical Engineering Congress and Exposition (IMECE2012), November 2012, Houston, Texas, USA

Chair of Session *AET Ballroom 2*, 2012 International Symposium on Robotics and Intelligent Sensors (IRIS2012), September 2012, Sarawak, Malaysia

Chair of Session A-11, 2011 IEEE International Colloquium on Humanities, Social Science and Engineering (CHUSER2011), December 2011, Penang, Malaysia

Chair of Session C-24, 2011 IEEE International Symposium on Humanities, Social Science and Engineering (SHUSER2011), June 2011, Kuala Lumpur, Malaysia

Co-chair of Session 12-17-1, 2010 ASME International Mechanical Engineering Congress and Exposition (IMECE2010), November 2010, Vancouver, Canada

Chair of Session 8-C, International Conference on Advances in Mechanical Engineering 2010 (ICAME2010), December 2010, Kuala Lumpur, Malaysia

Co-Chair of Session 3-D, National Conference on Advances in Mechanical Engineering 2005 (NAME2005), May 2005, Kuala Lumpur, Malaysia

### ***Visiting Scholar, Guest Lectures, Invited Talks and Keynote Addresses***

“The Skill Mandala: Aligning Minds, Markets, and Machines” **Keynote Address** in 3<sup>rd</sup> *International Conclave on Generative AI and The Future of Education 2026* (ICGAIFE2026) by Institute of Human Resource Development, Government of Kerala, January 16 – 18, 2026, Trivandrum, Kerala, India.

“Tune Your Vibration” **Invited Talk** by the Boiler and Safety Engineering Club (BOSEC) at the Faculty of Mechanical Engineering, UiTM Shah Alam, Malaysia, November 12 (Session 1) & December 3 (Session 2), 2025. (Physical and online)

“Low Strain Rate Behavior of Varied Geometry Marine Fenders: Influence of Weathering Conditions” **Keynote Address** in *International Conference on Applied Mechanics and Optimisation 2025*

(ICAMeO2025) by Mechanical Engineering Department of Mar Baselios College of Engineering and Technology, May 29 – 31, 2025, Trivandrum, Kerala, India. (Online)

“Weathering Effects on the Deformation Behavior and Impact Resistance of DD- and DC-shaped Marine Fenders” **Invited Talk** at the **Faculty Development Program**, St. Thomas College of Engineering and Technology, May 28, 2025, Chengganur, Kerala, India. (Online)

“Hyper-personalized Blended Learning with GenAI: Aligning Academic Skills with Industry Competencies” **Keynote Address** in *2<sup>nd</sup> International Conclave on Generative AI and The Future of Education 2024* (ICGAIFE2024) by Institute of Human Resource Development, Government of Kerala, December 8 – 10, 2024, Trivandrum, Kerala, India.

“Mechanical Vibrations: Resonance and Structural Stability” **Invited Talk** at the Department of Mechanical Engineering, College of Science and Technology, Royal University of Bhutan, May 28, 2024, Rinchending, Bhutan.

“Responsible Use of Generative AI for Engineering Assignments” **Invited Talk** at the Department of Mechanical Engineering, College of Science and Technology, Royal University of Bhutan, May 29, 2024, Rinchending, Bhutan.

“Life Cycle Assessment: Environmental Responsibility in the Realm of Multicomponent Material Systems” **Keynote Address** (online) in *International Conference on Green Technology and Sustainability 2024* (ICGTS2024) by Department of Mechanical Engineering and Department of Mechanical & Automation Engineering, Maharaja Agrasen Institute of Technology (MAIT), January 30 – 31, 2024, New Delhi, India.

“On the Examiner’s Desk: Navigating The Initial Phases of Postgraduate Research Proposal Defense Evaluation” **Invited Talk** at Research Seminar by the University of Wollongong Malaysia, January 10, 2024, Glenmarie, Shah Alam, Malaysia.

“The Unrelenting Pace of Generative AI in Education and Research: Tools and Policies” **Keynote Address** in *International Conclave on Generative AI and The Future of Education 2023* (ICGAIFE2023) by Institute of Human Resource Development, Government of Kerala, September 30 – October 1, 2023, Trivandrum, Kerala, India.

