

Mujibur Khan

Assistant Professor, Department of Mechanical Engineering
Georgia Southern University, Statesboro GA 30460
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EDUCATION

- **Ph.D.** in Ocean and Mechanical Engineering Florida Atlantic University (FAU) 2010
Dissertation: Investigation of Nanoscale Reinforcement into Textile Polymers
- **M.Sc.** in Mechatronics King's College, University of London 2004
- **M.Sc.** in Mechanical Engineering Bangladesh University of Engineering and Technology (BUET) 2003
- **B.Sc.** in Mechanical Engineering Bangladesh University of Engineering and Technology (BUET) 2001

PROFESSIONAL EXPERIENCE

- Assistant Professor Georgia Southern University (GSU) 8/2012 – Present
Department of Mechanical Engineering Statesboro, GA
- Research Assistant Professor and Undergraduate Program Coordinator, Department of Mechanical Engineering University of Texas at El Paso (UTEP), El Paso, TX 2011 – 2012
- Research Assistant Florida Atlantic University, Boca Raton, FL 2007 – 2010
Nanocomposites Laboratory, Department of Ocean & Mechanical Engineering
(Supervisor: Professor Hassan Mahfuz)
- Commonwealth Research Scholar Kings College, University of London, London 2003 – 2004
(Supervisor: Dr. Zian S Dai)
- Assistant Professor Bangladesh University of Engineering and Technology (BUET) 2004 – 2006
Department of Mechanical Engineering

RESEARCH INTERESTS

- Nanomaterials and Nanocomposites processing and performance
- Drug-loaded nanofibers for active and targeted cancer drug delivery
- High Performance hybrid nanocomposite fibers for ballistics and high impact applications
- Bio-fibers and green composite materials
- Electrospinning, solution/wet spinning, melt spinning and forced spinning
- Nanomaterials for energy storage
- Doped nanomaterials for thermoelectricity

AWARDS AND GRANT PROPOSALS

1. **PI-** Ultra-Tough Hybrid Nanocomposites (UHMWPE-Nylon 6-SWCT) Fiber for Light-Weight Body Armor (U.S. Army Natick Soldier Research, Development and Engineering Center; NSRDEC for Solicitation Number: W911QY-13-R-0032; 02/09/2015) Amount requested: \$215,000.00; **Pre-proposal under review.**
2. **PI-** Preparation of Soybean Oil-based Biofibers for Ecofriendly Textile and Green Composites (Submitted to United Soybean Board 03/08/2015) Amount requested \$125,000.00, **Concept Paper Under review.**
3. **PI-** Acquisition of a K-Alpha X-Ray Photoelectron Spectrometer for Advanced Materials Research in Georgia Southern University (DoD- Department of the Army; Proposal No. 66842-MS-RIP; 12/10/2014) Amount Requested: \$472,500.00; **Under Review.**
4. **PI-** MRI: Acquisition of a NF Electrospinning system for multidiscipline nanofiber/ nanotechnology research, training and teaching (NSF-MRI Proposal, Division of Material Research- 03070000 DMR; 08/01/13 – 07/30/2016) Funding Amount: \$153,000.00. **Awarded (Award number # DMR 1337545).**
5. **PI-** “Electrospinning of Aromatic Polymer Nanofibers” (Solvay Specialty Polymers, USA, LLC; 09/15/ 2014) Funding Amount: \$20,000.00; **Awarded (Award ID 000221-00001; 39G221).**
6. **PI:** “Advancing content knowledge of science teachers through hands-on experiments in nanofiber and nanotechnology” (Solvay Specialty Polymers, USA, LLC; 06/15/ 2014) Funding Amount: \$70,000.00; **Awarded (GSU Foundation-Reference 3-4030).**
7. **PI-** Electrospinning of bio-inspired drug-loaded core-sheath nanofibers for targeted anticancer drug delivery (Allen E. Paulson College of Engineering & Information Technology Faculty Research Seed Grant 2014; 11/4/2014) Funding Amount: \$9963.00; **Awarded.**
8. **Senior Personnel & Mentor-** Collaborative Multidisciplinary Investigations Through Undergraduate Research Experiences: CEMITURE (NSF-REU; 08/02/2014) Funding Amount: \$270,000.00; **Awarded (Award Number# 1359229).**
9. **PI-** Faculty Development Committee (FDC) Travel Award FY 14; 10/21/2014; Funding Amount: \$1,360.00; **Awarded.**
10. **PI-** Research Assistantship (RA) Investment Grant (Office of the Vice President for research and Economic Development, GSU; 06/04/2014) Funding Amount: \$25500.00; **Awarded.**
11. **PI-** Nanofiber based carbon capture technology to reduce the CO2 emissions in GSU campus (Center for Sustainability, GSU, May 2014) Funding Amount: \$30,044.00; **Awarded.**
12. **PI-** Ultra-Tough Hybrid Polymer/CNT Fiber for Light-Weight Composite Body Armor (Allen E. Paulson College of Engineering & Information Technology Faculty Research Seed Grant to procure a Solution Spinning Line; 3/20/2013) Funding Amount: \$30,000.00; **Awarded.**
13. **PI-** Integrated synthesis, characterization and testing of nano- reinforced ultra-tough hybrid polymer fiber for light weight body armor (ORSSP faculty development research grant, GSU; 07/01/ 2013 – 06/30/2014); Funding Amount: \$10,000.00; **Awarded.**

