

Sirajus Salekeen

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EDUCATION:

D. Sc., Mechanical Engineering, 1986
The George Washington University, Washington, DC, U.S.A

M. Sc., Mechanical Engineering, 1991
Tuskegee University, Tuskegee, AL 36088, U.S.A

B. Sc., Mechanical Engineering, 1999
Bangladesh University of Engineering & Technology, Dhaka, Bangladesh

EXPERIENCES:

Visiting Assistant Professor Aug. 2008 – Current
Georgia Southern University, Statesboro, Georgia
Department of Mechanical and Electrical Engineering
Subjects taught: Machine Design, Mechanics of Materials, Engineering Mechanics (Statics & Dynamics)
Engineering Graphics, Essentials of Applied Mechanical Engineering and FYE (First Year Experience)

Research Interests: Advanced and Smart Materials (composite and Nano-composites), Processing, testing, and performance evaluation of advanced materials, Fatigue and ballistic properties evaluation of advanced materials, Non-destructive evaluation of structures, Statistical modeling of experimental data, Mechanical Design and FEA.

Assistant Professor Aug. 2001- May 2008
Tuskegee University, Tuskegee, Alabama
Department of Mechanical Engineering

Subjects taught: Design for Machining and Assembly, Engineering Materials, Advanced Materials Lab, Engineering Economics, Probability and Statistics for Engineers, Machine Design I, Strength of Materials, Theory of Machines, Experimental Mechanics Lab , Engineering Mechanics (Dynamics & Statics), and Freshman Design

Summer Faculty Research Fellow Summers 2006-2008
Naval Surface Warfare Center, Naval Research Lab
Carderock Division, West Bethesda, Maryland
Researched on developing and applying model-based approach to generate Probability of Detection (POD) curves for improved reliability of eddy current inspection of condenser tubes of naval vessels.

Mechanical Engineer Sep. 1999 - Mar. 2001
ThermoRadiometrie, Gaithersburg, Maryland
Designed and developed non-contact thickness measuring systems (called C-FRAMES and O-FRAMES) that use X-RAY and Isotope technology to captures the thickness of flat metals on hot roll mills, cold roll mills and on process lines using AutoCAD and IDEAS
Designed and remodeled the source, detector, conduit, plumbing, track, front and rear wheel, and axle assembly of the C and O FRAMES.
Performed Finite Element Analysis (FEA) on the whole body as well as on the different components of these Frames by using advanced engineering design and analysis software such as IDEAS.
Supported design team by conceptualizing, drafting, analyzing, and documenting the design processes and developed bills of materials

Ensured consistency, accuracy, familiarity and efficiency of each design effort by communicating the nature of all tasks to the team members.

Instructor and Graduate Research Assistant

Jan. 1991 - Aug. 1999

The George Washington University, Washington, DC

Department of Civil, Mechanical and Environmental Engineering

Conducted scientific investigation associated with cyclic fatigue tests of fiber reinforced composite specimens. Developed theoretical models to determine the stiffness degradation of laminated composites under cyclic loading. Also performed tensile, buckling, and creep tests on fiber reinforced plastic composites using Universal Testing Machine (UTS), MTS, and Creep Tester.

Instructed students in the Computer Integrated Design and Analysis Lab. Provided guidance and training in the use of integrated mechanical design and analysis software IDEAS.

Emphasized the importance of teamwork skills and guided students through several design projects.

Help students in the Machine Shop as Lab Assistant.

Graduate Teaching and Research Assistant

Jan. 1988 - May 1991

Tuskegee University, Tuskegee, Alabama

Department of Mechanical Engineering

Processed and tested polymer and ceramic composite specimens. Processing included ply lay up, vacuum bag molding, and hot pressing. Testing included tensile, bending, and fracture toughness test. Performed Scanning Electron Microscopic Analysis of the fracture surfaces.

PUBLICATIONS AND PRESENTATION

Rahman, M., Salyers, T., Maroha, E., Ahmed, M., and **Salekeen, S.**, “Numerical Investigation of Novel Blade Geometry Design of Vertical Axis Wind Turbines for Performance Improvement,” accepted for publication in the Proceedings of the ASME 2016 Power and Energy Conference (PowerEnergy 2016), Charlotte, NC, USA, June 26 – 30, 2016,

M. Rahman, J. Shaw, M. Roesel, B. William, J. Willis and **S. Salekeen**, and M. Ahmed “Finite Element Analysis of Silica Aerogel to be used in High Temperature Insulation Tiles for Next Generation Space Tiles”, presented and published as technical paper in the Proceedings of CAMX 2015 (Composite and Advanced Materials Expo) Conference Proceedings, October 26-29, Dallas, Texas, 2015

M. Rahman, S. Cashwell, Mitchell Dockery, J. Ansley, J. Neumann, R. Shay, **S. Salekeen**, “Analysis of the effectiveness of Modern Ballistic Resistant Materials using Finite Element Techniques” published as a technical paper in the Proceedings of CAMX 2015 (Composite and Advanced Materials Expo) Conference Proceedings, October 26-29, Dallas, Texas, 2015

