

Multiscale and multiphysics modeling for combustion

Computational Combustion Laboratory (CCL) at Marquette University is looking for a Postdoctoral Research Associate for a highly interdisciplinary and collaborative project. The main research objective of the project is to develop multiscale and multiphysics (turbulence, spray, soot, and radiation) models for combustion. The postdoc will have freedom to choose their specific scope of research (within the overall objectives of the project) based on their interest and expertise. The postdoc will also be responsible for implementing novel computational approaches for the models of their choosing.

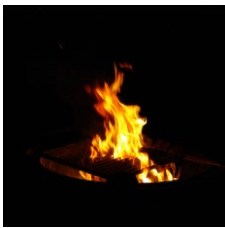
Desired qualifications:

- A Ph.D. (completed or nearing completion) in mechanical engineering or a related field (including computer science/engineering)
- Prior experience with computer programming
- Prior experience with CFD modeling, and
- Experience or interest in combustion or radiation modeling

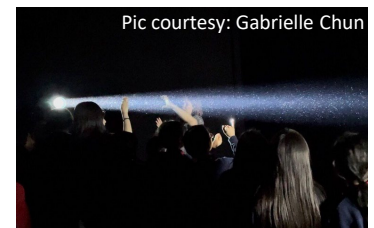
Strong consideration will be given to candidates with **demonstrated background in parallel computing and any aspect of combustion modeling.**

Interested candidates should send an email mentioning their interest and qualifications along with their CV and contact information for two references to **Dr. Somesh Roy** (somesh.roy@marquette.edu, 414-288-4586).

The position start date is flexible and preference will be given to candidates that can begin in early 2024. The initial appointment will be for 1 year with support available for a second year.



At Computational Combustion Laboratory (CCL), we work to tie together the fundamental knowledge at an atomic level with global models at the atmospheric level to better understand the global environmental issues. CCL offers a unique opportunity to work with scientists, community organizers, and artists.



Pic courtesy: Gabrielle Chun

Marquette University & Milwaukee

Marquette University, founded in 1881, is situated in downtown metropolitan Milwaukee, WI. Located on the shores of Lake Michigan, Milwaukee is the largest city in Wisconsin. Dubbed as the city of festivals, Milwaukee strikes a perfect balance between big city urban vibe and small city homeliness.



Photo by Isaac Rowlett
(Wikipedia, CC-BY-SA-4)



Contact Dr. Somesh Roy
somesh.roy@marquette.edu

Computational Combustion Laboratory,

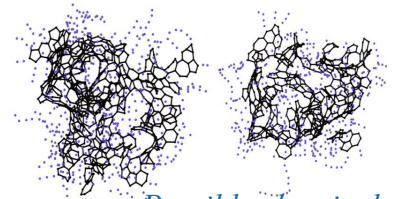
From atoms to the atmosphere – connecting different domains of science

Mechanical Engineering Department,
Marquette University, Milwaukee, WI, USA.

<http://www.marquette.edu/computational-combustion>

Postdoctoral Research Associate

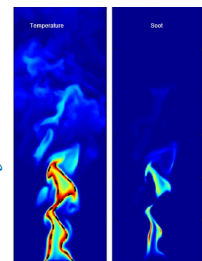
Project: Multiscale and multiphysics modeling for combustion



Possible chemical structure of a soot particle – a common pollutant from combustion

From atoms to the atmosphere ...
exploring the mysteries of combustion

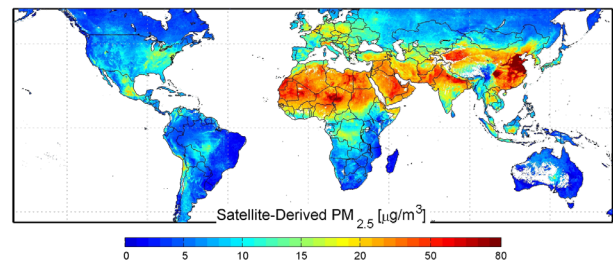
Simulated structure of a small fire



A real fire



Combustion is a major source of PM_{2.5}



Desired qualifications:

- Good academic standing is required.
- Good programming experience is required.
- Experience with Linux operating system will be advantageous.

Contact Dr. Somesh Roy at
somesh.roy@marquette.edu.

Tentative start date: Fall 2022



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