# Dr. RAMAZAN ASMATULU

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## EDUCATION

**Ph**.**D**., Department of Materials Science and Engineering (MSE), Virginia Polytechnic Institute and State University (**Virginia Tech**), Blacksburg, VA, August 1997-March 2001 (outstanding graduate student)

**M**.**S**., Department of Mining Engineering (MSE concentration), Istanbul Technical University (**ITU**), June 1992-June 1995

**B**.**S**., Department of Mining Engineering (MSE concentration), Istanbul Technical University (**ITU**), September 1988-June 1992 (honors student)

## ACADEMIC EXPERIENCES

**Primary Academic Experiences**:

- **Boeing Global Engineering Professor**, Department of Mechanical Engineering, Wichita State University, Wichita, KS, October 2018 - present.

- **Professor**, Department of Mechanical Engineering, Wichita State University, Wichita, KS, August 2017 - present.

- **Associate Professor**, Department of Mechanical Engineering, Wichita State University, Wichita, KS, August 2012 - August 2017.

- **Assistant Professor**, Department of Mechanical Engineering, Wichita State University, Wichita, KS, August 2006 - August 2012.

**Secondary Academic Experiences, Summer Activities and Collaborations**:

- **Visiting Scholar and Collaborator**, NASA Langley Research Center, Structural Mechanics and Concepts Branch, Hampton, VA, June 2023-August 2024.

- **Visiting Professor**, Department of Materials Science and Nano Engineering, Sabanci University, Istanbul, Turkey, June 2022-August 2022.

- **Visiting Professor**, Max Planck Institute for Polymer Research, Mainz, Germany, June 2021-Septembner 2021.

- **Visiting Professor**, Department of Mechanical Engineering, Tokyo Institute of Technology, Tokyo, Japan, May 2019-August 2019.

- **Affiliated Professor**, Department of Biomedical Engineering, Wichita State University, Wichita, KS, July 2013-present.

- **Visiting Scholar and Collaborator**, Department of Aeronautics and Astronautics, Air Force Institute of Technology (AFIT), Air Force Summer Faculty Fellowship Program, Wright-Patterson, OH, May 2011-August 2011 and May 2012-August 2012.

- **Visiting Professor**, Department of Materials Science and Engineering, Massachusetts Institute of Technology (MIT), Cambridge, MA, May 2009-September 2009.

- **Visiting Professor**, Harvard School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, May 2007-September 2007.

- **Research Faculty/Postdoctoral Research Associate**, Department of Electrical Engineering, Yale University, New Haven, CT, January 2006-August 2006.

- **Postdoctoral Research Associate**, Institute of Materials Science (IMS), the University of Connecticut (UCONN), Storrs, CT, April 2005-January 2006.

- **Postdoctoral Research Associate**, Fiber and Electro-Optics Research Center, Virginia Tech, Blacksburg, VA, March 2001-April 2005 (jointly worked as **Research Scientist** with a technology company, NanoSonic, Inc., Blacksburg, VA).

- **Research Assistant**, Department of Materials Science and Engineering (jointly appointed with Department of Mining and Minerals Engineering), Virginia Tech, Blacksburg, VA, February 1997-March 2001.

- **Research and Teaching Assistant**, College of Engineering, Istanbul University, July 1993-February 1997.

# RESEARCH EXPERIENCES AND INTERESTS

My research interests mainly include "***Sustainable Manufacturing of Materials/Nanomaterials/Composites***" and "***Solid Mechanics***" fields:

## Sustainable Manufacturing of Structural Composites

Mechanical Properties of Laminated and Honeycomb Composites, Modeling and Simulation of Composites, Curing Kinetics of Composites, Electrically and Thermally Conductive Composites,

Self-Healing of Composites, Low-Impact Energy Composites, Flame-Retardant Composites, Hybrid Composites, and Thermoplastic Composites

## Mechanics of Materials / Nanomaterials

Mechanics of Materials, Nanowires, Nanofibers, Nanofilms, Nanoparticles, Nanoflakes, Nanocomposites, Nanotubes, and Nanomembranes

## Energy Materials and Systems

Nanocatalysts, Nanoemulsion-based Biofuels, Dye-Sensitized Solar Cells, Proton-Exchange Membrane (PEM) Fuel Cells, Hydrogen Production (Electrolysis and Photoelectrolysis), Composite Turbine Design and Coating, Energy Storage, Algae-Based Biofuels, and Clean Coal Technology

## Biomaterials and Properties

Mechanics of Biocomposites, Biodegradable and Biocompatible Materials, Targeted Drug Delivery Systems, Hydrogels, Scaffolding (PCL, PEEK, and UHMWPE), Dental Composites, and Layer-by-Layer (LBL) Biofilms

# TEACHING EXPRINCESES and INTERESTS

## Undergraduate Courses

Mechanics of Materials, Dynamics, Statics, Design and Manufacturing, Materials Engineering, Thermodynamics I, Renewable Energy Systems, Introduction to Nanotechnology, Nondestructive Inspection, Biomaterials, and/or Capstone Design

## Graduate Courses

Fracture Mechanics, Failure Analysis, Mechanical Properties of Materials, Nanomanufacturing, Structural Health Monitoring, Advanced Energy Systems, Composite Manufacturing and Machining, and Corrosion Science

## Online Courses

Undergraduate (Mechanics of Materials, Dynamics, Thermodynamics, Introduction to Nanotechnology, and Nondestructive Inspection) and graduate (Failure Analysis, Fracture Mechanics, Nanomanufacturing, and Structural Health Monitoring) level courses can be developed and taught online.

# PROFESSIONAL LEADERSHIP EXPERIENCES

- Editor-In-Chief, *Advanced Engineering Technology and Application*, Natural Sciences Publishing, Great Neck, NY, USA (2024 – present).

- Senator of the Department Representative, Wichita State University (2024 - 2026).

- Organizer of the 2nd International Conference on Emerging Materials and Technologies (ICEMT-2024), organized by Pittsburg State University and Wichita State University, Pittsburg, KS, March 28-29, 2024 (Hybrid).

- Graduate Coordinator of Materials Engineering Program, College of Engineering, Wichita State University, (2023 – present).

- ABET Program Evaluator - Engineering Accreditation Commission Program (Mechanical Engineering) (2022 – present).

- Journal Editorial Board of *Journal of Engineering and Applied Sciences*, Majmaah University Center for Publishing and Translation, Majmaah, KSA, (2022 – present).

- Editor and Author of Six International Books published by Elsevier and RSC (2013 - 2024).

- Science Advisor of International Maarif School Foundation for Social Innovation Projects and Faculty and Student Training Club (2022 – 2024).

- Journal Editorial Board of *Advanced Composites and Hybrid Materials*, Springer, Berlin, Germany, (2016 – present).

- Guest Editor of *Molecules* "Nanomaterials for Solar Cells" MDPI Publisher, Basel, Switzerland (2022-2024).

- Senator of the Department Representative, Wichita State University (2020 – 2022).

- Mentor and trainer of over 10 junior faculty, staff, and student success advisors, 80 undergraduate and 150 graduate students and 20 postdocs and research associates.

- Mentor of developing new "Materials Engineering" program in the College of Engineering at Wichita State University (2019 – 2021).

- Director of three laboratories (Advanced Composite Laboratory: 2013 – present, Materials Engineering Laboratory: 2006 - 2016; and Nanotechnology Laboratory: 2007 – present), Department of Mechanical Engineering, Wichita State University.

- Secretary of the Board of Education of AIS School System, Wichita, KS (2021 – 2025).

- Advisor of the Capstone Design Projects, Department of Mechanical Engineering (2013 - present).

- Track Chair and Co-Chair of the "Nanomaterials and Nanoengineering Track for the 2021 International Conference on Industry, Engineering, and Management Systems (IEMS)", Online Conference (2021-2024).

- Mentor of Wichita Blueprint for Regional Economic Growth Development Program – Materials Engineering Cluster (2015- 2016).

- Director of Water, Sanitation and Environmental Program of the Research and Development for Humane Water, a Non-Profit Organization, Derby, KS (2017 – 2021).

- Director of Wichita SAMPE Chapter (313 professional members in the Midwest), Wichita, KS (2013 - 2018).

- Organizer of Kansas Science Olympiad for high school students, Wichita, KS (2012 – 2014) (Materials Engineering Section).

- Vice Chairman of Wichita SAMPE Chapter (313 professional members in the Midwest), Wichita, KS (2012 – 2013).

## RESEARCH GRANTS AND CONTRACTS

1. **Principal Investigator**, "Investigating the Micro and Nanoscale Crack Formations of Moisture Saturated Thermoplastic Composites under Cryogenic Conditions," funded by the NASA EPSCoR PDG, June 21, 2024, total amount **$26,166** for eight months.

2. **Principal Investigator**, "Highly Robust Advanced Coating Systems on Alloy Surfaces Against the Environmental Conditions," funded by the TAI-USA Inc., August 21, 2023, total amount **$330,000** for three years.

3. **Principal Investigator**, "Manufacturing and Characterization of Optically Transparent and Mechanically Robust Laminated Films for Aerospace Industry," funded by the TAI-USA Inc., August 21, 2023, total amount **$320,000** for three years.

4. **Co-Principal Investigator**, (with PI Dr. E. Asmatulu, WSU) "Investigating the Properties of High-Performing 3D Printed Alloys with Reduced Porosity for Structural Applications," funded by the TAI-USA Inc., August 21, 2023, total amount **$350,000** for three years.

5. **Principal Investigator**, "Highly Conductive and Durable Biosensors for Wearable Health Monitoring Systems," funded by the John A. See Foundation, Wichita State University, Wichita, KS, March 15, 2023, total amount **$13,500** for one year.

6. **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.

7. **Principal Investigator**, "Hydrogel-Based Targeted Hormone Therapy for Post Cancer Treatment," funded by the Flossie E. West Charitable Trust, Wichita State University, Wichita, KS, March 1, 2023, total amount **$36,280** for one year.

8. **Principal Investigator**, "Improving Flame Retardancy of Fiber Reinforced Composites via Modified Fire-Resistant Resins and Metallic Surface Film Coatings," funded by the TAI-USA Inc., September 30, 2021, total amount **$125,000** for 18 months.

9. **Co-Principal Investigator** (with PI Mr. R. Sack, WSU), "Ultrasonic Nanofiber Guidance," funded by the Kansas Innovation and Technology Enterprise (KITE), Topeka, KS, September 30, 2021, total amount **$23,000** for 18 months.

10. **Co-Principal Investigator** (with PI Dr. R. Amick, WSU), "Fast and Affordable Phenylalanine Detection System via Highly Sensitive and Porous Electrospun Nanofibers," funded by the John A. See Foundation, Wichita State University, Wichita, KS, February 19, 2018, total amount **$10,440** for one year.

11. **Principal Investigator**, "Re-Mineralizing Tooth Cavities through Antibacterial Nanocomposite Fibers," funded by Wichita Medical Research and Education Foundation (WMREF)/Collaborative Investigator Initiated Research (CIIR), November 30, 2017, total amount **$15,000** for one year.

12. **Principal Investigator**, "Highly Durable Superhydrophobic Coatings for Deicing of Aircraft Skins in Harsh Weather Conditions," funded by the WSU-NCAT/KART, November 13, 2017, total amount **$10,304** for six months.

13. **Co-Principal Investigator** (with PI Dr. S.Y. Yang, WSU/KU), "IL-21 Gene-Tethering Nanofiber Mesh for Osteosarcoma," funded by WMREF/CIIR, November 3, 2016, total amount **$15,000** for one year.

14. **Co-Principal Investigator**, (with PI Dr. I. Alarifi, WSU), "Enhancing the Surface Conductivity of Fiber-Reinforced Composites via Electrospun PAN Nanofibers Incorporated with CNT and Graphene Inclusions for Structural Health Monitoring," funded by Fibers National Factory, LLC, September 14, 2015, total amount **$25,617** for one year.

15. **Co-Principal Investigator** (with PI Dr. M. M. Rahman, WSU), "Development and Characterization of Emulsified Fuel-Water Mixtures for Improved Fuel Efficiency and Lower Carbon Footprint in Internal Combustion Engines," funded by Fuel Technology, LLC, July 15, 2015, total amount **$392,001** for two years.

16. **Co-Principal Investigator** (with PI Dr. K. Cluff, WSU), "Optimization of Nanoparticle-Embedded Scaffolds to Improve Neural Cell Remyelination through Raman Micro-spectroscopy," funded by WSU Multidisciplinary Research Project (MURPA), January 2, 2015, total amount **$7,500** for three months.

17. **Principal Investigator**, "Electrospun $SrTiO_3$ Nanofibers Incorporated with NiOx Nanoparticles for Improved Water Splitting Efficiency" (part of Climate Change and Energy: Basic Science, Impacts and Mitigation) funded by NSF EPSCoR, Grant/Fund No: R51243/700333, October 15, 2014, total amount **$68,228** for two years.

18. **Principal Investigator**, "Surface Characterizations of Polymeric Battery Membranes," funded by Li's Group/NSF EPSCoR Collaboration, the College of Engineering, October 7, 2014, total amount **$5,115** for six months.

19. **Principal Investigator**, "Pyrocarbonization of CNT Yarns for Enhanced Physical Properties," funded by AFRL, Grant/Fund No: R51191, July 16, 2014, total amount **$10,000** for six months.

20. **Principal Investigator**, "Size-Dependent Nanoparticles Intervention with Breast and Prostate Cancer Cells" funded by John A. See Foundation, Wichita State University, Wichita, KS, May 6, 2014, total amount **$10,000** for one year.

21. **Principal Investigator**, "Pyrocarbonization and UV Exposure of Carbon Nanotube Yarns," funded by the AFRL, Grant/Fund No: R51191, March 31, 2014, total amount **$9,000** for six months.

22. **Principal Investigator**, "Characterization of Aluminum Alloy Microstructures under a Corrosive Environment and Performance Analysis," funded by AFRL, Grant/Fund No: R51191, August 1, 2013, total amount **$6,000** for three months.

23. **Co-Principal Investigator** (with PI Dr. S.Y. Yang, WSU), "IL-21 Gene Tethering Nanofiber Mesh for Osteosarcoma," funded by WSU Flossie E. West Foundation, June 1, 2013, total amount **$30,000** for one year.

24. **Principal Investigator**, "Technology Development and Business Counseling Grant Proposal—Phase 2," funded by WSU Center for Innovation and Enterprise Engagement/ Nitride Solutions, Inc., January 15, 2013, total amount **$42,000** for one year.

25. **Principal Investigator**, "Microwave Heating for Wax Removal," funded by Spirit AeroSystems, Inc., PO 4400366361, November 1, 2012, total amount **$2,000** for three months.

26. **Principal Investigator**, "Functionalization of CNT Wires for Improved Electrical Conductivity and Mechanical Strengths," funded by AFRL, Grant/Fund No: R51191, September 15, 2012, total amount **$21,000** for one year.

27. **Co-Principal Investigator** (with PI Dr. A. Mahapatro, WSU), "Metallic Scaffolds for Bone Tissue Engineering," funded by College of Engineering, Strategic Engineering Research Fellowship Award, June 1, 2012, total amount **$20,000** for six months.

28. **Principal Investigator**, "Targeting Drug Loaded Nanocomposite Spheres to Breast Cancer by Internal and External Forces," funded by WSU Flossie E. West Foundation, June 1, 2012, total amount **$24,000** for one year.

29. **Principal Investigator**, "Nanocomposite Spheres for Self-healing of Composite Wind Turbine Blades," Faculty Fellowship Award funded by the WSU Center for Innovation and Enterprise Engagement, May 1, 2012, total amount **$20,000** for one year.

30. **Principal Investigator**, "Enhancing the Freshmen Retention and Success Rates at WSU through Hands-on Nanotechnology Education," funded by WSU Faculty Senate Planning and Budget Committee and Office of the Provost, April 1, 2012, total amount **$20,000** for one year.

31. **Principal Investigator**, "Prediction and Evaluation of the Effects of Defects in Composite Structures—Phase 2," funded by Sprit AeroSystems, Inc., RFP 4-1452-0311-10, March 15, 2012, total amount **$50,000** for one year.

32. **Principal Investigator**, "Technology Development and Business Counseling Grant Proposal," funded by WSU Center for Innovation and Enterprise Engagement/Nitride Solutions, Inc., March 15, 2012, total amount **$44,840** for one year.

33. **Principal Investigator,** "GTA Support for Materials Engineering Courses," funded by College of Engineering, Wichita State University, January 2, 2012, total amount **$8,000** for four months.

34. **Principal Investigator**, "Designing and Manufacturing of an Angle Bent Mold for the Fabrications of Fiber-Reinforced Composites," funded by Sprit AeroSystems, Inc., RFP 4-1452-0311-10-2, October 2011, total amount **$21,084** for three months.

