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ABSTRACT

PRESENTATION

PAPER

Stephane Amiel is a research engineer in non-destructive testing using laser thermography at the Safran company. He has a PhD in Thermal and Energy Mechanics from Aix-Marseille University (France). His area of expertise include thermal transfers, fluid mechanics, numerical modelling, thermo-mechanical calculations, thermal metrology, instrumentation and infrared thermography.

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APPLICATION OF LASER HEATING THERMOGRAPHY FOR THE INSPECTION OF NEW COMPOSITE AERONAUTICAL MATERIALS

Future Safran products will use new materials such as Ceramic Matrix Composites (CMC) to face the mechanical and thermal constraints imposed by the need to reduce the fuel consumption of aircraft engines. As part of the quality process implemented on the manufacturing lines of aeronautical components, various parts are inspected by non-destructive testing. For instance, laser heating thermography is being considered for the inspection of future CMC components. This localized surface heating method is ideally suited to the detection of surface defects. Besides, it makes it possible to digitize information while reducing chemical consumption.

The work described in this paper was carried out to demonstrate the feasibility of this technique for CMC sample inspection.