Are you familiar with our industrial-grade accredited inspection services?

- Test laboratory accredited according to DIN EN ISO / IEC 17025 and competent to issue certificates for qualifying and validating (new) nondestructive testing (NDT) processes for industrial testing
- Accelerated time-to-market and opportunity for qualified, standard-compliant deployment in industrial applications both for new in-house developments and for custom adaptations of innovative NDT technologies in fields where standards have not yet been established
- Certification of the corresponding quality management system in accordance with DIN EN ISO 9001

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3MA allows to simultaneously determine various relevant quality features of the materials, e.g. hardness or the variables of the tensile test. For this the probe is manually placed on the component and then the measurement process is triggered. The measurement only lasts some seconds, it is fully automated and can also be integrated into the production process.

Results

The use of 3MA requires a previous calibration. Based on a multiple regression analysis approximating functions are determined that relate the targeted quality features to the 3MA measures. Possible targets are shown in the image “Result of a 3MA inspection” below. To perform the calibration components were taken from the production line and, in addition, special procedure samples were prepared. In this way a set of calibration samples was created which covers the entire range of targeted variables but also the expected variation range of various disturbances (e.g. temperature, thickness, material batch). After calibration the 3MA inspection technique was validated for this special application.

Within the scope of the validation the test constraints were described, limits for the target variables to be observed were set and the extended measuring uncertainty was determined, taking into account all relevant confounders. Identified uncertainties ranged in size of a destructive test and below.