35. **Principal Investigator**, "Prediction and Evaluation of the Effects of Defects in Composite Structures," funded by Sprit AeroSystems, Inc., RFP 4-1452-0311-10, April 2011, total amount **$50,000** for one year.

36. **Co-Principal Investigator** (with PI Dr. P. Rillema, WSU), "Nanotechnology for Renewable Energy" funded by NSF EPSCoR, Grant No: NSF65506/KAN69284, January 2010, total amount **$705,380** for five years.

37. **Co-Principal Investigator** (with PI Dr. J. Twomey, WSU), "Wind Energy and Sustainable Energy Solutions," funded by DOE, Grant No: DE-EE0004167, July 2010, total amount **$1,500,000** for three years.

38. **Co-Principal Investigator** (with PI Dr. J. Twomey, WSU), "Sustainable Energy Solutions," funded by DOE, Grant No: DE-FG36-08GO88149, July 2008, total amount **$1,000,000** for three years.

39. **Principal Investigator**, "Fundamental Studies on Degradation of Nanocomposites under Harsh Environments," funded by WSU MURPA, January 2008, total amount **$5,000** for three months.

40. **Principal Investigator**, "Aircraft Interior Noise Reduction by Electrospun Polymeric Nanofibers," funded by Aircraft Design and Manufacturing Research Center (ADMRC), Grant No: 37, January 2007, total amount $**100,000** for one year.

41. **Co-Principal Investigator** (with PI Dr. B. Minaei, WSU), "Equipment for Standardized Manufacturing and Characterization of Nanocomposites," funded by College of Engineering, Wichita State University, April 2007, total amount **$120,000** for one year.

42. **Co-Principal Investigator** (with PI Dr. T.S. Ravigururajan, WSU), "Wet and Dry Etching Laboratory Development," funded by College of Engineering, Wichita State University, April 2007, total amount **$375,000** for one year.

43. **Co-Principal Investigator** (with PI Dr. B. Minaei, WSU), "Equipment for Nanocomposite and Biocomposite Laboratory," funded by College of Engineering, Wichita State University, April 2007, total amount **$150,000** for one year.

44. **Principal Investigator**, "An Equipment Proposal for the Nanotechnology Laboratory Development," funded by College of Engineering, Wichita State University, April 2007, total amount **$232,000** for one year.

45. **Co-Principal Investigator** (with PI Dr. K. Soschinske, WSU), "An Acoustic Laboratory Development for Aircraft Interior Noise Reduction," funded by College of Engineering, Wichita State University, April 2007, total amount **$135,000** for one year.

46. **Principal Investigator**, "Synthesis and Characterization of Nanocomposite Coatings for Aging Aircrafts," funded by WSU Undergraduate Research and Creative Activity Forum (URCAF), January 2007, total amount **$4,500** for five months.

47. **Co-Principal Investigator** (with PI Dr. R.H. Yoon, Virginia Tech), "Improving Coarse Particle Flotation," funded by DOE, Grant No: DE-FC26-01NT41091, September 2001, total amount **$277,740** for four years.

## HONORS AND AWARDS

1. **First Place Poster Presentation Winner**, "Sustainable Freshwater Harvesting from Atmosphere through Electrospun Superhydrophobic Polyacrylonitrile Nanocomposite Fibers," 17th Annual Capitol Graduate Research Summit (M. N. Uddin, F. J. Desai, and **R. Asmatulu**), Topeka, KS, February 26, 2020.

2. **Boeing Global Engineering Professor**, College of Engineering, Wichita State University, October 8, 2018.

3. **2017 WSU Ventures Innovation Award**, Wichita State University, October 24, 2017.

4. **Academy for Effective Teaching (AET) Award**, Wichita State University, May 5, 2017 (most prestigious award at WSU).

5. **Excellence in Research Award**, Wichita State University, May 5, 2017 (most prestigious research award at WSU).

6. **Shocker Composites First Dollar Award, WSU Ventures**, Wichita State University, November 29, 2016.

7. **Dwane and Velma Wallace 2015 Experience-Based Learning Award**, College of Engineering, Wichita State University, May 9, 2015.

8. **Polished Professor** (voted by more than 800 undergraduate and graduate students), Department of Mechanical Engineering, Wichita State University, 2015.

9. **Defense Science Study Group (DSSG) Award**, nationwide nomination by Wichita State University, April 29, 2015, Alexandria, VA.

10. **Academy for Effective Teaching Award Finalist**, Wichita State University, April 23, 2015 (most prestigious award at WSU).

11. **Young Faculty Scholar Award of the University** for Academic Year 2013-14, Wichita State University, Wichita, KS, May 2014 (most prestigious award at WSU for a young faculty member).

12. **Coleman Fellows Program Award**, Center for Entrepreneurship, Wichita State University, Wichita, KS, May 2014.

13. **John A**. **See Research Award**, "Size Dependent Nanoparticles Intervention with Breast and Prostate Cancer Cells," Wichita State University, Wichita, KS, May 2014.

14. **Academy for Effective Teaching Award Finalist**, Wichita State University, April 3, 2014 (most prestigious award of WSU).

15. **Second Place Poster Presentation Winner**, "Evaluating Nanosafety of Nanomaterials by In-Vitro Cytotoxicity Tests on Fibroblast Cells," International Society for the Advancement of Material and Process Engineering (SAMPE) Technical Conference (M. Srikanth, H.E. Misak, and **R**. **Asmatulu**), Wichita, KS, October 21-24, 2013.

16. **First Place Poster Presentation Winner**, "Characterization of Oligodendrocyte Progenitor Cell Differentiation on Co-Electrospun Nanofibers of PCL with Gelatin," Ninth Graduate Research and Scholarly Projects (GRASP) Symposium (B. Shrestha, M. Ceylan, A. Moon, **R**. **Asmatulu,** and L. Yao), Wichita State University, Wichita, KS, May 8, 2013.

17. **Third Place Poster Presentation Winner**, "Evaluating Nanosafety by In-Vitro Cytotoxicity Tests on Fibroblast Cells," Ninth Graduate Research and Scholarly Projects

(GRASP) Symposium (M. Srikanth, H. Misak, S.Y. Yang, and **R**. **Asmatulu**), Wichita State University, Wichita, KS, May 8, 2013.

18. **Student Government Association for the Exceptional Education Award**, Wichita State University, April 11, 2013.

19. **Academy for Effective Teaching Award Finalist**, Wichita State University, April 4, 2013 (most prestigious award at WSU).

20. **Best Presentation Award**, "Characterization of Oligodendrocyte Progenitor Cell Differentiation on Co-Electrospun Nanofibers of PCL with Gelatin," K-INBRE 2013 Syemposium (B. Shrestha, M. Ceylan, A. Moon, H. Wang, Q. Lu, **R**. **Asmatulu**, and L. Yao), Mantattan, KS, January 18, 2013.

21. **Second Place Poster Presentation Winner**, "Recent Progress in Self-Healing Process of Composite Wind Turbine Blades," International SAMPE Technical Conference, Student Poster Competition (V. R. Patlolla and **R**. **Asmatulu**), Charleston, NC, October 22-25, 2012.

22. **Air Force Summer Faculty Fellowship Program (SFFP**) **Award**, Dayton, OH, May 2012.

23. **Faculty Fellowship Award**, "Nanocomposite Spheres for Self-Healing of Composite Wind Turbine Blades," WSU Center for Innovation and Enterprise Engagement, May 1, 2012.

24. **College of Engineering Excellence in Research Award**, Wichita State University, May 4, 2012 (most prestigious research award of the college).

25. **Dwane and Velma Wallace 2012 Outstanding Educator Award**, College of Engineering, Wichita State University, May 4, 2012 (most prestigious teaching award of the college).

26. **First Place Poster Presentation Winner**, "New Progress in Self-Healing Technology of Composite Wind Turbine Blades," of the Graduate Research and Scholarly Projects Symposium at Wichita State University (V. R. Patlolla, and **R**. **Asmatulu**), Wichita, KS, April 18, 2012.

27. **First Place Poster Presentation Winner**, "The Benefits of Magnetic/Protein Targeted Drug Delivery in Treating Skin Cancer In-Vivo," Ninth Annual Capitol Graduate Research Summit (H. E. Misak and **R**. **Asmatulu**), Topeka, KS, February 16, 2012.

28. **Air Force Summer Faculty Fellowship Program (SFFP**) **Award**, Dayton, OH, May 2011.

29. **First Place Presentation Winner**, "Albumin Associated Magnetic Drug Delivery Systems for Cancer Therapy," 2011 Nanotechnology Entrepreneurship Forum, Pittsburg State University (H. E. Misak, F. Abedin, and **R**. **Asmatulu**), Pittsburg, KS, April 2011.

30. **Polished Professor** (voted by more than 1,500 undergraduate and graduate students), College of Engineering, Wichita State University (WSU), 2010.

31. **First Place Poster Presentation Winner**, "Characterization of Drug-Carrying Nanocomposite Spheres for Targeted Drug Delivery," the winner of the Graduate Research and Scholarly Projects Symposium at Wichita State University (J. S. Gopu, H.E. Misak, and **R**. **Asmatulu**), Wichita, KS, April 2010.

32. **First Place Poster Presentation Winner**, "Synthesis of Highly Ordered Titanium Dioxide Nanotubes for Solar Cell Applications," the winner of the 7th Annual Capitol Graduate Research Summit (S. I. Khan and **R**. **Asmatulu**), Topeka, KS, March 2010.

33. **Second Place Poster Presentation Winner**, "Improving the Wind Power Blade Life Duration Using Advanced Coating Materials," of the 2010 Wichita Regional Energy and Sustainability Conference (**R**. **Asmatulu** and Z. Bangwei), Wichita, KS, January 2010.

34. **Second Place Poster Presentation Winner**, "Increasing the Coating Resistance against UV Degradation and Corrosion Using Nanocomposite Coating," the winner of the 2010 Wichita Regional Energy and Sustainability Conference (**R**. **Asmatulu**, G. A. Mahmud, F. Abedin, and M. R. Anwar), Wichita, KS, January 2010.

35. **Best in Show Award and First Place Presentation Award in the College of Engineering**, "Developing a Targeted Drug Delivery System for Rheumatoid Arthritis," Senior Design Project, Wichita State University, May 2009 (B. Copper mentored by **R**. **Asmatulu** and H. E. Misak).

36. **Polished Professor** (voted by more than 400 undergraduate and graduate students), Department of Mechanical Engineering, Wichita State University, 2008.

37. **Polished Professor** (voted by more than 400 undergraduate and graduate students), Department of Mechanical Engineering, Wichita State University, 2007.

38. **Outstanding Graduate Student**, Department of Materials Science and Engineering (jointly appointed with the Department of Mining and Minerals Engineering), Virginia Tech, 2001.

39. **Scientific and Technological Research Council of Turkey (TUBITAK) Scholarship** for a Study at Virginia Tech, 1997.

40. **Honors Student** (BS), Department of Mining Engineering, Istanbul Technical University, June 1992.

# PUBLICATIONS

## Journal Articles Published

1. Gattu, D.K.R., Kaybal, H.B., and **Asmatulu, R**. "Fast and Affordable Detection of PKU Disease using Iron (III) Chloride-Based Solutions and Porous PCL Biosensors at Higher Prediction Rates," *Emergent Materials*, 2024 (in press).

2. Duzcukoglu, H., Kaybal. H.B., and **Asmatulu, R**. "Enhancing the Coating Durability and Electrical Stability of Fiber Composites with SPEEK/PEDOT:PSS Permanent Coatings: A Novel Approach," *Polymer Degradation and Stability*, Vol. 228, pp. 110908, 2024.

3. Murad, M.S., Asmatulu, E., Nuraje, A., Er, O., Gursoy, M., Bahceci, E., Bakir, M., and **Asmatulu, R**. "Improved Mechanical and Fire-Retardant Properties of Fiber-Reinforced Composites Manufactured via Modified Resins and Metallic Thin Films," *International Journal of Advanced Manufacturing Technology*, Vol. 133, pp. 4715-4730, 2024.

4. Gurung, D., Murad, M.S., Asmatulu, E., Gursoy, M., Bahceci, E., Bakir, M., and **Asmatulu, R**. "Enhancing the Thermal and Mechanical Properties of Sulfonated PEEK Fiber Composites with Reduced Smoke Density and Toxicity," *Journal of Applied Polymer Science*, Vol. 141(35), pp. e55886, 2024.

5. Jurak, S., Subeshan, B., and **Asmatulu, R**. "Superhydrophobic-Based Corrosion Mitigation Systems and Their Effectiveness on Dissimilar and Similar Friction Stir Spot-Weld Joint Aerospace Alloys," *Next Materials*, Vol. 5, pp. 100269, 2024.

6. Patlolla, V.R., Uddin, M.D., and **Asmatulu, R**. "Effects of Porosity and Edge Reinforcements on Interlaminar Tensile Strength of Curved-Beam Carbon Fiber Composites," *Journal of Composites Materials*), Vol. 58, 2024 (https://doi.org/10.1177/0021998324126405).

7. Parten, C., Subeshan, B., and **Asmatulu, R**. "Highly Conductive and Durable Nanocomposite Hard Coatings of Thermoplastic Carbon Fiber Composites against Lightning Strikes," *Discover Nano*, Vol. 19, 2024 (10.1186/s11671-024-04041-5).

8. Murali, T.K.S., Murad, M.S., Bakir, M., and **Asmatulu, R**. "PAN-Based Fiber Reinforced Carbon-Carbon Composites for Improved Fire Retardancy and Thermal and Electrical Conductivities for Harsh Environments," *Journal of Composite Materials*, Vol. 58, 2024 (https://doi.org/10.1177/002199832412466).

9. Subeshan, B., Asmatulu, E., Ma, A.T., Bakir, M., and **Asmatulu, R**. "Investigating Mechanical and Surface Roughness Properties of 3D Printed Titanium Alloys Along with Stress-Relieving Heat Treatments," *The International Journal of Advanced Manufacturing Technology*, Vol. 129(9), pp. 4939-4960, 2023.

10. Desai, F.J., Uddin, M.N., Rahman, M.M., and **Asmatulu, R**. "A Critical Review on Improving Hydrogen Storage Properties of Metal Hydride via Nanostructuring and Integrating Carbonaceous Materials," *International Journal of Hydrogen Energy*, Vol. 48, pp. 29256-29294, 2023.

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29. **Asmatulu, R**. "Enhanced Technological Properties of Fiber Reinforced Composites and CNT Wires," Yildirim Beyazit University, Ankara, Turkey, April 8, 2021.

30. **Asmatulu, R**. "Tailoring the Properties of Fiber Reinforced Composites and CNT Wires for Aerospace Industries," Samsun University, Samsun, Turkey, March 11, 2021.

31. Uddin, M.N., Desai, F.J., Rahman, M.M., and **Asmatulu, R**. "Electrospun Nanocomposite Fibers of Recycled Polystyrene Foams: An Efficient Atmospheric Fog Water Generator," 16th Graduate Research and Scholarly Projects (GRASP) Symposium, Wichita State University, Wichita, KS, May 1, 2020 (extended abstract published).

32. Uddin, M.N., Desai, F., and **Asmatulu, R**. "Sustainable Freshwater Harvesting from Atmosphere through Electrospun Superhydrophobic Polyacrylonitrile Nanocomposite Fibers," 17th Annual Capitol Graduate Research Summit (CGRS), Topeka, KS, February 26, 2020.

33. Brauning, K.A., Kunza, A., Rahman, M.M. and **Asmatulu, R**. "Edge Treatments of Machine Damaged Fiber Reinforced Composites," 2019 TechConnect World Innovation Conference and Exposition, National Harbor, MD, October 8-10, 2019 (abstract published).

34. Gong, X., Jiang, J., Ceylan, M., Dart, B., **Asmatulu, R**., and Yang, S.Y. "IL-21 Vector-tethering Nanofibers for Cancer Treatment Including Osteosarcoma," Society for Biomaterials, 2019 Annual Meeting and Exposition, Seattle, WA, April 3-6, 2019 (extended abstract published).

35. **Asmatulu, R**. "Progress in Physical Properties of CNT Wires and Fiber Reinforced Composites," Tokyo Institute of Technology, Tokyo, Japan, July 23, 2019.

36. Kunza, A., and **Asmatulu, R**. "Nano-Engineered Composites with Enhanced Mechanical Properties," 15th GRASP Symposium, Wichita State University, Wichita, KS, April 26, 2019 (extended abstract published).

37. Miller, L., Khan, Z., Rahman, M.M., and **Asmatulu, R**. "Employing 3D Printing for Low-Cost Permanent Dental Repairs," 2019 Industrial Engineering and Management Systems (IEMS) Conference, Clearwater Beach, FL, March 17-19, 2019 (extended abstract published).

