

**Dr. EYLEM ASMATULU**  
Department of Mechanical Engineering  
Wichita State University  
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## **EDUCATION**

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**Ph.D.**, Department of Industrial and Manufacturing Engineering, Wichita State University (WSU), Wichita, KS, May, 2013

**M.S.**, Department of Agricultural Engineering, Çukurova University, Adana, Turkey, July, 2004

**B.S.**, Department of Agricultural Engineering, Çukurova University, Adana, Turkey, July, 2002

## **RESEARCH EXPERIENCES AND INTERESTS**

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My research experiences and interests mainly include “*Manufacturing and Properties of Materials/Nanomaterials/Composites*” and “*Recycling and Reusing of Materials*” fields:

### **Advanced Manufacturing Systems**

Sustainable Manufacturing, 3D and 4D Additive Manufacturing, Design of Sustainable Manufacturing Systems, Lean Manufacturing, Robot-Assisted Manufacturing Systems, Composite Manufacturing and Machining, Composite Repairing, Nanomanufacturing, and Aircraft Manufacturing

### **Physical Properties of Materials**

Mechanical, Electrical and Thermal Properties of Nanomaterials, Composite Materials, Biomaterials, Advanced Materials, and Aircraft Materials

### **Energy Materials and Systems**

Sustainable Energy Systems, Nanomaterials for Energy Systems, Energy Transportation, Green Algae for CO<sub>2</sub> Capture, Algae-Based Biodiesel, Energy and Environment, and Energy Storage

### **Recycling and Reusing and Life-Cycle Analysis**

Converting Organic Wastes into Fuels, Briquetting for Active Carbon Production, Life Cycle Assessment, Recycling of Engineering Materials, Wastewater Treatment, and Environmental Health and Safety

## **TEACHING EXPERIENCES AND INTERESTS**

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## Undergraduate Courses

Materials Engineering, Design and Manufacturing, Lean Manufacturing, Quality Engineering, Engineering Graphics, Energy Systems, Engineering Economy, Nanotechnology, Polymeric Composites, Biomaterials and/or Thermodynamics

## Graduate Courses

Advanced Materials, Advanced Energy Systems, Sustainability, Six Sigma Engineering, Wastewater Treatment, Aircraft Manufacturing, Environmental Health and Safety, and/or Recycling and Reusing of Waste Materials

## Online Courses

Undergraduate (Design and Manufacturing and Nanotechnology and Nanosciences) and graduate (Six Sigma Engineering and Quality Engineering) level courses will be developed online.

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## RESEARCH GRANTS AND CONTRACTS

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1. **Co-Principal Investigator**, “Improving Flame Retardancy of Fiber Reinforced Composites via Modified Fire-Resistant Resins and Metallic Surface Film Coatings – Phase II,” funded by the TAI-USA, Inc., March 15, 2023, total amount **\$200,000** for two years (my share 50%).
2. **Principal Investigator**, “Novel Three-Layered Multifunctional Bioscaffold Systems for Localized and Fast Burn Wound Treatments,” funded by KITE, Inc., August 15, 2022, total amount **\$25,000** for one year (my share 70%).
3. **Co-Principal Investigator**, “Improving Flame Retardancy of Fiber Reinforced Composites via Modified Fire-Resistant Resins and Metallic Surface Film Coatings,” accepted by TAI-USA, Inc., March 15, 2021, total amount **\$125,000** for two years (my share 50%).
4. **Principal Investigator**, “Studying the Fuse Reliability and Extended Life Expectancy,” funded by LittleFuse Inc., August 15, 2021, total amount **\$50,100** for nine months (my share 100%).
5. **Principal Investigator**, “Multiphase Capillary Flow Behaviors of Oil and Water through Superhydrophobic and Superoleophobic Multifunctional Porous Membranes for Effective Separation,” funded by Doctoral New Investigator, American Chemical Society, Petroleum Research Fund, March 1, 2021, total amount **\$110,000** for two years (my share 100%).
6. **Principal Investigator**, “Investigating Hydrogen Storage Capacity and Kinetics of Highly Flexible Electrospun Nanocomposite Fibers,” funded by NASA KNEP PDG, March 25, 2021, total amount **\$21,708** for one year (my share 100%). (Phase I)

7. **Principal Investigator**, “Investigating Hydrogen Storage Capacity and Kinetics of Highly Flexible Electrospun Nanocomposite Fibers,” funded by NASA KNEP PDG, February 4, 2022, total amount **\$4,926** for six months (my share 100%). (Phase II)
8. **Principal Investigator**, “Studying the Sensitivity of Multifunctional Nanofiber Membrane Systems Integrated in 3D Printed Reusable Masks Against Infectious Diseases,” funded by Wichita Medical Research and Education Foundation (WMREF)/Collaborative Investigator Initiated Research (CIIR), October 27, 2020, total amount **\$15,000** for one year (my share 60%).
9. **Principal Investigator**, “Improving Flame Resistance of Aircraft Interiors via Polymeric Nanocomposite Fibers,” funded by College of Engineering, Wichita State University, August 3, 2021, total amount **\$4,000** for three months (my share 60%).
10. **Principal Investigator**, “Recycling Old Fishing Lines and Converting Them into Nanoproducts for Industrial Use,” funded by College of Engineering, Wichita State University, May 21, 2020, total amount **\$4,000** for three months (my share 60%).
11. **Principal Investigator**, “Superhydrophilic Nanofiber Desiccants for Enhanced Food and Drug Packaging,” funded by John A. See Foundation, WSU, February 20, 2020, total amount **\$11,500** for one year (my share 60%).
12. **Co-Principal Investigator/Academic Lead**, “Shocker 3D Packaging Solutions,” funded by Shocker Innovation Corps via NSF Innovation Program, February 17, 2020, total amount **\$2,150** for six months (my share 50%).
13. **Principal Investigator**, “Multifunctional Layered Structures of Nanofibers with Hydrogels for Chronic Wound Treatment,” funded by WSU MURPA, January 1, 2020, total amount **\$7,500** for six months (my share 60%).
14. **Principal Investigator**, “Converting Lithium-Cobalt Battery Cathodes into Highly Porous Complex Metals for High Performance Hydrogen Storage Applications,” funded by WSU Undergraduate Research and Creative Activity (URCA), June 18, 2018, total amount **\$4,500** for one year (my share 100%).
15. **Co-Principal Investigator**, “Design and Manufacturing of Graphene/Kevlar-Based Fire-Resistant Fabrics for Military Suits,” funded by College of Engineering, WSU, June 12, 2018, total amount **\$1,400** for three months (my share 50%).
16. **Principal Investigator**, “Electrochemical Exfoliation of Graphite Waste into High Quality Transparent Conductive Graphene Films for Photovoltaic Applications,” funded by WSU Office of Research Award for Research/Creative Projects (ARC), April 24, 2018, total amount **\$4,000** for three months (my share 100%).

17. **Co-Principal Investigator**, “Producing Algae-Based Briquettes for Activated Carbon Sources in Industrial Wastewater Treatment,” funded by College of Engineering, WSU URCA, June 9, 2017, total amount **\$3,600** for three months (my share 50%).
18. **Principal Investigator**, “Hands-on Experience of Recourses Recovery Class for Multidisciplinary Entrepreneurial Training,” funded by Brenton Myers Innovation in Engineering Education Award at WSU, January 2, 2016, total amount **\$8,000** for one year (my share 100%).

## PROFESSIONAL EXPERIENCE

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**Associate Professor** July 2023 - current  
Department of Mechanical Engineering, WSU, Wichita, KS

**Assistant Professor** August 2017 - July 2023  
Department of Mechanical Engineering, WSU, Wichita, KS

- Advising students: Doctor of Philosophy, Master of Science, Bachelor of Science, and Engineer of 2020
- Teaching undergraduate and graduate courses
- Serving on department-, college-, and university-level committees

**Visiting Assistant Professor** May 2022 – August 2022  
Sabanci University, Department of Materials Science and Nano Engineering, Tuzla, Turkey

**Visiting Assistant Professor** May 2019 – August 2019  
Tokyo Institute of Technology, Department of Transdisciplinary Science and Engineering, Tokyo, Japan

**Engineering Educator (Teaching Assistant Professor)** August 2015–August 2017  
Department of Mechanical Engineering, WSU, Wichita, KS

- Taught the following courses:
  - ME 250 Materials Engineering
  - ME 251 Materials Engineering Laboratory
  - ME 665 Selection of Materials for Design and Manufacturing
  - ME 750A Recycling of Engineering Materials
  - ME 750K Six Sigma Engineering
  - ME 850U Recycling of Advanced Materials
- Advised Master of Science students as well as Engineer of 2020 students
- Judged in community- and state-level service competitions.

