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Education	PhD in Mechanical Engineering in 2019 from National Taiwan University of Science and Technology, Taipei, Taiwan
	MSc. in Mechanical Engineering (Design) in 2013 from Addis Ababa University, Addis Ababa, Ethiopia
	BSc. in Mechanical Engineering in 2008 from Arba Minch University, Arba Minch, Ethiopia
Academic experience	(2023 – ongoing) – Faculty of Mechanical and Industrial Engineering, Bahir Dar Institute of Technology, Bahir Dar University, Associate Professor of Mechanical Engineering, Mechanical Design Chair
	(30/05/2019 - 03/12/2023) – Faculty of Mechanical and Industrial Engineering, Bahir Dar Institute of Technology, Bahir Dar University, Assistant Professor of Mechanical Engineering, Mechanical Design Chair
	(24/11/2009 - 09/03/2016) – Faculty of Mechanical and Industrial Engineering, Bahir Dar Institute of Technology, Bahir Dar University, Lecturer of Mechanical Design, Mechanical Design Chair
	(24/11/2009 - 03/08/2010) – Faculty of Mechanical and Industrial Engineering, Bahir Dar Institute of Technology, Bahir Dar University, Assistant Lecturer of Mechanical Engineering, Mechanical Engineering Department
	(24/11/2008 - 23/11/2009) – Faculty of Mechanical and Industrial Engineering, Bahir Dar Institute of Technology, Bahir Dar University, Graduate Assistant II in Mechanical Engineering, Mechanical Engineering Department
Administrative position experience	[2020 – 2025] Chair Holder of Mechanical Design, Faculty of Mechanical and Industrial Engineering, Bahir Dra Institute of Technology, Bahir Dar University, Bahir Dar, Ethiopia
	[2023 – 2025] Faculty Graduate Committee (FGC) Member, Faculty of Mechanical and Industrial Engineering, Bahir Dra Institute of Technology, Bahir Dar University, Bahir Dar, Ethiopia
Overall experience	17 years and 10 months of teaching, research, students supervision, and leadership
Teaching postgraduate courses	Advanced mechanics of materials, Optimal design, Fluid power systems design, Finite element method
Teaching undergraduate courses	Mechanics-Dynamics, Strength of materials, Machine drawing, Machine elements, Machine design project, Product design and development
Students supervision	26 masters and 8 PhD students
Research interest focus areas	Thermal management materials, Product design, Additive manufacturing, Reverse design, Powder metallurgy
Professional activities and awards	Conference organizing committee, track chair, EAI ICAST, 2020, Bahir Dar, Ethiopia.
	Conference organizing committee, publication chair, EAI ICAST, 2021, Bahir Dar, Ethiopia.
	Guest Speaker, International Conference on Emerging Trends in Science, Technology, Engineering and Management [ICESTEM'24], BHARATH NIKETAN Engineering College, India, 2024.

