



KOLECER

Scientific Journal of Mechanical Engineering

VOL. 1 NO. 2 SEPTEMBER 2025

KOLECER Scientific Journal of Mechanical Engineering is an academic journal focused on the publication of research findings in the field of mechanical engineering. It serves as a platform for researchers, academics, and practitioners to share recent discoveries, innovations, and technological developments across various aspects of mechanical engineering. The scope of this journal includes design and manufacturing, engineering materials, energy conversion, control and automation systems, as well as thermal and fluid engineering.

Editorial Board and Reviewer

Editorial Team

Journal Manager:

Dr. Ir. Sugiharto, M.T, Scopus ID: [56500504800](#), Universitas Pasundan

Editor in chief:

Ir. Toto Supriyono, M.T., Ph.D., Scopus ID: [57721388200](#), Universitas Pasundan

Section Editors:

Dr. Ir. Rachmad Hartono, M.T., Scopus ID: [57212092499](#), Universitas Pasundan

Reviewer

1. Prof. Dr. Ir. Priyono Sutikno, DEA., Scopus ID: 36633163300, Institut Teknologi Bandung
2. Prof. Dr. Ir. Jamari, ST., MT, Scopus ID: 13404591200, Universitas Diponegoro
3. Prof. Dr. Ir. Hery Sonawan, MT., Scopus ID: 57212391305, Universitas Pasundan
4. Dr. Ir. Abdurrachim, Scopus ID: 24538534900, Universite de Perpignan
5. Dr. Mohd Shahir K., Scopus ID: 57200989011, Universiti Sultan Zainal Abidin, Malaysia
6. Dr. Ir. Sri Raharno, ST., MT, Scopus ID: 56179645200, Institut Teknologi Bandung
7. Dr. Wayan Nata Septiadi, ST., MT, Scopus ID: 55006023700, Universitas Udayana
8. Dr. Steven Darmawan, ST., MT., Scopus ID: 56963944400, Universitas Tarumanagara
9. Dr. Ir. Bambang Ariantara, MT., Scopus ID: 57118200700, Universitas Pasundan
10. Dr. Ir. Muki Satya Permana, MT., Sinta ID: 5982377, Universitas Pasundan
11. Dr. Ir. Sugiharto, MT., Scopus ID: 56500504800, Universitas Pasundan
12. Dr. Ir. Endang Achdi, MT., Scopus ID: 57203090965, Universitas Pasundan
13. Dr. Ir. Widiyanti Kwintarini., Scopus ID: 57201667719, Universitas Pasundan
14. Dr. Ir. Gatot Santoso, MT., Scopus ID: 7801436887, Universitas Pasundan
15. Dr. Ir. Dedi Lazuardi, DEA., Scopus ID: 531250192, Universitas Pasundan

Foreword

The Editorial Board is pleased to present Kolecер Scientific Journal of Mechanical Engineering, Volume 1, Number 2, September 2025. This issue marks a continued commitment to providing a scholarly platform for the dissemination of high-quality research and applied studies in mechanical engineering and related disciplines.

This volume comprises six peer-reviewed articles that reflect both analytical depth and practical relevance. The published works address a wide range of topics, including structural strength analysis, manufacturing process optimisation, mechanical system development, thermal and energy analysis, measurement calibration, and material surface characterisation. Collectively, these contributions demonstrate the dynamic nature of mechanical engineering research in responding to contemporary industrial and technological challenges.

The first article presents an analysis of the strength and Safe Working Load (SWL) of a single crane hook using SolidWorks, offering valuable insights into structural safety and design validation. The second paper examines the influence of blade configuration in a simple shredding machine on the quality of PLA and PET material fragments, contributing to the development of effective plastic waste processing technologies. The third article reports on the development of a rotary fixture for a laser engraver, highlighting innovations in supporting equipment to enhance machining flexibility and precision.

Further contributions include an analysis of heat transfer and energy conversion in a split-type air conditioning system, providing insight into system performance and efficiency. Measurement science is addressed through a study on the calibration and uncertainty analysis of a DHT22 temperature sensor using a calibrated digital thermometer as a reference instrument. The final article investigates the effect of spindle rotation speed variations on the surface roughness of Aluminium 6061 in milling processes, which is of significant relevance to manufacturing quality control.

The Editorial Board extends its sincere appreciation to the authors for their valuable contributions, as well as to the reviewers for their rigorous and constructive evaluations that ensure the academic quality of this publication. It is hoped that the articles in this issue will serve as valuable references for researchers, practitioners, and students and encourage further research and innovation in mechanical engineering.

Editorial Team

Kolecер Scientific Journal of Mechanical Engineering

Table of Contents

Bhakti, Z. A., & Subekti. (2025). Analisis kekuatan dan safe working load (SWL) pada single crane hook menggunakan SolidWorks . <i>KOLECER Scientific Journal of Mechanical Engineering</i> , 1(2), 60–73. https://doi.org/10.23969/ksjme.v1i2.28230	60-73
Fikri, M. L. S., Saleh, Y. K. P., Mulyono, S., & Danu , A. (2025). Analisis Pengaruh Konfigurasi Mata Pisau Pada Mesin Pencacah Sederhana Terhadap Kualitas Cacahan Material Pla dan Pet. <i>KOLECER Scientific Journal of Mechanical Engineering</i> , 1(2), 74–83. https://doi.org/10.23969/ksjme.v1i2.27862	74-83
Hartono, R., & Husaini, F. A. (2025). Development of rotary fixture on laser engraver machine. <i>KOLECER Scientific Journal of Mechanical Engineering</i> , 1(2), 84–91. https://doi.org/10.23969/ksjme.v1i2.23679	84-91
Wati, D. A. R., & Wasono, J. A. (2025). Analisis perpindahan panas dan konversi energi pada sistem air conditioner tipe split. <i>KOLECER Scientific Journal of Mechanical Engineering</i> , 1(2), 92–99. https://doi.org/10.23969/ksjme.v1i2.39518	92-99
Sandia Yudha, V., Supriyono, T., Ghani M, J., Rizky Ferdiansyah, Y., Ramadani, Mardian, F., & Fatah Al Munawar, R. (2025). Kalibrasi dan analisis ketidakpastian pengukuran sensor temperatur DHT22 menggunakan termometer digital terkalibrasi sebagai alat referensi. <i>KOLECER Scientific Journal of Mechanical Engineering</i> , 1(2), 100–109. https://doi.org/10.23969/ksjme.v1i2.39427	100-109
Firmansyah, M., Wati, D. A. R., Pramitasari, R. E., & Wijanarko, N. P. (2025). Pengaruh variasi kecepatan putaran spindle frais milling terhadap sifat kekasaran alumunium 6061. <i>KOLECER Scientific Journal of Mechanical Engineering</i> , 1(2), 110–114. https://doi.org/10.23969/ksjme.v1i2.30720	110-114