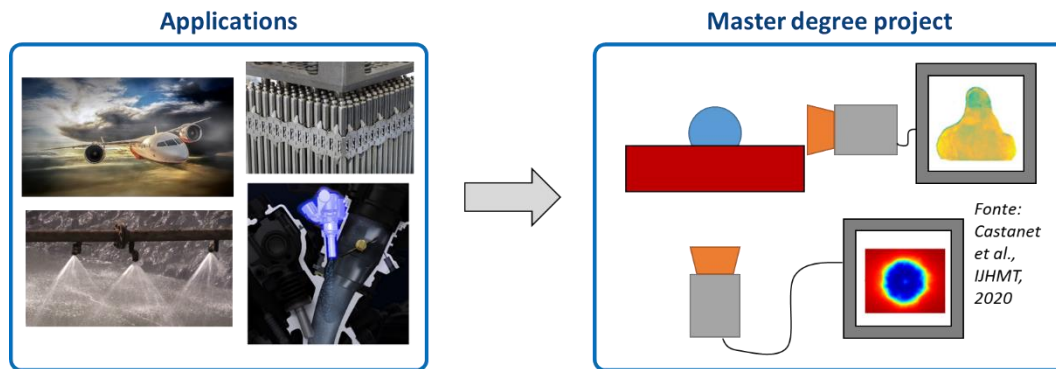


CALL FOR MASTER DEGREE WITH FAPESP FUNDING

THERMAL CHARACTERIZATION OF DROPLET IMPACT ON A HEATED WALL USING INFRARED THERMOGRAPHY AND PLANAR LASER-INDUCED FLUORESCENCE



INFORMATION

Supervisor: Arthur V. S. Oliveira (avs.oliveira@usp.br)

Time dedication: Full time

Domain: Thermal and fluids engineering

Requirement: Good scholar history

Potential upgrade to Doctorate

FAPESP project: Experimental study of droplets impact onto heated walls using combined optical techniques: single droplets, multiple droplets and sprays (Process 2021/01897-0)

OBJECTIVES

Although many researchers have studied droplet impact on heated walls, most of them used thermocouples to evaluate the wall temperature and almost none of them measured the droplet temperature before, during and after the impact. These limited measurements impede to characterize completely the **heat transfer phenomena** involved in this process. We are building a new experimental bench at EESC/USP to characterize droplet impact onto heated walls using **four different high-speed imaging techniques combined** (up to 20,000 fps), among them **Infrared thermography** (to measure the back-surface temperature – up to 500 fps) and **Planar Laser-Induced Fluorescence** (to measure droplet temperature). This Master degree project consists of **developing these two techniques** to evaluate single **droplet impacts on heated walls**, mainly in the Leidenfrost regime.

A **FAPESP scholarship is ensured**, including **financial support to move to São Carlos**. The main FAPESP project is in **collaboration with the Université de Lorraine, in France**, where part of the project can take place, especially if **upgraded to Doctorate degree**.

Application: e-mail your CV and scholar history to avs.oliveira@usp.br