# Press Release

## Safe modeling of operational stability

When component failure causes serious damage, the engineer is faced with the particular challenge of ensuring the safety of the product by means of calculations and tests. High-performance components with a lightweight design require special consideration. Perfect tools are essential if there is to be a perfect balance between low weight and high dynamic strength.

Optical dynamic strain measurement via three-dimensional scanning laser Doppler vibrometry is one such tool. It provides high-resolution measurement data for the validation of computer simulations, in order to determine the maximum stresses in the material, and therefore, its fatigue strength and the requisite safety margins. As an interferometric measurement procedure, the amplitude resolution is already very high. As an optical process, it also provides a spatial resolution that meets the requirements of the FE simulation. When correctly applied, measurements can be realized that are three orders of magnitude higher in accuracy than is possible with other methods. After intensive testing, the Polytec Xtra laser technology is available for dynamic strain measurement. It provides shorter measurement times, an optimum signal-to-noise ratio, and therefore, unambiguous results. The unique combination of Machine Vision algorithms (VideoTriangulation®), Xtra laser technology and CAE-integrated pre- and post-processing provides the engineer with test data in a quality that enables testing of high-quality simulation models. When safety is a top priority, development centers throughout the world rely on the 3D laser scanning Doppler vibrometer for the safe modeling and testing of operational stability.

Weblink for applications:
https://www.polytec.com/eu/vibrometry/areas-of-application/aerospace/$turbinen/
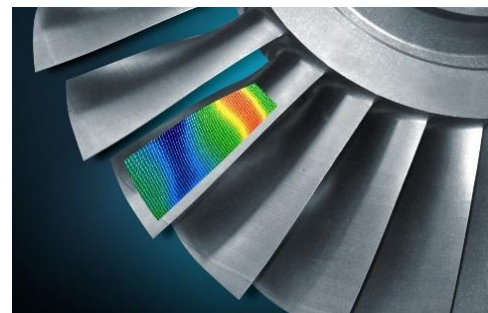




Reprint free of charge – specimen copy requested

Responsible for queries
Christina Petzhold
Tel. +49 7243 604-3680