Rahman, M., Chrysoferidis, S., **Salekeen, S.**, Chevalier, A., Bell, D., Jones, B., and Barlow, A., “Finite Element Analysis of Various Projectiles Modeled as Bullets”, Published in the Proceedings of the ASME 2015 International Mechanical Engineering Congress and Exposition (IMECE 2015), Houston, Texas, USA, November 13 - 19, 2015

A. Mitra, **S. Salekeen**, M. Rahman, “Fabrication of Polyurethane based Fabric Composite Shaft and its Experimental Study under Triple Point Bending” published in CD Proceedings, 2012 ASME International Mechanical Engineering Congress and Exposition (IMECE 2012) November 9-15, 2012, Houston, Texas

S. Salekeen, M. G. K. Khan and S. Jeelani, “High Velocity Impact properties Characterization of Nano-Phased Bi-layered Body Armor,” published in CD Proceedings, 2011 ASME International Mechanical Engineering Congress and Exposition (IMECE 2011), November 11-17, 2011, Denver, Colorado

M. Cheng, **S. Salekeen**, E. Bakhoun, C. Chen, "Adaptive Control of Synchronization for Muti Axis Motion System", paper presented on IEEE SoutheastCon 2010, May 18-21, 2010 Charlotte, North Carolina

S. Salekeen, M. G. K. Khan, M. Hosur and Shaik Jeelani, "Ballistic Properties Characterization Of Nano-Phased Body Armor", presented on Seventh International Conference on Composite Science and Technology (ICCST 07), Sharjah, United Arab Emirates, January 20-22, 2009

S. Salekeen, M. G. K. Khan, S. Jeelani, "Fabrication and Evaluation of Montmorillonite Nanoclay Reinforced Epoxy Composites", SAMPE 08, Long Beach, CA, May 18-22, 2008

N. Trepal, J. M. Liu, K. G. Lipetzky and **S. Salekeen**, "A Model-Based Probability of Detection Approach to Refinement of Eddy Current Inspection of Condenser Tubes", Review of Quantitative Nondestructive Evaluation, Vol. 27, 2008, American Institute of Physics

M. G. K. Khan, **S. Salekeen** and S. Jeelani, "Mechanical Property Characterization of Silica- Epoxy Nano-Composites", published in CD Proceedings, SAMPE 07 Conference, Baltimore, 2007

S. Salekeen, Justice Nana, H. Mahfuz and S. Jeelani, "Mechanical Property Degradation of a Nicalon Fiber Reinforced Ceramic Matrix Composite under Thermal Shock Loading", Composite Structures, 78 (2007)477-485

S. Salekeen, D. Jones, "Fatigue Response of Thick Section Fiberglass/Epoxy Composites", Composite Structures, 79 (2007) 119-124.

S. Salekeen, M. G. Khan, M. M. Hasan and S. Jeelani, "Effect of Post Curing Temperature on thermo-mechanical Properties of Multiwalled Carbon Nanotubes Reinforced SC-15 Epoxy", presented and published in CD proceeding at 21st Annual Technical Conference, American Society of Composites, Sept. 17-20, 2006, Dearborn, Michigan

S. Salekeen, D. Jones, "Fatigue Response of Thick Section Composites". Presented and Published in CD proceeding for SAMPE 2005, held on May1-5, 2005 long Beach, California.

S. Salekeen, M. Rahman, H. Mahfuz and Shaik Jeelani, Long term Creep and Creep rapture Behavior of Woven Ceramic Matrix Composites at elevated temperature. Presented and published in CD proceeding for 2004 ASME International Mechanical Engineering Congress held on November 13-19, 2004, Anaheim, California.

S. Salekeen, Justice Nana, H. Mahfuz and S. Jeelani, Thermal Shock induced Damage Assessment in SiC Fiber Reinforced SiCN Ceramic Matrix Composite. Presented and published in CD proceeding for SECTAM XXII conference held on August 15-17, 2004, Tuskegee, Alabama.

H. Mahfuz, M. Islam, M. Saha, **Salekeen, S.** and S. Jeelani. Flexural Response of Sandwich Composites with Nanophased Cores. Sixth International Conference on Sandwich Structures, to be held at the Marina Marriott Hotel, Ft. Lauderdale, Florida, on March 31-April 2, 2003

M. Islam, H. Mahfuz, M. Motuku, M. Saha, E. Ayorinde, **S. Salekeen**, and S. Jeelani, Manufacturing and Analysis of 3-D Woven Sandwich Composite Under Compressive Loading with Acoustic Emission Monitoring. Proceedings of IMECE2002, November 17-22, New Orleans, Luisiana.

Salekeen, S. and Jones, D. L. *Stiffness Degradation Modeling of Composite Laminates under cyclic loading*. Presented at ASME Mechanics & Materials conference, June 27-30, 1999, Blacksburg, Virginia.