**Environmental Technical Training Fellow** February 2014–June 2015  
Environmental Health and Safety, WSU, Wichita, KS

- Prepared the following training materials and manual as well as examination questions for WSU faculty, staff and students.
  - Nanomaterial Safety
  - Preventing Slip-and-Fall Accidents

- Eye and Face Protection
- Compressed Gas Safety
- Hazardous Waste Management
- Toxicity Training
- Controlled safety rules and regulations at WSU's teaching and research laboratories.
- Established corrective actions in departments and laboratories based on RCRA, OSHA, and KDHE rules and regulations.

**Director of Humane Water, Wichita, KS (Non-Profit Organization)** June 2013–Present  
Academy of Healthy Water Ecosystem and Environment

- Investigating arsenic contamination in wells of rural areas in U.S.
- Developing new filter systems for arsenic-, mercury-, and lead-free clean water supply.
- Disposing of heavy-metal-contaminated solids.

**Research Engineer** October 2010–May 2012

National Institute for Aviation Research (NIAR), WSU

- Performed MTS data reduction by testing and analyzing raw data, preparing tables and graphs, and tabulating test results for the manager.
- Performed tension and compression testing.
- Manufactured different types of composite materials using various techniques such as wet layup, pre-preg, RTM, and VARTM, etc.

**Teaching Assistant** September 2010–August 2011  
Wichita State University

- Graded two courses: Engineering Economy and Operation Research.
- Gained many benefits: economical thinking, optimizing manufacturing systems, and increasing profit and worker performance while reducing costs and production wastes.

**Research Assistant** August 2007–August 2008  
Wichita State University

- Developed a method for reducing environmental impacts of biomass/biofuel transportation, an important factor that directly increases the cost of biomass and biofuels, and should be reduced in order to compete with regular gas prices.
- Studied optimization of transportation of different types of biomasses (switch-grass bale, wood log, and corn stalks) from the field to the refinery and from the refinery to the refueling stations/customers.
- Analyzed biofuel production methodology to reduce overall costs.

**Laboratory Researcher** August 2005–February 2006  
University of Connecticut

- Investigated different ion concentrations on plant (*Arabidopsis*) growth.

**Quality Control Engineer** June 2003–June 2004  
Ekizoglu Peanut Packaging Company, Osmaniye, Turkey

- Worked as lead engineer for product development, packaging, and quality control in production facility.

## TEACHING EXPERIENCE

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### Undergraduate Courses Taught

- **ME 250 Materials Engineering**, Department of Mechanical Engineering, Wichita State University, since Fall 2015 (**online**).
- **ME 251 Materials Engineering Laboratory**, Department of Mechanical Engineering, Wichita State University, every semester since Fall 2015.
- **ME 650U Recovery of Engineering Materials**, Department of Mechanical Engineering, Wichita State University, Fall 2016.
- **ME 650P Engineering Safety**, Department of Mechanical Engineering, Wichita State University, Fall 2023 (expected).

### Graduate Courses Taught

- **ME 665 Selection of Materials for Design and Manufacturing**, Department of Mechanical Engineering, Wichita State University, since Spring 2014 (**online**).
- **ME 750K, Six Sigma Engineering**, Department of Mechanical Engineering, Wichita State University, since Spring 2016.
- **ME 848 Recycling of Advanced Materials**, Department of Mechanical Engineering, Wichita State University, since Fall 2016.

## PUBLICATIONS

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### Journal Articles under Review

1. Ijaola, A.O., Akamo, D.O., George, T.T., Sengul, A.B., and **Asmatulu, E.** “Algae as a Potential Source of Protein: A Review on Cultivation, Harvesting, Extraction, and Applications,” *Algal Research* (under review).
2. Ijaola, A.O., Obi, M., Akamo, D.O., Ajiboye, E.G., Yang, S.Y., and **Asmatulu, E.** “Hydrophilic and Antibacterial Electrospun Nanofibers from Recycled Monofilament Fishing Lines,” *Results Surfaces and Interfaces* (under review)

### Journal Articles Published (Peer Reviewed)

1. Subeshan, B., Pham, A., Murad, Md. S., and **Asmatulu, E.** “Mercury Cycles and It’s End-of-life Management: A Review,” *Journal of Material Cycles and Waste Management*, 2023 (in press).

2. Patil, V. Subeshan, B., **Asmatulu, E.** and Asmatulu, R. “Enhancing Saline Water Evaporation Rates via Floatable, Conductive Nanoparticles Embedded in Superhydrophobic Cotton Gauze at Air-Water Interface,” *Diamond and Related Materials*, 2023 (in press).
3. Ijaola, A.O., Akamo, D.O., Adekanmi, A.M., Saberi, Q.M. and **Asmatulu, E.** “Superhydrophobic and Self-cleaning Electrospun Nanofibers from Recycled Styrofoam,” *Results in Surfaces and Interfaces*, 2022, Vol. 9, pp. 100086. (IF:NA; Corresponding Author) <https://doi.org/10.1016/j.rsurfi.2022.100086>
4. Pham, A.K., and **Asmatulu, E.** “Effects of Functional Nanomaterials for Reduction of Carbon Monoxide Levels in Workplace and Homes,” *Journal of Management and Engineering Integration*, 2022, Vol. 15, pp. 48-58. (IF:NA; Corresponding Author)
5. Ahmed, T.M., Mohammed, Q.S., Subeshan, B., Rahman, M.M., Nuraje, N., and **Asmatulu, E.** “Improving Flame Retardancy and Hydrophobicity of Fabrics via Graphene Inclusion Obtained from Recycled Batteries,” *Materials Today: Proceedings*, 2022. Vol. 71, pp.78-89. (IF:1.46; Corresponding Author) <https://doi.org/10.1016/j.matpr.2022.07.469>
6. Mustafa, R., Baddam, Y., Subeshan, B., Sengul, A.B., and **Asmatulu, E.** “Fabrication of *Spirulina* Based Activated Carbons for Wastewater Treatment,” *Environmental Technology*, 2022, Vol., pp.1-15. (IF: 3.47; Corresponding Author) <https://doi.org/10.1080/09593330.2022.2138557>
7. Rajakaruna, A. D. N. V.R., Subeshan, B., Md.N., Uddin, and **Asmatulu, E.** “3D Printed Superhydrophobic Structures for Sustainable Manufacturing Benefits: An Overview,” *Journal of Management and Engineering Integration*, 2022, Vol. 15, No 1, pp. 45-65. (IF: 4.22; Lead and Corresponding Author).
8. Ijaola, A.O., Akamo, D.O., Damiri, F., Akisin, C.J., Bamidele, E.A., Ajiboye, E.G., Berrada, M., Onyenokwe, V.O., Yang, S.Y., and **Asmatulu, E.** “Recent Advances in Polymeric Biomaterials for Wound-Healing Applications: A Comprehensive Review,” *Journal of Biomaterials Science Polymer Edition*, 2022, Vol. 33(15), pp. 1-53. (IF: 3.68; Corresponding Author) <https://doi.org/10.1080/09205063.2022.2088528>
9. Bamidele, E.A., Ijaola, A.O., Bodunrin, M., Ajiteru, O., Oyibo, A.M., Makhatha, and **Asmatulu, E.** “Discovery and Prediction Capabilities in Metal-Based Nanomaterials: An Overview of the Application of Machine Learning Techniques and Some Recent Advances,” *Advanced Engineering Informatics*, 2022, Vol. 52, pp. 101593. (IF: 5.603; Corresponding Author) <https://doi.org/10.1016/j.aei.2022.101593>
10. Ali Z, and **Asmatulu E.** “Effects of Acid Treatment on The Recovery of Outdated Resin-impregnated Composite Fibers,” *Waste and Biomass Valorization*, 2022, Vol. 13, pp. 4267-4284. (IF:3.703; Corresponding Author) <https://doi.org/10.1007/s12649-022-01776-z>
11. Muhammad, G., Ngatcha, A.D.P., Lv, Y., Xiong, W., Qian, J., **Asmatulu, E.**, Xu, J., and Alam, M.A. “Enhanced Biodiesel Production from Wet Microalgae Biomass Optimized via

