

JOURNAL OF

Advanced Manufacturing Technology

Vol. 14 No. 2 (2) (2020)

Theme

**Innovating Manufacturing Technologies
towards Efficiency and Productivity**

Chief Editor

Radin Zaid Radin Umar

Editors

**Mohd Nazmin Maslan, Mohd Nazrin Muhammad
Toibah Abd Rahim and Liew Pay Jun**

The logo for the journal 'Advanced Manufacturing Technology' (AMT). It features the letters 'AMT' in a bold, yellow, sans-serif font. The 'A' is stylized with horizontal lines extending to the left, suggesting speed or technology. The 'M' and 'T' are solid yellow. The entire logo is set against a blue background with a subtle pattern of the journal's title.

**JOURNAL OF
ADVANCED MANUFACTURING TECHNOLOGY**

Contents

**Symposium on Advancement of Manufacturing Technology Innovations 2019
(AdManTi 2019)**

<i>No.</i>	<i>Title</i>	<i>Page</i>
1.	Effect of Deposition Time and Microstructure on Transition Metal Molybdenum Chalcogenides for Photovoltaic Applications <i>T.J.S. Anand, S. Shariza, S.I. Abd Razak and C. Vedhi</i>	1
2.	Enhanced the Mechanical Properties of Welding Butt Joint of Aluminum Alloy 6061 by T6 Heat Treatment Process <i>M.A. Md Ali, S. Yacob, N.I. Mohd Ali, M.H. Abu Bakar and V.A. Doan</i>	15
3.	Auto-Combustion Synthesis of Al-Doped ZNO Nanoparticles: Structural and Energy Band Gap Enhancement <i>M.S.M. Suan, I.M. Yusof and I. Nurdin</i>	29
4.	NPID Double Hyperbolic Controller with Particle Swarm Optimization (PSO) Technique for XY Table Ballscrew Drive System <i>L. Abdullah, S.C.K. Junoh, Z. Retas, S.N.S. Salim and M.H. Nordin</i>	41
5.	Robust Control for Precision Motion of a Thin and Compact Linear Switched Reluctance Motor <i>M.N. Maslan and K. Sato</i>	53
6.	Corrosion of Weld Area at Internal Surface of Pipeline Used in Oil and Gas Industry <i>M.A. Azam, M.F. Abdullah and T. Shimoda</i>	63
7.	Electrodeposition of Nickel Coating on AA7075 Substrate via Modified Single Zincating Method with Assistance of Copper Activation <i>I.S. Othman, M.J. Starink and S.C. Wang</i>	75
8.	Compression Strength, Heat Degradation and UL-94 Flammability Properties of Polyurethane Filled Bentonite Composite Foams <i>J.A. Razak, M. Mohamad, P. Puspitasari, M.H. Flaifel and N. Mohamad</i>	87
9.	Effect of PEG Loading on the Microstructure and Photocatalytic Activity of TiO₂ Film on Ceramic Tile <i>N.A.K.Z. Najwa, J.M. Juoi, Z.M. Rosli and T. Moriga</i>	101
10.	Synthesis of Robust Bi-Component C₃O₄-TiO₂ Nanotube Arrays <i>K.A. Khairul, S. Ismail, F. Budiman, M.Z.Z. Abidin and R.F. Munawar</i>	113

11. **Statistical Evaluation on the Effects of Rotation Speed in Hybrid Micro Wire Electrical Discharge Turning**
M. Firdauz, R. Izamshah, M. Akmal, M.S. Kasim and S. Ding..... 123
12. **Comparison of Wear Performance between Alumina and Alumina-Zirconia Cutting Tools at Higher Cutting Speed**
A.B. Hadzley, A.A. Afuza, T. Norfauzi, U.A.A. Umar and S.G. Herawan 137
13. **Mechanical Properties of Wet-Laid Nonwoven Mat Reclaimed Carbon Fibre in Polymer Composite**
Z. Shamsudin, N.M. Yatim, Z. Mustafa, E.A. Sharif and M. Mulyadi 149
14. **Dimensional Accuracy of Ultrasonic Assisted Fused Deposition Modeling System Printed Specimen**
S. Maidin, N.I. Iryani, K.H. Ting and E. Pei..... 161
15. **Application of Natural Fiber for Short Term Stabilization of Marine Clay Slope**
M.M. Ahmad, N.Z. Zainol, M.B.H. Ab Manaf, A. Faisal and M.Z.A. Mohd Zahid 173
16. **Malaysian Palm Oil Mill Sustainability Regulations: From Organisation Priority to Compliance Operation**
I. Abdullah, W.H.W. Mahmood, M.N.A. Rahman, M.F.M. Ab Halim and N.I. Omar 183
17. **Buckling Experiments of Axially Compressed Circular Cylinder with Imperfect Length**
O. Ifayefunmi, A.A.M. Damanhuri, Z.H. Tan and O.S. Ifayefunmi..... 199
18. **Weighting the Material Requirements of NFRC by Using Fuzzy AHP with Extent Analysis**
S.N.M. Farhan Han, M.T. Mastura, M.R. Mansor, S.I. Abdul Kudus and P. Pradel 211
19. **Temporal Analysis of Microwave Radiation Emitted by Stepped Leaders of a Cloud-to-Ground Flash**
S.A.S. Baharin, M.R. Ahmad, A.A. Alkahtani, M.R.M. Esa and M.A.B. Sidik..... 223
20. **Potential of the Biomolecules for Gas Hydrate Inhibition in Flow Assurance: Cosmo-RS Based Estimations**
S. Yaqub, A. Adnan, B. Lal, A.H. Shah and M. Murtaza 235
21. **Estimation of Building Energy Management Toward Minimizing Energy Consumption and Carbon Emission**
K. Parvin, W.M. Hafiz, M.A. Abdullah, M.A. Hannan and M.A. Salam..... 247
22. **Debinding Process of SS316L Metal Injection Moulding under Argon Atmosphere**
P. Jose Jol, A.M. Amin, M.H.I. Ibrahim, Z.W. Zhong and S. Shamsudin..... 259

Chief Editor

Warm greetings to the respected readers. I am delighted to announce the publication of a special issue in the Journal of Advanced Manufacturing Technology (JAMT). This special issue features articles from researchers who participated in a Symposium on Advancement of Manufacturing Technology Innovations (AdManTi 2019), held at Universiti Teknikal Malaysia Melaka on 8th and 9th August, 2019. The theme of symposium is 'Innovating Manufacturing Technologies towards Efficiency and Productivity'. The symposium gathered a number of researchers from diverse background and specialties, and managed to facilitate a collaborative research platform on various topics related to manufacturing, technology, and innovation.

The symposium provides an avenue for researchers to collaborate on research activities, expand research networks, and build long term partnerships based upon mutual research interests. The symposium encourages participants to develop and establish international collaboration and mentorship, as part of overarching goal to nurture a more open and inclusive research community. The publication of this special issue comprises of articles which are aligned to the symposium's research themes and goal.

I wish to take this opportunity to express deep appreciation to all contributors involved in providing their manuscripts to this special issue. I would also like to convey my gratitude to the technical reviewers, technical boards, and editorial team for their relentless efforts to make this publication a reality.