14. **Co-PI-** Si/Carbon Nanotubes Nanocomposites for Thermo-electrical Applications (College of Science & Mathematics (COSM) Interdisciplinary Pilot Grant, Georgia Southern University; 01/01/2013-12/31/2013) Funding Amount: \$10,000.00; **Awarded.**
15. **PI-** Thermoelectric thermal barrier nano-coatings for high temperature applications (University Research Institute (URI) grant, University of Texas at El Paso) Funding Amount: \$5000.00; **Awarded.**
16. **Faculty Mentor/Advisor-** Incorporation of fluorescent marker into nanofibers for analyzing the release mechanism of drugs for cancer therapy (CEIT-UR Research Proposal Fall 2014 for Sam Chambers; 11/04/2014) Funding Amount: \$3000.00; **Awarded.**
17. **Faculty Mentor/Advisor-** Electrospun Cellulose Fibers from Kraft Pulp (CEIT-UR Research Proposal Spring 2013 for Maxwell Friel; 03/07/2013) Funding Amount: \$2499.00; **Awarded.**
18. **PI-** Reduction of CO₂ Exhaust Emission through MOF (Metal Organic Framework) nanoparticles loaded Nanofibrous Membranes Based Filter Technology (Selected to submit to Georgia Power; GRAPE Program 2014; 7/11/2014) Amount Requested: \$99,270.00; **Not Funded.**
19. **PI-** Hybridization of nanocomposite-enhanced inorganic phase change materials (metal-doped carbon nanotubes (CNTs) nano-cluster-embedded in nitrate eutectic binary/ternary molten salts) for thermal storage in concentrated solar power (Selected to submit to Georgia Power; GRAPE Program 2014; 7/11/2014) Amount Requested: \$99,736.00; **Not Funded.**
20. **PI-** Graduation Attainment Program: GAP (NSF-IUSE Proposal, Division of undergraduate education-11040000 DUE; PD 14-7513; 02/04/2014) Amount requested: \$1,996,402.00; **Not Funded.**
21. **Co-PI-** STEP Pathways to Increase Graduation rates in Undergraduate Programs (STEPPING UP) (NSF-DUE; Division of undergraduate education- Proposal 11040000 DUE; NSF 11-550) Amount requested: \$ 1,962,590.00; Made the 2nd tire short listed review; **Not funded.**
22. **PI-** Collaborative Research: Integrated synthesis, characterization and multiscale analysis of aligned nanotube reinforced ultra-tough hybrid polymer filaments (NSF-DMR Proposal, Division Material Research- PD 03-1773; 03070000 DMR; 05/01/13) Amount requested: \$185,742.00; **Not Funded.**
23. **PI-** Collaborative Research: Processing and multiscale mechanics of hybrid ultra-high molecular weight polyethylene-nylon-nanotube nanocomposite fibers with ultra-high normalized velocity (NSF-CMMI Proposal, 07030000 CMMI; 02/01/12) Amount requested: \$220,198.00; **Not Funded.**
24. **Co-PI-** Silicon carbide nanowire (SiCNW)-carbon nanotube (CNT) heterojunctions reinforced SiC nanocomposite with embedded nanotwins for fusion nuclear reactor applications.(Agency: Office of Fusion Energy Sciences, U.S. Department of Energy (DOE), DE-FOA-0000603; December 2011) Amount requested: \$429,041.00. **Pre-proposal selected; Final Proposal not funded.**

