

DR. ILYANI ABDULLAH

SENIOR LECTURER

Ilyani Abdullah specializes in mathematical modeling in fluid mechanics, with a focus on blood flow dynamics, leveraging expertise in PDEs, numerical methods, stability analysis, and fuzzy mathematics. She has published extensively on micropolar, biomagnetic, and Power-Law fluid models, particularly in the context of cardiovascular disease analysis. Her research is supported by multiple grants, leading projects on biomagnetic blood flow and arterial stenosis modeling. She also collaborates on interdisciplinary studies integrating fuzzy mathematics, PDEs, and advanced numerical approaches. Through her work, she continues to contribute to the advancement of mathematical modeling in fluid dynamics and its real-world applications



RESEARCHER PROFILE

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EDUCATION



- PhD (Mathematics), UTM
- MSc (Mathematics), UKM
- BSc (Mathematics), UKM

AREAS OF EXPERTISE

- Fluid mechanics
- Mathematical modelling
- Numerical analysis
- Fuzzy mathematics

SUPERVISION



COLLABORATORS



CONTACT

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SELECTED RESEARCH PROJECTS

- ✓ Research Acculturation Collaborative Effort (RACE) from Ministry of Higher Education Malaysia. A Numerical Simulation of Unsteady Blood Flow Coupled with Mass Transfer Through Arterial Stenosis. (2014 – 2016). RM50,000.
- ✓ Postgraduate Research Grant (PGRG) from Universiti Malaysia Terengganu. Biomagnetic Fluid Flow Coupled with Mass Transfer in a Stenosed Artery. (2019 – 2023). RM20,000.00
- ✓ Fundamental Research Grant Scheme (FRGS) from Ministry of Higher Education Malaysia. Solving A Mathematical Model for The Stability of Water Distribution Problem in Open Channels by Using a Difference Splitting Scheme. (2020 – 2024). RM109,200.00.

SELECTED PUBLICATIONS

- ✓ I. Abdullah, and N. Amin (2010). A Micropolar Fluid Model of Blood Flow Through a Tapered Artery with A Stenosis. *Mathematical Methods in the Applied Sciences*. 33(16), pp. 1910–1923. WoS & Scopus-indexed.
- ✓ I. Abdullah, N. Amin, and T. Hayat (2011). Magneto-hydrodynamic Effects on Blood Flow Through an Irregular Stenosis. *International Journal for Numerical Methods in Fluids*. 67(11), pp. 1624–1636. WoS & Scopus-indexed.
- ✓ N. Naser, I. Abdullah, A.H. Talib, And R. Aloeve (2025). Blood Flow Characteristic of The Magneto-hydrodynamic Flow with Cosine-Shaped Stenosis in A Cylindrical System Under the Influence of Hall Effect. *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences*. 126(2) 26–37. Scopus-indexed.
- ✓ N.L.A. Mohd Kamel, L. Abdullah, F.M. Yee, I. Abdullah, and N. Vafaei (2021). Single Valued Neutrosophic VIKOR and Its Application to Wastewater Treatment Selection. *Neutrosophic Sets and Systems*. 47, pp. 250–272. Scopus-indexed.
- ✓ T. Kaliapan, N.S. Chong, I. Abdullah, Z. Salleh, and J. Labadin (2024). A Compartmental Model for the Transmission Dynamics of Rabies Disease in Dog Population. *Sains Malaysiana*. 53(12), pp. 3425–3435. WoS & Scopus-indexed.