Professional development experience	(01/06/2025 - ongoing) – Faculty of Mechanical Engineering, VSB-Technical University of Ostrava, Academic staff member and research fellow
Research projects	Modular design and small-scale manufacturing of metal composite foam-based technologies for solar-thermal energy storage and management in Ethiopia funded by Bahir Dar University
	Beyond reducing the post-harvest Loss: Enhancing the nutritional values of Teff and finger millet through developing efficient postharvest management technologies and blended food formulation funded by Bahir Dar University
	Development, Evaluation and Demonstration of Medium-Scale Finger Millet Thresher and Pearler Technology Transfer Project funded by Bahir Dar University
Human capacity development project	Empowering the workforce of Ethiopian Engineering Group through advanced skills and capacity development skills development training project funded by Ethiopian Engineering Group (EEG)-2022
Recently published articles and books	(1) Dawit Andualem Asrate, **Addisu Negash Ali***, A Novel Multi-Tray Cabinet Dryer for Thin-Layer Foods: Design and CFD-Based Optimization to Enhance Drying Uniformity, **Applied Food Research**, 2026, 10.1016/j.afres.2026.102697. (2) **Addisu Negash Ali***, Messele Gashaye Nigus, Velmurugan Paramasivam, Jana Petrů, Robert Čep. Design and Analysis of Automatic Whole Row Tomato Seedling Transplanter Technology with Integrated Controlling System, **Journal of Field Robotics**, 2026, 10.1002/rob.70142. (3) Achenef Tarekegn*, **Addisu Negash Ali**, Mohammed Abdulkedir Alfeki. Design and Optimization of a Pneumatic Multi-Row Teff Seeding System with Wet-Flow Parameter Analysis, **Modelling and Simulation in Engineering**, 2026, 10.1155/mse/9593369. (4) Eniyew Eskezia Tiguh*, Mulugeta Admasu Delele, **Addisu Negash Ali**, Geta K Mariam Gelaw, Solomon Workneh Fanta, Muluken Bayable Tadege. Development and performance evaluation of greenhouse solar dryer for unthreshed Teff crops, **Results in Engineering**, 2025, 10.1016/j.rineng.2025.104495. (5) **Addisu Negash Ali***, Amanuel Semma Yimer, Velmurugan Paramasivam, Development and characterization of reduced graphene oxide/low density polyethylene nanocomposite force sensor, **Results in Materials**, 2026, https://doi.org/10.1016/j.rinma.2026.100998. (6) **Addisu Negash Ali***, Girma Tsegaye Tefera, Aamer Nazir, Jana Petrů, Robert Čep, Additive manufacturing and wearable sensors data-based machine learning modelling of optimized orthopedic wrist cast, **Progress in Additive Manufacturing**, 1-28, 2026, 10.1007/s40964-026-01579-x. (7) Muhammad Abbas, Niyonkuru Benjamin, **Addisu Negash Ali**, Kashif Azher, Suhail Hyder Vattathurvalappil, Aamer Nazir, Design and Finite Element Evaluation of a Customized 3D-Printed Wrist-to-Finger Orthosis Targeting Carpal Tunnel Pressure Reduction, **Polymers**, 2026, 10.3390/polym18202521. (8) Samuel Belete Asfaw, Teshome Mulatie Bogale*, Assefa Asmare Tsegaw, **Addisu Negash Ali**, Enhancing tensile and impact strengths in vibration-assisted robotic GMAW of dissimilar AISI 304 stainless steel and AISI 1018 mild steel using hybrid ANN-GA optimization, **The International Journal of Advanced Manufacturing**