“Generative AI: Empowering Educators and Learners” **Invited Talk** in *1<sup>st</sup> International Seminar on Innovative Pedagogy: Digital Transformation to IR4.0 2023* by Kerala University College of Teacher Education, September 29, 2023, Kariavattom, Kerala, India.

“High-Acceleration Shock Characteristics of Industrial Marine Fenders” **Keynote Address** in *3<sup>rd</sup> International Conference on Sustainable Materials, Manufacturing and Renewable Technologies 2023* (i-SMaRT2023) by Department of Mechanical Engineering, Federal Institute of Science and Technology, May 24 – 26, 2023, Angamaly, Kerala, India.

“Pre-conference Workshop on Research Publication and Proposal Writing” **Workshop Resource Person** by Department of Mechanical Engineering, Federal Institute of Science and Technology, May 23, 2023, Angamaly, Kerala, India.

**Faculty Development Program**, St. Thomas College of Engineering and Technology, November 8 – 11, 2022, Chengganur, Kerala, India.

“How Engineered Volcanic Rocks Resist Bullets and Protect Man in Space Voyage: Cost and Performance Perspectives” **Invited Virtual Talk** in IEM Evening Talk by IEM Technical Division (Engineering Education) Institute of Engineers Malaysia (IEM), June 8, 2022 (IEM22/HQ/154/T(w)).

**Visiting Faculty Program**, Mechanical Engineering Department of Mar Baselios College of Engineering and Technology, February 3 – 7, 2020, Trivandrum, Kerala, India.

“Igneous Rocks Fabric as Body Armor: Potential and Challenges” **Keynote Address** in *International Conference on Applied Mechanics and Optimisation 2019 (ICAMeO2019)* by Mechanical Engineering Department of Mar Baselios College of Engineering and Technology, June 13 – 15, 2019, Trivandrum, Kerala, India.

“Dawn of Smart Green Buildings: The Impacts of IoT, Big Data & Energy Analytics” **Keynote Address** in *Innovative Sustainable Construction Materials and Recent Innovations in Civil Engineering 2018 (SCRICE-18)* by Vaagdevi College of Engineering, July 19 – 20, 2018, Warangal, Telangana, India.

“Smart Sourcing International Research Fundings: Engineer your strategy!” **Invited Speaker** in *Seminar On International Grants* by Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia (UKM), August 2, 2018, UKM Bangi, Malaysia.

“Moisture Absorption Properties and Shock Cushioning Characteristics of Bio-Based Polyurethane Foam Composites” **Keynote Address** in *International Conference on Innovative Approaches in Mechanical Engineering and Materials Science 2017 (IAMM2017)* by Trinity College of Engineering, June 15, 2017, Trivandrum, Kerala, India.

“The Art of Drafting and Interlinking Important Components of a Research Proposal,” **Invited Speaker** in *Research Grant Writing Workshop 2017* by Department of Information System, Faculty of Computer Science and Information Technology, Universiti Malaya, May 23, 2017, Petaling Jaya, Malaysia.

“International and Private Grants Acquisition: Sources and Strategies,” **Invited Speaker** in *IS Department Staff Development Workshop 2016* by Department of Information System, Faculty of Computer Science and Information Technology, Universiti Malaya, December 1, 2016, Petaling Jaya, Malaysia.

“Psychoacoustics: An Innovative Approach to Reverse-Engineering Your Mind Digitally –Stimulation of Beta Brainwave Rhythm using Isochronic Tones” **Keynote Address** in *International Conference on Innovative Approaches in Mechanical Engineering and Management Studies 2016 (IAMM2016)* by Trinity College of Engineering, June 3, 2016, Trivandrum, Kerala, India.

“Rheological Modeling of the Isothermal Creep Response of Poly(hydroxyalkanoates),” **Invited Speaker** in *International Symposium on Advanced Polymeric Materials 2016 (ISAPM 2016)* by Institute of Materials, Malaysia (IMM), May 18, 2016, Kuala Lumpur, Malaysia.

