



POSTDOCTORAL FELLOW

Where: Universidad Técnica Federico Santa María, Valparaíso, Chile
Faculty of Engineering and Sciences, Universidad Adolfo Ibáñez, Santiago, Chile

Subject: Forest Fire Research

Advisor: Rodrigo Demarco - Pedro Reszka

Application deadline: May 28, 2023

Duration: 24 months

Universidad Técnica Federico Santa María (UTFSM), in collaboration with Universidad Adolfo Ibáñez (UAI), has an opening for a Fire Research Postdoctoral Scholar. The position is opened in the context of the FONDEF ID22I10314 project, funded by the Agencia Nacional de Investigación y Desarrollo (ANID) of Chile. The project aims to propose and study a bench-scale setup that allows to quantitatively assess the effectiveness of fire retardants in the context of forest and wild fires.

Job description

The postdoctoral scholar will be responsible for developing a comprehensive setup to evaluate the flammability characteristics of different fuel beds, analyzing the effects of the application of fire retardants. This facility will provide important information to decision makers to improve the effectiveness of the forest and wildfires fighting. Measurements will provide validation to state-of-the-art theoretical and numerical modeling. The experimental methodology will follow the protocols implemented for a bench-scale apparatus developed during a former and an ongoing ANID-ANILLO projects, designed to locally and globally study solid-gas and gas-gas processes relevant for the continuous and discontinuous ignition and burning rate. The postdoctoral fellow will develop and implement the different diagnostics on the benchmark setup to provide reliable and replicable experimental campaigns. Also will be involved in the development of theoretical and numerical models to further study this configuration.

Work will be carried out in collaboration with Chilean and American universities, and international centers, including UAI, Worcester Polytechnic Institute, University of Sao Paulo. The scholar will be encouraged to apply for postdoctoral grants offered by ANID.

About the employer

UTFSM was the first Latin American university to offer a doctoral program in Engineering (since 1962) and has a strong emphasis on scientific research as well as on technological higher education. The Energy Conversion and Combustion Group (EC2G) from UTFSM is one of the leading research labs in combustion in South America. Research at EC2G has focused on the development of experimental and numerical techniques to improve the understanding of the physical and chemical phenomena controlling combustion processes, with applications in energy conversion and fire safety.

Benefits

Compensation includes a competitive salary and medical insurance (1.884.000 CLP gross per month). The location is in Valparaíso, Chile. The duration of the postdoctoral position is 24 months, with a start date in mid May 2023, or as soon as possible.

Desired skills and experience

- PhD in Engineering or Physical Sciences/Applied Mathematics, with a strong research background in applied electronics.
- Degree acquisition should not be older than May 2019. In the case of women, a year can be added for each child born within this time, prior presentation of birth certificate.
- Experience in combustion and flame diagnostics is desired.
- Experience in development and/or application of heat transfer models.
- Demonstrated research experience in bench-scale laboratory and analytic methodologies.
- Keen interest in extending mathematical and scientific computing techniques to new problems.
- Excellent verbal and written communication skills.
- Ability to work productively both independently and as part of a diverse and multidisciplinary team.

How to Apply

The posting shall remain open until the position is filled, however for full consideration, please apply before May 28, 2023. First selection will be notified shortly after, and selected candidates for the post will be called for an interview. Availability to start working immediately will be considered in the evaluation.

Please send a dossier with the following documents to rodrigo.demarco@usm.cl and pedro.reszka@uai.cl:

- Cover Letter.
- CV (including list of publications and research projects).
- Certificate of PhD degree and a half-page file describing your thesis.
- One recommendation letter from an academic/doctoral thesis advisor.

For more information and application, contact professors Demarco and/or Reszka.