	Technology, 2026, https://doi.org/10.1007/s00170-026-17982-1. (9) **Addisu Negash Ali***, Melikamu Fekadu, Velmurugan Paramasivam, Modeling and investigation of energy absorbing capacity of NiTi-carbon fiber hybrid composite for automotive bumper application, **Materials Today Communications**, 2026, https://doi.org/10.1016/j.mtcomm.2026.115625. (10) Eniyew Eskezia Tiguh*, Mulugeta Admasu Delele, **Addisu Negash Ali**, Solomon Workneh Fanta, Geta K Mariam Gelaw, Muluken Bayable, Effects of greenhouse solar drying on the physical attributes and nutritional quality of teff under different varieties and harvesting stages, **Journal of Cereal Science**, 2026, https://doi.org/10.1016/j.jcs.2026.104480. (11) Haymanot Beza Lamesgin, **Addisu Negash Ali***, Optimization of screw turbine design parameters to improve the power output and efficiency of micro-hydropower generation, **Cogent Engineering**, 11, 2025, 10.1080/23311916.2024.2327906. (12) Tewodros Belayneh Haymanot, **Adissu Negash Ali**, DK Nageswara Rao*, Temesgen Gashu Getnet, Modular Design of Reusable and Recyclable Pedestrian Brick Using HDPE Waste and Coffee Husk for Circular Economy, **Journal of Engineering**, 2026, https://doi.org/10.1155/je/4002846. (13) Samuel Belete Asfaw, Teshome Mulatie Bogale*, Assefa Asmare Tsegaw, **Addisu Negash Ali**, Improving joint hardness in vibration-assisted robotic gas metal arc welding of dissimilar AISI 304 stainless steel and AISI 1018 mild steel through ANN coupled with GA optimization, **Engineering Research Express**, 2026, 10.1088/2631-8695/ae5760. (14) Solomon Tekeste Hailemesikel*, Mulugeta Admasu Delele, **Addisu Negash Ali**, Solomon Workneh Fanta, Geta Kidanemariam, Mersha Alebachew. Optimizing Open-Sun Drying of Paddy Rice: Effects of Drying Floor Type and Layer Thickness on Milling Quality, **Journal of Food Processing and Preservation**, 2025, 10.1155/jfpp/9269672. (15) Solomon Tekeste Hailemesikel*, Mersha Alebachew, Mulugeta Admasu Delele, **Addisu Negash Ali**, Solomon Workneh Fanta, Geta Kidanemariam. Effects of Threshing Machine-Crop Parameters on Milling Quality of Rice, **Agricultural Engineering International: CIGR Journal**, 2025. (16) Solomon Tekeste Hailemesikel*, Mersha Alebachew, Mulugeta Admasu Delele, **Addisu Negash Ali**, Solomon Workneh Fanta, Geta Kidanemariam. Effects of machine-crop parameters on mechanical grain damage in rice threshing, **Cogent Food & Agriculture**, 10, 2024, 10.1080/23311932.2024.2367381. (17) Solomon Tekeste Hailemesikel*, Mersha Alebachew, Mulugeta Admasu Delele, **Addisu Negash Ali**, Solomon Workneh Fanta, Geta Kidanemariam, Effect of harvest moisture content and thresher operational parameters on rice milling quality, **Agricultural Engineering International: CIGR Journal**, 2025. (18) Dawit Andualem Asrate*, **Addisu Negash Ali**, Fekerte Berhanu Tadle. Comparative analysis of drying methods and optimization of Teff Injera drying parameters using RSM and SLP approach, **Scientific Reports**, 15, 2025, 10.1038/s41598-025-19188-z. (19) Solomon Tekeste Hailemesikel*, Mersha Alebachew, Mulugeta Admasu Delele, **Addisu Negash Ali**, Solomon Workneh Fanta, Geta Kidanemariam. Effects of Crop Parameters and Feed Rates on Performances of Axial

	Rice Thresher, **Sustainable Development Research in Manufacturing, Process Engineering, Green Infrastructure, and Water Resources**, Book Chapter, 111-124, 2025, 10.1007/978-3-031-77339-6_7. (20) Israel Endale Asres*, Ermias Gebrekidan Koricho, **Addisu Negash Ali**, Mulugeta Admasu Delele, Geta Kidanemariam Gelaw. Finger Millet Production Potential and the Challenges of Its Traditional Postharvest Practices in West Gojam Zone, Amhara, Ethiopia, **Sustainable Development Research in Green Infrastructure, Water Resources, Manufacturing, and Process Engineering: Advancements of Science and Technology**, Book Chapter, 77-102, 2025, 10.1007/978-3-031-87352-2_4. (21) **Addisu Negash Ali***, Abebaw Abiyu Yityaw, Velmurugan Paramasivam, DK Nageswara Rao, Development of optimally reinforced glass/bamboo fiber and rice husk/bagasse filler Agrostone composite panels for interior panel applications, **Journal of Engineering**, 2026, 10.1155/je/9962267. (22) Shekur Yesuf Aletah, **Addisu Negash Ali***, Velmurugan Paramasivam, Enhancing Quasi-Static Mechanical Properties with Bio-Inspired Optimization and Experimental Assessment of Composite T-Joint, **Composites Part C: Open Access**, 2026, 10.1016/j.jcomc.2026.100748. (23) Tibebu Merde Zelelew*, Geta Kidanemariam, Getnet Ayele Kebede, **Addisu Negash Ali**, Ermias Gebrekidan Koricho, Finite, Element Analysis of DOE-Optimized Shear Thickening Fluid–Impregnated Glass Fabric for Ballistic Protection, **Results in Engineering**, 2026, 10.1016/j.rineng.2026.110569. (24) Habtamu Geremew Workineh*, **Addisu Negash Ali**, Hussen Agegnehu Ali, Altaseb Kegne Sisay, Analytical modeling and development of optimal solid lattice structures with PDE base smooth transition Surfaces, **Mechanics Research Communications**, 2026, 10.1016/j.mechrescom.2026.104703. (25) Samuel Belete Asfaw, Teshome Mulatie Bogale*, Assefa Asmare Tsegaw, **Addisu Negash Ali**, Enhancing tensile and impact strengths in vibration-assisted robotic GMAW of dissimilar AISI 304 stainless steel and AISI 1018 mild steel using hybrid ANN-GA optimization, **The International Journal of Advanced Manufacturing Technology**, 2026, 10.1007/s00170-026-17982-1. (26) Song-Jeng Huang, **Addisu Negash Ali***. Effects of heat treatment on the microstructure and microplastic deformation behavior of SiC particles reinforced AZ61 magnesium metal matrix composite, **Materials Science and Engineering: A**, 711, 670-682, 2018, 10.1016/j.msea.2017.11.020. (27) Song-Jeng Huang, **Addisu Negash Ali***. Experimental investigations of effects of SiC contents and severe plastic deformation on the microstructure and mechanical properties of SiCp/AZ61 magnesium metal matrix composites, **Journal of Materials Processing Technology**, 272, 28-39, 2019, 10.1016/j.jmatprotec.2019.05.002. (28) **Addisu Negash Ali**, Song-Jeng Huang*. Ductile fracture behavior of ECAP deformed AZ61 magnesium alloy based on response surface methodology and finite element simulation, **Materials Science and Engineering: A**, 746, 197-210, 2019, 10.1016/j.msea.2019.01.036. (29) Tesfaye Mengesha Medibew, **Addisu Negash Ali***. Analysis and optimization of FFF process parameters to enhance the mechanical properties of 3D printed PLA products, **International Polymer Processing**, 38, 2022-4237, 2022, 10.1515/ipp-2022-4237.