- Response Surface Methodology and Artificial Neural Network,” *Renewable Energy*, 2022, Vol. 184, pp. 753-764. (IF: 8.001; Contributing Author) <https://doi.org/10.1016/j.renene.2021.11.091>
12. Bayazeid, S.M., Poon, K.L., Subeshan, B., Alamir, M., and **Asmatulu, E.** “Recovery of Impact-Damaged Carbon Fiber-Reinforced Composites Using Induction Heating,” *Journal of Composites*, 2022, Vol. 56(4), pp. 605-618. (IF:2.591; Corresponding Author) <https://doi.org/10.1177/00219983211058796>
  13. **Asmatulu, E.**, Andalab, M.N., and Abedin, F. “Impact of Nanomaterials on Human Health: An Overview,” *Environmental Chemistry Letters*, 2022, Vol. 20, pp. 2509-2529. (IF:9.027; First Author) <https://doi.org/10.1007/s10311-022-01430-z>
  14. Madeswaran, N., Desai, F.J., and **Asmatulu, E.** “Life Cycle Inventory and Performance Analysis of Phase Change Materials for Thermal Energy Storages,” *Emergent Materials*, 2021, Vol. 4(3), pp.1-13. (IF:NA; Corresponding Author) <https://doi.org/10.1007/s42247-021-00235-0>
  15. Ali, S., Ijaola, A.O., and **Asmatulu, E.** “Multifunctional Water Treatment System for Oil and Gas-produced Water,” *Sustainable Water Resource Management*, 2021, Vol. 7(6), pp. 1-17. (IF:NA; Corresponding Author) <https://doi.org/10.1007/s40899-021-00578-w>
  16. Baddam, Y., Ijaola, A.O., and **Asmatulu, E.** “Fabrication of Flame-Retardant and Superhydrophobic Electrospun Fibers,” *Surfaces and Interfaces*, 2021, Vol. 23, pp.101017. (IF:4.837; Corresponding Author) <https://doi.org/10.1016/j.surfin.2021.101017>
  17. Ozdemir, M.E., Ali, Z., Subeshan, B., **Asmatulu, E.** “Applying Machine Learning Approach in Recycling: A Review,” *Journal of Material Cycles and Waste Management*, 2021, Vol. 23(3), pp. 855-871. (IF:2.863; Corresponding Author) <https://doi.org/10.1007/s10163-021-01182-y>
  18. Subeshan, B., Baddam, Y., and **Asmatulu, E.** “Current Progress of 4D Printing Technology: A Critical Review,” *Progress in Additive Manufacturing*, 2021, Vol. 6(3), pp. 495-516. <https://doi.org/10.1007/s40964-021-00182-6> (IF: 3.94; Corresponding Author)
  19. Ali, Z., Subeshan, B., Alam, M.A., **Asmatulu, E.**, and Xu, J. “Recent Progress in Extraction/Transesterification Techniques for The Recovery of Oil from Algae Biomass,” *Biomass Conversion and Biorefinery*, 2021, Vol. 13(4), pp.1-17. (IF: 4.987; Contributing Author) <https://doi.org/10.1007/s13399-021-01326-y>
  20. Shoaib, M., Subeshan, B., Khan, W.S. and **Asmatulu, E.** “Catalytic pyrolysis of recycled HDPE, LDPE, and PP,” *Progress in Rubber, Plastics and Recycling Technology*, 2021, Vol. 37(4), pp.264-278. (IF: 1.154; Corresponding Author) <https://doi.org/10.1177/14777606211019414>



21. Ijaola, A.O., Bamidele, E.A., Akisin, C.J., Bello, I.T., Oyatobo, A.T., Abdulkareem, A., Farayibi, P.K. and **Asmatulu, E.** “Wettability Transition for Laser Textured Surfaces: A Comprehensive Review,” *Surfaces and Interfaces*, 2021, Vol. 21, pp.100802. (IF: 4.837; Corresponding Author) <https://doi.org/10.1016/j.surfin.2020.100802>
22. Uddin, M.N., Desai, F.J., Subeshan, B., Rahman, M.M. and **Asmatulu, E.** “Sustainable Atmospheric Fog Water Generator Through Superhydrophobic Electrospun Nanocomposite Fibers of Recycled Expanded Polystyrene Foams,” *Surfaces and Interfaces*, 2021, Vol. 25, p.101169. (IF: 4.837; Corresponding Author) <https://doi.org/10.1016/j.surfin.2021.101169>
23. Srikanth, M., Khan, W.S., Asmatulu, R., Misak, E.H., Yang, S.Y., and **Asmatulu, E.** “In vitro Cytotoxicity Studies of Industrially Used Common Nanomaterials on L929 and 3T3 Fibroblast Cells,” *JBRES Biomedical Engineering*, 2020, Vol. 1(5), pp. 192-200. (IF: NA; Corresponding Author)
24. Ijaola, A.O., Farayibi, P.K., and **Asmatulu, E.** “Superhydrophobic Coatings for Steel Pipeline Protection in Oil and Gas Industries: A Comprehensive Review,” *Journal of Natural Gas Science and Engineering*, 2020, Vol. 83, pp. 103544. (IF: 4.965; Corresponding Author) <https://doi.org/10.1016/j.jngse.2020.103544>
25. Ali, S., Ozturk, A.B., Wondimu, A., and **Asmatulu, E.** “Microfluidics Systems For Plant Cell Studies And Student Training,” *Transactions on Techniques in STEM Education*, 2020, Vol. 6, pp. 27-36. (IF: NA; Corresponding Author)
26. **Asmatulu, E.**, Subeshan, B., Twomey, J., Overcash, M. “Increasing the Lifetime of Products by Nanomaterials Inclusions: Life Cycle Energy Implications,” *Journal of International Life Cycle Analysis*, 2020, Vol. 25(9), pp. 1783-1789. (IF: 4.141; Corresponding Author) <https://doi.org/10.1007/s11367-020-01794-w>
27. Sengul, A.B., and **Asmatulu, E.** "Toxicity of Metal and Metal Oxide nanoparticles: A Review," *Environmental Chemistry Letters*, 2020, Vol. 18(5), pp. 1659-1683. (IF:9.027; Corresponding Author) <https://doi.org/10.1007/s10311-020-01033-6>
28. Mandadi, G.K., Asmatulu, R., Khan, W.S., and **Asmatulu, E.** “Fast and Affordable Recycling Approach to Electronic Waste above the Melting Point Using Induction Heat Combined with Centrifugal Forces,” *Asia-Pacific Journal of Chemical Engineering*, 2020, Vol. 15(4), pp. e2483. (IF:1.447; Corresponding Author) <https://doi.org/10.1002/apj.2483>
29. Desai, F., Atayo, A., Prasad, J.S., Muthukumar, P., Rahman, M., and **Asmatulu, E.** “Experimental Studies on Endothermic Reversible Reaction of Salts for Cooling,” *Heat Transfer Engineering*, 2020, Vol. Vol. 42, pp.1-13. (IF:2.172; Corresponding Author) <https://doi.org/10.1080/01457632.2020.1777002>
30. Mustafa, R., and **Asmatulu, E.** “Preparation of Activated Carbon Using Fruit, Paper and Clothing Wastes for Wastewater Treatment,” *Journal of Water Process Engineering*, 2020,

- Vol. 35, pp. 101239. (IF: 7.34; Corresponding Author)  
<https://doi.org/10.1016/j.jwpe.2020.101239>
31. Karimibavani, B., Sengul, A.B., and **Asmatulu, E.** “Converting Briquettes of Orange and Banana Peels into Carbonaceous Materials for Activated Sustainable Carbon and Fuel Sources,” *Energy, Ecology, and Environment*, 2020, Vol. 5, pp. 161-170. (IF:NA; Corresponding Author) <https://doi.org/10.1007/s40974-020-00148-4>
  32. Uddin, M.N., Desai, F., and **Asmatulu, E.** “Engineered Nanomaterials in the Environment: Bioaccumulation, Biomagnification and Biotransformation,” *Environmental Chemistry Letters*, 2020, Vol. 18, pp. 1073-1083. (IF:9.027; Corresponding Author) <https://doi.org/10.1007/s10311-019-00947-0>
  33. Uddin, M.N., Desai, F., and **Asmatulu, E.** “Biomimetic Electrospun Nanocomposite Fibers from Recycled Polystyrene Foams Exhibiting Superhydrophobicity,” *Energy, Ecology and Environment*, 2020, Vol. 5, pp.1-11. (IF:NA; Corresponding Author) <https://doi.org/10.1007/s40974-019-00140-7>
  34. Khorasgani, N.B., Sengul, A.B., and **Asmatulu, E.** “Briquetting Grass and Tree Leaf Biomass for Sustainable Production of Future Fuels,” *Biomass Conversion and Biorefinery*, 2020, Vol. 100, pp. 915-924. (IF: 4.987; Corresponding Author) <https://doi.org/10.1007/s13399-019-00465-7>
  35. Uddin, M.N., Arifa, K., and **Asmatulu, E.** “Recycling of E-Waste and Its Impacts on Human Health and Environment,” *International Journal of Environment and Waste Management*, 2019, Vol. 27(2), pp. 59-65. (IF:0.538; Corresponding Author)
  36. Lu, W., Alam M.A., Luo, W., and **Asmatulu E.** “Integrating Spirulina Platensis Cultivation and Aerobic Composting Exhaust for Carbon Mitigation and Biomass Production,” *Bioresource Technology*, 2019, Vol. 271, pp. 59-65. (IF:9.642; Contributing Author) <https://doi.org/10.1016/j.biortech.2018.09.082>
  37. Şengül, A. B., Rahman, M.M., and **Asmatulu, E.** “Evaluation of Media and Light Source Effects on the Growth of Botryococcus Braunii for Biofuel Production,” *International Journal of Environmental Science and Technology*, 2019, Vol. 16(7), pp. 3193-3202. (IF: 2.86; Corresponding Author) <https://doi.org/10.1007/s13762-018-1966-6>
  38. Overcash, M., Twomey, J., **Asmatulu, E.**, Vozzola, E., and Griffing, E. “Thermoset Composite Recycling—Driving Forces, Development, and Evolution of New Opportunities,” *Journal of Composite Materials*, 2018, Vol. 52, pp. 1033-1043. (IF:2.591; Contributing Author) <https://doi.org/10.1177/0021998317720000>
  39. Schneider, N.M., Janzen, M., and **Asmatulu, E.** “Undergraduate Student Training on Thermal Pyrolysis of Low Density Polyethylene for Sustainable Fuel Productions,” *Transactions on Techniques in STEM Education*, 2017, Vol. 2, pp 101-112. (IP: NA; Corresponding Author).