38. **Asmatulu, R**. "Physical Properties of Fiber Reinforced Composites Incorporated with Graphene Nanoflakes," Wichita State University, Wichita, KS, October 5, 2018.

39. **Asmatulu, R**. "Engineering Education for Future Generation," Humane Water Educational Seminar, Wichita, KS, April 28, 2018.

40. Jurak, E., Jurak, S., and **Asmatulu, R**. "Method of Cleaning Water through Addressing Nitrogen Contributions to Water Sources," 14th GRASP Symposium, Wichita State University, Wichita, KS, April 27, 2018 (extended abstract published).

41. Jurak, S., Jurak, E., and **Asmatulu, R**. "Designing and Evaluating of Superhydrophobic Coating Systems for Corrosion Mitigation of Aluminum Alloys," 14th GRASP Symposium, Wichita State University, Wichita, KS, April 27, 2018 (extended abstract published).

42. **Asmatulu, R**. "Latest Developments in Physical Properties of CNT Wires and Fiber Reinforced Composites," Department of Mechanical Engineering, University of Houston, Houston, TX, March 21, 2018.

43. Bollavaram, P. K., Rahman, M.M., and **Asmatulu, R**. "Lightning Strike Protection and EMI Shielding of Fiber Reinforced Composite Aircraft via Goal and Silver Nanofilms," 2018 Pacific Operational Science & Technology Conference, Honolulu, HI, March 5-9, 2018.

44. Uddin, M.N., Rahman, M.M., and **Asmatulu, R**. "Graphene-Based Nanomembranes for Waste Water Treatment and Desalination," 2018 Pacific Operational Science & Technology Conference, Honolulu, HI, March 5-9, 2018.

45. **Asmatulu, R**. "My Teaching Experiences and Styles at WSU," Academy for Effective Teaching (AET) Seminar Series of WSU, Wichita, KS, March 1, 2018.

46. Jurak, E., Jurak, S., and **Asmatulu, R**. "Proposed Method for Clean Water by Addressing Nitrogen Contribution to Surface Water Contaminations," 15th Annual Capitol Graduate Research Summit, Topeka, KS, February 2016, 2018.

47. Tanzim, F.S., and **Asmatulu, R**. "Enhancing Desalination of Sea Water with the Solar Distillation Process," International Humane Water Conference, Wichita, KS, October 28, 2017.

48. Uddin, M.N., and **Asmatulu, R**. "Graphene-Oxide Thin Film: The Next Generation Membrane for Water Purification," International Humane Water Conference, Wichita, KS, October 28, 2017.

49. **Asmatulu, R**. "Recent Progress in Various Properties of CNT Wires and Fiber Reinforced Composites," Department of Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC, October 28, 2016.

50. Patlolla, V.R., and **Asmatulu, R**. "Reinforcing the Interlaminate Tensile Strengths of Curved Laminate Composites," Wichita SAMPE Chapter Meeting, Wichita, KS, October 25, 2016.

51. Usta, A., and **Asmatulu, R**. "Magnetic Nanocomposite Drug Delivery Systems," Healthcare Innovation Summit, Wichita, KS, June 1, 2016.

52. Usta, A., and **Asmatulu, R**. "Synthesis and Analysis of Electrically Sensitive Hydrogels for Advanced Drug Delivery Systems," 12th GRASP Symposium, Wichita State University, Wichita, KS, April 29, 2016 (extended abstract published).

53. Alharbi, A., Alarifi, I.M., and **Asmatulu, R**. "Highly Hydrophilic Electrospun Polyacrylonitrile/Polyvinypyrrolidone Nanofibers Incorporated with Gentamicin as Filter Mediums for Drinking and Wastewater Treatment," 12th GRASP Symposium, Wichita State University, Wichita, KS, April 29, 2016 (extended abstract published).

54. Alarifi, I., Alharbi, A., and **Asmatulu, R**. "Fabrication and Characterization of Carbonized Polyacrylonitrile Nanofibers for Composite Aircraft and Wind Turbine Manufacturing,"

12th GRASP Symposium, Wichita State University, Wichita, KS, April 29, 2016 (extended abstract published).

55. Tran, T.V., Usta, A., and **Asmatulu, R**. "Multifunctional Protective Nanocoatings of Modified Graphene and Boron Nitride on Plastic Surfaces," 12th GRASP Symposium, Wichita State University, Wichita, KS, April 29, 2016 (extended abstract published).

56. **Asmatulu, R**. "Nanotechnology for the Future Engineers," Department of Mechanical Engineering, Kansas State Polytechnic, Kansas State University, Salina, KS, April 22, 2016.

57. **Asmatulu, R**. "Recent Developments in Physical Properties of CNT Wires and Fiber-reinforced Composites," Department of Mechanical and Aerospace Engineering, West Virginia University, Morgentown, WV, April 19, 2016.

58. Saeednia, L., Yao, L., and **Asmatulu, R**. "Potential of Injectable and Thermosensitive Chitosan-Carbon Nanotube Hydrogels for Sustained Delivery of Methotrexate," The 251st ACS National Meeting and Exposition, San Diego, CA, March 13-17, 2016.

59. **Asmatulu, R**. "Advancements in Manufacturing of Fiber Reinforced Composites for Aircraft and Wind Turbine Industries," Wichita SAMPE Chapter Meeting, Wichita, KS, December 1, 2015.

60. Amarasekara, A., and **Asmatulu, R**. "Converting Naturally Grown Algae Biomass into Activated Carbon via Briquetting and Carbonization Processes," 2015 ASME International Mechanical Engineering Congress and Exposition, Houston, TX, November 13-19, 2015.

61. Shinde, M.A., and **Asmatulu, R**. "Integrating $C_{60}$ Nanoparticles into $TiO_2$ Nanofibers via Electrospinning Process for Enhanced Energy Conversion Efficiencies," 2015 ASME International Mechanical Engineering Congress and Exposition, Houston, TX, November 13-19, 2015.

62. Alharbi, A., Alarifi, I.M., Khan, W.S., and **Asmatulu, R**. "Synthesis and Analysis of Electrospun $SrTiO_3$ Nanofibers with NiOx Nanoparticle Shells as Photocatalysts for Water Splitting," 23rd World Forum on Advanced Materials (PolyChar 23), Lincoln, NE, May 11-15, 2015.

63. Shinde, M.A., Alharbi, A., Alarifi, I.M., and **Asmatulu, R**. "Integrating $C_{60}$ Nanoparticles into $TiO_2$ Nanofibers via Electrospinning Process for Enhanced Energy Conversion Efficiencies," 23rd World Forum on Advanced Materials (PolyChar 23), Lincoln, NE, May 11-15, 2015.

64. Alarifi, I.M., Alharbi, A., and **Asmatulu, R**. "Properties of Carbonized PAN Nanofibers Cohesively Attached to Surface of Carbon Fiber Reinforced Composites," 23rd World Forum on Advanced Materials (PolyChar 23), Lincoln, NE, May 11-15, 2015.

65. Mahat, K.B., Alarifi, I.M., Alharbi, A., and **Asmatulu, R**. "Effects of UV Exposure on Physical Properties of Carbon Fiber/PPS Thermoplastic Composites," 23rd World Forum on Advanced Materials (PolyChar 23), Lincoln, NE, May 11-15, 2015.

66. Saeednia, L., Li, Y., and **Asmatulu, R**. "Injectable Cross-Linked Chitosan Hydrogel for Controlled Drug Release Applications," 11th GRASP Symposium, Wichita State University, Wichita, KS, May 3, 2015 (extended abstract published).

67. Usta, A., Nair, R., and **Asmatulu, R**. "Surface Functionalization of ZnO Nanoparticles for the Cytotoxicity of Cancer Cells," 23rd Annual Research Forum, Wichita, KS, April 29, 2015.

68. Srikanth, M., Li, Y., and **Asmatulu, R**. "Role of Electrospun Artificial Scaffolds to Induce Nerve Tissue Growth," 23rd Annual Research Forum, Wichita, KS, April 29, 2015.

69. Saeednia, L., Li, Y., and **Asmatulu, R**. "Injectable Chitosan-Based Hydrogel for Breast Cancer Treatment," 23rd Annual Research Forum, Wichita, KS, April 29, 2015.

70. Becker, R., Srikanth, M., **Asmatulu, R**., and Cluff, K. "Optimization of Nanoparticle-Embedded Scaffolds to Improve Neural Cell Remyelination through Raman Micro-Spectroscopy," URCAF, Wichita State University, Wichita, KS, April 7, 2015.

71. **Asmatulu, R**. "CNT Wires, Properties and Future Industrial Applications," Wichita ASME Chapter Meeting, Wichita, KS, March 24, 2015.

72. **Asmatulu, R**. "Recent Progress on Magnetic Targeted Drug Delivery Systems," invited talk by Department of Chemistry, Wichita State University, Wichita, KS, March 11, 2015.

73. **Asmatulu, R**. "Nanotechnology and Nanomaterials," invited talk by Osmaniye Korkutata University, Osmaniye, Turkey, December 23, 2014.

74. **Asmatulu, R**. "Recent Progress on Mechanical Properties of CNT Wires and Fiber-reinforced Composites," invited talk by Department of Mechanical and Nuclear Engineering, Kansas State University, Manhattan, KS, October 21, 2014.

75. Saeednia, L., Mehraein, H., Abedin, F., Cluff, K., and **Asmatulu, R**. "Simulation and Experimental Analysis of Drug Release Rates from Magnetic Nanocomposite Spheres," COMSOL Conference, Boston, MA, October 8-10, 2014.

76. Saeednia, L., Mehraein, H., **Asmatulu, R**. and Cluff, K. "Modeling of Hydrogel-Based Controlled Drug Delivery System for Breast Cancer Treatment," COMSOL Conference, Boston, MA, October 8-10, 2014.

77. **Asmatulu, R**. and Patlolla, V.R. "Recent Progress in Composite and Corrosion Technologies for Aircraft Industry," Wichita SAMPE Chapter Meeting, Wichita, KS, September 23, 2014.

78. Coskun, T., and **Asmatulu, R**. "Effects of Infrared Lights on Reduction of Graphene Oxide Nanoflakes for High Storage Supercapacitor Fabrications," 10th GRASP Symposium, Wichita State University, Wichita, KS, April 25, 2014 (extended abstract published).

79. Jabbarnia, A., Ghazinezami, A., and **Asmatulu, R**. "Electrospun Nanocomposite Membranes Incorporated with PVdF/PVP and Carbon Blacks for Supercapacitor Applications," 10th GRASP Symposium, Wichita State University, Wichita, KS, April 25, 2014 (extended abstract published).

80. Ye, Z., Faisal, M.S.S., Chen, Z. and **Asmatulu, R**. "Artificial Muscles of Dielectric Elastomers Attached to Artificial Tendons of Functionalized Carbon Fibers," 10th GRASP Symposium, Wichita State University, Wichita, KS, April 25, 2014 (extended abstract published).

81. Jiang, J., Ceylan, M., Wooley, P.H., **Asmatulu, R**., and Yang, S.Y. "Poly-ε-caprolactone (PCL) Electrospun Nanofiber as a Gene Delivery Tool," 60th Annual Meeting of the Orthopedic Research Society, New Orleans, LA, March 15-18, 2014 (extended abstract published).

82. Srikanth, M., Misak, H., and **Asmatulu, R**. "Evaluating Nanosafety of Nanomaterials by In-vitro Cytotoxicity Tests on Fibroblast Cells," 11th Annual Capitol Graduate Research Summit, Topeka, KS, February 13, 2014.

83. Husain, M., **Asmatulu, R**., Asaduzzaman, A., Usta, A., and Faisal, M.S.S. "Invention of Nanotechnology Based Arsenic Treatment and Pathogen Removal System," Seminar for Worldwide Danger of Arsenic Poisoning in Water and Sustainable Solutions, Wichita, KS, December 7, 2013.

84. Djam, K.H., Dirks, J., Khan, S.I., and **Asmatulu, R**. "Fabrication of Larger Diameter $TiO_2$ Nanotubes during the Electrochemical Anodization," 2013 ASME International Mechanical Engineering Congress and Exposition, San Diego, CA, November 15-21, 2013.

85. Jabbarnia, A., Coskun, T., Ghazinezami, A., and **Asmatulu, R**. "Physical Properties of Electrospun Nanofiber Separators for Graphene-Based Supercapacitors," 2013 ASME International Mechanical Engineering Congress and Exposition, San Diego, CA, November 15-21, 2013.

86. 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.

87. Srikanth, M., Misak, H.E., and **Asmatulu, R**. "Evaluating Nanosafety of Nanomaterials by In-vitro Cytotoxicity Tests on Fibroblast Cells," SAMPE Fall Technical Conference, Wichita, KS, October 21-24, 2013 (**Second Place Poster Presentation Winner**).

88. **Asmatulu, R**. "Electrospun Nanocomposite Nanofibers for Renewable Energy Systems," NSF EPSCoR Kansas Center for Solar Energy Research's Annual Program Meeting, Lawrence, KS, October 7-8, 2013.

89. Srikanth, M., Misak, H., Yang, S.Y., and **Asmatulu, R**. "Evaluating Nanosafety by In-Vitro Cytotoxicity Tests on Fibroblast Cells," 9th GRASP Symposium, Wichita State University, Wichita, KS, May 8, 2013 (extended abstract published) (**Third Place Poster Presentation Winner**).

90. Shrestha, B., Ceylan, M., Moon, A., Yao, Li., and **Asmatulu, R**. "Characterization of Oligodendrocyte Progenitor Cell Differentiation on Co-Electrospun Nanofibers of PCL with Gelatin," 9th GRASP Symposium, Wichita State University, Wichita, KS, May 8, 2013 (extended abstract published) (**First Place Poster Presentation Winner**).

91. Ghazinezami, A., Jabbarnia, A., and **Asmatulu, R**. "Fire Retardancy of Nanocomposites Incorporated with Graphene and Nanoclay Inclusions," 9th GRASP Symposium, Wichita State University, Wichita, KS, May 8, 2013 (extended abstract published).

92. Ceylan, M., Jiang, J., Yang, S.Y., and **Asmatulu, R**. "Gene Delivery with PCL Nanofiber in Vitro," 9th GRASP Symposium, Wichita State University, Wichita, KS, May 8, 2013 (extended abstract published).

93. Nageshkar, V.V., Jurak, E., Srikanth, M., and **Asmatulu, R**. "Splitting the Water Molecules via Conductive Nanoparticles," 9th GRASP Symposium, Wichita State University, Wichita, KS, May 8, 2013 (extended abstract published).

94. Saeednia, L., Usta, A., and **Asmatulu, R**. "Injectable Thermosensitive Hydrogels as Drug Delivery Systems," 9th GRASP Symposium, Wichita State University, Wichita, KS, May 8, 2013 (extended abstract published).

95. Djam, K.H., Dirks, J., Khan, I.S., and **Asmatulu, R**. "Optimizing the Growth Parameters of Highly Ordered $TiO_2$ Nanotubes during the Electrochemical Anodization," 9th GRASP Symposium, Wichita State University, Wichita, KS, May 8, 2013 (extended abstract published).

96. Shrestha, B., Ceylan, M., Moon, A., Wang, H., Lu, Q., **Asmatulu, R**., and Li, Y. "Characterization of Oligodendrocyte Progenitor Cell Differentiation on Co-Electrospun PCL Nanofibers with Gelatin," Kansas-IDeA Network of Biomedical Research Excellence (K-INBRE) 2013 Symposium, Mantattan, KS, January 18, 2013 (**First Place Presentation Award**).

97. Zhang, B., Kumar, S.S.A., Patlolla, V.R., and **Asmatulu, R**. "The Electromagnetic Shielding Effects of Graphene Films," 2012 ASME International Mechanical Engineering Congress and Exposition, Houston, TX, November 9-15, 2012.

98. Shinde, M., Mathur, V., and **Asmatulu, R**. "Efficiencies of Electrospun Nanofiber-Based DSSC Incorporated with Conductive Nanoscale Inclusions," SAMPE Technical Conference, Student Poster Competition, Charleston, NC, October 22-25, 2012.

99. Patlolla, V.R., and **Asmatulu, R**. "Recent Progress in Self-Healing Process of Composite Wind Turbine Blades," SAMPE Technical Conference, Student Poster Competition, Charleston, NC, October 22-25, 2012 (**Second Place Poster Presentation Winner**).

100. Patlolla, V.R., and **Asmatulu, R**. "Integrating the Self-healing Technology into Fiber Reinforced Aircraft Composites," Wichita SAMPE Chapter Meeting, Wichita, KS, October 16, 2012.

101. Patlolla, V.R., and **Asmatulu, R**. "New Progress in Self-Healing Technology of Composite Wind Turbine Blades," 2012 Kansas Statewide Wind Energy Forum, September 26-28, 2012, Manhattan, KS.