	(30) Biniam Tamrea Gebretsadik, **Addisu Negash Ali***. Improving the fatigue strength of superelastic NiTi by using constrained groove pressing severe plastic deformation deform 3D modeling and microstructural analysis, **Materials Science and Engineering: A**, 885, 2023, 10.1016/j.msea.2023.14562. (31) Destayehu Addisu Durressa, Ermias Gebrekidan Koricho, **Addisu Negash Ali***, Getnet Ayele Kebede. Characterization and modeling of residual elastic properties of impact damaged glass fiber composite, **Results in Engineering**, 25, 2025, 10.1016/j.rineng.2024.103721. (32) Fentaw Alemayehu Tesfaye*, **Addisu Negash Ali**, Ermias Wubete Fenta. Crashworthiness Optimization of Closed Cell–Sandwiched Aluminum Foam Crash Box Using FE and ANN Modeling, **Engineering Reports**, 7, 2025, 10.1002/eng2.70353. (33) Destayehu Addisu Durressa*, Ermias Gebrekidan Koricho, **Addisu Negash Ali**, Getnet Ayele Kebede. Assessment of Residual Elastic Properties in Damaged Composite Materials, **Sustainable Development Research in Materials and Energy**, Book Chapter, 25-37, 2024, 10.1007/978-3-031-69860-6_2. (34) Tibebu Meride Zelelew*, **Addisu Negashe Ali**, Getenet Ayele, Geta Kidamemariam, Ermias Gebrekidan Koricho. Numerical simulation of composite materials with sisal and glass fibers for ballistic impact resistance, **Materials Engineering Research**, 6, 2024, 10.25082/MER.2024.01.003. (35) Amanu Asmare Fenta, **Addisu Negash Ali***. Development of biochar/HDPE composites and characterization of the effects of carbon loadings on the electromagnetic shielding properties, **Heliyon**, 10, 2024, 10.1016/j.heliyon.2024.e24424. (36) Muhammad Sulaiman, Muhammad Waseem, **Addisu Negash Ali***, Ghaylen Laouini, Fahad Sameer Alshammari. Defense strategies for epidemic cyber security threats: modeling and analysis by using a machine learning approach, **IEEE Access**, 12, 4958-4984, 2024, 10.1109/ACCESS.2024.3349660. (37) Destayehu Addisu*, Ermias G/Kidan Koricho, **Addisu Negash**, Getnet Ayele. Experimental and Numerical Study on Effect of Fibre Orientations on Residual Elastic Properties in Glass Fibre Laminates, **Tuijin Jishu/Journal of Propulsion Technology**, 45, 2024, 10.52783/tjjpt.v45.i02.6169. (38) **Addisu Negash Ali***, Alemkere Bayih Yizengaw, Velmurugan Paramasivam. Influence of Water Steam on Manual Metal Arc (MMA) Welding Failure Mechanisms of Galvanized Carbon Steel Using Microstructural, Chemical, Mechanical, and Vibration Property Analysis, **The Scientific Journal**, 2025, 10.1155/tswj/6146715. (39) Tibebu Merde Zelelew, **Addisu Negash Ali***, Ermias Gebrekidan Koricho. Development of cornstarch-based shear thickening fluid and characterization of the effects of the addition of halloysite nanotubes-silica hybrid reinforcements, **Journal of Polymer Research**, 30, 2023, 10.1007/s10965-023-03792-6. (40) Samuel Tesfaye Molla, Assefa Asmare Tsegaw, Teshome Mulatie Bogale, **Addisu Negash Ali**, Asmamaw Tegegne Abebe, Variational Method and CZM-Based FEM Mechanical Strength Assessment of Adhesively Bonded Hybrid Sisal-Glass Reinforced HDPE Composite for Automobile Side Body Panel Application, **Engineering Reports**, 2026, 10.1002/eng2.70639. (41) Samuel Tesfaye Molla, Assefa Asmare Tsegaw, Teshome Mulatie Bogale, **Addisu Negash Ali**, Asmamaw Tegegne Abebe. Computational analysis of stress distribution in adhesively bonded hybrid sisal-glass reinforced

