

Editorial Board

Editor in Chief

-Assoc. Prof. Ir. Dr.
Ahmad Baharuddin
Abdullah

Secretary

-Zarirah Karrim Wani

Inside the Issue

Preface.....1
New Student.....1
Coming Event.....2

Active Grants

FRGS Grant

Title: Investigation on the effect of hot forging on the deformation behavior and microstructural response of Wire Arc Additive Manufacturing (WAAM) of high strength low alloy (HSLA) steel components.

Short Term

Title: Post Welding cold deformation effect on bonding behavior of bi-metal wall deposited by wire arc additive manufacturing.

Preface

An outstanding achievement as a new record was made by the MFRL team for the year 2024 as the publication reached the highest number since the lab was found.

We are now building our reputation in the metal additive manufacturing research, local and international.

In total, 9 papers were published, where 3 of them ranked Q2 and Q3. Another 4 in SCOPUS and the remaining 3 were not indexed.

Thank you USM for providing the space and facilities and our research grant sponsors. We really appreciate the support from our collaborators and colleagues.

Hoping for better in 2025 or at least remain the same.

List of Publication 2024

1. Muhammad Faris Akmal Md Azlin, Abdullah, A. B., Shahir Yasin Mohd Yusuf, Zarirah Karrim Wani, & R. Rajendran. (2024). "Enhancing the Tribological Performance of Additively Manufactured Aluminium Alloy ER 5356 via the Cold Deformation Process". *Journal of Advanced Research in Applied Mechanics*, 113(1), 189–206.
2. Hussin, A. I., & Abdullah, A. B. (2024). "Springback Optimization of Dissimilar Thickness AA6061-T6 Blank Joint with Double Butt-Lap (DBL) Using Taguchi Method and ANOVA". *International Journal of Integrated Engineering*, 16(1), 125-134.
3. Amer Isyraqi Hussin & Ahmad Baharuddin Abdullah, "Effect of joint configurations on joint strength of different thickness AA6061-T6 friction stir welded blank", *Welding International*, 38(1), 2024, pp. 45-56
4. Abdullah, A. B., Md-Azlin, M. F. A., Roslee, M. A., Vasuthaven, A. G., & Wani, Z. K. (2024). "Properties Enhancement of Metal Additive Manufactured Part via Cold Deformation Process". *Diffusion Foundations and Materials Applications*, Vol. 35, pp. 15–23).
5. Rizlan, M. Z., Abdullah, A. B., Abdul Razak, K. A. H., Hussin, A. I., & Abdullah, M. S. (2024). "Effect of post weld heat treatment on the springback of dissimilar aluminium and steel tailor welded blanks fabricated using friction stir welding". *Advances in Materials and Processing Technologies*, 1–18.
6. Jiang Aimin, Ahmad Baharuddin Abdullah and S K Pramodkumar. 2024. "Research progress on arc-based additive repair (AAR) technology for metal parts". *Engineering Research Express* 6 032401
7. Abdullah, A. B., Wani, Z. K., & Jaafar, N. A. (2024). "Optimizing welding parameters for high deposition efficiency in WAAM by using the Taguchi method". *International Journal of Industrial Optimization*, 5(2), 106–117.
8. Razak, K., Abdullah, A.B, & Mohamed, M. (2024). "Optimization of Single Point Incremental Forming (SPIF) Process Parameters on Springback of Dissimilar Friction Stir Welded Aluminium Alloys Blank using Taguchi Method". *Journal of Advanced Manufacturing Technology (JAMT)*, 18(3).
9. Zarirah Karrim Wani and Ahmad Baharuddin Abdullah, "Bead Geometry Control in Wire Arc Additive Manufactured Profile — A Review", *Pertanika Journal of Science & Technology*, 2024, 32(2), pp. 917-942.

Welcome to New Student – Saravana



MFRL would like to welcome a new student, Ponraj Saravanamuthukumar who effectively joined USM as a PhD student on 1st of December 2024. He is from Tamil Nadu, India. His project is on the development and optimization of Cu-based shape memory alloy by adopting Wire Arc Additive Manufacturing (WAAM). His present will strengthen our group in the metal additive manufacturing related research. All the best to Saravana.



Contact Details

Metal Forming Research Laboratory, School of Mechanical Engineering, Engineering Campus Universiti Sains Malaysia Seri Ampangan 14300 Nibong Tebal, Pulau Pinang, MALAYSIA, Phone: 604-5996361, Fax: 604-5996912, e-mail: mebaha@usm.my, <http://metalforming.usm.my>

COMING EVENT

RESEARCH WEBINAR #5

METAL ADDITIVE MANUFACTURING: PROGRESS ON BI-METALLIC MATERIAL

Wednesday, 23rd April 2025

at 03.00 – 5.00 PM (Malaysia Time)



Jiang Aimin

(PhD Student)

Characterization of Functionally Graded Material
(18Ni300/IN718) Fabricated through CMT-WAAM

Zarirah Karrim Wani

(MSc Student)

Optimization of process parameter of WAAMed bi-metallic
(ER70s-ER308) using Taguchi Method



<http://metalforming.eng.usm.my/>