



# Khaled M. Mukut

Mechanical Engineer

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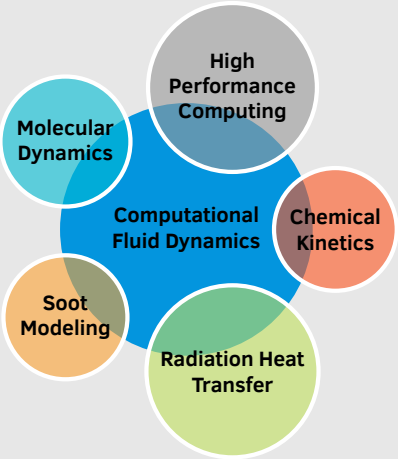
## Education

**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](#)

## Experience

Aug 2018 - Present	<b>Graduate Teaching Assistant</b>	Marquette University
	<ul style="list-style-type: none"><li>Prepare and taught several classes on heat transfer for junior level undergraduates.</li><li>Served as the grader for fluid mechanics and heat transfer courses designed for junior level undergraduates.</li><li>Help setting up experiments and teach students about heat treatment of different alloys in course MEEN 2460.</li></ul>	
Mar 2016 - Aug 2017	<b>Graduate Assistant</b>	BUET
	<ul style="list-style-type: none"><li>Mentored two separate group totalling seven undergraduate seniors in their undergraduate thesis work. One group worked on linear heating in nano-confinement using <b>molecular dynamics</b> and the other group worked on numerically modelling a thermally stratified co-axial jet using <b>ANSYS: FLUENT</b>.</li><li>Guided these groups in preparation of their research finding to put together their undergraduate thesis.</li></ul>	
Mar 2016 - Aug 2016	<b>Operation Engineer (Export)</b>	PRAN-RFL
	<ul style="list-style-type: none"><li>Worked on the "Automatic Conveyor Control System in Production Line" project actively (Hardware and Software).</li><li>Active member of the operation and maintenance team for injection and blow molding machines.</li></ul>	
Feb 2016 - Mar 2016	<b>Maintenance Engineer (Intern)</b>	KPCL
	<ul style="list-style-type: none"><li>Hands on experience of working with large diesel and HFO based power plant.</li></ul>	

## Research

Aug 2017 - Present	<b>Graduate Research Assistant</b>	Marquette University
	<b>Research Topic:</b> Fundamental investigation and modelling of soot formation in combustion systems. <ul style="list-style-type: none"><li>Characterizing multi-physics interaction in combustion devices.</li><li>Detailed multi-scale stochastic soot modeling.</li><li>Radiation modeling in multiphase systems.</li><li>Reactive molecular dynamics simulation for fundamental investigation of soot nucleation.</li><li><b>Tools: OpenFOAM, C++, HPC cluster, slurm,Fortran etc.</b></li></ul>	
Mar 2016 - Aug 2016	<b>Graduate Assistant</b>	BUET
	<ul style="list-style-type: none"><li>Non-reactive molecular dynamics investigation of explosive boiling, bubble formation and nucleation in nano-confinements.</li><li>Thermodynamic characterization of the critical heat flux density and inherent meta-stability in nano-scale boiling heat transfer.</li><li>Numerical standardization of thermally stratified co-axial jet flow parameters</li><li><b>Tools: LAMMPS, ANSYS: FLUENT, Tecplot, MATLAB etc.</b></li></ul>	
Jan 2015 - Dec 2015	<b>Undergraduate Research</b>	BUET
	<ul style="list-style-type: none"><li>Drag minimization and optimization of lift-to-drag ratio in airfoils using passive and active control.</li><li><b>Tools: ANSYS: FLUENT, MATLAB, Tecplot etc.</b></li></ul>	

## Publications

- A. Sharma, K.M. Mukut, S.P. Roy & E. Goudeli (2021). The coalescence of incipient soot clusters. Carbon (in press).
- 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
- K.M. Mukut, S.P. Roy (2019), "An Investigation of Soot Evolution in High-pressure Spray Combustion", 11<sup>th</sup> U.S. national combustion meeting
- For full list of publications click [HERE](#)