PUBLICATIONS

JOURNAL PUBLICATIONS

1. **M. Khan**, K. Edwards, S. Absar, O. Garcia and R. Quirino, 'Experimental study of Thermopower of SWCNTs and SiC Nanoparticles with B-P (Born-Phosphorus) Sol-gel Diffusion' (Materials Research Innovation, Manuscript No: MRI1786; Under Review) February 2015.
2. **M. Khan**, S. Absar, H. Mahfuz, K. Edwards, 'Morphological Characteristics of UHMWPE+Nylon-6+SWCNT Solution-Spun Hybrid Nanocomposite Fibers Compatibilized with PE-g-MAH', Polymer Science, Paper No: 2015/027; Revised manuscript Under Review) 2015.
3. S. Absar, **M. Khan**, K. Edwards and J. Neumann, 'Investigation of synthesis and processing of Cellulose, Cellulose Acetate and Poly(ethylene oxide) nanofibers incorporating anti-cancer/tumor drug cis-Diammineplatinum (II) dichloride using electrospinning techniques', Journal of Polymer Engineering, Paper No: POLYENG.2014.0341 Accepted for Publication in March 2015.
4. **M. Khan**, S. Absar, J. Denham, J. Neumann and S. Hulsey, 'Encapsulation of Cancer Drug 5-Fluorouracil into Polyethylene Oxide Nanofibers through Coaxial Electrospinning', Nano Communications, Paper No: 14-40; In press, February, 2014.
5. I. Shabib, M. Abu-Shams and **M. Khan**, "Atomistic simulation of nanoindentation response of Fe-10%Cr bi-crystal alloys with $\Sigma 5\langle 001 \rangle$ and $\Sigma 3\langle 110 \rangle$ tilt boundaries", Modelling and Simulation of Materials Science and Engineering, Paper Number: MSMSE-100961 (Under Review) Submitted December 2014.
6. **M. Khan**, H. Mahfuz, A. Adnan, T. Leventouri and S. Absar, 'A Study of Mechanical Behavior and Morphology of Carbon Nanotube Reinforced UHMWPE/Nylon 6 Hybrid Polymer Nanocomposite Fiber', Fibers and Polymers, vol. 15, no. 7, pp. 1484-1492, 2014.
7. **M. R. Khan**, H. Mahfuz, A. Adnan, and I. Shabib, 'Elastic properties of SWCNT reinforced polyethylene: An experimental, theoretical and molecular dynamics evaluation', Journal of Materials Engineering and Performance, Vol 22, Issue 6, 2013.
8. **M. R. Khan** and H. Mahfuz, 'Effect of strain hardening on the elastic properties and normalized velocity of hybrid UHMWPE-Nylon 6-SWCNT nanocomposites fiber', Journal of Materials Research, 27(20), 2012.
9. H. Mahfuz, F. Powell, R. Granata, M. Hosur and **M. Khan**, 'Coating of Carbon Fiber with POSS to Enhance Mechanical Properties and Durability of Carbon/Vinyl Ester Composites', Materials, 4, 1619-1631, 2011.
10. **M. R. Khan**, H. Mahfuz, Th. Leventouri, V. K. Rangari, A. Kyriacou, 'Enhancing Toughness of Low-Density Polyethylene Filaments Through Infusion of Multiwalled Carbon Nanotubes and Ultrahigh Molecular Weight Polyethylene', Polymer Engineering and Science, 51(4), 654-662, 2011.

11. H. Mahfuz, **M. R. Khan**, Th. Leventouri, and E. Liarokapis, 'Investigation of MWCNT Reinforcement on the Strain Hardening Behavior of Ultrahigh Molecular Weight Polyethylene', *Journal of Nanotechnology*, Article ID 637395, 2011.
12. M. A. Rahman and **M. R. Khan**, 'Unique local deformations of the superelastic SMA rods during stress-relaxation tests', *Structural Engineering and Mechanics, an International Journal*, 22, (5), 563-574, 2006.
13. **M. R. Khan** and Jian S. Dai, 'Mathematical analysis of spherical linkage metamorphic robot palm with finger positions', *Journal of Mechanical Engineering, Institution of Engineers, Bangladesh*, 36, 18-26, 2006.

