

Dr. Addisu Negash Ali

Position: Associate Professor of Mechanical Engineering (Design and Mechanics)

Office: Materials & Design Research lab

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Education:

- ✓ Ph.D., in <u>Mechanical Engineering</u>, at National Taiwan University of Science and Technology
- ✓ M.S., in <u>Mechanical Engineering (Design Engineering)</u>, at <u>Addis Ababa</u> University

Courses:

✓ Finite Element Method, Advanced Mechanics of materials, Optimal Design, Research Methods, Product Design & Development, & Fracture Mechanics

Research:

✓ Individual research works, MSc. And PhD students supervision, local and international collaboration, community engagement projects

Professional Experience:

 \checkmark More than 15 years of experience on teaching and research

Research Interests:

 Metals & Alloys, Additive Manufacturing, Integrated Computational Modelling, Thermal Conductivity and Anisotropy, Finite Element and Machine Learning Modelling

Honors & Awards:

- ✓ [ICESTEM'24], 2024 Guest Speaker Certificate
- ✓ Best Paper Award at EAI ICAST 2021 9th International Conference, Bahir Dar, Ethiopia.
- ✓ Best Paper Award at EAI ICAST 2024 12th International Conference, Bahir Dar, Ethiopia.
- ✓ Conference organizing committee certificates, EAI ICAST 2020 and 2021.
- ✓ Journal reviewer certificates, many reputable journals, 2018-Now
- ✓ Community engagement certificates, SolidWorks training for Bahir Dar Polytechnique College staff 2021/2022.

Publications (Selected publications):

✓ Characterization and modeling of residual elastic properties of impact damaged glass fiber composite, Destayehu Addisu Durressa, <u>Addisu Negash Ali*</u>, Ermias Gebrekidan Koricho, Getnet Ayele Kebede, Results in Engineering, Volume (25), 2025.

- ✓ Effects of Shear Thickening Fluids to Enhance The Impact Resistance of Soft Body Armor Composites: A Review, Tibebu Meride Zelelew*, <u>Addisu Negash Ali</u>, Getenet Ayele, Geta Kidamemariam, Ermias Gebrekidan Koricho, Smart Materials and Structures, 2025.
- ✓ Optimization of screw turbine design parameters to improve the power output and efficiency of micro-hydropower generation, Haymanot Beza Lamesgin, <u>Addisu Negash</u> <u>Ali*</u>, Cogent Engineering, Volume (11), 2024.
- ✓ Assessment of Residual Elastic Properties in Damaged Composite Materials, Destayehu Addisu Durressa*, Ermias Gebrekidan Koricho, <u>Addisu Negash Ali</u>, Getnet Ayele Kebede, Sustainable Development Research in Materials and Energy, Chapter, PP 25-37, 2024.
- ✓ Nanofillers tailored polymers and enhanced synergistic properties for engineering applications: A review, Biniam Tamrea Gebretsadik, <u>Addisu Negash Ali*</u>, Journal of polymer Research, Volume (31), 2024.
- ✓ Numerical simulation of composite materials with sisal and glass fibers for ballistic impact resistance, Tibebu Meride Zelelew*, <u>Addisu Negash Ali</u>, Getenet Ayele, Geta Kidamemariam, Ermias Gebrekidan Koricho, Materials Engineering Research, Volume (6), 2024.
- ✓ Development of biochar/HDPE composites and characterization of the effects of carbon loadings on the electromagnetic shielding properties, Amanu Asmare Fenta, <u>Addisu</u> <u>Negash Ali</u>*, Heliyon, Volume (10), 2024.
- ✓ The Effect of Nanoparticle Reinforcement on Shear-Thickening Fluid, Merde Zelelew Tibebu*, <u>Addisu Negash Ali</u>, Geta Kidanemariam, Getnet Ayele Kebede, Ermias Gebrekidan Koricho, Journal of Nanotechnology, 2024.
- ✓ Development of cornstarch-based shear thickening fluid and characterization of the effects of the addition of halloysite nanotubes-silica hybrid reinforcements, Tibebu Merde Zelelew*, <u>Addisu Negash Ali</u>, Ermias Gebrekidan Koricho, Journal of Polymer Research, Volume (30), 2023.
- ✓ Improving the fatigue strength of superelastic NiTi by using constrained groove pressing severe plastic deformation deform 3D modeling and microstructural analysis, Biniam Tamrea Gebretsadik, <u>Addisu Negash Ali*</u>, Materials Science and Engineering: A, Volume (885), 2023.
- ✓ A stochastic NARX neural network to investigate the carbon capture in the plantations of forests, Muhammad Sulaiman, Fazlullah Fazal, <u>Addisu Negash Ali*</u>, IEEE, Volume (11), 2023.
- ✓ A computational study of magneto-convective heat transfer over inclined surfaces with thermodiffusion, Muhammad Fawad Khan, Muhammad Sulaiman, <u>Addisu Negash Ali*</u>. IEEE, Volume (11), 2023.
- ✓ Analysis and optimization of FFF process parameters to enhance the mechanical properties of 3D printed PLA products, Tesfaye Mengesha Medibew, <u>Addisu Negash</u> <u>Ali*</u>, International Polymer Processing, Volume (38), 2023.
- ✓ Modeling and Numerical Simulation of Ballistic Impact on Sandwich Composite Materials, Tibebu Merde Zelelew, Ermias Gebrekidan Koricho, <u>Addisu Negash Ali</u>, Advances of Science and Technology, Chapter, 2022.

