

Ph.D. in Computational Fluid Dynamics  
University of Massachusetts, Lowell

Direct Link: <https://www.AcademicKeys.com/r?job=101029>

Downloaded On: May. 27, 2018 11:31am

<b>Job Title</b>	Ph.D. in Computational Fluid Dynamics
<b>Department</b>	Mechanical Engineering <a href="https://www.uml.edu/engineering/mechanical/">https://www.uml.edu/engineering/mechanical/</a>
<b>Institution</b>	University of Massachusetts, Lowell Lowell, Massachusetts
<b>Date Posted</b>	Dec. 6, 2017
<b>Application Deadline</b>	January 2018
<b>Position Start Date</b>	August 2018
<b>Job Categories</b>	Graduate Student
<b>Academic Field(s)</b>	Sustainable Engineering Mechanical Engineering Engineering Physics Computer Engineering Aerospace/Aeronautical/Astronautics Engineering - Other
<b>Apply By Email</b>	<a href="mailto:cfsearch.uml@gmail.com">cfsearch.uml@gmail.com</a>

**Job Description**

Ph.D. in Computational Fluid Dynamics of Plasma Flows

To enable a future based in renewable electricity, electric power has to be channeled to produce the reactivity that fuels society. Plasmas - electrically-conducting gases formed by electrical discharges - are ideal means to produce such reactivity, as amply exploited in diverse applications in materials, manufacturing, and energy. An especially important research frontier is the interaction of plasma with liquids, found in novel applications in materials and chemical synthesis, environmental remediation, bioengineering and medicine.

Ph.D. in Computational Fluid Dynamics  
University of Massachusetts, Lowell

Direct Link: <https://www.AcademicKeys.com/r?job=101029>

Downloaded On: May. 27, 2018 11:31am

Plasma flows are reactive electromagnetic gas flows that present some remarkable microscopic and macroscopic characteristics, from unique chemical kinetics to self-organization. The computational description of plasma flows present compound challenges found in other Computational Fluid Dynamic (CFD) applications, such as multi-scale resolution, multi-physics coupling, and multi-phase interactions.

We invite applications for up to two Ph.D. research assistantship positions in the Department of Mechanical Engineering at the University of Massachusetts Lowell (UMass Lowell). The successful applicants will work under the supervision of Prof. Juan Pablo Trelles to conduct research in novel numerical methods for plasma-liquid flows. More information about research being conducted at Prof. Trelles' lab is found in: [http://faculty.uml.edu/Juan\\_Pablo\\_Trelles/](http://faculty.uml.edu/Juan_Pablo_Trelles/) and <https://www.uml.edu/Research/Energy/>. The assistantships include complete tuition and fees waivers and graduate student stipends.

Qualifications:

- B.S. or M.S. degree in Mechanical Engineering, Chemical Engineering, Aerospace Engineering, Applied Mathematics, or closely related areas.
- Experience in numerical methods and computational fluid dynamics.
- Programming experience (preferably in C++/C or Fortran).
- Good English communication skills (writing and oral).

Desired Experience:

- Plasma, reacting, compressible, and/or magnetohydrodynamic flows.
- Finite element methods, or other unstructured mesh methods.
- Use and development of large-scale CFD codes.
- High performance computing (Linux development, profilers, parallel processing).

To Apply:

Interested applicants should send as a single PDF document to: [cfsearch.uml@gmail.com](mailto:cfsearch.uml@gmail.com) containing:

- (1) Resume/Curriculum Vitae.
- (2) Copies of transcripts.
- (3) Copies of relevant publications, professional (journal articles, conference proceedings) or academic (project reports, academic thesis).

Optional:

Ph.D. in Computational Fluid Dynamics  
University of Massachusetts, Lowell

Direct Link: <https://www.AcademicKeys.com/r?job=101029>

Downloaded On: May. 27, 2018 11:31am

- (4) Samples/portions of computing codes authored by the applicant.
- (5) TOEFL and GRE scores (needed to apply to Graduate programs in the U.S.).

Successful applicants will be directed to apply to the Department of Mechanical Engineering (<https://www.uml.edu/Catalog/Graduate/Engineering/Mechanical-Engineering/Doctoral-Program.aspx>). Prof. Trelles will arrange the waiving of application fees. Review of submissions will begin December 18, 2017 and will proceed until January 19, 2018.

About Lowell and UMass Lowell:

The city of Lowell is located at a 30-minute ride from Boston, in the high-tech region of Massachusetts in the U.S. northeast coast. Lowell is among the most cosmopolitan cities in the U.S., has a rich history as the cradle of the industrial revolution, and its downtown area is a National Historical Park. More information about the city of Lowell, please visit: <http://www.likelowell.com>.

UMass Lowell has a distinguished reputation in science and engineering and is committed to educating students for lifelong success and conducting high-quality research. UMass Lowell is a Carnegie Doctoral High Research university and is ranked in the top tier of the US News and World Report's national university ranking. Annual funded research expenditures exceed \$60 million and research is deeply integrated throughout the campus, including 37 interdisciplinary centers and institutes. For example, the new \$80 million interdisciplinary Emerging Technologies and Innovation Center houses state-of-the-art facilities for advanced materials, manufacturing, nanotechnology, and energy research. UMass Lowell is within the 5 most rapidly growing institutions among academic rankings in the U.S. The Department of Mechanical Engineering has more than 30 faculty, 200 graduate, and 600 undergraduate students.

### **EEO/AA Policy**

The University of Massachusetts Lowell is an Equal Opportunity/Affirmative Action, Title IX employer. All qualified applicants will receive consideration for employment without regard to race, sex, color, religion, national origin, ancestry, age over 40, protected veteran status, disability, sexual orientation, gender identity/expression, marital status, or other protected class

### **Contact Information**

Ph.D. in Computational Fluid Dynamics  
University of Massachusetts, Lowell

Direct Link: <https://www.AcademicKeys.com/r?job=101029>

Downloaded On: May. 27, 2018 11:31am

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

**Contact** Prof. Juan Pablo Trelles  
Mechanical Engineering  
University of Massachusetts, Lowell  
UMass Lowell, Mechanical Engineering  
One University Avenue  
Lowell, MA 01854

**Contact E-mail** cfdsearch.uml@gmail.com