■ CONFERENCE PUBLICATIONS AND PROCEEDINGS

1. S Iqbal, **M. Khan**, S Absar, A Diamanduros, S Chamber, K Scarpinato, "Coaxial Electrospinning of Polycaprolactone Core-shell Nanofibers Encapsulating Cancer Drug 5-Fluorouracil for Active Targeted Drug delivery" Abstract Accepted, *Proceedings of the ASME 2015 International Mechanical Engineering Congress & Exposition, IMECE2015*, November 13-19, 2015, Houston, Texas, USA, IMECE 2015-50811.
2. W Zaman, **M. Khan**, S Harp, S Absar, K Edwards, N Takas, "Fabrication of PAN (Polyacrylonitrile) Nanofiber Membranes Functionalized with MOF (Metal Organic Framework) for CO₂ Capturing" Abstract Accepted, *Proceedings of the ASME 2015 International Mechanical Engineering Congress & Exposition, IMECE2015*, November 13-19, 2015, Houston, Texas, USA, IMECE2015-50806.
3. **M. Khan**, Quazi Nahida Sultana, Saheem Absar, Stephanie Hulsey, Hans Schanz, "Synthesis and Processing of Solution Spun Cellulose Acetate Fibers Reinforced with Carbon Nanotubes" Abstract Accepted, *Proceedings of the ASME 2015 International Mechanical Engineering Congress & Exposition, IMECE2015*, November 13-19, Houston, Texas, USA, 2015, IMECE2014-50804.
4. S. Absar, **M.Khan**, H. Mahfuz and Q. N. Sultana, "Solution Spinning of Hybrid Nanocomposite Fibers", Abstract submitted to the American Society for Composites 30th Annual Technical Conference, September 28-30, 2015, Michigan State University, MI.
5. S. Absar, **M.Khan**, K. Edwards and D. Calamas, "Electrospinning of Cisplatin-loaded Cellulose Nanofibers For Cancer Drug Delivery", *Proceedings of the ASME 2014 International Mechanical Engineering Congress & Exposition, IMECE2014*, November 14-20, 2014, Montreal, Quebec, Canada, IMECE2014-37182.
6. S. Absar, **M.Khan** and K. Edwards, "Processing of Hybrid Nanocomposite High Performance Fibers (UHMWPE+NYLON 6+CNT+MAH) using Solution Spinning Technique", *Proceedings of the ASME 2014 International Mechanical Engineering Congress & Exposition, IMECE2014*, November 14-20, 2014, Montreal, Quebec, Canada, IMECE2014-37183.
7. K. Edwards, **M.Khan**, R. Quirino, B. Beckler and S. Absar, "Enhanced Charge Carrier Concentration of SiC/CNT with N and P Type Doping Agents", *Proceedings of the ASME 2014 International Mechanical Engineering Congress & Exposition, IMECE2014*, November 14-20, 2014, Montreal, Quebec, Canada, IMECE2014-38123.

