Khaled M. Mukut

Mechanical Engineer

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kmmukut

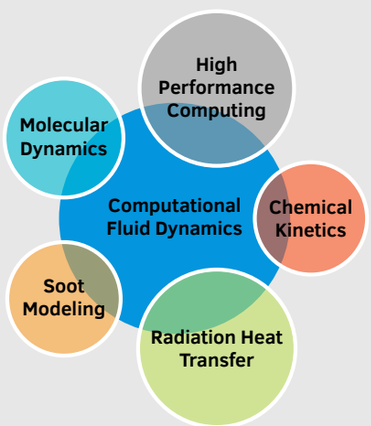
Education

Ph.D candidate
Specialization:Energy Systems
Marquette university
2019 - Present | Milwaukee, WI, U.S.A.

MS in Mechanical Engineering
Specialization:Energy Systems
Marquette university
2017 - 2019 | Milwaukee, WI, U.S.A.

Technical Skills

Overview



Software and Programming

C • C++ • MATLAB

OpenFOAM • ANSYS:FLUENT

Fortran • Python • LAMMPS

gnuplot • Bash • Linux

COMSOL • LaTeX • Converge CFD

Autocad • Solidworks

Paraview • Tecplot

Machine Learning •Data Science

About Me

I am a dedicated, honest, hardworking and proactive Mechanical Engineer with a strong background in computational fluid dynamics, high performance computing , and environmental modelling. I am a very fast learner and enjoy learning new things. I am currently looking for a summer intern opportunity to utilise my technical skills in a challenging working environment and become a valuable asset to the organisation that I work for.

For a more detailed overview of my profile click **HERE** or **SCAN**

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 undergraduates.
- 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 using **ANSYS: FLUENT**.
- 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 molding 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 — **Graduate Research Assistant** — Marquette University

Research Topic: Fundamental investigation and modelling of soot formation in combustion systems.

- Characterizing multi-physics interaction in combustion devices.
- Detailed multi-scale stochastic soot and radiation modeling.
- Reactive molecular dynamics simulation for fundamental investigation of soot nucleation.
- **Tools: OpenFOAM, C++, HPC cluster, slurm,Fortran, Python etc.**

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

- Non-reactive molecular dynamics investigation of explosive boiling, bubble formation and nucleation in nano-confinements.
- Numerical standardization of thermally stratified co-axial jet flow parameters
- **Tools: LAMMPS, ANSYS: FLUENT, Tecplot, MATLAB etc.**

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

- Drag minimization and optimization of lift-to-drag ratio in airfoils using passive and active control.
- **Tools: ANSYS: FLUENT, MATLAB, Tecplot etc.**

Publications

- K.M. Mukut, S.P. Roy & E. Goudeli. Molecular arrangement and fringe identification and analysis from molecular dynamics (MAFIA-MD): A tool for analyzing the molecular structures formed during reactive molecular dynamics simulation of hydrocarbons. Computer Physics Communication, 276, DOI:10.1016/j.cpc.2022.108325
- A. Sharma, K.M. Mukut, S.P. Roy & E. Goudeli (2021). The coalescence of incipient soot clusters. Carbon, 180, 215-225, DOI:10.1016/j.carbon.2021.04.065
- K.M. Mukut, S.P. Roy (2020) Effect of O2 concentration in ambient mixture and multiphase radiation on pollutant formation in ECN spray-A, Combustion Theory and Modelling, 24:3, 549-572, DOI: 10.1080/13647830.2020.1721561
- For full list of publications click **HERE** or **SCAN**