

**POLITEKNIK & KOLEJ KOMUNITI  
JOURNAL OF ENGINEERING AND TECHNOLOGY**

**EXECUTIVE ADVISORY BOARD**

**Chairman of the Board**

Ts. Dr. Mohammad Naim Bin Yaakub  
*Director General,  
Department of Polytechnic and Community College Education  
(Malaysia)*

**Chief Executive Board**

Dr. Ishak Bin Mohamad  
*Director of Centre Research and Innovation,  
Department of Polytechnic and Community College  
Education (Malaysia)*

**Manager Editorial Board**

Ts. Dr. Mohd Norhadi Bin Muda  
*Deputy Director of Centre Research and Innovation,  
Department of Polytechnic and Community College  
Education (Malaysia)*

Cr. Dr. Saifuddin Kumar Bin Abdullah  
*Deputy Director of Centre Research and Innovation,  
Department of Polytechnic and Community College  
Education (Malaysia)*

Prof . Dr. Yusri Bin Yusof  
*Faculty of Mechanical and Manufacturing  
Engineering  
Universiti Tun Hussein Onn Malaysia (Malaysia)*

Dr. Setiawan Bin Hardono  
*Deputy Director of Centre Research and Innovation,  
Department of Polytechnic and Community College  
Education (Malaysia)*

Dr. Andi Tenri Ummu  
*Ibnu Sina College Batam (Indonesia)*

Prof. Emeritus Dr. Rosly Bin Jaafar  
*Faculty of Science and Mathematics  
Universiti Pendidikan Sultan Idris (UPSI)*

**Executive Editor**

Pn. Elmiza Binti Roslan (Chief)  
Dr. Baharuddin Bin Mustapha

En. Mohd Nafiz Nazly Bin Mohd Nazly  
En. Mohd Khairul Nizam Bin Abdul Talib

**Editorial Board**

Ts. Ir. Dr Ahmad Azlan Bin Abdul Aziz  
Dr. Norasiah Binti Muhamad  
Dr. Mohd Pahmi Bin Saiman

Ts. Dr. Choong Chee Guan  
Dr. Rusdi Bin Rusli  
Dr. Sharifah Nadiyah Binti Razali

**Articles**

---

Fabrication, Measurement and Verification of Switchable Dielectric Resonator Antenna Array for 5G Applications Nor Hidayu Shahadan	1-13
Shear Properties of Woven and Chopped Strand Mat Laminated Composite by Arcan Test Method Mohd Sharizan Mohd Sharif, Siti Khalijah Jamal, Suaiza Khairi	14-22
Automatic Pump down Air Conditioning System for Refrigerant R22 Split Unit Muhamad Asrul Affendi Mat Nor, Nurul Syahirah Mohd Nor, Zulkurnain Hassan	23-30
Effect of ABS on the Mechanical Properties of PP/ABS Blends and Tensile Strength Using Taguchi Method Siti Iriaty Sa Ismail, Shazwani Farhah Shamsuddin	31-41
Dry Drilling: Feasibility of Aluminium Alloy Stack Material in Aerospace Structures Siti Rozakiyah Assurin Hassan, Noor Rafidah Md Osman, Dina Izzati Hashim	42-53
Parameter Optimization of Friction Stir Welding Process by using RSM on Dissimilar Welded AA6061-AA7075 Mohamad Khir Johari Jamaludin, Muhammad Aiman Abu Johan	54-71
Mechanical Properties of Treated Powder Bamboo/Short E- Glass/Polypropylene Hybrid Composite Kannan Rassiah, Noor Hasanah Tham Shu Yin, Mohd Ghazali Kadir Sulaiman	72-81
Smart IOT Agricultural Kit For Precision Farming Murugan Krishnan, Ruslaimi Abd.Kadir	82-90
Performance Evaluation of PEGASIS and LEACH Protocol Using MATLAB Based Simulation Platform Nazihan Aziziuddin, Ezlina Mohamad Esa	91-103
Development of Portable Water Quality Monitoring System Using Apps Siti Farah Hussin, Nor Zamira Othman, Masuria Mohd Tahar	104-115
Analysis of Mechanical Properties and Microstructure of Al-SiCp Metal Matrix Composite Mulyadi, Djuhana, Sunardi, Kusdi Priyono	116-122

---

---

Effect of Heat Treatment Temperature on Mechanical Properties and Micro Structure of DIN 1.2316 Steel Djuhana, Mulyadi, Sunardi	123-130
Use of Durian Pectin, Rice Husk Ash (RHA) and Eggshell Powder (ESP) in Concrete Chia Soi Lee, Amruthavarsini Muniandy, Evania Joseph, Jezzindren Sathasivam	131-137
Channel Pattern Evolution Due To The Non-Migrating Mid-Bar Zamsalwani Zamri, Junaidah Ariffin, Jazuri Abdullah	138-147
Penggunaan Serat Selulosa Di Dalam Panel Konkrit (IBS) Hazruwani A Halim	148-158
Modelling Titanium Machined Workpiece Qualities Using Fuzzy Logic Saipul Azmi Mohd Hashim, Ahmad Zhafri Zainudin, Mohanadas Kanagaraj	159-171
Manual Handling Process in IBS Precast Concrete Panel Site Construction: A Case Study Sinatu Sadiyah Shapie, Hussein Md Zan	172-180
Kesan Penambahan Abu Sekam Padi Terhadap Sifat Mekanikal Batu Bata Mohd Fadhli Ahmad, Mohd Fadzil Allias, Nurul Khairunnisa Su	181-189
Kajian Sistem Penyejukan Radiasi Secara Prototaip Bangunan Nurul Syahirah Mohd Nor, Muhamad Asrul Affendi Mat Nor, Zulkurnain Hassan	190-200
Lighting System Level In The Dewan Sri Mas, Politeknik Sultan Abdul Halim Mu'adzam Shah (POLIMAS), Jitra, Kedah Abdul Rahman Huraisen Masri	201-209
Kesan Penggunaan Sisa Precious Slag Ball Pada Sifat Konkrit Mazly Mohd Nor	210-218

---