8. Mahfuz, H. and **Khan, M.R.**, “High Energy Fibers through Nanoparticle Reinforcement in Textile Polymers,” Keynote Lecture, the 3rd Global Conference on Materials Science and Engineering (CMSE 2014), October 20-23, 2014, Shanghai, China.
9. S. Absar, K. Edwards and **M.Khan**, “Electrospun Cellulose Nanofibers for Structural and Biomedical Applications”, 2014 SEM Annual Conference & Exposition, June 2-5, 2014 Greenville, SC, Paper No: 345 (Technical Presentation).
10. **M.Khan**, “Synthesis and Processing of fibers and nanofibers for Structural and Biomedical Applications”, GSU Research Symposium 2014, April 15-16, 2014, Georgia Southern University,
11. S. Absar, J. Denham, J. Neumann, S. Hulsey, K. Edwards and **M.Khan**, “Electrospinning of Bio-nanofibers for Structural and Biomedical Applications”, Teacher Professional Development workshop on Nanomaterials and Nanotechnology, June 2014, Georgia Southern University, Statesboro, GA (Technical Presentation).
12. **M.Khan**, M. Jones, L. Bugarin and S. Sandoval, “Experimental Study of Thermoelectric Properties of SWCNTs and SiC Nanoparticles and its Composites Doped with Sol-gels”, Proceedings of the ASME International Mechanical Engineering Congress & Exposition, IMECE2013-65773, November 15-21, 2013, San Diego, CA, USA.
13. **M.Khan**, M. Friel, and J. Weaver, “Thermoelectric and Mechanical Properties of SiC+SWCNTs+B4C nanocomposites with Sol-gels diffusion”, 2013 ASME District-F Early Career Technical Conference Proceedings, ASME ECTC; November 2 – 3, Birmingham, Alabama USA.
14. M. Friel, S. Absar, J. Neumann and **M.Khan**, “Electrospinning of Bio-Nanofibers for Biocomposites and Drug Delivery”, GSU Research Symposium 2014, April 15-16, 2014, Georgia Southern University, Statesboro, GA.
15. S. Absar, K. Edwards and **M.Khan**, “Co-axial Electrospinning of drug (Cisplatin) loaded Cellulose Acetate Nanofibers for Anti-Tumor/Anticancer Therapy”, GSU Research Symposium 2014, April 15-16, 2014, Georgia Southern University, Statesboro, GA.
16. **M.Khan**, S. Harp, “Nanofiber Based Carbon Capture Technology to Reduce the CO₂ Emissions at GSU Campus”, Sustainability Project SGA Meeting, September 24, 2014, Georgia Southern University, Statesboro, GA.
17. O. Garcia, **M. R. Khan**, A. R. Choudhuri, N. Love, “Experimental Study of Thermoelectric Properties of Randomly distributed CNTs and SiC Nanoparticles”, Submitted to the AIAA JPC/IECEC, 2012 Conference, Atlanta, Georgia.
- A. Chowdhury, O. Garcia, **M.Khan**, L. Cabrera, Thermoelectric properties of Carbon nano tubes, Novel Testing and Materials, 2nd southwest energy science and engineering symposium El Paso, Texas, March, 2012.
18. L. Cabrera, O. Garcia, **M.Khan**, A. Chowdhury, Investigation of thermoelectric properties of SiC+SWCNT, Energy Materials Technology, 2nd southwest energy science and engineering symposium, El Paso, Texas, March, 2012.

19. H. Mahfuz, M.R. Khan, Advances in the development of polymeric fibers with high elastic energy storage capacity, ICME2011,KN3, 18-20 December 2011, BUET, Dhaka, Bangladesh (Key note paper and presentation)
20. H. Mahfuz, M.R. Khan, “Nanoparticle reinforcement of textile polymers for enhanced energy absorption”, The 4th Annual NanoScience Technology Symposium (NanoFlorida TM), September 30 – October 1, 2011, Miami, Florida (Keynote presentation)
21. **M. R. Khan**, H. Mahfuz, and V. Rangari, “Enhancing strain hardening behavior of ultra-high molecular weight polyethylene fibers with carbon nanotubes (CNTs) reinforcement”, ASME International Mechanical Engineering Congress & Exposition November 13-19, 2009, Lake Buena Vista, Florida, USA.
22. H. Mahfuz, **M. R. Khan**, A. Adnan. M. M. Hasan, V. K. Rangari, S. Jeelani and V.Dhanak“Advances in nanoscale reinforcement of Textile polymers”, Proceedings of the 4th BSME –ASME International Conference on Thermal Engineering, 27-29 December, 2008, Dhaka, Bangladesh (Keynote presentation)
23. **M. R. Khan**, H. Mahfuz, and A. Kyriacou, “Synthesis and Characterization of Low Density Polyethylene (LDPE) Reinforced with Functionalized CNTs, Nano-, Bio-, Cellular and Nonlinear Materials”, IMECE2008-68034, Proceedings of IMECE 2008, ASME International Mechanical Engineering Congress and Exposition, October 31-November 6, 2008, Boston, Massachusetts, USA.
24. **M. R. Khan**, H. Mahfuz and T. Leventouri, “Investigation of infusion of Ultra high molecular weight polyethylene (UHMWPE) and carbon nanotube (CNT) into low density polyethylene (LDPE)”, SAMPE fall conference, Sept. 8-11, 2008, Memphis Tennessee.
25. H. Mahfuz, **M. R. Khan** and T. Leventouri, “Reinforcement of Low density polyethylene (LDPE) with CNT and Ultra high molecular weight Polyethylene (UHMWPE)- A systematic approach to enhance strength, modulus and toughness”, US-Japan Conference on Composite Materials, June 6-7, 2008, Tokyo, Japan.
26. J. S. Dai and **M. R. Khan**, “Geometrical and Mathematical Model of five-bar Spherical Linkage Metamorphic Robot Palm”, Proceedings of the International Conference on Mechanical Engineering (ICME 05-AM-11) 28-30 December 2005, Dhaka, Bangladesh.
27. M.A.T. Ali, T.A.G.M. Zaki Nuruddin Jubery and **M. R. Khan**, “Study of mean velocity and flow direction in the mixing zone of two non-axial air streams” International Conference on Mechanical Engineering , 2001, December 26-28 , Dhaka, Bangladesh, IV,1-4.