102. Shinde, M., Dirks, J.R., and **Asmatulu, R**. "Enhancement of DSSC Efficiencies via Nanofibers Incorporated with Nanoparticles," 2012 Kansas Statewide Wind Energy Forum, September 26-28, 2012, Manhattan, KS.

103. **Asmatulu, R**., Shinde, M., Djam, K.H., and Dirks, J.R. "$TiO_2$ Nanowires Incorporated with $C_{60}$ and Graphene Nanoflakes for High Solar Energy Conversion," NSF EPSCoR Kansas Center for Solar Energy Research's Annual Program Meeting, Wichita, KS, June 10-11, 2012.

104. Shinde, M., Djam, K.H., Dirks, J.R., and **Asmatulu, R**. "Filling $TiO_2$ Nanotubes with $C_{60}$ and ITO Nanoparticles Using High Centrifugal Forces and Ferrofluids," NSF EPSCoR Kansas Center for Solar Energy Research's Annual Program Meeting, Wichita, KS, June 10-11, 2012.

105. Abedin, F., Zacharias, N., Wooley, P.H., **Asmatulu, R**., and Yang, S.Y. "Magnetic and Albumin Targeted Drug Delivery for Breast Cancer Treatment," 9th World Biomaterials Congress (WBC), Chengdu, China, June 1-5, 2012 (extended abstract published).

106. Patlolla, V.R., and **Asmatulu, R**. "New Progress in Self-healing Technology of Composite Wind Turbine Blades," 7$^{th}$ GRASP Symposium, Wichita State University, Wichita, KS, April 18, 2012 (extended abstract published) (**First Place Poster Presentation Winner**).

107. Misak, H.E., and **Asmatulu, R**. "The Benefits of Magnetic/Protein Targeted Drug Delivery in Treating Skin Cancer In-Vivo," 9$^{th}$ Annual Capitol Graduate Research Summit, Topeka, KS, February 16, 2012 (**First Place Poster Presentation Winner**).

108. Zhang, B., Le, L., and **Asmatulu, R**. "Nanocomposites for the Improved Strength of Composite Wind Turbine Blades," Annual NSF EPSCoR Statewide Conference, Wichita, KS, January 12-13, 2012.

109. Ceylan, M., Asmatulu, E., and **Asmatulu, R**. "Nanotechnology to Address the Global Warming," Annual NSF EPSCoR Statewide Conference, Wichita, KS, January 12-13, 2012.

110. **Asmatulu, R**. "Surface Degradation of Polymeric Barrier Films under UV Exposure," 2011 ASME International Mechanical Engineering Congress and Exposition, Denver, CO, November 11-17, 2011 (extended abstract published).

111. Patlolla, V.R., Chiao, D., and **Asmatulu, R**. "Galvanic Corrosion between Carbon Fibers and Copper/Aluminum Meshes in Aggressive Conditions," ASME International Mechanical Engineering Congress and Exposition, Denver, CO, November 11-17, 2011 (extended abstract published).

112. **Asmatulu, R**. "Graphene-Based Nanocomposites for Future Structural Applications of Aircraft," Wichita SAMPE Chapter Meeting, Wichita, KS, October 25, 2011.

113. Nuraje, N., **Asmatulu, R**., Cohen, R., and Rubner, M. "Layer-by-Layer Assembled Polymeric Coatings for Antifog Application," 4th International Workshop, Specialty Polymers for Environment Protection, Oil Industry, Bio-Nanotechnology and Medicine, Almaty, Kazakhstan, August 16-17, 2011.

114. **Asmatulu, R**., Misak, H.E., and Abedin, F. "Albumin Associated Magnetic Drug Delivery Systems for Cancer Therapy," 2011 Nanotechnology Entrepreneurship Forum, Pittsburg State University, Pittsburg, KS, April 2011 (**First Place Oral Presentation Winner**).

115. **Asmatulu, R**., Zhang, B., and Anwar, R. "Cohesively Bonded Nanocomposite Films on the Surface of Composite Wind Blades," 2011 Nanotechnology Entrepreneurship Forum, Pittsburg State University, Pittsburg, KS, April 2011.

116. Misak, H., Abedin, F., Man, M., Herring, J., and **Asmatulu, R**. "The Benefits of Magnetic/Protein Targeted Drug Delivery in Treating Skin Cancer in-Vivo," 7th GRASP Symposium, Wichita State University, Wichita, KS, April 2011 (extended abstract published).

117. Misak, H.E., Abedin, F., Wooley, P.H., **Asmatulu, R**., and Yang, S.Y. "The Efficacy of Magnetic Targeted Drug Delivery to Cure Skin Cancer," Society for Biomaterials 2011 Annual Meeting and Exposition, Orlando, FL, April 2011 (extended abstract published).

118. Yang, T., Liu, Y.P., Yu, H., **Asmatulu, R**., Wooley, P.H., and Yang, S.Y. "Biocompatibility Testing of a Magnetic Bio-Scaffold Composite," 2011 Annual Meeting of the Orthopaedic Research Society, Long Beach, CA, January 13-16, 2011 (extended abstract published).

119. **Asmatulu, R**. "Nanotechnology, the Future," presentation to freshman students in the College of Engineering, Wichita State University, Wichita, KS, October 2010.

120. **Asmatulu, R**., Anwar, R.M., and Misak, H.E. "UV Prevention of Fiber Reinforced Composites Using Nanocomposite Coatings," 2010 Nanotechnology Entrepreneurship Forum, Pittsburg State University, Pittsburg, KS, April 2010.

121. Khan, S.I., and **Asmatulu, R**. "Synthesis of Highly Ordered Titanium Dioxide Nanotubes for Solar Cell Applications," 7th Annual Capitol Graduate Research Summit, Topeka, KS, March 2010 (**First Place Poster Presentation Winner**).

122. **Asmatulu, R**., Gopu, J. S., and Misak, H. "Characterization of Drug Carrying Nanocomposite Spheres for Targeted Drug Delivery," 6th GRASP Symposium, Wichita State University, Wichita, KS, April 2010 (extended abstract published) (**First Place Poster Presentation Winner**).

123. Khan, S.I., and **Asmatulu, R**. "Synthesis of Highly Ordered Titanium Dioxide Nanotubes: Impact of Process Parameters," 6th GRASP Symposium, Wichita State University, Wichita, KS, April 2010 (extended abstract published).

124. Zhang, B., and **Asmatulu, R**. "Using Graphene in Coating Materials to Prevent UV Degradation on Advanced Composite Materials," 6th GRASP Symposium, Wichita State University, Wichita, KS, April 2010 (extended abstract published).

125. Khan, S.I., and **Asmatulu, R**. "Synthesis of Highly Ordered Titanium Dioxide Nanotubes for Solar Cell Applications," 7th Capitol Graduate Research Summit, Topeka, KS, March 2010 (**First Place Oral Presentation Winner**).

126. **Asmatulu, R**., and Bangwei, Z. "Improving the Life Duration of Wind Generator Blades Using the Advanced Coating Materials," 2010 Wichita Regional Energy and Sustainability Conference, Wichita, KS, January 2010 (**Second Place Poster Presentation Winner**).

127. **Asmatulu, R**., Mahmud, G.A., Abedin, F., and Anwar, M.R. "Increasing the Coating Resistance against the UV Degradation and Corrosion Using Nanocomposite Coatings," 2010 Wichita Regional Energy and Sustainability Conference Wichita, KS, January 2010 (**Second Place Poster Presentation Winner**).

128. Lakougna, H., Ceylan, M., **Asmatulu, R**., and Schneegurt, M. "Bacterial Surface Contact and Adhesion and Polymeric Biomaterials," 5th Annual Mountain West Biomedical Engineering Conference, Salt Lake City, UT, September 2009.

129. **Asmatulu, R**. "Electrospinning for an Advanced Nanomaterials Fabrication," Materials Sciences and Engineering, Massachusetts Institute of Technology, Cambridge, MA, June 2009 (invited talk).

130. **Asmatulu, R**. "Nanomaterials Fabrication and Characterization for Advanced Manufacturing," 2009 Nanotechnology Entrepreneurship Forum, Pittsburg State University, Pittsburg, KS, April 2009.

131. Khan, W.S., Ceylan, M. and **Asmatulu, R**. "Dielectric Properties of MWCNTs Reinforced Polyacrylonitrile (PAN) Nanofibers at Various Temperatures," 5th Annual GRASP Symposium, Wichita State University, Wichita, KS, April 2009 (extended abstract published).

132. Ho, J.C., El-tabey, M.M., Hamdeh, H.H., **Asmatulu, R**., Wu, S.H., and Chen, Y.Y. "Mossbauer and Magnetic Studies of $(Ni_{0.6-x}Co_x)Zn_{0.4}Fe_2O_4$ Nanoparticles," American Physics Society March Meeting, March 16-20, 2009, Pittsburg, PA (abstract published).

133. **Asmatulu, R**. "Magnetic Nanocomposite Spheres for Targeted Drug Delivery," invited talk, Department of Biological Sciences, Wichita State University, Wichita, KS, September 2008.

134. **Asmatulu, R**. "Fabrication and Characterization of Electrospun Nanocomposite Fibers and Their Future Applications," Department of Mechanical Engineering, Cukurova University, Adana, Turkey, August 2008 (invited talk).

135. Fakhari, A., and **Asmatulu, R**. "Biodegradable Magnetic Nanocomposite Spheres Fabrication by O/O Emulsion/Solvent Evaporation Technique for Drug Delivery Purposes," 2008 Design of Medical Devices Conference, Twin Cities, MN, April 2008 (extended abstract published).

136. **Asmatulu, R**., and Fakhari, A. "Neutral pH Ferrofluid Fabrication for Biomedical Applications," 2008 Design of Medical Devices Conference, Twin Cities, MN, April 2008 (extended abstract published).

137. **Asmatulu, R**., "Properties of $TiO_2$ Nanotubes for Solar Cell Applications," invited talk, Department of Chemistry, Wichita State University, Wichita, KS, October 2007.

138. Rashidi, N., Soltani, S.A., and **Asmatulu, R**. "Crevice Corrosion Theory, Mechanisms and Prevention Methods," 3rd Annual GRASP Symposium, Wichita State University, Wichita, KS, April 2007 (extended abstract published).

139. **Asmatulu, R**. "2-D Colloidal Photonic Crystals Fabrication Using DNA Molecules," invited talk, Special Engineering Seminar, Wichita State University, Wichita, KS, April 2007.

140. **Asmatulu, R**. "Fabrication and Defect Designs on DNA Linked 2-D Colloidal Photonic Crystals Using a Nd:YAG Pulsed Laser," Special Engineering Seminar, Department of Mechanical Engineering, University of Arkansas, Fayetteville, AR, March 2007 (invited talk).

141. **Asmatulu, R**. "Nanotechnology for Future Engineers," presentation to Wichita High School Students, Wichita Art Museum, Wichita, KS, February 2007.

142. **Asmatulu, R**. "Nanocomposite Fabrications and Characterizations for Future Applications," Wichita SAMPE Chapter Meeting, Wichita, KS, November 2006.

143. Mao, L., **Asmatulu, R**., Kose, A.R., and Koser, H. "A Fast and Selective Assay for Ligand-Receptor Interactions Using Ferrofluids," 2nd International Conference on Bio-Nano-Informatics Fusion, Beijing, China, October 2006.

144. Mao, L., **Asmatulu, R**., and Koser, H. "Ferrofluids: Science and Applications," State of Connecticut Science Competition, West Haven, CT, May 2006.

145. **Asmatulu, R**., Kim, S., Bright, R., Papadimitrakopoulos, F., and Marcus, H.L. "Synthesis and Controlled Defect Insertion in 2-D Photonic Crystals," Connecticut State Conference of NAACP Branches, Hartford, CT, September 2005.

146. **Asmatulu, R**. "Synthesis and Characterization of Bio- and Nano-Structured Materials," Department of Mechanical Engineering, Auburn University, Auburn, AL, March 2005 (invited talk).

147. **Asmatulu, R**. "Synthesis, Characterization and Targeting of Biodegradable Magnetic Nanocomposite Spheres," Department of Chemical Engineering and Materials Science, Michigan State University, East Lansing, MI, April 2005 (invited talk).

148. **Asmatulu, R**. "Chemical Dewatering of Fine Coal Particles," IX International Mineral Processing Symposium, Cappadocia, Turkey, September 2002 (extended abstract published).

149. Yoon, R.H., Asmatulu, R., B. Basim, Luttrell, G.H., and A. Walters, "Pilot-scale Testing of Novel Dewatering Aids," XIV International Coal Preparation Congress and Exhibition, Johannesburg, South Africa, March 11-15, 2002.

150. Yoon, R.H., Asmatulu, R., and Luttrell, G.H. "Extending the Upper Particle Size Limit for Flotation," XIV International Coal Preparation Congress and Exhibition, Johannesburg, South Africa, March 11-15, 2002.

151. Yoon, R.H., **Asmatulu, R**., and Luttrell, J. "Development of Novel Fine Coal Dewatering Aids," 18th International Coal Preparation Exhibition and Conferences, Coal Prep' 2001, Pittsburg, PA, May 2001.

152. Yoon, R.H., **Asmatulu, R**., Luttrell, J., and Walters, T. "Advanced Fine Coal Dewatering Technologies Developed at Virginia Tech," International Pittsburgh Coal Conference, Pittsburgh, PA., September 2000.

153. Onal, G., Mustafaev, I., **Asmatulu, R**., Yildirim, I., Acarkan, N., and Celik, M.S. "Desulfurization of Turkish Coals by Semicoking," 8th Isparta Engineering Conference, Isparta, Turkey, May 1994 (extended abstract published).

# CITATIONS OF WORK

Scholarly activities cited in peer-reviewed journal articles, books, book chapters, conference proceedings, technical reports, patents, and Ph.D. dissertation are given in the link below: (http://scholar.google.com/citations?user=ylEhmJwAAAAJ&hl=en).

# RESEARCH EXPERIENCE

Academic studies at various institutions (Virginia Tech, UCONN, Yale, Harvard, MIT, AFIT, Tokyo Tech and Max Planck Institute) have involved more than **120 different projects** in the areas of mechanics of materials, nanomaterials, biomaterials, composites, and energy systems.

# TECHNICAL REPORTS

More than **130 technical reports** have been submitted to different government agencies and private companies.

# TEACHING EXPERIENCE

## Undergraduate Courses Taught

- **ME 250 Materials Engineering** (class notes entirely updated), Department of Mechanical Engineering, Wichita State University, every semester from Fall 2007 to Spring 2021 (**Hybrid / Online Course**).

- **ME 335 Dynamics for Mechanical Engineers** (class notes updated), Department of Mechanical Engineering, Wichita State University, Fall 2021 and Spring 2022.

- **ME 398 Thermodynamics I**, Department of Mechanical Engineering, Wichita State University, Fall 2024 and Spring 2025.

- **ME 651 Biomaterials** (developed), Department of Mechanical Engineering, Wichita State University, Fall 2008, Fall 2009, Spring 2011, Spring 2012, Spring 2013, and Fall 2018.

- **ME 665 Selection of Materials for Design and Manufacturing** (class notes entirely updated), Department of Mechanical Engineering, Wichita State University, Spring 2014 and Fall 2016.

- **ME 667 Mechanics of Materials/Mechanical Properties of Materials I** (class notes entirely updated), Department of Mechanical Engineering, Wichita State University, Spring 2016 and Spring 2020 (**Online Course / Hybrid**).

- **ME 670 Introduction to Nanotechnology** (developed), Department of Mechanical Engineering, Wichita State University since Fall 2007 (**Hybrid Course**).

## Graduate Courses Taught

- **ME 751B Advanced Energy Systems** (developed), Department of Mechanical Engineering, Wichita State University, Fall 2012, Fall 2014, and Fall 2019.

- **ME 752 Failure Analysis Methods and Tools** (developed), Department of Mechanical Engineering, Wichita State University, Fall 2016, and Spring 2020 (**Online Course / Hybrid**).

- **ME 753 Advanced Materials for Energy Systems** (developed), Department of Mechanical Engineering, Wichita State University, Spring 2019, and Fall 2021.

- **ME 760 Fracture Mechanics** (class notes entirely updated), Department of Mechanical Engineering, Wichita State University, Spring 2007, Spring 2010, Fall 2013, Spring 2016, and Fall 2018.

- **ME 844 Advanced Biomaterials** (developed), Department of Mechanical Engineering, Wichita State University, Fall 2014, Fall 2017, Spring 2019, and Fall 2020 (**Hybrid**).

- **ME 865 Corrosion Science and Engineering** (developed), Department of Mechanical Engineering, Wichita State University, Spring 2015, Fall 2018 and Spring 2021 (**Hybrid Course**).