40. Mandadi, G. K., Subeshan, B., and **Asmatulu, E.** “Hands-on Training of Engineering Students on Recycling of Electronic Waste Materials,” *Transactions on Techniques in STEM Education*, 2017, Vol. 3, pp. 57-64. (IP: NA; Corresponding Author).
41. Tay, N., Low, X. J., Patil, V., and **Asmatulu, E.** “Mechanical Properties of 3D Printed Polylactic Acid Parts under Different Testing Conditions,” *Transactions on Techniques in STEM Education*, 2017, Vol. 3, pp 19-26. (IP: NA; Corresponding Author).
42. Amarasekara, A., Tanzim, F.S., and **Asmatulu, E.** “Briquetting and Carbonization of Naturally Grown Algae Biomass for Low Cost Fuel and Activated Carbon Productions,” *Fuel*, 2017, Vol. 208, pp. 612-618. (IF:6.609; Corresponding Author) <https://doi.org/10.1016/j.fuel.2017.07.034>
43. **Asmatulu, E.**, Twomey, J., and Overcash, M. “Recycling of Fiber-Reinforced Composites and Direct Structural Composite Recycling Concept,” *Journal of Composite Materials*, 2013, Vol. 48, pp. 593-608. (IF:3.19; First Author) <https://doi.org/10.1177/0021998313476325>
44. **Asmatulu, E.**, Twomey, J., and Overcash, M. “Evaluation of Recycling Efforts of Local Aircraft Companies,” *Journal of Resources, Conservation and Recycling*, 2013, Vol. 80, pp. 36-45. (IF:13.71; First Author) <https://doi.org/10.1016/j.resconrec.2013.08.002>
45. **Asmatulu, E.**, Overcash, M., and Twomey, J. “Recycling of Aircraft: State of the Art in 2011,” *Journal of Industrial Engineering*, 2013, Vol. 2013, 8 pages. (IF: NA; First Author) <https://dx.doi.org/10.1155/2013/960581>
46. **Asmatulu, E.**, Twomey, J., and Overcash, M. “Life Cycle and Nano-Products: End-of-Life Assessment,” *Journal of Nanoparticle Research*, 2012, Vol. 14, 8 pages. (IF:2.53; First Author) <https://doi.org/10.1007/s11051-012-0720-0>
47. Asmatulu, R., **Asmatulu, E.**, and Zhang, B. “Recent Progress in Nanoethics and Its Possible Effects on Engineering Education,” *International Journal of Mechanical Engineering Education*, 2017, Vol. 40, 10 pages. (IF: 1.12; Contributing Author) <https://doi.org/10.7227/IJMEE.40.1.4>
48. Asmatulu, R., and **Asmatulu, E.** “Importance of Recycling Education: A Curriculum Development at Wichita State University,” *Journal of Materials Cycles and Waste Management*, 2011, Vol. 13, pp. 131-138. (IF: 3.57; Corresponding Author) <https://doi.org/10.1007/s10163-011-0002-4>

### **Book Chapters Published (Peer Reviewed)**

1. **Asmatulu, E.**, Haynes, H., and Asmatulu, R. “Nanotechnology Safety in Aerospace Industry,” in *Nanotechnology Safety 2<sup>nd</sup> Edition*, Editors R. Asmatulu, W.S. Khan, and E. Asmatulu, Elsevier, 2024 (accepted).

2. Sack, R., and **Asmatulu, E.** “Nanotechnology Safety in the Biomedical Industry,” in *Nanotechnology Safety 2<sup>nd</sup> Edition*, Editors R. Asmatulu, W.S. Khan, and E. Asmatulu, Elsevier, 2024 (accepted).
3. Asmatulu, R., Nguyen, O., Khan., W.S., and **Asmatulu, E.** “Nanotechnology Safety in Automotive Industry,” in *Nanotechnology Safety 2<sup>nd</sup> Edition*, Editors R. Asmatulu, W.S. Khan, and E. Asmatulu, Elsevier, 2024 (accepted).
4. Asmatulu, R., Zhang, B., Khan, W.S., and **Asmatulu, E.** “Safety and Ethics of Nanotechnology,” in *Nanotechnology Safety 2<sup>nd</sup> Edition*, Editors R. Asmatulu, W.S. Khan, and E. Asmatulu, Elsevier, 2024 (accepted).
5. Hughes, S., and **Asmatulu, E.** “Introduction, Principles and Concepts,” pp. 1-19, in *Nanotoxicology and Nanoecotoxicology*, Environmental Chemistry for a Sustainable World (ECSW) Series, Editors Vineet Kumar, Praveen Guleria, Nandita Dasgupta, Shivendu Ranjan, and Eric Lichtfouse, Springer, Nature Book, 2021 (Lead and Corresponding Author).
6. Uddin, M. N., Desai, F., and **Asmatulu, E.** “Bioaccumulation, Biomagnification and Biotransformation of Nanomaterials,” pp. 133-164, in *Nanotoxicology and Nanoecotoxicology*, ECSW Series, Editors Vineet Kumar, Praveen Guleria, Nandita Dasgupta, Shivendu Ranjan, and Eric Lichtfouse, Springer, Nature Book, 2021 (Lead and Corresponding Author).
7. Abedin, F., **Asmatulu, E.**, Andalab, M. N. “Nanomaterials and Human Health,” pp. 165-180, in *Nanotoxicology and Nanoecotoxicology*, ECSW Series, Editors Vineet Kumar, Praveen Guleria, Nandita Dasgupta, Shivendu Ranjan, and Eric Lichtfouse, Springer, Nature Book, 2021 (Corresponding Author).
8. Sengul, A. B., and **Asmatulu, E.** “Nanomaterials Causing Cellular Toxicity and Genotoxicity,” pp. 245-266, in *Nanotoxicology and Nanoecotoxicology*, ECSW Series, Editors Vineet Kumar, Praveen Guleria, Nandita Dasgupta, Shivendu Ranjan, and Eric Lichtfouse, Springer, Nature Book, 2021 (Lead and Corresponding Author).
9. Abedin, F., and **Asmatulu, E.** “Cradle to Gate Life-Cycle Analysis of Nanostructured Materials,” pp. 1-35, in *Advances in Nanotechnology*, Editors Zacharie Bartul and Jérôme Trenor, Series: Advances in Nanotechnology BISAC: TEC027000, Nova Science Publisher Inc., 2019 (Lead and Corresponding Author).
10. **Asmatulu, E.** “Life-Cycle Analysis of Nanocomposites,” pp. 111-138, in *Advances in Nanotechnology*, Editors Zacharie Bartul and Jérôme Trenor, Nova Science Publishers, Inc., 2017.
11. Uddin, M. N., and **Asmatulu, E.** “Nanomaterials and Their Fracture Mechanics,” pp. 113-172, in *Advances in Nanotechnology*, Editors Zacharie Bartul and Jérôme Trenor, Nova Science Publishers, Inc., 2017.