INVITED LECTURES AT SPECIAL SEMINARS

1. Investigation of dual reinforcement strategy to design and fabricate high performance fibers from UHMWPE (Ultra high molecular weight polyethylene) -The Alan G. MacDiarmid NanoTech Institute, University of Texas at Dallas, May 2011.
2. Hybrid polymer nanocomposites fiber for armor and thermoelectricity in high temperature ceramics, Department of Chemistry, Georgia Southern University, October 2012.

3. Fibers and nanofibers for structural and Biomedical applications – Hearty Advanced Materials Development Center, Savannah Georgia, March 2015.

SCHOLARSHIPS AND ACHIEVEMENTS

- | | |
|---|-------------|
| ▪ Research Fellowship under NSF Funded Project | 2007 – 2009 |
| ▪ Dean’s Scholarship, Mechanical and Ocean Engineering Department, FAU | 2008 – 2009 |
| ▪ Commonwealth Scholarship, UK, London | 2003 – 2004 |
| ▪ Dean's List Award, Bangladesh University of Engineering and Technology (BUET) | 1999 – 2001 |
| ▪ Merit Scholarship, Bangladesh University of Engineering and Technology (BUET) | 1996 – 2001 |

TEACHING EXPERIENCE

■ COURSES TAUGHT AS A SOLE INSTRUCTOR

- | | | |
|---|---------------------|---------------------------|
| ▪ Instructor, Georgia Southern University | 08/2012 – Present | |
| <u>Course</u> | <u>Credit Hours</u> | <u>No. of Enrollments</u> |
| UNDERGRADUATE | | |
| ENGR 2231 Engineering Mechanics I | 3.0 | 29 |
| MENG 1310 Manufacturing Processes | 1.0 | 20 |
| MENG 3333 Materials Processing Studio Lab | 1.0 | 20 |
| MENG 3130 Mechanism Design | 3.0 | 60 |
| MENG 5137 Mechanical System Design (Senior Design) | 3.0 | 08 |
| MENG 4899 Independent Study | 1.0/3.0 | 05 |
| GRADUATE | | |
| TMAE 7891G Enhancement of Thermoelectric properties
SWCNTs/SiC Nanoparticles | 3.0 | 29 |
| TMAE 7891 B Core-Sheath Nanofibers | 3.0 | 20 |
| TMAE 7999 H, N, P, R, S Thesis | 3.0 | 20 |
| ▪ Instructor, University of Texas at El Paso | 2011 – 07/2012 | |
| <u>Course</u> | <u>Credit Hours</u> | <u>No. of Enrollments</u> |
| UNDERGRADUATE | | |
| MECH 2340 Dynamics Mechanics-II | 3.0 | 95 |
| MECH 3334 Mechanical Design | 3.0 | 33 |
| MECH 4346 Mechatronics | 3.0 | 21 |
| MECH 4395 Design Practice | 3.0 | 11 |
| MECH 5391 Individual Studies | 3.0 | 01 |

NEW COURSES PROPOSED AND DEVELOPED BY KHAN

- MECH 4395** Design Practice
- MECH 4376** Pre Professional Experience
- MECH 5391** Individual studies

UNDERGRADUATE PROGRAM CO-ORDINATOR AND ADVISOR

- University of Texas at El Paso 2011 – 2012
 - Modified the undergraduate program curriculum and degree plan.
 - Introduced new courses for the curriculum.
 - Developed an online program guide line for the students.
 - Conducted the student advising sessions on a regular basis.
 - Implemented students' record and data management system.
 - Performed the course evaluation and transfer process for the transfer students.
 - Made decisions for student reinstatement, course drop/add and prerequisites.
 - Coordinated the interdepartmental administrative work for the undergraduate program.
 - Assisted the department with the ABET evaluation and reporting process.

FACULTY ADVISOR OF MINI BAJA STUDENT DESIGN TEAM

- University of Texas at El Paso 2011 – 2012
 - Developed a student team through a selection process.
 - Advised and coordinated the design process.
 - Conducted the preliminary, intermediate and critical design review.
 - Administered the material and components procurement process.
 - Supervised the fabrication, installation and testing.