Salekeen, S., Haque, A., et al. *Effects of Reinforcement Geometry on the Mechanical Properties of SiC/Al₂O₃ Composites*. Composite Engineering, An International Journal, Vol.2, Number 4, May 1992

SYNERGISTIC ACTIVITIES:

- Co-Investigator with Drs. ShaoWen Xu and Aniruddha Mitra for GSU CEIT 2013 Faculty Research Seed Grant, “Bio-inspired Multi-Scale Hierarchical Structured Composites for Energy Absorption and Impact Resistant Applicatio.”
- Co-Investigator of the following grant in nanomaterials area: Synthesis, Manufacturing, and Characterization of Structural Nanocomposites, National Science Foundation, Center for Research Excellence in Science and Technology (CREST) program, (\$4.5 million 9/03 –9/08)

AWARDS:

- Outstanding Faculty Performance Award for Teaching from the College of Engineering, Architecture and Physical Sciences, Tuskegee University, Tuskegee, Alabama for the academic year 2007-2008.
- Summer Faculty Research Fellow, Naval surface Warfare Center, Naval Research Lab, Bethesda, Maryland, 2006-2008

PROFESSIONAL CONFERENCES/WORKSHOPS ATTENDANCE:

- Attended **ASME 2011** International Mechanical Engineering Congress and Exposition (**IMECE 2011**), Denver, Colorado, November 11-17, 2011
- Attended **SAMPE 2008**, Long Beach, California, May 18-22, 2008
- Attended 21st Annual Technical Conference, **ASC 2006 (American Society of Composites)**, Sept.17-20, 2006, Dearborn, Michigan
- Attended **ASEE 2006** Annual Conference held on June 17-21 in Chicago, 2006
- Attended Conference on Nanoscience & Nanotechnology at Auburn University, Auburn, Alabama, May, 2006
- Attended **EPSCoR/NSF** workshops at Tuskegee University, Tuskegee, Alabama, March 2006
- Attended Mentoring Workshop at Tuskegee University, Tuskegee, Alabama, February, 2006
- Attended workshop on “Models for Interdisciplinary Research and Curriculum Development at the Undergraduate Level”, February 15, at Tuskegee University, Tuskegee, 2007
- Attended workshop on Academic Advisement-Datatel Colleague System Training, May 1st, at Tuskegee University, Tuskegee, 2007
- Attended three days **CASEE/NAE** (Center for the Advancement of Scholarship on Engineering Education/The National Academy of Engineering) Training conference in Golden, Colorado, July – August, 2005
- Attended **CASEE/NAE** (Center for the Advancement of Scholarship on Engineering Education/The National Academy of Engineering) Training Conference in Indianapolis, Indiana, October, 2005
- Attended **CASEE/NAE** (Center for the Advancement of Scholarship on Engineering Education/The National Academy of Engineering) Training Conference in Kansas City, MO, October-November, 2005)
- Attended and presented paper at **SAMPE 2005**, Long Beach, California, May 1-5, 2005
- Attended and presented paper at **ASME 2004**, Anaheim, California, November 13-19, 2004
- Attended **SAMPE 2004**, Long Beach, California, May 16-20, 2004

SUPERVISION OF STUDENT RESEARCH

- M. G. K. Khan, Graduate student, Master thesis, (Research supervision and support) 2005-2008
- Justice Nana, Graduate student, Master Thesis, (Research supervision) 2001-2005
- Farhana Parvin, Graduate student, (Research Supervision and support) Spring 2004 -Fall 2004
- M. Rahman, Graduate student, (Research supervision) 2003-2004
- M. S. Islam, Graduate student, (Research supervision) 2001-2002

- Garry Price, Undergraduate, (Research supervision and support) 2005-2006
- Cicily Palmer, Undergraduate, (Research supervision and support), Sum - Fall 2005
- Fatima Majid, Undergraduate, (Research supervision and support) Spring, 2005
- Maceo Henderson, Undergraduate (Research supervision and support) Sum - Fall, 2005
- Daniel Lee, High School Student (Summer Research supervision and support) Sum, 2005
- Elana Garcia Undergraduate, (Research supervision and support) Spring - Fall 2004

OTHER ACTIVITIES:

- **PLTW** (Project Lead The Way) **Affiliate Faculty** (CIM)
- Served National Science Foundation (NSF) Graduate Fellowship Panelist, 2011, 2013
- Reviewed papers for ASME and IEEE conferences
- Member of Faculty Senate, Tuskegee University, 2006 -2008
- Vice Chair, ASME Chattahoochee Section, 2007-2008
- Treasurer, ASME Chattahoochee Section, 2004-2006
- Session Judge, Sigma Xi Scientific Research Society at Tuskegee University Section, 2003-2006
- Judge, 2003 Annual Student Seminar Competition, ASME Chattahoochee section, Auburn University, June 26, 2003
- Member of ASME, ASEE, previous member of Sigma Xi Scientific Society and SAMPE

CITIZENSHIP: Citizen of U.S.A.