12. Razinobakht, S.A. and **Asmatulu, E.** “Fabrication, Functionalization and Applications of Carbon Nanoparticulates,” pp. 1-38, in *Advances in Nanotechnology*, Editors Zacharie Bartul and Jérôme Trenor, Nova Science Publishers, Inc., 2017.
13. **Asmatulu, E.** “The World of Engineering Nanomaterials,” pp. 41-60, in *Nano-Safety: What We Need to Know to Protect Workers*, Editors D. Fazarro, and W. Trybula, DeGruyter Online Publisher, 2017.
14. **Asmatulu, E.** “Biologically Assembled Systems for CO<sub>2</sub> Reductions Using Green-Nanomaterials,” pp. 274-293, in *Green Photo-Active Nanomaterials: Sustainable Energy and Environmental Remediation*, RSC Publishing, 2015.
15. Asmatulu, R., Nguyen, O., and **Asmatulu, E.** “Nanotechnology Safety in Automotive Industry,” pp. 57-72, in *Nanotechnology Safety*, Editor R. Asmatulu, Elsevier, 2013.
16. Asmatulu, R., Zhang, B., and **Asmatulu, E.** “Safety and Ethics of Nanotechnology,” pp. 31-42, in *Nanotechnology Safety*, Editor R. Asmatulu, Elsevier, 2013.

### Conference Proceedings (Peer Reviewed)

1. Gurgung, D., Murad, M.S., Bakir, M., Bahceci, E., Er, O.O., Safaker, B., Gursoy, M., **Asmatulu, E.**, and Asmatulu, R. “Sulfonated PEEK Fiber Reinforced Composites for Improved Thermal and Mechanical Properties,” The 2023 International Conference on Industry, Engineering, and Management Systems (IEMS), Clearwater Beach, FL, March 5-7, 2023 (Accepted) (Contributing Author).
2. Vishma, R.A.D.N., Subeshan, B., Uddin, Md. N., and **Asmatulu, E.** “3D Printed Superhydrophobic Structures for Sustainable Manufacturing Benefits,” IEMS Conference 2022, Clearwater Beach, Florida, March 13-15, 2022, 12 pages (Lead and Corresponding Author).
3. Pham, A.K., and **Asmatulu, E.** “Effects of Functional Nanomaterials for Reduction of Carbon Monoxide Levels in Workplace and Homes,” IEMS Conference 2022, Clearwater Beach, Florida, March 13-15, 2022, 11 pages (Lead and Corresponding Author).
4. Subeshan, B., Abdulaziz, A., Khan, Z., Uddin, Md. N., Rahman, M.M., and **Asmatulu, E.** “Reverse Engineering of Aerospace Components Utilizing Additive Manufacturing Technology,” 2022 TMS Annual Meeting & Exhibition, Anaheim, CA, USA, February 27-March 03, 2022, 8 pages (Corresponding Author).
5. Srinivasan, J.R., Khan, W.S., **Asmatulu, E.**, Khan, A., Alyammahi, S., and Asmatulu, R. “Studying the Superhydrophobic and Superhydrophilic Nanofiber Layers into Astronaut Spacesuit Gloves for Better Sweat Absorption Properties,” The 5<sup>th</sup> Advances in Engineering Technology and Sciences Multi-Conference (ASET 2023), Dubai, UAE, February 20-23, 2023, 6 pages (Contributing Author).

6. Murad, M.S., **Asmatulu, E.**, Er, O., Gursoy, M., Safaker, B., Bahceci, E., Bakir, M. and Asmatulu, R. “Improving Flame Retardancy of Fiber Reinforced Composites via Modified Fire-Resistant Resins and Metallic Thin Film Coatings,” CAMX Conference, Anaheim, CA, October 17-20, 2022, 8 pages (Contributing Author).
7. Subeshan, B., Abdulaziz, A., Khan, Z., Rahman, M.M., and **Asmatulu, E.** “Reverse Engineering of Aerospace Components Utilizing Additive Manufacturing Technology,” 2022 TMS Annual Meeting & Exhibition, Anaheim, CA, USA, February 27-March 03, 2022, 9 pages (Corresponding Author).
8. Habib, Md. A., **Asmatulu, E.**, and Rahman, M.M. “Applying Lean in Aerospace Manufacturing for Waste Reduction,” The 2021 International Conference on Industry, Engineering, and Management Systems (IEMS), Online Conference, March 15-17, 2021, 9 pages (Contributing Author).
9. **Asmatulu, E.**, Ali, Z., Habib, M.A., and Rahman, M.M. “Using Six Sigma for Energy Conservation and Energy Efficiency Improvement.” The 2021 International Conference on Industry, Engineering, and Management Systems (IEMS), Online Conference, March 15-17, 2021, 9 pages (First Author).
10. Habib, Md. A., **Asmatulu E.**, and Rahman, M.M. “Recycling and Reusing of Aircraft Materials and Composites,” The Thirty-Sixth International Conference on Solid Waste Technology and Management, Washington, D.C., March 14-17, 2021, 9 pages (Contributing Author).
11. Uddin, Md. N., Rahman, M.M., and **Asmatulu, E.** “Sustainable Freshwater Harvesting from Atmosphere through Nanocomposite Fibres of Recycled Polystyrene Foams,” SPIE Smart Structures/Non-Destructive Evaluation Conference, Anaheim, CA, April 26-30, 2020, 9 pages (Lead and Corresponding Author).
12. Baddam, Y., Uddin M.N., Don, A.A.T., and **Asmatulu, E.** “Integrating 4D Printing Processes into STEM Education,” ASEE Midwest Regional Conference at Wichita State University, Wichita, KS, September 15 - 17, 2019, 11 pages (Lead and Corresponding Author).
13. Uddin, M.N., Baddam, Y., Cornejo, P.O., and **Asmatulu, E.** “Training Engineering Students on Synthesis and Characterization of Superhydrophobic Electrospun nanocomposite Fibers from Recycled Polystyrene,” ASEE Midwest Regional Conference at Wichita State University, Wichita, KS, September 15-17, 2019, 10 pages (Lead and Corresponding Author).
14. Ali, S., Ozturk, A.B., Wondimu, A., and **Asmatulu, E.** “Microfluidics-based Learning and Analysis for Plant Cells,” ASEE Midwest Regional Conference at Wichita State University, Wichita, KS September 15-17, 2019, 9 pages (Lead and Corresponding Author).

15. Uddin, Md. N., Desai, F., Murali, A.R., Swindle, A., and **Asmatulu, E.** “Superhydrophobic Electrospun Nanocomposite Fibers for Training Engineering Students,” ASEE Midwest Regional Conference at Wichita State University, Wichita, KS September 15-17, 2019, 9 pages (Lead and Corresponding Author).
16. Desai, F. J., Atayo, A., Palanasamy, M., Rahman, M.M., and **Asmatulu, E.** “Experimental Studies on Endothermic Reversible Reaction of Salts for Cooling” 5<sup>th</sup> International Conference on Polygeneration (ICP 2019), May 15–17, 2019, Kyushu University, Fukuoka, Japan, 2 pages (Lead and Corresponding Author).
17. Ahmed, T.M., Rahman, M.M., Ali, Z., and **Asmatulu, E.** “Advanced Recycled Materials for Economic Production of Fire-Resistant Fabrics,” American Society of Mechanical Engineers (ASME) International Mechanical Engineering Congress and Exposition, Pittsburg, PA, November 9-15, 2018, 7 pages (Lead and Corresponding Author).
18. Mandadi, G.K., and **Asmatulu, E.** “Centrifugal-Force Induced Separation of Recyclable Electronic Wastes above the Melting Points Using Induction Heat Unit,” The Composites and Advanced Materials Expo (CAMX) Conference, Dallas, TX, October 16-18, 2018, 7 pages (Lead and Corresponding Author).
19. **Asmatulu, E.** “Recent Developments in Recycling Plants: Health and Environmental Benefits,” The Composites and Advanced Materials Expo (CAMX) Conference, Dallas, TX, October 16-18, 2018, 7 pages (Sole Author).
20. Ali, Z., and **Asmatulu, E.** “Sustainable and Green Manufacturing Options of Fiber Reinforced Composites,” The Composites and Advanced Materials Expo (CAMX) Conference, Dallas, TX, October 16-18, 2018, 8 pages (Lead and Corresponding Author).
21. Arifa, K., Rahman, M.M., and **Asmatulu, E.** “Mechanical Properties of 3D Printed PLA Specimens with Various Infill Shapes and Volumes,” TechConnect World Innovation Conference and Exposition, Anaheim, CA, May 13-16, 2018, 4 pages (Lead and Corresponding Author).
22. Rahman, M.M., Ahmed, T.M., and **Asmatulu, E.** “Recycling of Graphite Waste into High Quality Graphene Products,” TechConnect World Innovation Conference and Exposition, Anaheim, CA, May 13-16, 2018, 4 pages (Lead and Corresponding Author).
23. **Asmatulu, E.** “Sustainability of Fiber Reinforced Laminate and Honeycomb Composites in Manufacturing Industries,” SPIE Smart Structures/Non-Destructive Evaluation Conference, Denver, CO, March 4-8, 2018, 7 pages (Sole Author).
24. Paranjipe, N., Alamir, M., Alonayni, A., **Asmatulu, E.**, Rahman, M., and Asmatulu, R. “Strength and Failure Analysis of Composite-to-Composite Adhesive Bonds with Different Surface Treatments,” SPIE Smart Structures/Non-Destructive Evaluation Conference, Denver, CO, March 4-8, 2018, 6 pages (Contributing Author).