TEACHING ASSISTANT

- Florida Atlantic University 2008 – 2012

Courses taught:
Vibrations (EOC 3114)
Lab: Strength of Materials (EOC 3150)
Structural Analysis I (EOC 3410)

ASSISTANT PROFESSOR

- Bangladesh University of Engineering and Technology (BUET) 2005 – 2007

Courses taught:
Robotics (ME 445)
Control Engineering (ME 461)
Engineering Mechanics (ME 221)

PROFESSIONAL SERVICES AND ACTIVITIES

JOURNAL REVIEWER

- Polymer International
- Fibers and Polymers
- Nanomaterials
- Polymer Engineering and Science
- Computational Materials Science

PROPOSAL REVIEWER

- AIAA
- National Science Foundation's (NSF) Transforming Undergraduate Education in STEM (TUES) program

CONFERENCE ORGANIZER/SESSION CHAIRS/MEMBER OF PANEL

- Member of Applied Mechanics Division (AMD) of American Society of Mechanical Engineers (ASME) in 2013 and 2014.
- Organizing of the technical session of Nanocomposites processing and performance symposium in the ASME 2014 International Mechanical Engineering Congress & Exposition IMECE 2014 at Montreal Canada, November 14 -20, 2014.
- Organizer of the technical session of Nanocomposites fibers in the ASME 2015.
- International Mechanical Engineering Congress & Exposition to be held at Houston, Texas, November 13-19, 2015.
- Session chair at AIAA JPC/IECEC, 2012 Conference, Terrestrial Fossil Energy Systems, Atlanta.
- Session chair at Georgia 2nd southwest energy science and engineering symposium, 2012, Novel Testing and Materials.
- Session chair at 2013 ASME District-F Early Career Technical Conference Proceedings, ASME ECTC, November 2 – 3, Birmingham, Alabama USA.

PROFESSIONAL MEMBERSHIPS

- American Society of Mechanical Engineers (ASME)
- Society of Manufacturing Engineers (SME)
- American Institute of Aeronautics & Astronautics (AIAA)

SERVICE IN THE COMMITTEES

- Georgia Southern University 08/ 2012 – Present
 - Member, ME and Manufacturing Faculty Search Committee: Served as a member of this committee for year 2013, 2014.
 - Member, Manufacturing Faculty Search Committee: Serving as a member of this committee for year 2015.
 - Member of Graduate Curriculum Committee: Serving in this committee since fall 2014.

- Member of Scholarship Committee: Served in the Scholarship selection committee for ME Department (Pound, Abercrombie, ME MFG, Darley) and CEIT (Paulson Scholarship; Willium Scholarship; Hartsell Scholarship)
- Member of Thesis Defense committee: Served as a member of this committee for two graduate students.
- Member of Faculty Graduate Committee: Served in University Faculty Graduate Committee as an alternative member.
- Served COE Med Team.
- Reviewed graduate level programs.
- Made recommendation about new Programs: (1) completed Program Review Report; and (2) completed CPR Rubric.

▪ University of Texas at El Paso

2011 – 07/2012

- Member of the solid mechanics and control curriculum review committee.
- Member of the ME Senior Design review committee.
- Member of ABET accreditation review committee.

STUDENTS ADVISED

■ CURRENT GRADUATE RESEARCH STUDENTS

Saheem Absar	Hybrid nanocomposite fibers and drug loaded nanofibers
Richard Hood	Nanocomposite enhanced phase change materials
Sakib Iqbal	Drug-loaded nanofibers for targeted cancer drug delivery
Wahiduzzaman	CO ₂ Emission Reduction
Quazi Nahida Sultana	Synthetic and bio-composite fibers

■ PAST GRADUATE STUDENTS

Onasis Garcia: Experimental Study of Thermoelectric Properties for Randomly Distributed Carbon Nanotubes and Silicon Carbide Nanoparticles; Masters of Science in Mechanical Engineering (2012)

■ CURRENT UNDERGRADUATE RESEARCH STUDENTS

Stephanie Hulsey	Hybrid nanocomposite fibers and bio-fibers
Kyle Edwards	Thermoelectric nanocomposites
Samuel Chambers	Drug release analysis from nanofibers using fluorescent markers
Jeffrey Neumann	Electrospinning of structural nanofibers
Maxwell Friel	Fabrication of drug-loaded nanofibers