

Kibria K. Roman PhD, PE, EMIT

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EDUCATION

- Doctor of Philosophy in Mechanical Engineering, Dec-2017, University of Illinois at Urbana GPA: 3.63/4.00
- Masters of Science in Mechanical Engineering, May-2008, Tuskegee University, Alabama GPA: 4.00/4.00
- Bachelor of Science in Mechanical Engineering, Jan-2005, BUET, Bangladesh GPA: 3.80/4.00

CERTIFICATION AND AWARDS

- Canton College Foundation Award 2017
- Outstanding Journal Reviewer, Elsevier 2016
- Energy Manager in Training certified, AEE 2015
- Professional Engineering License, Michigan, USA 2014
- Scored 4.1 out of 5 in Instructor and Course Evaluation Survey (ICES), University of Illinois at Urbana, 2014
- Davenport Fellowship, Virginia Tech, USA 2010
- Completed B. Sc. Engineering with honors, BUET, Bangladesh 2005
- Dean's Scholarship for Academic Excellence, BUET, Bangladesh 2004

TEACHING EXPERIENCES

SUNY Canton, NY

Aug 2016-Present

Assistant Professor, Department of Mechanical Engineering Technology

- Taught AREA 323-Photovoltaic System, and AREA 340-Geothermal Energy, MECH 343-Heat Transfer undergraduate classes offered by Mechanical Engineering and Sustainable Energy Technology program.
- Taught ACHP323-HVAC Equipment Selection, ACHP 306-Energy System Technology, ACHP 253 and 254-Domestic and Commercial Heating classes offered by HVAC Engineering Technology program.
- Supervise students in homework and projects.

Stony Brook University, NY

Jan 2016-May 2016

Lecturer, Department of Mechanical Engineering

- Teaching MEC 522, Building Energy Dynamics, a graduate classes offered by mechanical engineering department. Approx. 40 students.
- Supervise teaching assistant to grade homework and projects.

University of Illinois at Urbana-Champaign, IL

Aug 2012-May 2016

Teaching Assistant, Department of Mechanical Science & Engineering

- Taught several undergraduate and laboratory classes which included ME 320 Heat Transfer, ME 410 Compressible Flow, ME 411 Viscous flow and Heat transfer in mechanical science and engineering department.
- Developed lectures, quizzes, and exams. Graded homework and midterm exams.
- Served as an assistant faculty advisor for ME 470 senior design projects.

Tuskegee University, AL

Aug 2005-Dec 2006

Teaching Assistant, Department of Mechanical Engineering

- Taught MENG 310 Experimental Mechanics lab to undergraduate students.
- Developed laboratory lectures, graded homework for MENG 310 and supervised student's final year projects.
- Supervised students in undergraduate research to conduct gas gun experiment, data analysis and technical report writing.

Bangladesh University of Engineering and Technology

Jan 2005-Aug 2005

Lecturer, Department of Mechanical Engineering

- Taught several undergraduate theory and lab classes. Classes included ME 260 Mechanical Engineering Drawing, ME 322 Fluid Mechanics, ME 304 Heat and Mass transfer, ME 243 Mechanics of Solids, ME 346 Mechanics of Machinery.
- Arranged industrial training for about 130 senior students in 30-35 different industrial institutions and attended in departmental conferences as a judge to grade their industrial report.
- Supervised group of students with their final projects and advised several undergraduate students as an academic advisor.

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RESEARCH EXPERIENCES

University of Illinois at Urbana-Champaign

Jan2012-May 2018

Research Assistant, supervisor: M. Quinn Brenster, Ph. D.

- Evaluating radiation effect on micro-droplets growth in a mist flow and determining heat fluxes by both experimental measurements and FEM analysis.
- Explore the effect of radiation in mist condensation/evaporation for electronic cooling and cloud physics application.
- Simulating the infrared radiation effects on phase change heat transfer using Monte Carlo Simulation.
- Modeling and simulation of residential and commercial building to optimize energy conservation measures by using DesignBuilder, BEopt, and EnergyPlus software. Performing heat balance calculation and load analysis of HVAC system.

Virginia Tech

June 2010-Dec 2011

Research Assistant, supervisor: Amrinder Nain, Ph. D.