## Teaching Evaluations

Received high and excellent teaching evaluations from students in the College of Engineering at Wichita State University, a trend that has continuously increased based on teaching experiences:

- Undergraduate courses: High
- Graduate courses: Excellent

# LABORATORY DEVELOPMENT

## Nanotechnology Research Laboratory

Developed a nanotechnology research laboratory in 2007 in the Department of Mechanical Engineering at Wichita State University, which has the following equipment:

Electrospinning units, atomic force microscope (AFM), corrosion and degradation testing units, ultraviolet (UV) photolithography, dry and wet etching apparatus, plasma cleaner, AC/DC power units, ultraviolet-visible (UV-Vis) spectrometer, optical microscopes, zeta potential/nanosizer, fume hoods, glow box, spin-coating apparatus, capacitance bridge, contact angle and surface tension measurement devices, electrostatic self-assembly (ESA) unit, potentiostat, temperature humidity chamber, highly sensitive balances, injection molding, autoclave, vacuum-assisted resin transfer molding (VARTM), hot press, sonicators, centrifuges, deionized (DI) water system, air table, vacuum pumps, ovens, and furnaces

## Nanotechnology Teaching Laboratory

Developed a nanotechnology teaching laboratory for students in 2007 to support courses ME 650C and ME 850N in the Department of Mechanical Engineering at Wichita State University. The following experiments are conducted:

> Magnetic nanoparticles, ferrofluids, carbon nanotube (CNT) nanocomposites, titanium oxide ($TiO_2$) nanotubes, nanoporous gold films, electrostatic self-assembled nanofilms, electrospun nanofibers, biodegradable nanocomposite spheres, metallic nanofilms, dye-sensitized solar cells, and hydrogen fuel cells fabrication and characterization

# CERTIFICATE PROGRAM

## Nanotechnology Certificate Program

Developed the nanotechnology certificate program in Spring 2013 along with the following laboratory sessions:

> Magnetic nanoparticles, ferrofluids, CNT nanocomposites, $TiO_2$ nanotubes, electrostatic self-assembled nanofilms, electrospun nanofibers, biodegradable nanocomposite spheres, metallic nanofilms, dye-sensitized solar cells, and hydrogen fuel cells.

After participating in these laboratory sessions, students (high school, undergraduate, and graduate) receive a certificate for their future employments/plans.

# LABORATORY DIRECTORSHIPS

Director of three of seven teaching laboratories and the composite research laboratory in the Department of Mechanical Engineering at Wichita State University:

- **Advanced Composite Laboratory (Research)**, since July 2013
- **Materials Engineering Laboratory (Teaching)**, August 2006-January 2016
- **Introduction to Nanotechnology Laboratory (Research and Teaching)**, since August 2007

# FORMER STUDENTS, POSTDOCS, AND PROFESSORS

Served as advisor and supervisor on various projects for the following B.S., M.S., and Ph.D. students, as well as postdocs and research associates:

## Bachelor of Science Students

1. Chiranjeet Hira, “Flame-retardant Fiber-Reinforced Composites for Aircraft and Wind Turbine Blades,” Department of Mechanical Engineering, Wichita State University, August, 2024.

2. Bao Nguyen, "Piezoelectric Nanocomposite Fibers on Fiber Composites for Improved Harvesting Capabilities of Aircraft Vibration," Department of Mechanical Engineering, Wichita State University, August, 2024.

3. Ameera Binte Gofur, "Time-sensitive Biodegradable Hydrogels for Post Treatments," Department of Biological Sciences, Wichita State University, August, 2024.

4. Jerret Delancy, "Multifunctional Polymeric Phase Change Materials for the Heat Absorption of Workers," Department of Applied Engineering, Wichita State University, May, 2024.

5. Yasemin Barut, "Hormone-based Multifunctional Hydrogels for Post Treatments," Department of Biomedical Engineering, Wichita State University, May, 2024.

6. Sameeha Rashid, "Controlled Drug Release mechanisms of Multifunctional Hydrogels," Department of Biological Sciences, Wichita State University, May, 2024.

7. Emanual Andrade, "High Impact Resistant and Lightweight Kevlar Composite Structures," Department of Mechanical Engineering, Wichita State University, May, 2023.

8. Rakan Alnasser, "Carbonized PAN Nanofibers for Improved Lightning Strike and EMI Shielding," Department of Mechanical Engineering, Wichita State University, May, 2023.

9. Faisal Salamah, "Fire-Retardant Fiber Composite Structures for High Temperature Aerospace Applications," Department of Mechanical Engineering, Wichita State University, August, 2022.

10. Jenifer Alfaro, "Capturing $CO_2$ in Atmosphere via Multifunctional Nanofibers and Converting It into Biofuel," Department of Mechanical Engineering, Wichita State University, July, 2021.

11. Selman Okmen, "Solar-Cell Powered Portable Desalination Systems for Continuous Fresh Water Supply," Department of Mechanical Engineering, Wichita State University, May, 2021.

12. Anas Mohammed, "Creating Multifunctional Nanofibers Using Electrospinning Unit," Department of Mechanical Engineering, Wichita State University, May, 2020.

13. Weeranarayana Mudalige Meriesha Fonseka, "Fabricating Elastomeric PVDF Nanofibers Using Electrospinning Technique," Department of Mechanical Engineering, Wichita State University, May, 2020.

14. Hassan Akram, "Fabricating Superhydrophilic Fibers to Catch Water in the Atmosphere," Department of Mechanical Engineering, Wichita State University, May, 2020.

15. Zhan Hong Lok, "Electrospun PAN Functional Nanocomposting Fibers," Department of Mechanical Engineering, Wichita State University, December, 2019.

16. Jia Quan Chong, "Introducing 3D Printing for Bio Applications," Department of Mechanical Engineering, Wichita State University, December, 2019.

17. Joshua Teoh Chiang Yee, "Fabrication of Hydrophobic Coating on Aluminum Alloy 2024-T3 Substrates," Department of Mechanical Engineering, Wichita State University, December, 2019.

18. Sean Sadat, "Solid State Hydrogen Storage Materials and Processes," Department of Mechanical Engineering, Wichita State University, May, 2019.

19. Joshua Roshan Visagaran, "Tensile Testing of Corroding Metals," Department of Mechanical Engineering, Wichita State University, May, 2019.

20. Kent Ee Ong, "Electrospinning of Functional Nanofibers with Different Polymer Combinations," Department of Mechanical Engineering, Wichita State University, May, 2019.

21. Afiq Shahreen Ahmad Shairi, "Electrospinning of Nanofibers for Biosensor Development," Department of Mechanical Engineering, Wichita State University, May, 2019.

22. Shao Kit Then, "Electrolysis of Water with Nanoscale Inclusions and Boric Acid Solution," Department of Mechanical Engineering, Wichita State University, May, 2019.

23. Alexandre Gilquin, "Superhydrophobic Nanofiber Mats for Fog Harvesting," Department of Mechanical Engineering, Wichita State University, September, 2018.

24. Trenton Bosley, "Developing Nanostructured Materials for Long Lasting Structural Applications," Department of Mechanical Engineering, Wichita State University, August, 2018.

25. Brian Pham, "Converting Algae-based Biomass into Crude Oil at High Temperature and Pressure," Department of Mechanical Engineering, Wichita State University, December 2017.

26. Binh Nguyen, "Converting Polyethylene Packaging Materials into Biodegradable Products via Corn Starch and Biodegradable Adhesives," Department of Mechanical Engineering, Wichita State University, May 2017.

27. Arman Ortiz, "Highly Porous 3D Structured PEEK Materials with Converting Algae-based Biomass into Crude Oil at High Temperature and Pressure," Department of Mechanical Engineering, Wichita State University, December 2017.

28. Balakrishnan Subeshan, “Highly Robust Superhydrophobic Coating of Metals and Alloys,” Department of Mechanical Engineering, Wichita State University, December 2016.

29. Shabbir Dalal, “Designing Surfactant-Based Nanoemulsion Production Systems,” Department of Mechanical Engineering, Wichita State University, December 2016.

30. Israel Belachew, “Development of Inexpensive Biodiesel Fuels from the Fried and Waste Oils,” Department of Mechanical Engineering, Wichita State University, December 2015.

31. Huong Nguyen, “Extracting The Cow Teeth for Fabrication of PCL-Hydroxyapatite Nanocomposite Fibers for Teeth Scaffolding,” Department of Mechanical Engineering, Wichita State University, December 2015.

32. Anh Pham, “Characterization of PCL-Hydroxyapatite Nanocomposite Fibers for Teeth Regeneration,” Department of Mechanical Engineering, Wichita State University, December 2015.

33. Usama Mushtag, “Development of Inexpensive Biodiesel Fuels from the Animal Fat,” Department of Mechanical Engineering, Wichita State University, August 2015.

34. Eric E. Esparza, “Developing Electro-Active Polymers for Artificial Muscles Connected to Artificial Tendons,” Department of Mechanical Engineering, Wichita State University, December 2014.

35. Yatharsana Manickavasagar “Fiber Reinforced Laminate Composites for Aircraft Structural Applications,” Department of Mechanical Engineering, Wichita State University, December 2014.

36. Sayed Irfan Farid, “Enhancing the Impact Resistance of Kevlar Fiber Reinforced Composites via Functionalized Nanoparticles,” Department of Mechanical Engineering, Wichita State University, December 2014.

37. Ankit Gupta, “Electrospun Nanofiber Mats for the Wing Design of Micro Air Vehicle,” Department of Mechanical Engineering, Wichita State University, December 2014.

38. Madushanka Yatila Kumara, “Electrolysis of Water through Carbon Fiber Reinforced Composite Electrodes,” Department of Mechanical Engineering, Wichita State University, August 2014.

39. Charitha Mishan Perera-Dehiwelage, “Water Electrolysis by Carbon Fiber Reinforced Composite Electrodes in Highly Concentrated Electrolyte Solutions,” Department of Mechanical Engineering, Wichita State University, May 2014.

40. Emily Swindle, “Producing Plasmid DNA from the E-Coli Bacteria,” Department of Mechanical Engineering, Wichita State University, December 2013.

41. Jacqueline Weber, "Characterizations of Antibacterial Nanofibers for Drug Delivery Systems," Department of Mechanical Engineering, Wichita State University, December 2013.

42. Philip Landrum, "Biodegradable Nanocomposite Fabrication from the Natural Sources," Department of Mechanical Engineering, Wichita State University, December 2013.

43. Ricardo Flores, "Fabrications of Antibacterial Nanofibers for Implants," Department of Mechanical Engineering, Wichita State University, December 2013.

44. Ogbonnaya Udochu, "Biodegradable Nanocomposite Fabrications and Characterizations," Department of Mechanical Engineering, Louisiana State University, August 2013.

45. Antony Bonavia, "Producing Plasmid DNA for Skin Cancer Treatments," Department of Mechanical Engineering, Wichita State University, December 2013.

46. Alex Coker, "Non-crimp Fabric Composites for the Aircraft Fuselage Applications," Department of Mechanical Engineering, Wichita State University, December 2013.

47. Hatim Zeineddine, "Electrospun Plasmid DNA Nanofibers for Cancer Treatment," Department of Mechanical Engineering, Wichita State University, December 2013.

48. Olajide O. Adeoti, "High Impact Resistant Composites via Nanoscale Inclusions," Department of Mechanical Engineering, Wichita State University, August 2013.

49. Norman Paul, "Highly Durable Nanocomposite Top Coating for Composite Surfaces," Department of Mechanical Engineering, Wichita State University, August 2013.

50. Boon Guang Lua, "Electrospun Nanofibers Incorporated with PCL and Plasmid DNA," Department of Mechanical Engineering, Wichita State University, December 2012.

51. Benjamin E. Coon, "Cross-Linking of CNT Nanowires for 3D Woven Composite Fabrications," Department of Mechanical Engineering, Wichita State University, December 2012.

52. Shakya Liyanage, "Nanoinclusion Reinforced Dental Composites against the Mechanical Deformation and Moisture Absorption," Department of Mechanical Engineering, Wichita State University, December 2012.

53. Vasanthathiban Periasamy, "Synthesis and Characterization of Frame Retardant Electrospun Nanocomposite Fibers," Department of Mechanical Engineering, Wichita State University, December 2012.

54. Aasish Jaiswal, "Water Splitting via ITO Doped $TiO_2$ and $SrTiO_3$ Nanowires," Department of Mechanical Engineering, Wichita State University, December 2012.

55. Joshua Whitman, "Antibacterial Electrospun Nanofibers for the Reinforcement of Chitosan-Based Hydrogels," Department of Mechanical Engineering, Oklahoma State University, August 2012, and August 2013.

56. Jonathan Driks, "Electrospun Nanocomposite Fibers Associated with Buckyball and ITO Nanoparticles for the DSSC Fabrication," Department of Mechanical Engineering, Wichita State University, December 2012.

57. Joseph S. Melzer "Preparation of Graphene Thin Films against the Lightning Strikes," Department of Mechanical Engineering, Wichita State University, August 2012.

58. Edward D. Harrison, "Highly Protonated Polyaniline (PANI) Coatings against the Lightning Strikes," Department of Mechanical Engineering, Wichita State University, August 2012.

59. Eric LaRue, "Polyaniline (PANI)-Based Conductive Nanocomposite against the Lightning Strikes," Department of Mechanical Engineering, Wichita State University, August 2012.

60. Amit Roy, "Fabrication of High Strength Nanocomposites Using Recycled Styrofoam and Nanoclay Inclusions," Department of Mechanical Engineering, Wichita State University, August 2012.

61. Evan Johnson, "Fabrication of Self-Healing Microspheres Associated with Graphene Nanoflakes," Department of Mechanical Engineering, Wichita State University, August 2012.

62. Miles Uzoma Atughonu, "Fabrication and Characterization of Polymeric Scaffolds Associated with Heat Treated Cow Bones as Hydroxyapatite Sources," Department of Mechanical Engineering, Wichita State University, August 2012.

63. Vu N. Nguyen, "Carbon Fiber Reinforced Thermoplastic Composite Manufacturing Using UHMWPE," Department of Mechanical Engineering, Wichita State University, May 2012.

64. Shenal Perera, "CNT Reinforced Nanocomposite Fibers for the Wing Manufacturing of Micro Air Vehicles," Department of Mechanical Engineering, Wichita State University, May 2012.

65. Abhiruchika Sriyarathne, "Self-Healing of Composite Wind Turbines," Department of Aerospace Engineering, Wichita State University, May 2012.

66. Seyed A. Razinobakht, "3D Woven Composites for Aircraft Structural Applications," Industrial and Manufacturing Engineering, Wichita State University, May 2012.

67. Chiran Kulasena, "Organic Solar Cell Assembly on the CNT Reinforced Nanocomposite Fibers for the Wing Manufacturing of Micro Air Vehicles," Department of Mechanical Engineering, Wichita State University, May 2012.

68. Anuruddah Ransilu Peiris, "Porous PEEK Scaffolds Incorporated with Natural Hydroxyapatite Particles," Department of Mechanical Engineering, Wichita State University, May 2012.

69. Supun Kariyawasam, "Producing Natural Hydroxyapatite Particles from the Animal Bones," Department of Mechanical Engineering, Wichita State University, May 2012.

70. Yi Yang Tay, "Fabrication and Characterization of CNT Reinforced PCL Porous Nanocomposite Scaffolds," Department of Mechanical Engineering, Wichita State University, May 2012.

71. Hay Mar Hlaing, "CNT Reinforced Porous PEEK Scaffolds Incorporated with Nanoscale HA Particles," Department of Electrical Engineering and Computer Science, Wichita State University, May 2012.

72. Shahla Pourkaram, "Highly Conductive Nanocomposite Coatings for the Prevention of Lightning Strikes on the Composite Surfaces," Department of Aerospace Engineering, Wichita State University, December 2011.

73. Xiaolong Cui, "Fabrication and Characterization of Highly Conductive Nanocomposite Films for the Fiber Reinforced Composites," Department of Mechanical Engineering, Wichita State University, December 2011.

74. Maninder Dhillon, "Improving the Mechanical and Electrical Properties of Carbon Fiber Composites via Graphene Nanoflake Addition," Department of Mechanical Engineering, Wichita State University, December 2011.

75. Sagun Shrestha, "Highly Porous Nanocomposite PEEK Fabrication for Bone Replacement," Department of Mechanical Engineering, Wichita State University, August 2011.

76. George Keomany, "Fiber Reinforced Composite Development for Aircraft Industry," Department of Mechanical Engineering, Wichita State University, August 2011.

77. Jennifer Herring, "Magnetic Targeted Drug Delivery for Skin Cancer Treatment," Department of Mechanical Engineering, Wichita State University, August 2011.