25. Subeshan, B., Alonayni, A., Rahman, M.M., and **Asmatulu, E.** “Investigating Compression Strengths of 3D Printed Polymeric Infill Specimens of Various Geometries,” SPIE Smart Structures/Non-Destructive Evaluation Conference, Denver, CO, March 4-8, 2018, 6 pages (Lead and Corresponding Author).
26. **Asmatulu, E.** “Safety Concerns in Composite Manufacturing,” SPIE Smart Structures/Non-Destructive Evaluation Conference, Denver, CO, March 4-8, 2018, 7 pages (Sole Author).
27. Mandadi, G.K., Subeshan, B., and **Asmatulu, E.** “Hands-on Training of Engineering Students on Recycling of Electronic Waste Materials,” ASEE Midwest Section Conference, Stillwater, OK, September 24-26, 2017, 9 pages (Lead and Corresponding Author).
28. Schneider, N.M., Janzen, M., and **Asmatulu, E.** “Undergraduate Student Training on Thermal Pyrolysis of Low-Density Polyethylene for Sustainable Fuel Productions,” ASEE Midwest Section Conference, Stillwater, OK, September 24-26, 2017, 14 pages (Lead and Corresponding Author).
29. Tay, N., Low, X.J., Patil, V., and **Asmatulu, E.** “Mechanical Properties of 3D Printed Polylactic Acid Parts under Different Testing Conditions,” ASEE Midwest Section Conference, Stillwater, OK, September 24-26, 2017, 9 pages (Lead and Corresponding Author).
30. **Asmatulu, E.**, “Non-destructive Inspections and Repair of Laminate Composites,” The Composites and Advanced Materials Expo (CAMX) Conference, The Composites and Advanced Materials Expo, Orlando, FL, September 11-14, 2017 (Sole Author).
31. Sengul, A.B., Rahman, M.M., and **Asmatulu, E.** “Investigating the Effects of Media and Light Sources on the Growth of *Botryococcus Braunii*,” The 2017 TechConnect World Innovation Conference, Washington D.C., May 25-29, 2017, 6 pages (Lead and Corresponding Author).
32. Coskun, C., Patlolla, V.R., Alzahrani, N., Zeineddine, H, F., and **Asmatulu, E.** “Experience-based Training of Engineering Students on Concretes Reinforced by Recycled Carbon Fibers,” SPIE Smart Structures, Portland, Oregon, March 25-29, 2017, 7 pages (Lead and Corresponding Author).
33. **Asmatulu, E.**, Usta, A., Alzahrani, N., Patil, V., and Vanderwall, A. “Encapsulation of Natural Ingredient for Skin Protection via Nanoemulsion Process,” SPIE Smart Structures, Portland, Oregon, March 25-29, 2017, 6 pages (First, Lead and Corresponding Author).
34. **Asmatulu, E.**, “Multidisciplinary Entrepreneurial Training in Resource Recovery Class,” The Composites and Advanced Materials Expo (CAMX) Conference, The Composites and Advanced Materials Expo, Anaheim, CA, September 26-29, 2016, 7 pages (Sole Author).



35. Faisal, M.S.S., Downing, C., **Asmatulu, E.**, and Asmatulu, R. "Sealing the Holes of Aircraft Composites via Epoxy Nanocomposites Incorporated with Layered Nanoscale Inclusions," The Composites and Advanced Materials Expo (CAMX) Conference, The Composites and Advanced Materials Expo, Anaheim, CA, September 26-29, 2016, 10 pages (Contributing Author).
36. **Asmatulu, E.**, "End-of-life Assessments of Piezoelectric Materials and Their Applications," CMAX Conference, The Composites and Advanced Materials Expo, Anaheim, CA, September 26-29, 2016, 8 pages (Sole Author).
37. **Asmatulu, E.**, "Recent Developments on Nanomaterials and Nanosafety for Engineering Applications," CMAX Conference, The Composites and Advanced Materials Expo, Anaheim, CA, September 26-29, 2016, 13 pages (Sole Author).
38. Overcash, M., Twomey, J., and **Asmatulu, E.** "Reviews of Studies on Recycling Fiber Reinforced Composites and Direct Structural Composite Recycling Concepts," CMAX Conference, The Composites and Advanced Materials Expo, Dallas, TX, October 27-29, 2015, 10 pages (Contributing Author).
39. Khan, W.S., **Asmatulu, E.**, Soltani, S.A., and Asmatulu, R. "Aircraft Recycling: A Review of Current Issues and Perspectives," SAMPE Fall Technical Conference, Wichita, KS, October 21–24, 2013, 11 pages (Contributing Author).
40. Khan, W.S., Ceylan, M., **Asmatulu, E.**, and Asmatulu, R. "Effects of Nanotechnology on Global Warming," ASEE Midwest Section Conference, Rollo, MO, September 19-21, 2012, 13 pages (Contributing Author).
41. Asmatulu, R., **Asmatulu, E.**, and Zhang, B. "Nanotechnology and Nanoethics in Engineering Education," ASEE Midwest Conference, Lawrence, KS, September 22-24, 2010, 11 pages (Contributing Author).
42. Asmatulu, R., Khan, W.S., **Asmatulu, E.**, and Ceylan, M. "Biotechnology and Bioethics in Engineering Education," ASEE Midwest Conference, Lawrence, KS, September 22-24, 2010, 10 pages (Contributing Author).
43. Asmatulu, R., **Asmatulu, E.**, and Khan, S.I. "Antibacterial Behavior of Polymeric Nanofilms on the Surfaces: A Recent Development," SAMPE Fall Technical Conference, Salt Lake City, UT, October 11-14, 2010, 9 pages (Contributing Author).
44. Asmatulu, R., **Asmatulu, E.**, and Yourdkhani, A. "Toxicity of Nanomaterials and Recent Developments in the Protection Methods," SAMPE Fall Technical Conference, Wichita, KS, October 19-22, 2009, 12 pages (Contributing Author).
45. Asmatulu, R., **Asmatulu, E.**, and Yourdkhani, A. "Importance of Nanosafety in Engineering Education" ASEE Midwest Conference, Lincoln, NB, September, 2009, 8 pages (Contributing Author).

46. Asmatulu, R., Venishetty, B., and **Asmatulu, E.** “Non-destructive Testing of Fiber Reinforced Composite Materials using a Capacitance Bridge,” ASME International Mechanical Engineering Congress and Exposition, Lake Buena Vista, FL, November 13-19, 2009, 7 pages (Contributing Author).