- ✓ Investigate the Effects of Fiber Surface Chemical Treatment on the Mechanical Properties of Bamboo Fiber Reinforced Polyester Resin Composites, Sewale Yasabu Enyew, <u>Addisu Negash Ali*</u>, Advances of Science and Technology, Chapter, 2022.
- ✓ The Effect of Micro-SiCp Content on the Tensile and Fatigue Behavior of AZ61 Magnesium Alloy Matrix Composites, Song-Jeng Huang, Murugan Subramani, <u>Addisu</u> <u>Negash Ali</u>, International Journal of Metal Casting, Volume (15), 2021.
- ✓ Evaluation of Fatigue Behavior of Silicon Carbide Particles Reinforced with Magnesium Alloy Metal Matrix Composites, Song Jeng Huang, Murugan Subramani, <u>Addisu</u> <u>Negash Ali</u>, Key Engineering Materials, Volume (830), 2020.
- ✓ Experimental investigations of effects of SiC contents and severe plastic deformation on the microstructure and mechanical properties of SiCp/AZ61 magnesium metal matrix composites, Song-Jeng Huang, <u>Addisu Negash Ali*</u>, Journal of Materials Processing Technology, Volume (272), 2019.
- ✓ Ductile fracture behavior of ECAP deformed AZ61 magnesium alloy based on response surface methodology and finite element simulation, Song-Jeng Huang, <u>Addisu Negash</u> <u>Ali*</u>, Materials Science and Engineering: A, Volume (746), 2019.
- ✓ Influence of the ECAP and HEBM processes and the addition of Ni catalyst on the hydrogen storage properties of AZ31-x Ni (x= 0, 2, 4) alloy, Song-Jeng Huang, Veeramanikandan Rajagopal, <u>Addisu Negash Ali</u>, International Journal of Hydrogen Energy, Volume (44), 2019.
- ✓ Effects of heat treatment on the microstructure and microplastic deformation behavior of SiC particles reinforced AZ61 magnesium metal matrix composite, Song-Jeng Huang, <u>Addisu Negash Ali*</u>, Materials Science and Engineering: A, Volume (711), 2018.

