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Postdoctoral position in: Behavior of aeronautic composites under flames

The use of innovative composite materials in aeronautical applications is confronted today by ever more demanding safety standards, and it is imperative to bring reliable and relevant answers. Also, allowing the aeronautics industry to understand / predict the thermal response of their materials in different configurations, in particular when they are exposed to flames, is essential.

The aim of the project is the development of an innovative testing platform allowing to expose composite samples under heat fluxes in the range 100-200 kW/m² supplied by propane or kerosene flames, in order to understand the mechanisms of composite degradation.

A position is currently open through regional funding. The research responsibilities entail:

- The optimization of existing bench tests;
- To develop a thermo-phosphorescence laser measurement technique that allows to measure the temperature on composite surfaces during tests;
- To measure the flow velocity near the wall by laser diagnostic (LDV, PIV);
- To measure and analyze the wall heat flux supplied by the flames; and
- To compare the thermal degradation of aeronautical composite materials submitted to a propane or kerosene flames, particularly the composite materials with better fire resistance (via the addition of flame retardant fillers).

Essential Requirements

Candidates should have a PhD in mechanical engineering, with skills in reactive fluid mechanics and optical diagnostics. Experience in conducting combustion experimentations. Ability to write tools in Labview and Python is a plus.

How to Apply

The funding is secured for one (1) year at CNRS-CORIA laboratory (Rouen, France), with possibility to renew (subject to additional funding and satisfactory performances).

For more information, please contact Prof. Alexis Coppalle (coppalle@coria.fr, +33 2 32 95 97 73).

Interested candidates should send a detailed academic CV.

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