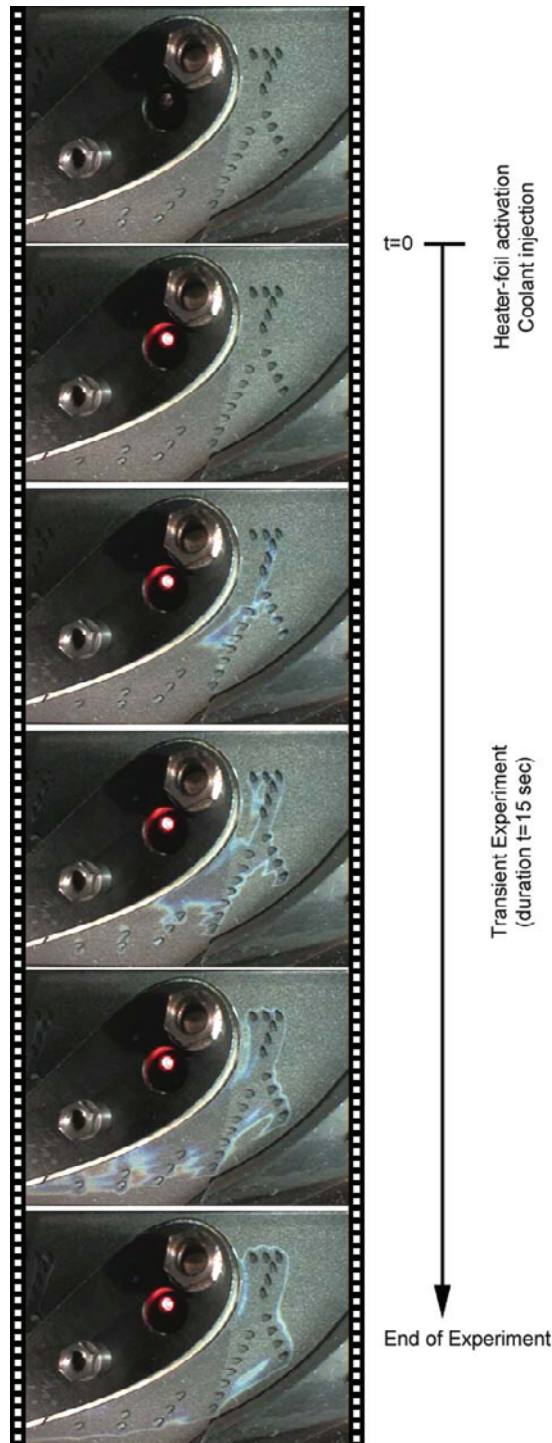


Visualization of a Narrow-band Transient Liquid Crystal Signal on a Film-cooled Contoured Platform of a Nozzle Guide Vane for Film Cooling Performances Measurements

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This figure shows a series of pictures issued from a transient liquid crystal experiment applied on a film-cooled contoured nozzle guide vane platform. The transient experiments were performed using an electrical heater foil applied on the surface and heated at different temperature levels. The air coolant gas was simultaneously injected at different temperature levels resulting in different time event detection of the narrow-band liquid crystal color on the surface. The following paint layers were used for these experiments:

Black backing acrylic layer: Hallcrest BB-G1
Liquid crystal layer: Hallcrest BM/R36C07W
Varnish protection layer: Hallcrest binder AQB-2

The evolution of the color information on the surface is then reduced in order to obtain the film cooling performances.

Transient liquid crystal sequence on a film-cooled surface with air injection