

## Knowledge of material properties offers added value

Thorough knowledge of the properties and behavior of materials provides decisive advantages to organizations involved in product development, raw material sourcing and quality control. One of the most critical stages in component design is durability testing; it is here that the know-how and expertise of the HBM nCode test laboratory assists developers in taking the right design decisions, based on reliable information about raw and manufactured materials.

The properties of a material determine how it will respond to loading and hence influence component durability. Optional manufacturing treatments such as heat treatment, shot-peening, or environmental factors such as oxidation can also influence durability. The resulting cost-benefit of applying various manufacturing processes to increase durability can be assessed during product development to achieve target life or optimal product quality.

Specialized in the acquisition and analysis of fatigue data, the HBM nCode test lab provides customers with a 360° report on the fatigue life of materials used as well as component durability.

In addition to providing precise measurement results, our engineers gather huge amounts of data for analysis and processing.

Results for different and combined conditions can be achieved at a fraction of the cost even for materials that are difficult to test. In addition, statistical probability analysis backs up the validity of the interpreted results.

As material specialists, HBM nCode engineers are ready to support you in the choice of technologies and specific test methods according to best practices.

■ *Craig Pick, HBM UK*

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#### List of services

- Strain-life fatigue testing in tension/compression, fully-reversed bending and torsion
- Load-controlled fatigue testing for the derivation of stress-life or load-life parameters
- Static and cyclic thermal loading from -40 °C to 1050 °C
- Related thermal and mechanical loadings from -40 °C to 1050 °C
- Tension/compression from 5 kN to 150 kN. Torsion up to 5000 Nm
- Isothermal non-ambient testing in the range from -40 °C to + 1050 °C.
- Single and multi-axis, static and dynamic testing.
- Full specimen manufacture and preparation:
  - Extraction of specimens from real components
  - Supply of specimens available from a wide range of production processes.

