Postdoctoral Fellowship in Advanced Droplet Impact and Phase Change Studies

Laboratoire Énergies & Mécanique Théorique et Appliquée, Université de Lorraine, CNRS

Starting date: No later than January 2025
Duration: 18 months
Location: LEMTA, University of Lorraine

Contacts:
Application documents (CV, letter of motivation, references…) must be sent to:

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Offer Description
We are seeking a candidate with a Ph.D. in fluid mechanics, thermal sciences, or a related field. The ideal candidate should be passionate about developing innovative experimental approaches and collaborating closely with our team to study the impact of droplets on surfaces under non-isothermal conditions. A proven track record in any of these areas is highly valued.

Project Description
The interaction between droplets and surfaces is crucial in various technologies, such as spray cooling of hot surfaces in electronics, preventing aircraft icing, and coating surfaces. Under non-isothermal conditions, droplets may undergo phase changes (solidification or boiling), which are intricately linked to heat transfer and droplet dynamics. We utilize and develop original experimental methods, including state-of-the-art imaging techniques like laser-induced fluorescence and IR thermography, to obtain quantitative data on these heat transfer processes. The postdoctoral researcher will contribute to multiple national projects, including an ANR project on spray cooling of textured surfaces and a project on anti-icing using plasma actuators. The aim is to utilize and develop innovative experimental methods, such as laser-induced fluorescence and IR thermography, to obtain quantitative data on heat and mass transfer processes.

What We Offer:
This position is for 18 months, with a flexible start date in 2024. The salary is based on experience and follows national academic rates for postdoctoral researchers. We will support candidates in applying for national and international postdoctoral fellowships. Our lab offers an international and highly collaborative research environment, access to cutting-edge facilities including advanced imaging systems and instruments. The lab is engaged in national and international collaborations and institutional programs, providing access to textured surfaces that show great promise for the targeted applications.