## Presentations and Abstracts

1. Asmatulu, R. and **E. Asmatulu** “Multifunctional Fiber Reinforced Composites and CNT Wires for Aviation Industries,” TAI, Inc., Kahramankazan, Ankara, Turkey, June 24, 2022.
2. Ijaola, A., Pham, A.K., Uddin, M.N., and **Asmatulu, E.** “Multifunctional Electrospun Nanofibers for Enhanced Chronic Wound Healing,” IEMS Conference 2022, Clearwater Beach, Florida, March 13-15, 2022.
3. **Asmatulu, E.** “Preparation of Activated Carbon using Various Waste Materials for Wastewater Treatment” ISME Colloquium, Wichita State University, November 1, 2019.
4. Ali, S., and **Asmatulu, E.** “Produced Water Treatment for Agricultural Use in Kansas Oil, and Gas Production Fields” Statewide 16<sup>th</sup> Capitol Graduate Research Summit (CGRS) February 26, 2019.
5. Rakip, M., and **Asmatulu, E.** “Waste Water Treatment using Food Waste, Clothes and Algae Briquettes after Activation and Carbonization Processes,” 14<sup>th</sup> Graduate Research and Scholarly Projects (GRASP) Symposium, Wichita State University, Wichita, KS, April 27, 2018 (extended abstract published).
6. Arifa, K., and **Asmatulu, E.** “Factors Affecting Heat Generation during Bone Drilling and Implant Surgery,” 43<sup>th</sup> GRASP Symposium, Wichita State University, Wichita, KS, April 27, 2018 (extended abstract published).
7. Rahman, M.M., and **Asmatulu, E.** “Current State on Advanced Materials for Fire Resistant Clothing,” 2018 Pacific Operational Science and Technology Conference, Honolulu, HI, March 5-9, 2018.
8. Rakip, M., and **Asmatulu, E.** “Sustainable Fresh Water Productions and Supplies in Rural Areas,” 2017 First International Conference on Water, Energy, Sanitation, Hygiene, Ecosystem, Environment, Health, Education, Science and Technology, Wichita, KS, October 28-29, 2017.
9. Rakip, M., and **Asmatulu, E.** “Nanoemulsion of Natural Oils for Skin Protection Using Encapsulation Technique,” 13<sup>th</sup> GRASP Symposium, Wichita State University, Wichita, KS, April 28, 2017 (extended abstract published).
10. Shoaib, M., and **Asmatulu, E.** “Improving Decomposition Process of Recycled Plastics for Sustainable Fuel Productions,” 13<sup>th</sup> GRASP Symposium, Wichita State University, Wichita, KS, April 28, 2017 (extended abstract published).

11. Husain, M., Asmatulu, R., Asaduzzaman, A., **Asmatulu, E.**, Morrison, E., Bridge, T., Begum, L., Agrama, H., and Uddin, J. “Magnetite Nanoparticles-Based Water Treatment System for Arsenic Removal,” Governor’s Conference on the Future of Water in Kansas, Manhattan, KS, October 24-25, 2013.
12. **Asmatulu, E.**, Twomey, J., and Overcash, M. “End-of-Life Investigation of Nano-Products,” Annual NSF EPSCoR Statewide Conference, Wichita, KS, January 12-13, 2012.
13. Ceylan, M., and **Asmatulu, E.**, and Asmatulu, R. “Nanotechnology to Address the Global Warming,” Annual NSF EPSCoR Statewide Conference, Wichita, KS, January 12-13, 2012.
14. **Asmatulu, E.**, and Twomey, J. “Transportation and Distribution of Future Energy: Biofuel,” GRASP Symposium, Wichita State University, April 25, 2008.
15. **Asmatulu, E.**, Ma, W., Ali, R., and Berkowitz, G. “Effect of Loss-of-unction Mutation in the Cyclic Nucleotide Gated Channel AtCNGC1 on Na Ion Related Arabidopsis Plant Phenotypes,” American Society of Plant Biology Conference, 2006.

## BOOKS AND MANUALS

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1. Asmatulu, R., Khan, W.S., and **Asmatulu, E.** *Nanotechnology Safety*, 2<sup>nd</sup> Edition, Elsevier, Amsterdam, The Nederland, 2024 (accepted) (Contributing Author).
2. Khan, W.S., **Asmatulu, E.**, Uddin, M.N., and Asmatulu, R., *Recycling and Reusing of Engineering Materials*, Elsevier, Cambridge, MA, 2022 (Contributing Author).
3. **Asmatulu, E.** *Materials Engineering Laboratory Manual*, Department of Mechanical Engineering, Wichita State University, Wichita, KS, 2016 (Sole Author).

## PATENTS

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1. **Asmatulu, E.**, Ali, Z, and Alamir, M. “Effects of Acid Treatments on Solvent Based Recovery of Outdated Pre-Preg Composite Fibers,” WSU Ventures, September 1, 2020. U.S. Provisional Patent Application No. 63/074,689 (Primary Investigator).

## CITATION OF WORK

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To date, my scholarly activities have been cited about **1,531 times**, in peer-reviewed journal articles, conference proceedings, books and thesis.

[http://scholar.google.com.tr/citations?hl=tr&view\\_op=search\\_authors&mauthors=Eylem+Asmatulu](http://scholar.google.com.tr/citations?hl=tr&view_op=search_authors&mauthors=Eylem+Asmatulu)

## STUDENTS, POSTDOCS, AND PROFESSORS

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## Bachelor of Science Students

1. Zainab Farah Khan, “Three-Layered Multifunctional Bioscaffold Systems for Localized and Fast Burn Wound Treatments,” Department of Mechanical Engineering, Wichita State University, (expected in May 2023)
2. Nourin Karim, “Investigation of Hydrogen Storage via Electrospun Fibers for Space Missions” Department of Mechanical Engineering, Wichita State University, (expected in May, 2023).
3. Selin Ergul, “Investigating Hydrogen Storage Capacity and Kinetics of Highly Flexible Electrospun Nanocomposite Fibers,” Department of Mechanical Engineering, Wichita State University, (expected in May, 2023).
4. Emanuel Andrade, “Improving Flame Resistance of Aircraft Interiors via Polymeric Nanocomposite Fibers,” Department of Mechanical Engineering, Wichita State University, May, 2023.
5. Masi Angela Obi, “Recycling Old Fishing Lines and Converting Them into Nanoproducts for Industrial Use,” Department of Mechanical Engineering, Wichita State University, May, 2021.
6. Selman Okten, Engineer of 2020 “Using Nylon 6,6 Wastes and Converting Them into Nanoproducts for Wound Healing” Department of Mechanical Engineering, Wichita State University, May, 2021.
7. Khaled Alrashidi, “Composite Repair Techniques for Fast Recovery,” Department of Mechanical Engineering, Wichita State University, April, 2020.
8. Bader Alshatti, “Impact Damages of Carbon Fiber Composite and Its Properties,” Department of Mechanical Engineering, Wichita State University, April, 2020.
9. Corry Sundquist, “Fabrication of Nanofiber Sheets for the Inoculation of Soybeans via Water Contact Angle Testing,” Department of Mechanical Engineering, Wichita State University, August, 2019.
10. Harrison Shellhammer, “Composite Recovery and Reuse Possibilities,” Department of Mechanical Engineering, Wichita State University, May, 2019.
11. Polo Osornio-Cornejo, “Design and Manufacturing of Graphene/Kevlar-Based Fire Resistant Fabrics for Military Suits,” Department of Mechanical Engineering, Wichita State University, August, 2018.
12. Thisath Nisitha Dasal Attampola Arachchi Attampola Arachchige Don, “Improving Self-Healing Properties of Asphalt,” Department of Mechanical Engineering, Wichita State University, August, 2018.

13. Arvind Raj Murali, “Improving Self-Healing Properties of Asphalt by Induction Heating,” Department of Mechanical Engineering, Wichita State University, August, 2018.
14. Kriti Tamrakar, “Producing Algae-based Briquettes for Activated Carbon Sources in Industrial Waste Water Treatment,” Department of Mechanical Engineering, Wichita State University, August, 2018.
15. Omar Khodair, “Producing Seed-Based Briquettes for Activated Carbon Sources in Industrial Wastewater Treatment,” Department of Mechanical Engineering, Wichita State University, August, 2017.
16. Emaad Mohammad Malik, “Manufacturing Biomass Based Briquettes for Activated Carbon Sources in Industrial Wastewater Treatment,” Department of Mechanical Engineering, Wichita State University, August, 2017.
17. Pradeep Gedara Ahadiwelagedara, “Wastepaper-Based Briquettes for Activated Carbon Sources in Water Purification,” Department of Mechanical Engineering, Wichita State University, August, 2017.
18. Rajakaruna Rajakaruna Athukoralage, “Briquetting of Used Cotton Clothes for Activated Carbon Sources in Wastewater Treatment,” Department of Mechanical Engineering, Wichita State University, August, 2017.
19. Amanuel Wondimu, “Improving Tire Recycling for Biofuel Production,” Department of Mechanical Engineering, Wichita State University, August, 2017.
20. Attampola Arachchige Don, “Plastic Bottle Recycling for 3D Printer Filament Production through Extrusion Process,” Department of Mechanical Engineering, Wichita State University, August, 2017.
21. Momin Khan, “Polystyrene Recycling for 3D Printer Filament Manufacturing,” Department of Mechanical Engineering, Wichita State University, August, 2017.
22. Nathan Schneider, “Thermal Pyrolysis of Low Density Polyethylene for Sustainable Fuel Productions,” Department of Mechanical Engineering, Wichita State University, May, 2017.
23. Mark Janzen, “Renewable Fuel Productions from Recycled Plastics via Thermal Pyrolysis Processes,” Department of Mechanical Engineering, Wichita State University, May, 2017.
24. Xiu Jie Low, “Investigating the Properties of 3D Printed PLA Objects under Various Environmental Conditions,” Department of Mechanical Engineering, Wichita State University, June, 2017.