78. Daouda Diouf, "Antibacterial Nanofibers Fabrication and Characterization," Department of Mechanical Engineering, Wichita State University, December 2010.

79. Sachin Sharma, "Antibacterial Coating on the Composite Surfaces," Department of Mechanical Engineering, Wichita State University, December 2010.

80. Tao Yang, "Biocompatibility Testing of a Magnetic Bio-Scaffold Composite," Department of Biological Science, Wichita State University, May 2010.

81. Manish Shinde, "A Dye-sensitized Solar Cell Fabrication from the Natural Products," Department of Mechanical Engineering, Wichita State University, December 2009.

82. Bailey Cooper, "A Magnetic Targeted Drug Delivery System for Rheumatoid Arthritis," Department of Mechanical Engineering, Wichita State University, May 2009.

83. Justin Ochs, "Nanocomposite Coatings for the Prevention of Aircraft Skins," Department of Mechanical Engineering, Wichita State University, December 2008.

84. Jananisri Gopu, "A Novel Drug Delivery System for Skin Cancer Treatment," Department of Mechanical Engineering, Wichita State University, December 2008.

## Master of Science Students

1. Purva Todmal, "PVDF and PAN-Based Piezoelectric Nanocomposite Fibers Integrated on Fiber Composites for Improved Vibration Energy Harvesting Rates," M.S. Project, Wichita State University, July 18, 2024.

2. Purva Todmal, "The Role of Multifunctional 3D Structured Conductive Nanofibers for Flexible and Wearable Health Monitoring Systems," M.S. Project, Wichita State University, July 18, 2024.

3. Mennatallah Mousa, "Designing and Analysis of Hydrogel-Based Targeted Hormone Therapy for Post-Breast Cancer Treatments," M.S. Project, Wichita State University, July 18, 2024.

4. Poreddy Neeraja, "Piezoelectric Nanocomposite Thin Film Layers for Improved Electricity Generation from the Natural Movements," M.S. Project, Wichita State University, May 3, 2024.

5. Richard Sack, "Acoustic Hologram Guided Electrospinning," M.S. Thesis, Department of Biomedical Engineering, Wichita State University, April 25, 2024 (Co-Chair).

6. Weeranarayana Fonseka Meriesha, "Synthesizing and Characterization of PVDF and PAN-Based Electrospun Piezoelectric Nanofibers Incorporated with Nanoinclusions for Improved Vibration Energy Harvesting," M.S. Thesis, Wichita State University, May 11, 2023.

7. Nivedhan Ravi, "Carbonized PAN Unidirectional Fiber Reinforced Composites with Nanoscale Inclusions for Improved Thermo-Mechanical Properties," M.S. Thesis, Wichita State University, April 27, 2023.

8. Dinesh Gurung, "Sulfonated PEEK Fiber Reinforced Composites for Increased Thermal and Mechanical Properties," M.S. Thesis, Wichita State University, April 27, 2023.

9. Murali Krishna Sai Telagamsetti, "Fiber Reinforced Carbon-Carbon Composites for Enhanced Fire Retardancy and Electrical and Thermal Conductivities," M.S. Thesis, Wichita State University, July 15, 2022.

10. Zelalem Demissie, "Modeling and Analysis of Carbon, Kevlar, Glass and Silicon Carbide Fiber Filaments Subjected to External Tensile Loads" M.S. Project, Wichita State University, June 17, 2022.

11. Hatim Zeineddine, "Examination of Ferrofluid Stability When Treated with Organic Compounds" M.S. Project, Wichita State University, May 2, 2022.

12. Dileep Kumar Reddy Gattu, "Fast and Affordable Detection of PKU Metabolic Disorder Using Iron (III) Chloride-Based Solutions and Porous PCL Biosensor," M.S. Thesis, Wichita State University, December 1, 2021.

13. Anh Pham, "Design and Manufacturing of Hemoglobin-Based Multifunctional Nanofibers for Improved Carbon Monoxide Absorption," M.S. Thesis, Wichita State University, August 20, 2021.

14. Hamad Alshaiji, "Design and Manufacturing of Solar Energy-Based Portable Desalination Systems for Sustainable Fresh Water Supply" M.S. Project, Wichita State University, July 7, 2021.

15. Annie Ngoc Tran, "Investigating the Physical Properties of 3D Printed Titanium Ti-6Al-4V (Grade 23) Alloys of Various Shapes Before and After Heat Treatment Processes" M.S. Project, Wichita State University, December 19, 2019.

16. Clay Parten, "Development and Testing of Spray-Coated Lightning Strike Protection Systems for Fiber-Reinforced Thermoplastic Composites," M.S. Thesis, Wichita State University, December 4, 2019.

17. Sina Davani, "Design, Development, and Experimental Analysis of a Two-Stage Flameless Combustion Engine using Homogenous Charge Compression Ignition System," M.S. Thesis, Wichita State University, December 4, 2019.

18. Abdullah Alonayni, "Design and Manufacturing of Portable Desalination System for Freshwater Production in Rural Areas," M.S. Thesis (honorary degree contribution after unfortunate passing), Wichita State University, November 27, 2019.

19. Srinivasan Jeeyariyer Rajagopal, "Integrating Superhydrophobic and Superhydrophilic Nanofiber Layers into Astronaut Spacesuit Gloves for a Better Sweat Mitigation," M.S. Project, Wichita State University, November 26, 2019.

20. Harika Vadla, "Recovering the Dissolved Elements of Produced Water for Future Industrial Applications," M.S. Project, Wichita State University, May 10, 2019.

21. Rajan Shrestha, "Three-Dimensional Structured Superhydrophobic Electrospun Nanofiber Mats for Environmental Remediations" M.S. Thesis, Wichita State University, May 10, 2019.

22. Ganiyu Alimi, "Inspecting the Cracks and Dents of Teeth through Dye Penetrant Liquids without X-Ray Imaging," M.S. Project, Wichita State University, May 9, 2019.

23. Tyler McCune, "An Evaluation of Salt Spray Corrosion Effects on Steel Sheets with Varying Galvanic Coatings and Paint Finishes," M.S. Project, Wichita State University, May 7, 2019.

24. Aditi Shiromani, "Converting Hard Graphite Powder into Graphene Nanoflakes via Cryogenic Milling for Highly Stiff Materials Productions," M.S. Project, Wichita State University, May 3, 2019.

25. Punit D. Singh, "Cryogenic Milling of Soft Graphite Powder into Graphene Nanoflakes for Improved Corrosion Resistance of Copper Plates," M.S. Project, Wichita State University, May 3, 2019.

26. Sameed Cheema, "Testing and Evaluating the Mineral Concentrations of Produced Water," M.S. Project, Wichita State University, April 26, 2019.

27. Kiran Nepal, "Design and Evaluation of Portable Nanofilter Systems for Continuous Water Supplies in Water-Scare Locations," M.S. Thesis, Wichita State University, October 19, 2018.

28. Raj Kumar Bhatta, "Investigating the Electrical Behavior of Nanoplatelet Infused Holes of Carbon Fiber Reinforced Composites during Fatigue Loadings," M.S. Thesis, Wichita State University, July 20, 2018.

29. Balakrishnan Subeshan, "Highly Robust Superhydrophobic Coating of Aluminum 2024-T3 Alloy for Corrosion Prevention, Deicing and Self-Cleaning of Aircraft," M.S. Thesis, Wichita State University, February 26, 2018.

30. Fairus S. Tanzim, "Investigating the Effects of Carbon Felt and Other Carbonaceous Materials on Desalination Rates of Salt Water under Sunlight Simulation," M.S. Thesis, Wichita State University, December 15, 2017.

31. Mohammed A. Alamir, "Designing and Evaluating of Superhydrophilic Nanofiber Mats for Fog Catching in the Atmosphere," M.S. Thesis, Wichita State University, December 11, 2017.

32. Ankit Khadak, "Effects of Superhydrophobic Coatings on De-Icing of Carbon Fiber-Reinforced Composite Aircraft," M.S. Thesis, Wichita State University, December 1, 2017.

33. Tharun R. Chillakuru, "A Study on Viscoelastic Properties of Epoxy Nanocomposites via Dynamic Shear Rheological Analysis," M.S. Project, Wichita State University, November 30, 2017.

34. Vinay Patil, "Enhancing the Evaporation Rate at the Air-Water Interface with Use of Nanoparticles for Improved Desalination Process," M.S. Thesis, Wichita State University, October 26, 2017.

35. Guven Yay, "Modeling and Analysis of 30 Ply Twisted CNT Wires Subjected to External Loads," M.S. Project, Wichita State University, July 21, 2017.

36. Iheanyi Onwubiko, "Low-temperature Carbon-Based Counter Electrodes for Hole Transport Free Perovskite Solar Cells Fabricated in Ambient Conditions," M.S. Thesis, Wichita State University, April 28, 2017.

37. Tyler Alexander, "The Effects of Porosity and Micro-Scale Sodium Chloride Inclusions on the Figure of Merit of Bismuth Telluride," M.S. Thesis, Wichita State University, March 3, 2017.

38. Neda Seyedhassantehrani, "Introducing Carbonized Electrospun PAN Nanofibers as Flow Battery Electrodes," M.S. Thesis, Wichita State University, November 22, 2016.

39. Kavya S. Erukala, "Pre-Surface Treatments of Carbon Fiber Reinforced Composites for Enhancement of Adhesion between Coatings and Adherents," M.S. Thesis, Wichita State University, November 22, 2016.

40. Tanner D. Harpool, "Observing the Effects of Infill Shapes on Tensile Characteristics of 3D Printed Plastic Parts," M.S. Thesis, Wichita State University, September 23, 2016.

41. Praveen Kumar Bollavaram, "Lightning Strike Protection and Electromagnetic Interference Shielding for Composite Structures Using Metallic Submicrofilm and Nanofilm," M.S. Thesis, Wichita State University, July 29, 2016.

42. Nikhil Paranjpe, "Strength and Failure Mode Analysis of Single Lap Joints between Composites and Composite-to-metals with Different Surface Treatments," M.S. Thesis, Wichita State University, July 22, 2016.

43. Azhar Hussain Mohammed, "Tuning the Energy Band Gaps of Sol-Gel Based $TiO_2$ Nanocomposite Particles Incorporated with $C_{60}$, SWCNT and ITO Inclusions," M.S. Thesis, Wichita State University, June 2, 2016.

44. Shravani Kasaragadda, "Investigating the Effects of Surface Superhydrophobicity on Moisture Ingression of Fiber Reinforced Laminate Composites," M.S. Thesis, Wichita State University, April 29, 2016.

45. Yashwanth Reddy Bathula, "Recycling and Reusing Outdated Pre-Preg Carbon Fiber Reinforced Composites for Soccer Shin-Guard Fabrications," M.S. Project, Wichita State University, April 29, 2016.

46. Abhijit Chowdary Singamaneni, "Studying Mechanical Properties of Virgin and Recycled Chopped Fiber Reinforced Composites," M.S. Project, Wichita State University, April 29, 2016.

47. Nasrin Baratzadeh Khorasgani, "Briquetting and Characterization of Leaf and Grass Biomass for Fuel and Activated Carbon Applications," M.S. Project (jointly advised with Dr. K. Krishnan, Department of Industrial and Manufacturing Engineering), Wichita State University, April 28, 2016 (Co-Chair).

48. Bahareh Karimibavani, "Converting Orange and Banana Peels in Briquettes and Activated Char Coals as Sustainable Carbon and Fuel Sources," M.S. Project (jointly advised with Dr. K. Krishnan, Department of Industrial and Manufacturing Engineering), Wichita State University, April 28, 2016 (Co-Chair).

49. Vijay Sai Swarna, "Epoxy Nanocomposites for Enhanced Fire Retardancy and Metal-Metal Bonding Properties of Aircraft Aluminum Alloys," M.S. Thesis, Wichita State University, April 28, 2016.

50. Janakinandan Nookala, "Effects of Tilt Angles on Self-Cleaning of Superhydrophobic Composite Surfaces," M.S. Project, Wichita State University, April 28, 2016.

51. Shawn M. Hughes, "Electrospun PCL Nanofibers Incorporated with Natural and Synthetic Calcium Hydroxyapatite Particles for Human Tooth Regeneration," M.S. Thesis, Wichita State University, April 27, 2016.

52. Goutham Chinni, "Microalgae Growth, Lipid Extraction and Stable Nanoemulsion Productions for Various Industrial Applications," M.S. Thesis, Wichita State University, April 27, 2016.

53. Gopi Krishna Mandadi, "Melting Temperature Dependent Separations of Metallic Electronic Wastes and Wires Using Induction Heating and Centrifugal Forces," M.S. Thesis, Wichita State University, April 25, 2016.

54. Md. Shafinur Murad, "Investigating Corrosion Behaviors of Anodized Metallic Implants by Electrochemical Analysis," M.S. Thesis, Wichita State University, April 21, 2016.

55. Christopher Downing, "Sealing the Holes of Carbon Fiber Composites Using Epoxy Nanocomposites Incorporated with Layered Nanoscale Inclusions," M.S. Project, Wichita State University, April 15, 2016.

56. Vibhakar Seewoogolam, "Highly Robust Electrospun Nanofibers for Development of Lightweight MAV Wings," M.S. Project, Wichita State University, April 8, 2016.

57. Edward D. Harrison, "Investigating Temperature Dependent Frictional Coefficients of Thermoset Polymers Incorporated with Chopped Carbon Fiber and Silicon Carbide Whisker Reinforcements for Clutch Break Applications," M.S. Project, Wichita State University, December 11, 2015.

58. Thu Van Tran, "Multi-functional Protective Nanocomposite Coatings of Modified Graphene and Hexagonal Boron Nitride Nanoparticles on Transparent Plastics," M.S. Thesis, Wichita State University, November 24, 2015.

59. Rifath Mahmud Rony Shagor, "Effects of Graphene Functionalization on Mechanical Properties of Carbon Fiber Laminate Composites," M.S. Thesis, Wichita State University, November 23, 2015.

60. Salahuddin Mohammad, "Investigating Superhydrophobic Behaviors of Carbonized PAN Nanofibers on Gas Diffusion Layers of PEM Fuel Cells," M.S. Thesis, Wichita State University, November 23, 2015.

61. Md. Shahnewaz Sabit Faisal, "Studying Activated Carbons of Natural Sources for Supercapacitor Applications," M.S. Thesis, Wichita State University, November 23, 2015.

62. Jason Yeoh, "Sealing the Machine Damaged Edges of Fiber Reinforced Composites via High Strength Adhesives for Better Mechanical Properties," M.S. Project, Wichita State University, July 17, 2015.

63. Ugochukwu Njoku, "Edge and Hole Sealing of Carbon Fiber Reinforced Composites Using Nanocomposite Sealants," M.S. Project, Wichita State University, May 8, 2015.

64. Aybala Usta, "Synthesis, Analysis and Characterization of Electrically Sensitive PVA Hydrogels Loaded with MTX Cancer Drugs," M.S. Thesis, Wichita State University, November 26, 2014.

65. Khairul B. Mahat, "Effects of UV Exposure on Properties of Carbon Fiber/PPS Thermoplastic Composites," M.S. Project, Wichita State University, December 1, 2014.

66. Asanga M. Amarasekara, "Briquetting and Carbonization of Naturally Grown Algae Biomass for Activated Carbon Applications," M.S. Project, Wichita State University, December 1, 2014.

67. Ka Pho Man (Michelle), "Investigating the Drug Loaded Magnetic Nanocomposite Spheres for Collagen Induced Arthritis Murine Model," M.S. Thesis, Wichita State University, July 2014.

68. Toan P. Dhin, "Effects of Carbon Black Nanoparticles on Physical Properties of Biodegradable Polymeric Nanocomposites," M.S. Project, Wichita State University, July 2014.

69. Temmuz Coskun, "Investigating Solid-state Supercapacitors Constructed with PVA/CNT Nanocomposite Electrolytes," M.S. Thesis, Wichita State University, April 2014.

70. Seyed Alireza Razinobakht, "Silanization Effects of Carbon Black Nanoparticles on Curing Kinetics of Nanocomposites," M.S. Thesis, Wichita State University, April 2014.

71. Emil Jurak, "Studying the Effects of Acid Treatments on the Electrical Behaviors of CNT Wires," M.S. Thesis, Wichita State University, April 2014.

72. Jessica Irving, "Improving the Efficiency of Water Electrolysis via Conductive Nanoadditives and Carbon Fiber Electrodes," M.S. Project, Wichita State University, April 2014.

73. Jithin Mathew George, "Effects of UV Light and Moisture Absorptions on Impact Resistances of Three Different Carbon Fiber Reinforced Composites," M.S. Thesis, Wichita State University, March 2014.