“Effectiveness of Embedded Binaural Beats and Isochronic Tones on Gamma-domain Brainwave Stimulation,” **Invited Speaker** in *Research Seminar Series* by Department of Mechanical and Materials Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia (UKM), March 23, 2016, UKM Bangi, Malaysia.

“Eco-Biocomposite Materials for Shock Cushioning Application: An Outlook of Their Potentials and Challenges,” **Invited Speaker** in *International Conference on Advances in Mechanical Engineering 2015 (ICAME2015)*, August 26, 2015, Bali, Indonesia.

“Enhancement of Low Frequency Sound Absorption Performance of Indigenous Sound Absorbers,” – **Invited Speaker** in *Development of Biorefinery based on Rice Straw* by School of Biological Sciences, Universiti Sains Malaysia (USM), October 28, 2013, USM Penang, Malaysia.

“Writing for Eminent Journals,” – **Invited Speaker** in *Academic Writing Series of Workshops* by Research Management Institute (RMI) UiTM, November 17, 2011, UiTM Shah Alam, Selangor, Malaysia.

“A New Viscoelastic Model to Simulate the Constitutive Behavior of a Twaron® Fabric/Natural Rubber Composite,” **Guest Lecture** in *2010 International Conference on Advances in Mechanical Engineering (ICAME2010)* December 2 – 5, 2010, Shah Alam, Selangor, Malaysia.

## **STRATEGIC FACULTY & RMC RESPONSIBILITIES**

(School of Mechanical Engineering, UiTM Shah Alam is contracted as PKM; PKM [2021 – 2025] formerly known as FKM)  
(Faculty of Mechanical Engineering, UiTM Shah Alam is contracted as FKM; PKM reverted to FKM since May 2025)  
(Research Management Center, UiTM is contracted as RMC above; RMC is formerly known as RMI)

Head, Evaluation Panel – Collaborative Teaching Projects of FKM, UiTM Shah Alam, 2025 – 2027

Member, Lecturer Professionalism Monitoring Committee, FKM, 2024 – 2027

Course Resource Person, MEC632 – Environmental Noise Control and Technology, PKM, College of Engineering, UiTM Shah Alam, 2024 – 2026

Course Resource Person, MEC521 – Vibrations, PKM, College of Engineering, UiTM Shah Alam, 2024 – 2026

Manager, Student Mobility Program (Inbound and Outbound) between Mar Baselios College of Engineering and Technology, Kerala, India and UiTM, 2025

Head, Evaluation Panel – Collaborative Teaching Projects of PKM, College of Engineering, UiTM Shah Alam, 2024 – 2025

Manager, Student Mobility Program (Inbound and Outbound) between St. Thomas College of Engineering and Technology, Kerala, India and UiTM, 2024

Ranking Champion, International Unit, College of Engineering, UiTM Shah Alam, 2023

Member, Collaborative Teaching Committee, College of Engineering, UiTM Shah Alam, 2023

Member, Special Committee on IQA-04 Documentation (Postgraduate Courses), College of Engineering, UiTM Shah Alam, 2022

Director, World Congress on Science, Engineering and Technology (WCOSSET) 2021, FKM, 2021

Chairman, 2020 Virtual Conference on Trends in Mechanical Engineering Analysis, Tools and Applications (MANTAP) 2020, FKM, 2020

Head of Research (International & Private Grants), RMC, 2014 - 2019

Research Fellow, International & Private Grants Unit, RMC 2011 – 2013

Qualified Research Manager, Malaysian Code of Responsible Conduct in Research, 2019

Member, UiTM Technical and Equipment Committee, RMC, 2013 – 2019

Panel Member, Synergised Industry-Experimenter Research Grant Initiative (SInERGI) Proposal Evaluation Committee, RMI, 2014 – 2015

Member, Research Ethics Committee, FKM, 2013 – 2014

Member, Academic Professionalism Monitoring Committee, FKM, 2012 – 2014

Course Coordinator, Designed and developed OBE-compliant teaching and e-learning materials for MEC600 (Engineers in Society), FKM, 2013 – 2014