- Investigated fabrication platform for nanofiber synthesis and characterized nanofibers by using SEM, TEM.
- Established boundary condition in a TEM grid and explored mechanical testing by using the AFM.
- Performed characterization of different polymers (PMMA, PEO) by using the dilute solution viscometer, DSC, TMA.

Tuskegee University

Aug 2005-Aug 2007

Research Assistant, supervisor: Sirajus Salekeen, Ph. D.

- Conducted experimental and computational study of composite structure under ballistic impact by using GAS GUN and LS-DYNA software.
- Explored nanocomposites fabrication and characterization, e.g. Silica, clay & CNT infused composite by using MTS tester, TMA, DSC, DMA.

PROFESSIONAL EXPERIENCES

DJ Engineering, Inc, Augusta, KS, USA

Aug 2007-Jun 2009

Project Engineer, supervisor: Mahmudunnabi Basunia

- Engineered the production of Boeing 737, 747-8, 787, and Gulfstream aircraft detail & assembly parts; to include hard-alloy extrusions, composite, sheet metal and formed extrusions.
- Prepared and analyzed preventative and corrective action reports to avoid the repetitive manufacturing error.
- Prepared necessary test matrix, computer programs for Boeing BAC5317 qualification, e.g., Shelf life & Vendor Survey Database, Tensile, compression, long/short beam bending, peel ply testing.

DJ Extruding, Conway Springs, USA

Jan 2008-Mar 2008

Acting Production Manager, supervisor: Krish Patni

- Supervised employee for heat treatment (annealing, solution heat treating, stress relief, aging) operations of aircraft parts for Boeing, Gulfstream, Vought and other customers.
- Developed various manufacturing plans, Bill of Materials, work instructions and illustrations to define and document as-built configuration.

BUET, Dhaka, Bangladesh

Jan 2005-Aug 2005

Consulting Engineer and Teaching Faculty

- Conducted performance tests of pumps, compressor, fans, and HVAC systems for vendors.
- Calibrated measuring instruments to qualify for ISO 9001 certifications.

Ashuganj Power Station Company Limited, Bangladesh

Jan 2004-Feb 2004

Engineering Intern

- Performed routine inspection, troubleshooting & maintenance duties in 777 MW combined cycle thermal power plant.

SKILLS

- *Computational Modeling:* ANSYS, COMSOL, LS-DYNA, CATIA, SolidWorks, MATLAB, C/C++, Visual Basic.
- *Building Energy Analysis:* EnergyPlus, DesignBuilder, and BEopt.
- *Nanotechnology:* SEM, AFM, TEM, FESEM, and Nanoindenter.
- *Thermal and Spectral Characterization:* TGA, TMA, DMA, FTIR, and Malvern spectroscopy.
- *Mechanical Characterization:* Instron/MTS mechanical tester, split hopkinson pressure bar, Gas gun for high speed impact testing, Dynatup 8210 Drop Weight Impact Test Machine.

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- *Industrial Equipment:* Bladder press for sheet metals forming, Solution heat treatment furnace, Aging furnace, CNC machine, Laser trackers for aerospace part inspection.

LEADERSHIP AND PROFESSIONAL ACTIVITIES

- Curriculum coordinator for Sustainable Energy Technology program at SUNY Canton, 2017-current.
- President of Bangladesh Student Association, University of Illinois at Urbana, 2014.
- Lead the audit team for Nadcap (National Aerospace and Defense Contractors Accreditation Program) heat treatment plant accreditation at D-J Extruding, KS, 2009.
- Member-secretary of the registration sub-committee at International Conference on Mechanical Engineering organized by the Department of Mechanical Engineering, BUET, Dec 2004.
- Member of ASME.

OUTREACH ACTIVITIES

- Helping local community, Birdsfoot firm by fixing their solar thermal unit by charging glycol in the system, Nov. 2017
- Demonstration of PV solar trainer to the local community in Home, Garden and Business Expo hosted by Clarkson University in April 2017.
- Organized and presented laboratory demonstration to the high school students at MechSE open house, University of Illinois, 2014.
- Prepared outreach materials, i.e. lab book titled “Phase change heat transfer and radiation” and laboratory demonstration to middle school students, University of Illinois, 2013.
- Presented a seminar, titled “Infrared Evaporative Absorption in Water” to graduate and undergraduate students at Prairie View A&M University, Houston, TX, 2013.