74. Daouda Diouf, "Investigating the Effects of Silanized Graphene Nanocomposite Coatings on Fiber Reinforced Composites Exposed to UV Light and Salt Fog Environments," M.S. Thesis, Wichita State University, February 2014.

75. Vishal V. Nageshkar, "Enhancing the Splitting Efficiency of Water Molecules Using Conductive Nanomaterials," M.S. Thesis, Wichita State University, December 2013.

76. Ali Ghazinezami, "Fire Retardancy, Thermal Stability and Mechanical Properties of Polymeric Based Nanocomposites," M.S. Thesis, Wichita State University, December 2013.

77. Virat Mathur, "Effects of Nanoscale Inclusions on Impact Resistance of Kevlar-Epoxy Laminate Composites," M.S. Thesis, Wichita State University, December 2013.

78. Waseem Mohammed, "Fabrication and Characterization of $TiO_2$ Nanofibers Incorporated with ITO Nanoparticles," M.S. Project, Wichita State University, December 2013.

79. Manish Shinde, "Synthesis and Analysis of Electrospun $TiO_2$ Nanofibers Incorporated with Nanoscale Inclusions for Improved DSSC Efficiencies," M.S. Thesis, Wichita State University, December 2013.

80. Gena N. Le, "Investigating the Mechanical Properties of Out-of-Autoclave Pre-Preg NCF Composites," M.S. Project, Wichita State University, December 2013.

81. Louie Nghia Le, "Nanocomposites and Graphene Oxide Thin Film Coatings on the Surface of Fiber Reinforced Composites for Enhanced Flame Retardancy," M.S. Thesis, Wichita State University, May 2013.

82. Zeinab Veisi, "Detection of Cox-2 Enzyme Using Highly Sensitive Electrospun Polyaniline Nanofiber-Based Biosensor," M.S. Thesis, Wichita State University, May 2013.

83. Md Syef Seraz, "Electrochemical Analysis of Antibacterial Polyelectrolyte Coated Mg Alloys for Cardiovascular Applications," M.S. Thesis, Wichita State University, May 2013.

84. Kevin Andrew Brauning, "Mitigation of Machining Damage on Delamination of Fiber Reinforced Composite Tensile Coupons," M.S. Thesis, Wichita State University, May 2013.

85. Michael Lee Jenkinson, "Electrochemical Evaluation of the Aircraft Al Alloys Surfaces Treated with Metallic and Nanocomposite Coatings," M.S. Project, Wichita State University, May 2013.

86. Stephanie Patrick, "Fabrication and Characterization of Antibacterial Polycaprolactone and Natural Hydroxyapatite Nanofibers for Bone Tissue Scaffolds," M.S. Thesis, Wichita State University, May 2013.

87. Sachin Sharma Ashok Kumar, "Incorporation of Graphene Thin Films into the Carbon Fiber Reinforced Composite via 3D Composite Concept against the Lightning Strikes of Composite Aircraft," M.S. Thesis, Wichita State University, December 2012.

88. Vamsidhar R. Patlolla, "Improvements and Effects of Porosity on Interlaminar Tensile Strength of Curved Beam Carbon Fiber Composites," M.S. Thesis, Wichita State University, November 2012.

89. Angelie Marie Vincent, "Evaluation of Residual Stresses on Welded Aircraft Titanium Alloy Sheets via Hole-drilling Strain Gage Method," M.S. Project, Wichita State University, November 2012.

90. Suhasini Pyarasani, "Antibacterial Hydrogels Reinforced by Electrospun Nanofibers," M.S. Project, Wichita State University, August 2012.

91. Helene T. Ndjountche Gandy, "Adhesiveless Honeycomb Sandwich Structure with Carbon Graphite Pre-preg: A Comparative Study to the Use of Adhesive Film," M.S. Thesis, Wichita State University, May 2012.

92. Madhulika Srikanth, "In Vitro Cytotoxicity Tests of Nanomaterials on 3T3 and L929 Cells," M.S. Thesis, Wichita State University, May 2012.

93. Harish Muppalla, "Highly Hydrophilic Electrospun Fibers for the Filtration of Micro and Nanosize Particles Treated with Coagulants," M.S. Thesis, Wichita State University, December 2011.

94. Phuoc Nguyen, "Nanotechnology and Nanosafety in Automotive Industry," M.S. Project, Wichita State University, December 2011.

95. Sarah F. Jurak, "Statistical Analysis of the Mechanical Properties of Friction Stir Welds in 2024 and 2198 Aluminum Alloys," M.S. Thesis, Wichita State University, December 2011.

96. Dominic P. Ha, "Synthesis and Characterization of Graphene Nanoflakes-Based Polycaprolactone Bionanocomposites," M.S. Project, Wichita State University, December 2011.

97. Farhana Abedin, "Magnetic and Albumin Targeted Drug Delivery for Breast Cancer Treatment," M.S. Thesis, Wichita State University, July 2011.

98. Md. Rajib Anwar, "Electrospun Fiber-Based Biosensors for Ultrasensitive Protein Detection," M.S. Thesis, Wichita State University, July 2011.

99. Vincent Rodriguez, "Thermally Conductive Nanocomposite Fibers for Lithium-ion Battery Membranes," M.S. Project, Wichita State University, July 2011.

100. Vinay Kumar Adigoppula, "A Study on Nafion Nanocomposite Membranes for Proton Exchange Membrane Fuel Cells," M.S. Thesis, Wichita State University, May 2011.

101. Kyle Nilsen, "Development of Low-Pressure Filter Vessel Using Electrospun Nanofiber Membranes for Water Treatment," M.S. Thesis, Wichita State University, May 2011.

102. Michael Jay Holle, "Effects of Hardness on the Lifetime of Graphite Brushes Used for Aircraft Starter Generators," M.S. Thesis, Wichita State University, May 2011.

103. Darren Chiao, "Corrosion Behavior of Copper and Aluminum Meshes in Different Electrolyte Solutions," M.S. Project, Wichita State University, May 2011.

104. Mohamad H. Ghaddar, "Surface Energy Changes on UV Exposed Nanocomposite Coatings of Fiber Reinforced Composites," M.S. Project, Wichita State University, May 2011.

105. Holly M. Haynes, "Production Alternatives to Screen Printing for Dye Sensitized Solar Cells in Laboratory Testing," M.S. Thesis, Wichita State University, December 2010.

106. Venumadhav Movva, "Evaluation of Advanced Composites Using Destructive and Non-Destructive Testing Techniques," M.S. Project, Wichita State University, December 2010.

107. Shifath Ikram Khan, "A Study on Graphene-Based Nanocomposite Coatings Subjected to UV Degradation," M.S. Thesis, Wichita State University, December 2010.

108. Ramya Jannapu Reddy, "Preparation, Characterization and Properties of Injection Molded Recycled HDPE Graphene Nanocomposites," M.S. Thesis, Wichita State University, October 2010.

109. Shalini Davluri, "CNT-Based Electrospun Nanocomposite Fibers from Recycled Plastics," M.S. Project, Wichita State University, July 2010.

110. Vinay K. Dandin, "Properties of Recycled PVC and PS Nanocomposite Fibers at Various NiZn Ferrite Loadings," M.S. Project, Wichita State University, July 2010.

111. Nguyen The Luc, "Effects of High-Speed Centrifugal Forces on Physical Properties of Fibers," MS All Course Work, Wichita State University, May 2010.

112. Anusha Garikapati, "Cytotoxicity of Biodegradable Magnetic Nanocomposite Spheres for Drug Delivery Purposes," M.S. Thesis, Wichita State University, May 2010.

113. Gazi A. Mahmud, "Increasing the Coating Resistance against UV Degradation and Corrosion Using Nanocomposite Coating," M.S. Thesis, Wichita State University, December 2009.

114. Muhammet Ceylan, "Superhydrophobic Behavior of Electrospun Nanofibers with Variable Additives," M.S. Thesis, Wichita State University, December 2009.

115. Kelvin Nguyen, "Fabrication and Characterization of Electrospun Magnetic Nanocomposite Fibers," M.S. Project, Wichita State University, May 2008.

116. Bangwei Zhang "Guiding Nonmagnetic Particles by External Magnetic Field in a Microfluidic Device," M.S. Thesis, Wichita State University, October 2008.

117. Bhargava Venishetty, "Non-Destructive Testing of Composite Materials Using Capacitance Bridge," M.S. Project, Wichita State University, October 2008.

118. Sirisha Gokathoti, "Effect of Temperature and Humidity on the Mechanical Properties of Polymeric Nanocomposites," M.S. Project, Wichita State University, October 2008.

119. Sridhar Chitti, "Recycling Survey in the City of Wichita," M.S. Project, Wichita State University, November 2008.

120. Casey Hille, "Corrosion Protection of Unclad 2024-T3 Aluminum with MWCNT Epoxy Primer Composite and Chromate Conversion Coating," M.S. Project, Wichita State University, December 2008.

121. Heath Misak, "The Distribution and Flow of Nickel Powder and Carbon Nanotubes Mixed in an Aluminum Matrix via Friction Stir Welding," M.S. Thesis, Wichita State University, December 2008.

122. Shashanka Revuri, "Nanocomposite Coating for Corrosion Protection," M.S. Project, Wichita State University, December 2008.

123. Sattar Ali, "Comparison of Different Coating Materials in Salt Fog Chamber," M.S. Project, Wichita State University, December 2008.

124. Steven Smyth, "Hot Temperature Corrosion: Causes, Effects and Preventions," all M.S. coursework, September 2007.

125. Narender Reddy Musku, "Conductive Nanostructured Materials Fabrication and Characterization: Gold, Silver and Platinum," M.S. Project, Wichita State University, September 2007.

126. Ramchander Rao Yerravalli, "Nanofilm Fabrication and Characterization," M.S. Project, Wichita State University, December 2007.

127. Syed Mustafa Hussain, "Non-Destructive Testing and Repair of Composite Materials: A Review," M.S. Project, Wichita State University, December 2007.

128. Hearty Pinnamaneni, "Fabrication and Characterization of Magnetic Nanoparticles," M.S. Project, Wichita State University, December 2007.

## Doctor of Philosophy Students

1. Lateefah Miller, "Remineralizing Dental Caries through Multifunctional Nanocomposite Materials Incorporated with PCL, PLA and HA Nanoparticles," Ph.D. Dissertation, Wichita State University, December 15, 2024.

2. Sina Davani, "Manufacturing and Testing of Emulsified Micro and Nano Biodiesel Blends using Water and Other Natural Resources for Enhancement of Fossil Fuels," Ph.D. Dissertation, Wichita State University, July 15, 2023.

3. Mohammed A. Alamir, "Designing, Manufacturing, Testing, and Modelling Motorcycle Helmets Using Hybrid Composite Systems," Ph.D. Dissertation, Wichita State University, November 23, 2021.

4. Fenil J. Desai, "Encapsulated Metal Hydride and Carbon Particles in Polymeric Matrix - an Approach to Enhances Hydrogen Storage Properties of Metal Hydrides," Ph.D. Dissertation, Wichita State University, April 29, 2021.

5. Md. Nizam Uddin, "Permanent Electrospun Superhydrophobic Hybrid Nanocomposite Fibers for Fog Harvesting," Ph.D. Dissertation, Wichita State University, August 6, 2020.

6. Anas A. Shargawi, "Mechanical Testing and Evaluation of D3o® Material for Adequacy of an Ergonomic Intervention for Vibrations Transmission Reduction in Aircraft Manufacturing," Ph.D. Dissertation, Wichita State University, July 17, 2020 (Co-Chair).

7. Aybala Usta, "Synthesis, Characterization, and Hyperthermia Studies of Thermosensitive Hydrogels Associated with Magnetic Nanoemulsions," Ph.D. Dissertation, Wichita State University, July 13, 2018.

8. Sarah F. Jurak, "Synthesis and Analysis of Superhydrophobic-Based Corrosion Protection Systems for Aluminum Alloys and Their Evaluations on Friction Stir Spot-Welded Metals," Ph.D. Dissertation, Wichita State University, April 27, 2018.

9. Vamsidhar R. Patlolla, "Improving and Predicting the Strengths of Fiber-reinforced Composites Using a Graphene-Based Self-Healing System and Finite Element Analysis," Ph.D. Dissertation, Wichita State University, March 29, 2018.

10. Ibrahim Alarifi, "Fabrication and Characterization of Electrospun Carbonized Polyacrylonitrile Fibers as Strain Gauges in Composite Aircraft for Structural Health Monitoring Applications," Ph.D. Dissertation, Wichita State University, April 4, 2017.

11. Leyla Saeednia, "Investigating the Mechanical and Biological Properties of Nanoparticles-Infused Thermosensitive Chitosan Hydrogels for Targeted Drug Delivery," Ph.D. Dissertation, Wichita State University, April 26, 2016.

12. Abdulaziz R. Alharbi, "Advancements in Electrospun Nanofibers for Water Splitting and Water Treatment," Ph.D. Dissertation, Wichita State University, April 5, 2016.

13. Madhulika Srikant, "Investigating the Regeneration Behaviors of Neuroglial Cells on Artificially Made Electrospun PCL Scaffolds Embedded with Conductive Nanomaterials," Ph.D. Dissertation, Wichita State University, July 10, 2015.

14. Amir Jabbarnia, "Synthesis and Characterization of Electrospun Polyvinylidene Fluoride (PVdF)-Based Polymeric Separators for Supercapacitor Applications," Ph.D. Dissertation, Wichita State University, November 25, 2014.

15. Muhammet Ceylan, "Synthesis and Characterization of Electrospun Nanofibers for Advanced Drug Delivery and Cell Culturing," Ph.D. Dissertation, Wichita State University, April 2014.

16. Puttagounder Swaminathan Dhanasekaran, "Fabrication and Characterization of Highly Porous PEEK Bionanocomposites Incorporated with Carbon and Hydroxyapatite Nanoparticles for Scaffold Applications," Ph.D. Dissertation, Wichita State University, May 2013.

17. Bangwei Zhang, "Manufacturing, Characterization and Modeling of Graphene-Based Nanocomposites for Aircraft Structural and Lightning Strike Applications," Ph.D. Dissertation, Wichita State University, December 2012.

18. Erkan Kececi, "Highly Durable Hydrophobic Thin Films for Moisture Prevention of Composite Structures for Aerospace Applications," Ph.D. Dissertation, Wichita State University, May 2012.

19. Heath E. Misak, "Pre-Clinical Treatment of Skin Cancer by Magnetic-Protein Nanocomposite Drug Delivery System," Ph.D. Dissertation, Wichita State University, December 2011.

20. Waseem S. Khan, "Improving the Physical Properties of Electrospun Fibers by Nanoscale Inclusions," Ph.D. Dissertation, Wichita State University, December 2010.

21. Humphrey L. Wamocha, "Synthesis and Characterization of 5-FU Loaded Magnetic Nanocomposite Spheres for Advanced Drug Delivery," Ph.D. Dissertation, Wichita State University, July 2010.

**Research Associates, Postdocs, and Professors**

1. Dr. Halil Yildirim, Assistant Professor, "Thermoforming of Thermoplastic Fiber Composites for Energy and Aviation," Wichita State University, August 2024 – August 2025.

2. Ms. Arshyn Zhengis, Research Assistant, "Zwitterionic Polymer-based Nanomembrane Systems for Improved Desalination Processes," Wichita State University, August 2024 – October 2025.

3. Dr. Hayrettin Duzcukoglu, Professor, "Electromagnetic Shielding of Nanocomposite Materials for Aviation," Wichita State University, February 2023 – August 2024.

4. Dr. Halil Burak Kaybal, Assistant Professor, "Application of Nanocomposite Coatings with Permanent Superhydrophobic Surface Properties for De-icing and Anti-icing of Unmanned Aerial Vehicles," Wichita State University, January 2023 – August 2024.

5. Dr. Veera Sajjanapu, Postdoc, "Design, Manufacturing and Modeling of Piezoelectric Nanocomposite Fibers and Fiber Reinforced Composites," Wichita State University, September 2021 – February 2022.

6. Dr. Sarah Jurak, Postdoc, "Mechanically Robust Superhydrophobic-Based Corrosion Protection Systems on Friction Stir Welded Metals," Wichita State University, April 2019-March 2020.

7. Mr. Nepal Kiran, Research Associate, "Design and Evaluation of Highly Robust Nanofilter Systems for Continuous Water Supplies in Rural Area," Wichita State University, January 2019-December 2019.

8. Dr. Aybala Usta, Postdoc, "Fabrication and Characterization of Drug Loaded Hydrogels for Advanced Therapy," Wichita State University, January 2019-May 2019.

9. Mr. Balakrishnan Subeshan, Research Associate, "Synthesis and Analysis of Nanostructured Materials for Energy Conversion and Storage," Wichita State University, March 2018-October 2018.