Course Coordinator, Designed and developed MOOC-based ODL-friendly e-learning materials for MEC629 (Fundamentals of Acoustics), FKM, 2012 – 2022

Lead Judge, Innovation, Invention and Design (IID), FKM, 2012

Deputy Director, Institute of Mechanical Engineering and Technology Advancement (iMETA), FKM, 2010 – 2012



Certified Internal Auditor, ISO Internal Audit and Quality Assurance Team, FKM, 2003 – 2004, 2010 – 2011

Coordinator, Innovation, Invention and Design (IID) Committee, FKM, 2010 – 2011

Coordinator, Unit for Research, Development and Commercialization (URDC) FKM, 2003 – 2004

Chief Editor, *Hybrids* – The Official Bulletin of the Faculty of Mechanical Engineering, UiTM Shah Alam, 2003 – 2004

Founder and Editorial Coordinator of *Journal of Faculty of Mechanical Engineering* (now known as *Journal of Mechanical Engineering*, the first Scopus-indexed journal in UiTM) Publication Unit, FKM, 2004 – 2005

Chief, New Program Development – Bachelor of Engineering (Hons.) Mechanical (Engineering Biomechanics), FKM, 2011 – 2012

Member, New Program Development – Master of Science (Mechanical) Applied Mechanics, FKM, 2011 – 2012

Course Coordinator, KJM247 (Dynamics); KJV322 (Mechanics of Motor Vehicle); KJM522 (Vibrations), FKM, 2003 – 2005

Course Coordinator, Designed and developed OBE-compliant teaching and e-learning materials for MEC411 (Mechanics of Materials) FKM, 2010 – 2012

Founder and Manager, Physics Laboratory, FKM, 2003 – 2005

Founder and Manager, Nanotechnology Laboratory, FKM, 2004 – 2005

Founder and Leader, Indigenous Technology Special Interest Group (SIG), FKM, 2003 – 2004

## **COLLABORATIVE EFFORTS**

### ***Academia & Industrial Collaborations***

Memorandum of Understanding (Friendship and Cooperation, Promotion of Mutual Understanding, Academic, Cultural and Scientific Thought and Personnel Exchange) with Federal Institute of Science and Technology (FISAT), Kerala, India, 2023 – 2025

Memorandum of Understanding (Friendship and Cooperation, Promotion of Mutual Understanding, Academic, Cultural and Scientific Thought and Personnel Exchange) with Mar Baselios College of Engineering and Technology (MBCET), Kerala, India, 2019 – 2028

Memorandum of Understanding (Friendship and Cooperation, Promotion of Mutual Understanding, Academic, Cultural and Scientific Thought and Personnel Exchange) with St. Thomas College of Engineering and Technology (STC), Kerala, India, 2022 – 2024

Memorandum of Understanding (Friendship and Cooperation, Promotion of Mutual Understanding, Academic, Cultural and Scientific Thought and Personnel Exchange) with Trinity College Of Engineering (TCE), Kerala, India, 2019 – 2021

Committee, Institute of Materials, Malaysia Task Force on Coatings Fingerprinting (2014 – 2016)

Initiated “UiTM-SIRIM Lab-to-Market Collaboration Program” under RMI, UiTM, 2013

Memorandum of Agreement with Impress Wood Sdn. Bhd. (Klang, Malaysia) for TechnoFund Research Grant collaboration, 2012

Documented and established the Shimadzu-UiTM Memorandum of Understanding, 2005 – 2006

Initiated the Standards and Industrial Research Institute of Malaysia (SIRIM)-UiTM Collaboration, 2005.

Initiated the Malaysian Rubber Board (MRB)-UiTM Collaboration, 2003.