JOURNAL REVIEWER

- Energies
- Energy and Building
- Applied Energy
- Energy Conservation and Management
- International Journal of Refrigeration
- Materials Letters
- Applied Physics Letter

MENTORING/SUPERVISION EXPERIENCE:

- Supervised one undergraduate student with a research project, i.e. cool roof at University of Illinois at Urbana, IL.
- Co-supervised one undergraduate student at Virginia Tech, VA to complete the nanofabrication platform for Nanofibers fabrication.
- Mentoring one undergraduate student at Tuskegee University, AL to conduct various material testing to explore the impact responses of nanocomposites for a NSF funded research project.

PUBLICATIONS

Note: In 2015 I changed my name from Mohammad Golam Kibria Khan to Kibria Khan Roman

- K. Roman, et. al. “CCHP System Performance Based on Economic Analysis, Energy Conservation and Emission Analysis”, *Accepted*, Energy Systems and Environment, *IntechOpen publisher*
- K. Roman, et al. “Effect of Prime Movers in CCHP Systems for Different Building Types on Energy Efficiency” *ASME Power and Energy conference*, 2017
- K. Roman, et al. “Selection of prime mover for combined cooling, heating, and power systems based on energy savings, life cycle analysis and environmental consideration” *Energy Build.* **110**, 170–181 (2016).
- K. Roman, et al. “Simulating the effects of cool roof and PCM (phase change materials) based roof to mitigate UHI (urban heat island) in prominent US cities” *Energy* **96**, 103–117 (2016).
- MQ Brewster, KT Wang, WH Wu, MG Khan, “Temperature effect on phase-transition radiation of water”, 2014 *Journal of Heat Transfer* 136 (6), 062704, doi: 10.1115/1.4026556

- Sheets, Kevin; Wang, Ji; Meehan, Sean; Sharma, Puja; NG, Colin; Khan, Mohammad; Koons, Brian; Behkam, Bahareh; Nain, Amrinder S., “Cell-Fiber Interactions on Aligned and Suspended Nanofiber Scaffolds” 2013 *Journal of Biomaterials and Tissue Engineering* 3 (4), 355-368, doi: <http://dx.doi.org/10.1166/jbt.2013.1105>
- Sirajus Salekeen, Mohammad G. Kibria Khan and Shaik Jeelani, “High Velocity Impact Properties Characterization of Nano-Phased Bi-Layered Body Armor”, 2011 ASME 2011 International Mechanical Engineering Congress, *IMECE2011-63284*, pp. 227-238, doi:10.1115/IMECE2011-63284
- Mohammad Khan, Amrinder Nain, “Mechanical Characterization of Polymeric Nanofibers Using An Integrated Approach”, 2011 *AICbE annual Meeting*
- Sirajus Salekeen, M. G. Kibria Khan, Mahesh Hosur and Shaik Jeelani, “Ballistic Properties for Nano-Infused Epoxy Composite/Ceramic Armor”, 2009 *International Conference on Composites Science and Technology*, Sharjah, UAE
- M G K Khan, S Salekeen, S Jeelani, “Mechanical characterization of silica reinforced epoxy composites”, *SAMPE* 2007 Baltimore, MD June 3 - 7, 2007
- Sirajus Salekeen, Mohammad G. Khan, Mohammad M. Hasan, Shaik Jeelani, “Effect of post curing on thermo-mechanical properties of multiwall carbon nanotubes reinforced SC-15 epoxy”, *Proceeding of American Society of Composites*, MI 2006
- Mohammad G. Khan and Sirajus Salekeen, “Fabrication And Characteristics On Thermo-Mechanical Properties Of Multiwalled Carbon Nanotubes Reinforced Sc-15 Epoxy”, 33rd *Annual Student Research Symposium*, Sigma Xi, AL 2006
- Mohammad Golam Kibria Khan, Talha Rahman, MM Alam, “Wind Energy in Bangladesh: Prospects and Utilization Initiatives”, 2004 *International Conference on Electrical & Computer Engineering*, Dhaka, Bangladesh
- M. G. Kibria Khan, Fazle Mahbub and M.A. Salam Akanada, “Effect of Fillet Radius on Stress Distribution of a Changing thickness Bar Using Finite Difference Technique” 2004, *International Mechanical Engineering Conference* (Dec. 28~31, IMCE’ 04)