25. Balakrishnan Subeshan, "Effects of Infill Shapes on the Compression Strengths of 3D Printed Objects," Department of Mechanical Engineering, Wichita State University, April, 2016.
26. Adesha Vanderwall, "Encapsulation of Natural Ingredient for Skin Protection via Nanoemulsion Process," Department of Mechanical Engineering, Wichita State University, July, 2016.
27. Neville Tay, "Improving Resistance of 3D Printed Polymeric Materials under Various Environmental Degradation," Department of Mechanical Engineering, Wichita State University, December, 2016.

### **Master of Science Students**

1. Siva Sai Reddy Gudepu, "Developing Flame Retardant Nanofibers," M.S. Thesis, Wichita State University, December 2024 (expected).
2. Kalkidan Tefera, "Converting Recycled Plastic into Renewable Fuel Using Chemical Recycling Techniques," M.S. Thesis, Wichita State University, December 2023 (expected).
3. Christian Nowasu, "Studying the Sensitivity of Multifunctional Nanofiber Membrane Systems Integrated in 3D Printed Reusable Masks Against the Infectious Diseases," M.S. Thesis, Wichita State University, December 2023 (expected).
4. Tamseel Murtuza Ahmed, "Recycling of Graphite Wastes and Converting Them into High Quality Graphene Products," M.S. Thesis, Wichita State University, December 2023 (expected).
5. Qamar Saberi, "Investigating Hydrogen Storage Capacity and Kinetics of Highly Flexible Electrospun Nanocomposite Fibers," M.S. Thesis, Wichita State University, May 2023 (graduated).
6. Sultan Mohammed Bayazeid, "Recovery of Impact Damaged Composite by Induction Heating System," M.S. Project, Wichita State University, July 2020 (graduated).
7. Yeshaswini Baddam, "Synthesis of Superhydrophobic and Flame Retardant Electrospun Fibers," M.S. Thesis, Wichita State University, May, 2020 (graduated).
8. Vishma Rajakaruna, "Developing Super Hydrophilic Electrospun Fibers for Different Applications," M.S. Thesis, Wichita State University, December 2020 (graduated).
9. Zaara Ali, "Effects of Acid Treatments on Solvent Based Recovery of Outdated Pre-Preg Composite Fibers," M.S. Thesis, Wichita State University, December, 2019 (graduated).
10. Naveenkumar Madeswaran, "Life Cycle Analysis of Phase Change Materials for Heat Storage Applications," M.S. Project, Wichita State University, December, 2019 (graduated).

11. Rakib Mustafa, "Investigation of Wastewater Treatment Using Waste Materials and Algae Through Carbonization and Activation Processes," M.S. Thesis, Wichita State University, December, 2018 (graduated).
12. Muhammad Shoaib, "Improving Thermal Decomposition Process of Recycled Plastics for Sustainable Gas and Liquid Fuel Productions," M.S. Thesis, Wichita State University, May, 2017 (graduated).

### **Doctor of Philosophy Students**

1. Vishma Rajakaruna, "Low Dielectric Constant Composite for Aircraft for Better Signal and Communications" Ph.D. Dissertation, Wichita State University, Spring 2024 (expected).
2. Anh Pham, "Multiphase Capillary Flow Behaviors of Oil and Water through Superhydrophobic and Superoleophobic Multifunctional Porous Membranes for Effective Separation" Ph.D. Dissertation, Wichita State University, Spring 2024 (expected).
3. Balakhrisnan Subeshan, "Design and Manufacturing of 4D Additive Manufacturing Systems" Ph.D. Dissertation, Wichita State University, Spring 2024 (expected).
4. Zaara Ali, "Highly Sensitive 3D Desiccant Design and Development for Food Packaging" Ph.D. Dissertation, Wichita State University, Spring 2024 (expected).
5. Ahmed Ijaola, "Superhydrophobic Polymer Coatings for Gas and Oil Pipeline Protection," Ph.D. Dissertation, Wichita State University, December 2021 (graduated).
6. Sattar Ali, "Oil and Gas-Produced Water Treatment System for Agricultural Use in the State of Kansas," Ph.D. Dissertation, Wichita State University, May 2020 (graduated).

### **Research Associates, Postdocs, and Visiting Professors**

1. Dr. Ayse B. Sengul, Assistant Professor, "Algae Growth under Different Media and Light Frequency for Biofuel Production," Department of Mechanical Engineering, Wichita State University, July 2016-August 2017.
2. Dr. Cumhur Coskun, Assistant Professor, "Concretes Reinforced by Recycled Carbon Fibers," Department of Mechanical Engineering, Wichita State University, July 2015-March 2017.

### **SERVICES**

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Served in the department, college, and university level committees.

- Member of the College of Applied Studies Representative of Accessibility Committee, Wichita State University, 2020 - Current.

- Judge for the Wichita State Wallace Invitational Scholarships in Engineering (WISE), College of Engineering, 2016 - 2023.
- Judge for Undergraduate Research and Creative Activity Forum (URCAF), April 2022- April 2023.
- International Conference on Industry, Engineering, and Management Systems (IEMS), March 2022 and March 2023. Nanotechnology Track Chair.
- American Chemical Society (ACS) proposal evaluator February 2021 and August 2022.
- National Science and Foundation (NSF) (ECO-CBET) panel reviewer, November 18-19, 2021.
- Member of the Department Curriculum Committee, Department of Mechanical Engineering, 2019 - 2021.
- Member of the Laboratory Safety Committee, Department of Mechanical Engineering, since January 2017.
- Judge for the WSU Shocker MINDSTORMS Challenge between 4th and 8th Grade Students in Lego Competition, College of Engineering, 2016 - 2019.
- Judge for the Block Kids Regional Competition between 1<sup>st</sup> and 6<sup>th</sup> Grade Students, College of Engineering, 2016 - 2017.
- Advisor of Senior Capstone Design Projects, Department of Mechanical Engineering since 2017.

## **CERTIFICATES RECEIVED**

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- “Composite Testing” at NIAR, Wichita, KS, March 2011: Ability to operate NIAR testing equipment, measurement equipment, approvals of test reports and performing the mechanical testing (e.g., tension, bending and compression tests) and characterizations.
- “Hands-on Nanotechnology Experiences,” WSU, Wichita, KS, May 2014: Conducted several laboratory sessions including magnetic nanoparticles, ferrofluids, ceramic nanoparticles, sol-gel, electrospun nanofibers, nanocomposite spheres, metallic nanofilms, solar cells, and hydrogen fuel cells fabrication and characterization.
- “HazCom (Hazard Communication) Training,” WSU, Wichita, KS, February, 2014: Acquired strong knowledge about general laboratory safety, chemical hazards, chemical labels, safety data sheets, minimizing risk, exposure monitoring and evaluation, and waste disposal.



- “Hazwoper Training,” WSU, Wichita, KS, March, 2014: Gained knowledge about hazardous waste operations and emergency response.
- “Hazwoper Refresher Training” KS-Train, Wichita, KS, April 2015.

## **DIVERSITY, EQUITY, AND INCLUSION (DEI)**

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Broad experience in diversity, equity, and inclusion (DEI) and a willingness to work with diverse populations in a multicultural environment.

## **GRANT REVIEW PANEL**

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- ACS Petroleum Grant review panel (PRF# 62421-UNI10), March 12, 2021 (online review process).
- National Science and Foundation (NSF) (ECO-CBET) panel reviewer, November 18-19, 2021.

## **TECHNICAL SKILLS**

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- Ability to apply OSHA and NIOSH safety rules and regulations to teaching and research laboratories.
- Capability of performing testing and characterizations: UV-Vis, FTIR, nanosizer, water contact angle unit, and bomb calorimetry.
- Ability to operate laboratory equipment for research and development: optical microscopes, high-speed centrifuge, fume hood, autoclave, filters, and others.
- Capability of problem solving, working hard, learning quickly, and self-motivation.
- Strong oral, written, and team-work communication skills for applying to challenging teaching and research duties.
- Ability to transfer and apply a strong background to varying fields quickly and easily.
- Competent in manufacturing composite materials.
- Proficiency at repairing damaged fiber-reinforced composites.
- Skill in using Microsoft Word, Excel, Outlook, Microsoft Publisher, ANOVA, Lindo, and Macro programs

## **PROFESSIONAL MEMBERSHIPS**

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- American Society for Quality Engineering (ASQE) since 2012.
- Materials Research Society (MRS) since 2021.

## **EMPLOYMENT AUTHORIZATION**

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U.S. Citizen