### ***Interdisciplinary Initiatives***

Member, Climate Change & Carbon Footprint, a registered transdisciplinary Research Excellence Entity, Community of Research – *Green Technology & Sustainable Development*, UiTM, 2017 – current

Member, Music Therapy, Rehabilitation & Wellness (MusTReWell), a registered transdisciplinary Research Excellence Entity, Community of Research – *Pharmaceutical and Life Sciences*, UiTM, 2015 – 2018

Member, Mathematical Thinking for Teaching Research Group, a registered transdisciplinary Research Excellence Entity, Community of Research – *Humanities, Design and Creativity*, UiTM, 2015 – current

### **HONORS AND NOTABLE AWARDS**

- Gold Award, International Teaching and Learning Invention Innovation Competition (iTaLiiC) 2025, Project title: Generative AI-powered Platform for Hyper-Personalized Blended Learning (HPBL)
- Shortlisted Awardee, Exemplary Teaching and Learning Award at the e-Learning Forum Asia (eLFA) Awards 2025
- Judge, Universiti Malaya Undergraduate Ideas Festival (iFEST) 2025
- Judge, Young Inventors Challenge (YIC), 2025 organized by the Association of Science, Technology and Innovation (ASTI), Malaysia
- Gold Award, 5<sup>th</sup> International Teaching Aid Competition (iTAC) 2024, Project title: XR-Powered 3D Immersive-Interactive Learning Tool for Experimental Forced Vibration Analysis
- Lead Judge, Science Carnival 2023, Sekolah Jenis Kebangsaan (T) Ladang Kinrara, Malaysia
- Excellent Service Award UiTM, 2021 Universiti Teknologi MARA (awarded in 2022)
- Judge, Young Inventors Challenge (YIC), 2022 organized by the Association of Science, Technology and Innovation (ASTI), Malaysia
- Discussion Panel Member, Establishment of Kerala Science Park, Kerala State Council for Science, Technology and Environment (KSCSTE), India 2022
- Lecturer Professionalism (PRO-PENS) Excellent Award 2021, Universiti Teknologi MARA
- Judge, Young Inventors Challenge (YIC), 2020 organized by the Association of Science, Technology and Innovation (ASTI), Malaysia
- Jury, National e-Content Development Competition (e-ConDev) 2020 organized by Ministry of Higher Education Malaysia and Universiti Teknologi MARA
- Judge, Science Fair for Young Children (SYFC) Champions League, 2019 organized by the Association of Science, Technology and Innovation (ASTI)
- 6<sup>th</sup> International Young Inventors Award (IYIA) 2019 - Silver medal for CermaiBite<sup>®</sup> in collaboration with SJKT Ladang Midlands, Malaysia
- Judge, Young Inventors Challenge (YIC), 2019 organized by the Association of Science, Technology and Innovation (ASTI), Malaysia
- Best Presenter Award, 5<sup>th</sup> International Conference on Science and Social Research (CSSR), 2018, Sabah, Malaysia
- Judge, Young Inventors Challenge (YIC), 2018 organized by the Association of Science, Technology and Innovation (ASTI), Malaysia
- Excellent Service Award UiTM, 2015 Universiti Teknologi MARA (awarded in 2016)
- Judge, Young Inventors Challenge (YIC), 2016 organized by the Association of Science, Technology and Innovation (ASTI), Malaysia
- Judge, 27<sup>th</sup> International Invention, Innovation & Technology Exhibition (ITEX 2016)
- Judge, 26<sup>th</sup> International Invention, Innovation & Technology Exhibition (ITEX 2015)