10. Dr. Leyla Saeednia, Postdoc, "Fabrication and Characterization of Drug Loaded Hydrogels Incorporated with Nanoparticles for Targeted Drug Delivery Systems," Wichita State University, September 2016-May 2017.

11. Dr. Ayse Busra Sengul, Assistant Professor, "Algae-Based Lipid Productions for $CO_2$ Reduction and Environmental Mitigations," Wichita State University, June 2016-September 2018.

12. Dr. Cumhur Cosgun, Assistant Professor, "Structural Health Monitoring of Infrastructures and Lifetime Predictions Using Highly Sensitive Nanosensors," Wichita State University, August 2015-September 2017.

13. Dr. Yanhong Ding, Associate Professor, "Synthesis and Analysis of Highly Hydrophilic Electrospun PVC Nanofibers Incorporated with PVP Polymer," Tianjin University of Technology, China, March 2015-December 2016.

14. Dr. Xu Ma, Associate Professor, "Energy Band Gap Tuning of Semiconductors via Electrospinning Process for Improved Energy Conversion," Tianjin University of Technology, China, March 2015-December 2016.

15. Dr. Amir Jabbarnia, Postdoc, "Design and Analysis of Nanostructured Materials for Energy Conversion and Storage," Wichita State University, January 2015-December 2015.

16. Dr. Seyed A. Soltani, Postdoc, "Curing Kinetics of Epoxy Nanocomposites Incorporated with Functionalized Nanoparticles," Wichita State University, January 2014-August 2014 (part time).

17. Dr. Heath E. Misak, Postdoc, "Functionalization of CNT Wires for Improved Electrical and Mechanical Strengths," Wichita State University, May 2013-December 2014.

18. Mr. Jianhao Jiang, Research Associate, "Plasmid-Based Gene Delivery by both Nanofibers and Nanocomposite Spheres for Cancer Treatment," Wichita State University, January 2013-July 2013.

19. Dr. Kasim Biber, Associate Professor, "Thermal Properties of Nanostructured Materials," Bartin University, Turkey, June-September 2012.

20. Mr. Kimal Honour Djam, Research Associate, "Development of Highly Ordered $TiO_2$ Nanotubes for DSSC," Wichita State University, March-December 2012.

21. Dr. Waseem S. Khan, Postdoc, "Development of Nanocomposite Fiber Catalysts for Water Splitting," Wichita State University, October 3, 2011-December 2013.

22. Dr. Mahdi S. Kashani, Postdoc/Consultant, "Evaluation of Ti Alloy Sheet Reinforced Fiber Composites Using Finite Element Modeling (ABAQUS)," Wichita State University, April 2011-March 2012 (part time).

23. Mr. Venumadhav Movva, Research Associate, "Destructive and Non-Destructive Testing of Fiber Reinforced Composites for Aircraft Industry," Wichita State University, January 10-May 9, 2011.

24. Mrs. Lateefah Miller, Research Associate, "High Strength Honeycomb Composite Fabrication for Structural Applications of Aircraft," Wichita State University, August-December 2010.

25. Mr. Khan Habeeb Ur Rahman, Research Associate, "UV Prevention of Composite Coatings," Wichita State University, January-November 2009.

26. Dr. Mohamed El-Tabey, Postdoc, "Magnetic Nanocomposite Fiber Fabrication and Characterization," Wichita State University, May 2008-January 2009.

# DIVERSITY AND MULTICULTURALISM

Strong experience in diversity settings and a willingness to work with diverse populations in a multicultural environment. An active member of the **Tilford Commission Strategic Plan for Diversity** at WSU since August 2013, and regular participation in group meetings and discussions on and outside of campus.

# SERVICES

## University-Level Service at WSU

1. Senator, Department Representative, Wichita State University, May 2024-2026.

2. Member, Faculty Evaluation and Alignment Committee, Wichita State University, May 2022-2024.

3. Senator, Department Representative, Wichita State University, May 2020-2022.

4. Member, Graduate School Dean Search Committee, Wichita State University, August 2018-2019.

5. Member, Academic Affairs, Wichita State University, August 2018-2020.

6. Member, University Research Council, Wichita State University, August 2018-2020.

7. Member, Dorothy and Bill Cohen Honors College Committee, Wichita State University, August 2017-2018.

8. Member, Faculty Senate Standing Committee, Faculty Support, Wichita State University, June 2016-2018.

9. Member, Koch Scholarship Competition Committee, Wichita State University, August 2015-2019.

10. Member, Undergraduate Research and Creative Activity Forum (URCAF), Wichita State University, August 2012-2016.

11. Member, Graduate Research and Scholarly Projects (GRASP) Symposium Organization Committee, Wichita State University, Wichita, KS, August 2012-2016.

12. Member, University Admissions and Exceptions Committee, Wichita State University, August 2012-2015.

## College-Level Service at WSU

1. Member, College Tenure and Promotion Committee, College of Engineering, August 2023 - 2026.

2. Member, Establishing Materials Engineering Department Committee, College of Engineering, August 2019-Auguts 2020.

3. Member, Wallace Invitational Scholarships in Engineering (WISE) Committee, College of Engineering, August 2015-December 2019.

4. Member, College Tenure and Promotion Committee, College of Engineering, August 2014-17.

5. Member, Business Continuity Plan, College of Engineering, August 2013-2014.

6. Member, College of Engineering Business Manager Selection Committee, College of Engineering, November 2013.

7. Member, Awards and Scholarship Committee, College of Engineering, September 2013-15.

8. Member, Engineering Student Success Center, College of Engineering, August 2013-2014.

9. Member, Ad Hoc Committee on Graduate Support, College of Engineering, April 2013-2014.

10. Member, Dean's Faculty Advisory Board, College of Engineering, August 2012-2014.

11. Member, Strategic Planning Graduate Program Development Team, College of Engineering, August 2012-2014.

12. Member, Organizational Structure Team, College of Engineering, August 2012-2014.

13. Member, Retention and Recruitment Search Committee, College of Engineering, March 2012-2015.

14. Judge, Project Lead The Way (PLTW) Competition and Showcase for Local High Schools in South Kansas, College of Engineering, April 2012-May 2015.

15. Member, Composites Committee, College of Engineering, August 2011-15.

16. Member, Safety Committee, College of Engineering, August 2011-14.

17. Member, Strategic Planning Team, Student Advising, College of Engineering, August 2011-14.

18. Member, Strategic Planning Team, Faculty Recruiting and Retention, College of Engineering, August 2011-14.

19. Member, Facility Supervisor/Manager Search Committee, College of Engineering, September 2011.

20. Member, Engineering Council for Undergraduate Students, College of Engineering, September 2008-10.

21. Judge, Wichita State Wallace Invitational Scholarships in Engineering (WISE), College of Engineering, August 2008-15.

## Department-Level Service at WSU

1. Chair, Department Tenure and Promotion Committee, Department of Mechanical Engineering, August 2023-January 2026.

2. Advisor of Senior Capstone Design Projects, Department of Mechanical Engineering since 2018.

3. Chair, Faculty Search Committee, Department of Mechanical Engineering since August 2014.

4. Member, Mechanical Engineering Revitalization Plan for the Creation of "Department of Mechanical and Materials Engineering," Department of Mechanical Engineering, February 2013-15.

5. Chair, Nanomaterials Safety Committee, Department of Mechanical Engineering, September 2010-13.

6. Member, Department Tenure and Promotion Committee, Department of Mechanical Engineering, August 2012-20.

7. Member, Faculty Search Committee, Department of Mechanical Engineering, January 2010-14.

8. Member, Faculty Search Committee, Department of Biological Sciences, January-May 2010.

9. Member, Faculty Search Committee, Biomedical Engineering Program, January-August 2010.

10. Member, Department Curriculum Committee, Department of Mechanical Engineering, January 2009-August 2014.

11. Chair, Laboratory Safety Committee, Department of Mechanical Engineering since January 2009.

12. Member, Accreditation Board for Engineering and Technology (ABET), Department of Mechanical Engineering since September 2008.

13. Judge, Engineering Open House for student projects of the Department of Mechanical Engineering since May 2007.

14. Member, Teaching Laboratory Committee, Department of Mechanical Engineering since January 2007.

## Community Service in the City and State Levels

1. Director of Water, Sanitation and Environmental Program of the Research and Development for the Humane Water, a Non-Profit Organization, Derby, KS, since February 2017.

2. Director of Research and Conference for the Academy of Healthy Water, Ecosystem and Environment Corporation (AHWEEC), a Non-Profit Organization, Derby, KS, December 2013-February 2015.

3. Author of 29-page study manual for the Kansas Science Olympiad Tournament for Materials Science (C) Section (High School), Wichita, KS, October 2013.

4. Director of Wichita SAMPE Chapter (313 professional members in the Midwest), Wichita, KS, since September 2013.

5. Advisor of Wichita SAMPE Student Chapter (42 student members), Wichita, KS, since January 2013.

6. One of the organizers of Kansas Science Olympiad for high school students, Wichita, KS, between October 2012 and October 2014 (http://webs.wichita.edu/scienceolympiad/).

7. Vice Chairman of Wichita SAMPE Chapter (313 professional members in the Midwest), Wichita, KS, between September 2012-13.

8. Judge for WSU Shocker MINDSTORMS Challenge between 4$^{th}$ and 8$^{th}$ Grade Students in Lego Competition, Wichita, KS, February 2009-14.

9. Outreach Activities for Nanotechnology for K-12 Students and School Teachers, mainly for underrepresented and underserved larger minority groups and women in Wichita, KS, March 2008-14.

10. Judge for Wichita Regional Science and Engineering Fair for K-12 Students, mainly for the student competition in science in Wichita, KS, May 2008-2012.

11. Member of International Student Organization (for international student affairs and housing), Virginia Tech, Blacksburg, VA, August 1999-2001.

## ORGANIZATIONS AND CHAIRMANSHIPS

1. Track Chair of the "Nanomaterials and Nanoengineering Track for the 2024 International Conference on Industry, Engineering, and Management Systems (IEMS)", Disney Springs Area, FL, March 3-5, 2025.

2. Track Co-Chair of the "Nanomaterials and Nanoengineering Track for the 2023 International Conference on Industry, Engineering, and Management Systems (IEMS)", Disney Springs Area, FL, March 4-6, 2024.

3. Track Co-Chair of the "Nanomaterials and Nanoengineering Track for the 2023 International Conference on Industry, Engineering, and Management Systems (IEMS)", Clearwater Beach, FL, March 5-7, 2023.

4. Track Chair of the "Nanomaterials and Nanoengineering Track for the 2021 International Conference on Industry, Engineering, and Management Systems (IEMS)", Online Conference (due to the Covid-19), March 15-17, 2021.

5. Session Chair for "American Society for Engineering Education (ASEE) Midwest Section," Wichita, KS, September 15-17, 2019.

6. Session Co-Organizer for "Environmental Effects of Aerospace Structures and Materials," Aerospace Structures and Materials in ASME 2014, Montreal, Canada, November 14-20, 2014.

7. Session Co-Chair for "Environmental Effects of Aerospace Structures and Materials," Aerospace Structures and Materials in ASME 2014, Montreal, Canada, November 14-20, 2014.

8. Session Chair for "Advances in Aerospace Design and Optimization I," Advances in Aerospace Technology in ASME 2013, San Diego, CA, November 15-21, 2013.

9. Session Chair for "Advances in Aerospace Design and Optimization II," Advances in Aerospace Technology in ASME 2013, San Diego, CA, November 15-21, 2013.

10. Session Chair for "Advances in Aerospace Design and Optimization III," Advances in Aerospace Technology in ASME 2013, San Diego, CA, November 15-21, 2013.

11. Topic Organizer and Session Organizer for "Advances in Aerospace Design and Optimization I," Advances in Aerospace Technology in ASME 2013, San Diego, CA, November 15-21, 2013.

12. Topic Organizer and Session Organizer for "Advances in Aerospace Design and Optimization II," Advances in Aerospace Technology in ASME 2013, San Diego, CA, November 15-21, 2013.

13. Topic Organizer and Session Organizer for "Advances in Aerospace Design and Optimization III," Advances in Aerospace Technology in ASME 2013, San Diego, CA, November 15-21, 2013.

14. Session Co-Chair for "Nanostructured Materials II," Nanostructured Materials in ASME 2013, San Diego, CA, November 15-21, 2013.

15. Session Co-Organizer for "Nanostructured Materials II," Nanostructured Materials in ASME 2013, San Diego, CA, November 15-21, 2013.

16. Session Chair for "Alternative and Efficient Energy Technology I," SAMPE Tech Conference, Wichita, KS, October 21-24, 2013.

17. Session Chair for "Alternative and Efficient Energy Technology II," SAMPE Tech Conference Wichita, KS, October 21-24, 2013.

18. Session Chair for "Advances in Aerospace Design and Optimization," Advances in Aerospace Technology in ASME 2012, Houston, TX, November 9-15, 2012.

19. Session Chair for "Aerospace Processes and Optimization," Advances in Aerospace Technology in ASME 2012, Houston, TX, November 9-15, 2012.

20. Topic Organizer, and Session Organizer for "Advances in Aerospace Design and Optimization," Advances in Aerospace Technology in ASME 2012, Houston, TX, November 9-15, 2012.

21. Topic Organizer, and Session Organizer for "Aerospace Processes and Optimization," Advances in Aerospace Technology in ASME 2012, Houston, TX, November 9-15, 2012.

22. Session Chair for "Graphene," SAMPE Tech Conference, Charleston, SC, October 22-25, 2012.

23. Session Chair for "Biomedical Applications," SAMPE Tech Conference, Charleston, SC, October 22-25, 2012.

24. Session Chair for "Nanomaterials Health and Safety," SAMPE Tech Conference, Charleston, SC, October 22-25, 2012.

25. Session chair and co-chair between 2002 and 2011 at several international conferences including ASME, SAMPE, and SME.

# SAFETY

- Safety officer for the Department of Mechanical Engineering, Wichita State University, since January 2007, training undergraduate and graduate students working in wet and dry teaching and research laboratories.

- Author of laboratory safety manual for the College of Engineering, Wichita State University, January 2007 (updated in January 2013).

- Receiver of training in environmental health and safety based on new regulations at Yale University in 2016, Massachusetts Institute of Technology in 2016, and Air Force Research Laboratory in 2012, mainly including chemical health and safety, nanosafety, biological health and safety, electrical safety, occupational health and safety, laser safety, and hazardous waste management.

# GRANT REVIEW PANELS

- NSF Nanomanufacturing (NM) program panel (Metals and Related Nanostructures B), Arlington, VA, May 13, 2011.

- NSF Biomedical Engineering (BME) program panel, Arlington, VA, May 3-4, 2011.

- NSF BME CAREER program panel, Arlington, VA, October 20-21, 2010.

# SKILLS

## Technical Skills

Experience in and/or ability to operate the following equipment and procedures:

Atomic force microscopy (AFM), scanning electron microscopy (SEM), transmission electron microscopy (TEM), X-ray diffraction (XRD), X-ray photoelectron spectroscopy (XPS), Fourier transform infrared spectroscopy (FTIR), vibrating sample magnetometry (VSM), superconducting quantum interference device (SQUID), chemical vapor deposition (CVD), physical vapor deposition (PVD), differential scanning calorimetry (DSC), thermal gravimetric analysis (TGA), dynamic mechanical analysis (DMA), ellipsometry, UV lithography, lasers (Argon Ion, $CO_2$ and Nd:YAG Pulsed), corrosion devices (Gamry, EIS and salt spray unit), ultraviolet degradation device, vacuum-assisted resin transfer molding (VARTM), autoclave, coating equipment (nozzle spray, solution casting, and spin coating), layer-by-layer (LBL) coating, ultraviolet-visible (UV-Vis) spectrometer, conductivity and capacitance measurement devices, zeta meter, nanosizer, contact angle goniometers, surface tensiometer, hardness measurement devices, stress-strain measurement devices, creep and

fatigue testing devices, temperature and humidity chambers, confocal optical microscopes, hot and cold presses, and metallurgical furnaces.

## Computer Skills

COMSOL Multiphysics, ABAQUS CAE, CATIA, Origin, Matlab, Mathematica 4.2, Sigma, and C++.

## Machine Shop Skills

Special mechanical technician degree and the ability to operate the following machines in machine/manufacturing shops:

Lathe, drill press, milling, molding, CNC, hydraulic press, cutting, arc welding, and friction stir welding

# PROFESSIONAL MEMBERSHIPS

- American Society of Mechanical Engineers (ASME) since 2010.
- Society for the Advancement of Material and Process Engineering (SAMPE) since 2009.
- American Society for Engineering Education (ASEE) since 2007.
- Materials Research Society (MRS) since 2000.

# HOBBIES AND INTERESTS

Reading, Listening to Music, Watching Movies, Swimming, Traveling, and Hiking.