Conference:

- ✓ The role of interphase in the advanced composite design, <u>Addisu Negash Ali</u>, Guest Speaker of the International Conference on Emerging Trends in Science, Technology, Engineering and Management [ICESTEM'24], BHARATH NIKETAN Engineering College, India, 2024.
- ✓ Finger millet production potential and the challenges of traditional postharvest practices in Ethiopia, Israel Endale Asres, Ermias Ke brekidan Koricho, <u>Addisu Negash Ali</u>, Mulugeta Admasu Delele, Geta Kidanemariyam Gelaw, 12th EAI International Conference on Advancements of Science and Technology (ICAST), Bahir Dar, Ethiopia, 2024.
- ✓ Assessment of Residual Elastic Properties in Damaged Composite Materials, Destayehu Addisu Durressa, Ermias Gebrekidan Koricho, <u>Addisu Negash Ali</u>, Getnet Ayele Kebede, 11th EAI International Conference on Advancements of Science and Technology (ICAST), Bahir Dar, Ethiopia, 2023.
- ✓ Effects of Crop Parameters and Feed Rates on Performances of Axial Rice Thresher, Solomon Tekeste Hailemeskel, Mersha Alebachew, Mulugeta Admasu Delele, <u>Addisu</u> <u>Negash Ali</u>, Solomon Workneh Fenta, Geta Kidanemariam, 11th EAI International Conference on Advancements of Science and Technology (ICAST), Bahir Dar, Ethiopia, 2023.

- ✓ Modeling and Numerical Simulation of Ballistic Impact on Sandwich Composite Materials, Tibebu Merde Zelelew, Ermias Gebrekidan Koricho, <u>Addisu Negash Ali</u>, 9th EAI International Conference on Advancements of Science and Technology (ICAST), Bahir Dar, Ethiopia, 2021.
- ✓ Investigate the Effects of Fiber Surface Chemical Treatment on the Mechanical Properties of Bamboo Fiber Reinforced Polyester Resin Composites, Sewale Yasabu Enyew, <u>Addisu</u> <u>Negash Ali</u>, 9th EAI International Conference on Advancements of Science and Technology (ICAST), Bahir Dar, Ethiopia, 2021.
- ✓ Publication chair (editor), Addisu Negash Ali, 9th EAI International Conference on Advancements of Science and Technology (ICAST), Bahir Dar, Ethiopia, Proceedings, 2021.
- ✓ Investigation of Microstructural and Mechanical Properties of SiCp/AZ61 Magnesium Metal Matrix Composites Enhanced by Severe Plastic Deformation, Song-Jeng Huang, <u>Addisu Negash Ali</u>, 2nd International Conference on Sensors, Materials and Manufacturing (ICSMM 2018), Taipei, Taiwan, 2018.
- ✓ Strengthening of mg/ws2 and al/ws2 inorganic nanotubes metal matrix composites, Song-Jeng Huang, Wei-Yi Peng, Bojana Visic, Alla Zak, Chia-Han Ho, Yishay Feldman, Reshef Tenne, <u>Addisu Negash Ali</u>, The Tenth International Conference on Material Technologies and Modeling MMT-2018, Israel, 2018.
- ✓ Experimental and numerical analysis of mechanical behaviors of AZ61 magnesium alloy reinforced with micro-SiC particles, Song-Jeng Huang, Murugan Subramani, <u>Addisu</u> <u>Negash Ali</u>, Dawit Bogale Alemayehu, 20th RFBR-MOST 2018, Anniversary of partnership, Advancing the future of scientific cooperation, Taipei, Taiwan, 2018.
- ✓ Analysis of the rheological properties of CP Ti at temperatures and strain rates typical for SPD processing, Song-Jeng Huang, Murugan Subramani, Dawit Bogale Alemayehu, <u>Addisu Negash Ali</u>, 20th RFBR-MOST 2018, Anniversary of partnership, Advancing the future of scientific cooperation, Taipei, 2018.

Projects:

- ✓ PI for product design and development training project for Ethiopian Engineering Group (EEG) engineers and researchers, 2022 (completed).
- ✓ PI for manufacturing and experiment training project for Gondar University postgraduate students, 2024 (completed).
- ✓ Co-PI and supervisor for finger millet threshing machine design and development for West Gojam local farmers. A community service and technology transfer project funded by Bahir Dar Institute of Technology, 2024 (continued).