- Judge, 25<sup>th</sup> International Invention, Innovation & Technology Exhibition (ITEX 2014)
- Judge, 24<sup>th</sup> International Invention, Innovation & Technology Exhibition (ITEX 2013)
- Judge, 23<sup>rd</sup> International Invention, Innovation & Technology Exhibition (ITEX 2012)
- Scholarly Impact Award: High-impact Journal Publication Incentive Award, UiTM, 2012
- Scholarly Impact Award: High-impact Journal Publication Incentive Award, UiTM, 2011
- Dean's Quality Award 2010, Faculty of Mechanical Engineering, UiTM, 2011
- 19<sup>th</sup> International Invention, Innovation and Technology Exhibition (ITEX 2008) – Silver Medal for Non-Asbestos Brake Friction Materials for Heavy Duty Application (in collaboration with SIRIM (M) Berhad), 2008
- Malaysia Technology Expo 2008 – Best Award and Gold Medal for Asbestos-Free Friction Materials for Heavy Duty Brake Application (in collaboration with SIRIM (M) Berhad), 2008
- FULBRIGHT Fellow: Research and Graduate Scholarship Award, 2006 – 2009
- Thompson Fellowship (Graduate Fellowship Award, Texas A&M University), 2006
- ASME Auxiliary Rice-Cullimore Scholarship (The American Society of Mechanical Engineers), 2006
- Inventions, Innovations and Designs 2006 (IID 2006) – UiTM Shah Alam, Bronze Medal for Innovation category. Project: Electric-Powered Scrubber for Domestic Application, 2006
- Excellent Service Award UiTM, 2004 Universiti Teknologi MARA (awarded in 2005)
- Ministry of Science, Technology & Innovation, Malaysia Postgraduate Scholarship Award, 2000 – 2001
- Dean's List Recipient (Distinction), 1999
- Golden Hope Book Award, 1999
- Best UKM (National University of Malaysia) Indian Student, 1999
- Malaysian Community & Education Foundation (MCEF) Award, 1997 – 1999

## **SOCIAL AND COMMUNITY INVOLVEMENT**

- Advisor, International STEM Innovation Competition 2024 ([ISIC-WOU24](#)) for Sekolah Jenis Kebangsaan (T) Ladang Kinrara. International level competition hosted by Malaysia Young Scientist Organization. Project ID: JI212, Award: Gold | Project ID: JI225, Award: Silver
- Advisor, World Youth STEM Invention Innovation ([WYSII](#)) 2024 for Sekolah Jenis Kebangsaan (T) Ladang Kinrara. International level competition hosted by Malaysia Young Scientist Organization. Project ID: EPE1006, Award: Silver | Project ID: EES1025, Award: Bronze
- Advisor, National Science Fair for Young Children ([NSFYC](#)) 2023 for Sekolah Jenis Kebangsaan (T) Ladang Kinrara. National level competition organized by the Association of Science, Technology and Innovation (ASTI), Malaysia.
- Mentor, Green Makers Challenge @ American Corners ([GMC](#)) 2023, organized by the Association of Science Technology and Innovation (ASTI) in collaboration with Embassy of the United States of America (US Embassy) at Kuala Lumpur, American Corners and Institute Pendidikan Guru Malaysia (IPGM).
- Advisor, Innovation Project for Lower Secondary Students, Sekolah Menengah Sri Acmar & SMK Setia Alam (2022) – Finalist at [YIC2022](#), Virtual international innovation competition organized by the Association of Science, Technology and Innovation (ASTI), Malaysia.
- Advisor, Innovation Project for Lower Primary Students, Sekolah Jenis Kebangsaan (T) Ladang Midlands (2019) – Silver medal at [IYA2019](#), Jakarta, Indonesia
- Trainer, Science Project for Lower Primary Students, Sekolah Jenis Kebangsaan (T) Ladang North Hummock, sponsored by PIBG SJK(T) Ladang North Hummock (2018)
- Trainer, Project Ilham - Inspiring Excellence (Science Workshop) – Phase 2, sponsored by [EWRf](#) (2017)
- Trainer, Project Ilham - Inspiring Excellence (Science Workshop) – Phase 1, sponsored by [EWRf](#) (2016)
- Honorary Secretary, Institute of Materials, Malaysia (2015 – 2016)
- Member, Organizing Committee of the 2015 National Colloquium on RACE Research Grant, Universiti Putra Malaysia (2014 – 2015)

- Chairman, Journal Scopus Indexing Committee, Institute of Materials, Malaysia (2014 – 2016)
- Treasurer, Polymer Committee, Institute of Materials, Malaysia (2014 – 2016)
- Member, mySET Standing Committee on Young Professionals, Malaysian Society for Engineering and Technology (mySET), 2011
- Ex-officio ('08/'09), Brazos Valley Chapter of Fulbright Association, USA, 2008
- President ('08/'09), Fulbright Students' Association (Texas A&M University), 2008
- Advisor ('07/'08), Malaysian Students Association (Texas A&M University), 2007
- Donation, ASME Virginia Tech Memorial Scholarship Fund, 2007
- Donations, National Type (Tamil) Primary School, Section 7, Shah Alam, Malaysia, 2006
- Donations, National Council for Cancer (Malaysia) MAKNA, 2004
- Member, Hindu Students Representation, National University of Malaysia (UKM), 1999

