

Internship offer

Title: Carrying out simple educational experiments with IR cameras for Master's students in thermal sciences

Location of the internship: Arts et Métiers Bordeaux, Esplanade des Arts et Métiers
33405 Talence Cédex, FRANCE

Laboratory: TFIC group at the Mechanical Engineering Institute of Bordeaux (I2M,
<https://www.i2m.u-bordeaux.fr/>)

Supervisor: Prof. **Batsale Jean-Christophe**, email: jean-christophe.batsale@ensam.eu

Description:

It is proposed both to carry out experiments and to develop methods for processing infrared images in some cases of thermal convection:

- Measurement of global exchange coefficients on levitating spheres (dry or wet ping pong ball in a hair dryer type flow, study of drying)
- Thermal realization of the hearth of Voh (study of the disturbance caused by a flow on a Gaussian thermal spot)
- Co or counter current exchanger (visualization of temperature fields and measurement of the different characteristics of the exchanger (exchanged flow, overall exchange coefficients, flow rate, etc.))

This internship requires both a taste for experimentation and calculation and image processing. At the end of the internship, we could create a gallery of infrared images close to an artistic production which would be exhibited on the web or in a laboratory space.

Duration of the internship: 2 to 3 months from May to July 2022

Profile of the candidate:

The candidate needs to have a strong knowledge in mechanical engineering and CAD software. In addition, a background in image processing and Arduino coding would be appreciated. The candidate must have very good communication skills to weekly report his/her work and to integrate a young research team made of 10 PhD and Master students. It is also important to be able to work with autonomy.