

# Robotic Shearography

## Robotic Shearography NDT increases safety in Aerospace



Manual NDT inspections are no better than the daily shape of the operator. This fact in combination with today's aerospace composite subassemblies becoming more complex, the NDT systems used need to be more sophisticated. The composite materials have been optimized for weight saving, and the shapes are often advanced 3-D curvatures. This also forces the NDT inspection methods to become contactless to be able to achieve a high inspection quality and speed.

Dantec Dynamics latest type of Robot System was launched in 2008. This new system type, a fully automatic robotic shearography system, was installed at a leading business jet manufacturer in USA, fall 2008. The robot system performance is capable of inspecting 1-2 m<sup>2</sup> per minute for arbitrary geometries, which is absolutely cutting edge performance in NDT worldwide. The system operates in a production environment, inside a vacuum chamber. It excites the production parts with vacuum and can also boost the material with up to 3 kW of heat if necessary. Objects are illuminated with 8 Laser Diodes and the shearography sensor reads out real time phase stepping results. The systems interface is constructed for being easy to operate, integrate and harmonize with a company's written practice standard, in accordance with ASNT SNT-TC-1A or corresponding. The robot system can also be equipped with a software integrated sound excitation mode for vibration shearography through a piezo shaker or loudspeaker.