**CURRENT PUBLICATIONS** (Please view a complete list of Publications and Reviews [here](#).)

**Journal (Author)** (Scopus Author ID: 24437783100)

(h-index = 11) {Citation database(s) are indicated in curl brackets}



## 2024

1. Tom Anto, Rejeesh Charuvila Rajendran, Abhishek Agarwal, Elammaran Jayamani, Valliyappan David Natarajan, 2024, "Investigation of Mechanical Properties of 3D Printed Biodegradable Polylactic Acid Reinforced with Paper Microcrystalline Cellulose," *Applied Science and Engineering Progress*, 17(4) (Special Issue). (ISSN: 2672-9156) DOI: <http://dx.doi.org/10.14416/j.asep.2024.08.007> {Scopus indexed | Q2}
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## **Editor (Proceedings and Journal)**

## 2015

1. **Chief Editor**, Special Issue of Jurnal Teknologi (Science and Engineering), “Advanced Industrial Materials: Processing, Characterization and Performance,” Vol. 75, No. (7), 2015, (e-ISSN: 2180-3722).

## 2010

2. **Editor**, Proceedings of 2010 International Conference on Advances in Mechanical Engineering (ICAME2010), (ISBN: 978-967-363-186-5).

## 2005

3. **Editor**, Proceedings of 2005 National Conference on Advances in Mechanical Engineering (NAME'05) Vol.1 & 2, (ISBN Vol.1: 967-958-173-7; ISBN Vol. 2: 967-958-177-2).
4. **Managing Editor**, Journal of Faculty of Mechanical Engineering, Vol. 2, No. (1), 2005, (ISSN: 1823 – 5514).

## 2004

5. **Managing Editor**, Journal of Faculty of Mechanical Engineering, Vol. 1, No. (1), 2004, (ISSN: 1675 – 8994).

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1. **International Journal of Damage Mechanics**, SAGE Publications (indexed in Scopus)
2. **Composites Part B: Engineering**, Elsevier, B. V. (indexed in Scopus)
3. **Mechanics of Materials**, Elsevier, B.V. (indexed in Scopus)
4. **Periodica Polytechnica Mechanical Engineering**, Budapest University of Technology and Economics, 2023 (indexed in Scopus and Clarivate WoS)
5. **Polymer Testing**, Elsevier, B.V. (indexed in Web of Science, Chemical Abstracts and Scopus)
6. **Journal of Applied Polymer Science**, Wiley Periodicals, Inc. (indexed in Web of Science and Scopus)
7. **Mechanics of Advanced Materials and Structures**, Taylor & Francis Group LLC. (indexed in Scopus and SCIE)
8. **Materials and Design**, Elsevier, B.V. (indexed in Scopus)  I review for  
Materials and Design  
ELSEVIER
9. **The Journal of Industrial Textiles**, SAGE Publications (indexed in Science Citation Index)
10. **Defence Technology**, Elsevier, B.V. (indexed in Chemical Abstracts, Scopus and ScienceDirect)
11. **Advances in Mechanical Engineering**, SAGE Journals (indexed in Web of Science and Scopus)
12. **Sains Malaysiana**, Penerbit UKM. (indexed in Web of Science and Scopus)
13. **Jurnal Teknologi (Science and Engineering)**, Penerbit UTM Press (indexed in Scopus)
14. **Journal of Medical and Bioengineering**, Engineering and Technology Publishing (indexed in EBSCO, MELib and Google Scholar)
15. **Journal of Faculty of Mechanical Engineering**, ©UiTM Press (indexed in Scopus)
16. **International Journal of Automotive and Mechanical Engineering (IJAME)**, ©Universiti Malaysia Pahang.
17. **International Journal of Institute of Materials Malaysia (IJIMM)**, Institute of Materials, Malaysia.
18. **Journal of Procedia Engineering** for the 2012 International Symposium on Robotics and Intelligent Sensors (IRIS2012), September 4 – 6, 2012, Kuching, Sarawak, Malaysia (indexed in Scopus).
19. **Journal of Applied Science, Engineering, Technology and Management (JASETM)**, Federal Institute of Science and Technology, Kerala, India.
20. **Proceedings of the 2015 ASME International Mechanical Engineering Congress and Exposition (IMECE2015)**, November 13 – 19, 2015, Houston, Texas, USA.
21. **Proceedings of 2015 International Conference on Advances in Mechanical Engineering 2015 (ICAME20105)**, August 26 – 27, 2015, Bali, Indonesia.

