Khaled M. Mukut

Mechanical Engineer

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kmmukut

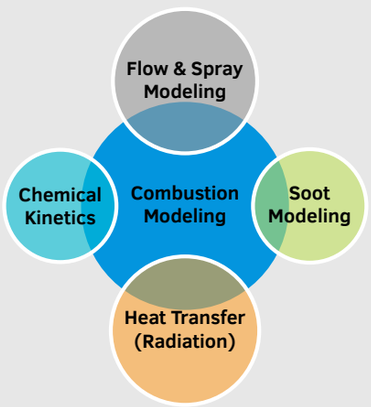
Education

MSc.in Mechanical Engineering
Specialization:Energy Systems
Marquette university
2017 - Present | Milwaukee, WI, U.S.A.

BSc.in Mechanical Engineering
Bangladesh University of Engineering & Technology (BUET)
20011 - 2016 | Dhaka, Bangladesh.

Technical Skills

Overview



Software and Programming

C • C++ • MATLAB

OpenFOAM • ANSYS:FLUENT

Fortran • Python • Converge CFD

gnuplot • Bash • Linux

COMSOL • LaTeX

Autocad • Solidworks

Paraview • Tecplot

Experience

Aug 2018 - Present — **Graduate Teaching Assistant** — Marquette University

- Prepare and taught several classes on heat transfer for junior level undergraduates
- Served as the grader for fluid mechanics and heat transfer courses designed for junior level undegraduate
- Serving as the laboratory instructor for the Material and Metallurgy lab.
- Help setting up experiments and teach students about heat treatment of different alloys in course MEEN 2460.

Mar 2016 - Aug 2017 — **Graduate Assistant** — BUET

- Mentored two separate group totalling seven undergraduate seniors in their undergraduate thesis work. One group worked on linear heating in nano-confinement using molecular dynamics and the other group worked on numerically modelling a thermally stratified co-axial jet
- Guided these groups in preparation of their research finding to put together their undergraduate thesis

Mar 2016 - Aug 2016 — **Operation Engineer (Export)** — PRAN-RFL

- Worked on the ”Automatic Conveyor Control System in Production Line” project actively (Hardware and Software)
- Active member of the operation and maintenance team for injection and blow moulding machines

Feb 2016 - Mar 2016 — **Maintenance Engineer (Intern)** — KPCL

- Hands on experience of working with large diesel and HFO based power plant.

Research

Aug 2017 - Present — **MSc. Candidate, Graduate Research Assistant** — Marquette University

Thesis: Effect of radiation and EGR in pollutant formation in high-pressure constant volume spray combustion

- Characterizing multiphysics interaction in combustion devices
- Detailed multiscale stochastic soot modeling
- Radiation modeling in multiphase combustion systems
- Studying EGR and Radiation effects on soot and NO_X production in spray combustion systems
- **Tools**: OpenFOAM, C++, HPC cluster, slurm,Fortran etc.

Mar 2016 - Aug 2016 — **Graduate Assistant** — BUET

- Molecular dynamics investigations of explosive boiling characteristics
- Investigating cavitation and bubble nucleation in nano-confinement
- Thermodynamic characterization of the critical heat flux density and inherent metastability in nano-scale boiling heat transfer
- Studying effects of nano-structures on boiling of liquids
- Characterization of heat flux during linear and rapid boundary heating in nano-confinement
- Numerical standardization of thermally stratified co-axial jet flow parameters
- **Tools**: LAMMPS, ANSYS: FLUENT, Tecplot, MATLAB etc.

Jan 2015 - Dec 2015 — **BSc. Undergraduate Research** — BUET

Thesis: Numerical Investigation on Active Control for Drag Reduction in NACA 4412 Airfoil

- The study was aimed at conducting a thorough CFD analysis in order to reduce drag on NACA4412 airfoil under Suction at different location on the airfoil and find out the optimum suctionlocation and velocity for which maximum lift to drag ratio occurs
- **Tools**: ANSYS: FLUENT, MATLAB, Tecplot etc.

Publications

- K.M. Mukut, S.P. Roy (2019), ”An Investigation of Soot Evolution in High-pressure Spray Combustion”, 11^{th} U.S. national combustion meeting
- K. M.Mukut, S. P. Roy, (2018) ”A Sensitivity Study on Soot and NOx Formation in High Pressure Combustion System”, CSSCI spring technical meeting
- K. M.Mukut, S.P. Roy, (Submitted to Combustion Theory and Modeling) ”Effect of EGR and Radiation in Pollutant Formation in ECN spray-A Configuration”
- For full list of publications click **HERE**