high-density polyethylene composite, **Journal of Reinforced Plastics and Composites**, 2026, 10.1177/07316844261419578.

(42) Samuel Belete Asfaw, Teshome Mulatie Bogale*, Assefa Asmare Tsegaw, **Addisu Negash Ali**, Improving joint hardness in vibration-assisted robotic gas metal arc welding of dissimilar AISI 304 stainless steel and AISI 1018 mild steel through ANN coupled with GA optimization, **Engineering Research Express**, 2026, 10.1088/2631-8695/ae5760.

(43) Muhammad Fawad Khan, Muhammad Sulaiman, **Addisu Negash Ali***, Ghaylen Laouini, Fahad Sameer Alshammari, Majdi Khalid. A computational study of magneto-convective heat transfer over inclined surfaces with thermodiffusion, **IEEE Access**, 11, 57046-57070, 2023, 10.1109/ACCESS.2023.3283209.

(44) Girma Moges, Kevin McDonnell, Mulugeta Admasu Delele*, **Addisu Negash Ali**, Solomon Workneh Fanta. Development and comparative analysis of ANN and SVR-based models with conventional regression models for predicting spray drift, **Environmental Science and Pollution Research**, 30, 21927-21944, 2022, 10.1007/s11356-022-23571-y.

(45) Tibebu Merde Zelelew*, Ermias Gebrekidan Koricho, **Addisu Negash Ali**. Modeling and numerical simulation of ballistic impact on sandwich composite materials, **Advances of Science and Technology**, Book Chapter, 412, 339-349, 2022, 10.1007/978-3-030-93712-6_23.

(46) Sewale Yasabu Enyew, **Addisu Negash Ali***. Investigate the effects of fiber surface chemical treatment on the mechanical properties of bamboo fiber reinforced polyester resin composites, **Advances of Science and Technology**, Book Chapter, 3412, 50-364, 2022, 10.1007/978-3-030-93712-6_24.

(47) Song-Jeng Huang, Murugan Subramani*, **Addisu Negash Ali**, Dawit Bogale Alemayehu, Jong-Ning Aoh, Pai-Chen Lin. The effect of micro-SiCp content on the tensile and fatigue behavior of AZ61 magnesium alloy matrix composites, **International Journal of Metalcasting**, 15, 780-793, 2021, 10.1007/s40962-020-00508-0.