22. **Proceedings** of the 2014 International Colloquium on Textile Engineering, Fashion, Apparel and Design (**ICTEFAD2014**), April 2014, Penang, Malaysia.
23. **Proceedings** of the 2014 IEEE International Colloquium on Humanities, Social Science and Engineering (**CHUSER2014**), April 2014, Penang, Malaysia.
24. **Proceedings** of the 2012 ASME International Mechanical Engineering Congress and Exposition (**IMECE2012**), November 9 – 15, 2012, Houston, Texas, USA.
25. **Proceedings** of the 2011 International Symposium on Humanities, Science and Engineering Research (**SHUSER2011**), June 5 – 8, 2011, Kuala Lumpur, Malaysia.
26. **Proceedings** of the 2010 ASME International Mechanical Engineering Congress and Exposition (**IMECE2010**), November 12 – 18, 2010, Vancouver, Canada.
27. **Proceedings** of 2010 International Conference on Advances in Mechanical Engineering 2010 (**ICAME2010**), December 2 – 5, 2010, Shah Alam, Malaysia.

**VALLIYAPPAN DAVID NATARAJAN**

**Field Engineer (Nov 2001 – May 2002)**

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**(A merger of OILFIELD PIPELINE INSPECTION (OPI) SDN. BHD. & SVT Australia.)**

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- April 2002 : MetronetSdn. Bhd., Subang.  
Positive Material Identification using PMI Niton II on Ball Valves for Lawit 'A' EMEPMI under Velosi (M) Sdn. Bhd. Inspector supervision.
- April 2002 : Malampaya Offshore Platform, Palawan, Philippines.  
Shell Philippines Exploration B.V. (SPEX) – KBR, Halliburton Multinational Inc. Time-of-Flight Diffraction (TOFD) using Min UT TOFD on 24" piping line PG0044 weldment (Cold Heat Exchangers To Gas Compression Suction Scrubber.)
- April 2002 : KNM Steels Sdn. Bhd., Melaka.  
Positive Alloy Material Identification using PMI Master Plus on HDS Reactor Vessel for Ultramar – Carb III FRG project by Fluor Daniel under Moody International Inspector Supervision.
- April 2002 : MLNG Dua Sdn. Bhd., Bintulu.  
Eddy Current Inspection (ECT) on E2415C condenser tubes using MIZ 27ET.
- Mar 2002 : MLNG Dua Sdn. Bhd., Bintulu.  
Positive Alloy Material Identification using PMI Metorex X-Met 2000 on Piping Tie-In Work for MRR Project.
- Mar 2002 : Mechmar-Keppel Engineering Sdn. Bhd., Shah Alam.  
Positive Materials Identification using PMI Master on HX-182 materials for EMEPMI Seligi 'A' Compression Platform.
- Feb 2002 : Gas District Cooling (GDC), KLCC.  
ECT using MIZ-40RFT on HX condenser tubes.
- Jan 2002 : Petra Fabricators, Shah Alam.  
Positive Material Identification using PMI (Niton II) for Bintang A & B Gas Cooler Separator under Velosi (M) Sdn. Bhd. Inspector supervision.
- Dec 2001 : ESSO PD Refinery, Port Dickson, N. Sembilan.  
InCoTEST sub-sea measurement for Esso PD Island Jetty piles. (InCoTEST is a specialized equipment based on Eddy Current NDT principles.)