(48) Song Jeng Huang, Murugan Subramani*, **Addisu Negash Ali**, Dawit Alemayehu, Jong Ning Aoh, Pai Chen Lin. Evaluation of fatigue behavior of silicon carbide particles reinforced with magnesium alloy metal matrix composites, **Key Engineering Materials**, 830, 113-118, 2020, 10.4028/www.scientific.net/KEM.830.113.

(49) Song-Jeng Huang, Veeramanikandan Rajagopal, **Addisu Negash Ali**. 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, **International Journal of Hydrogen Energy**, 44, 1047-1058, 2019, 10.1016/j.ijhydene.2018.11.005.

(50) Muhammad Sulaiman, Awais Khan, **Addisu Negash Ali***, Ghaylen Laouini, Fahad Sameer Alshammari. Quantitative analysis of worm transmission and insider risks in air-gapped networking using a novel machine learning approach, **IEEE Access**, 11, 111034-111052, 2023, 10.1109/ACCESS.2023.3322924.

(51) Muhammad Sulaiman, Fazlullah Fazal, **Addisu Negash Ali***, Ghaylen Laouini, Fahad Sameer Alshammari, Majdi Khalid. A stochastic NARX neural network to investigate the carbon capture in the plantations of forests, **IEEE Access**, 11, 74702-74721, 2023, 10.1109/ACCESS.2023.3297279.

(52) Amanu Asmare Fenta, **Addisu Negash Ali**, Samuel Tesfaye Mekonone, Ephraim Fentahun Zegeye, Aseffa Asmare Tsegaw. State of the art of thermal management materials: A review, **Presented at EAI ICAST 13th**

	International Conference, Book Chapter for 2026 publication. (53) Ephrem Zeleke Kassa*, **Addisu Negash Ali**, D.K. Nageswara Rao, Rajendiran Gopal. Fabrication of metal foams using controlled space holder technologies-a review, **Presented at EAI ICAST 13th International Conference**, Book Chapter for 2026 publication. (54) Dawit Andualem Asrate, **Addisu Negash Ali***. Review on the recent trends of food dryer technologies and optimization methods of drying parameters, **Applied Food Research**, 2025, 10.1016/j.afres.2025.100927. (55) Tibebu Meride Zelelew, **Addisu Negash Ali**, Geta Kidanemariam, Getnet Ayele Kebede and Ermias Gebrekidan Koricho. Effects of shear thickening fluids to enhance the impact resistance of soft body armor composites: A review, **Smart Materials and Structures**, 2025, 10.1088/1361-665X/adbdb2. (56) Biniam Tamrea Gebretsadik, **Addisu Negash Ali***. Nanofillers tailored polymers and enhanced synergistic properties for engineering applications: A review, **Journal of Polymer Research**, 31, 1-15, 2024, 10.1007/s10965-024-04165-3. (57) Eniyew Eskezia Tiguh*, Mulugeta Admasu Delele, **Addisu Negash Ali**, Geta Kidanemariam, Solomon Workineh Fenta. Assessment of harvest and postharvest losses of teff (Eragrostistef (Zucc.)) and methods of loss reduction: A review, **Heliyon**, 10, 2024, 10.1016/j.heliyon.2024.e30398. (58) Tibebu Merde Zelelew**, Addisu Negash Ali**, Geta Kidanemariam, Getnet Ayele Kebede, Ermias Gebrekidan Koricho. The Effect of Nanoparticle Reinforcement on Shear-Thickening Fluid, **Journal of Nanotechnology**, 2024, 10.1155/2024/8819920. (59) Mulugeta Admasu Delele, Mekuanint, Agegnehu Bitew, Abebech Abera Beyene, Solomon Workneh Fanta, **Addisu Negash Ali**, Advances of Science and Technology 8th EAI International Conference, ICAST 2020, Bahir Dar, Ethiopia, October 2-4, 2020, Proceedings Book, Part I (60) Mulugeta Admasu Delele, Mekuanint, Agegnehu Bitew, Abebech Abera Beyene, Solomon Workneh Fanta, **Addisu Negash Ali**, Advances of Science and Technology 8th EAI International Conference, ICAST 2020, Bahir Dar, Ethiopia, October 2-4, 2020, Proceedings Book, Part I