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

- Accredited laboratory in line with DIN EN ISO / IEC 17025, to qualify and validate new non-destructive testing (NDT) processes for industrial applications
- Accelerated time-to-market and opportunity for qualified, norm-compliant deployment in industrial applications as well as for complete new in-house developments or custom adaptation of innovative NDT technologies, even in fields where norms have not been established
- Certification of the corresponding quality management system in accordance with DIN EN ISO 9001

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Fast large-scale testing for deep-seated flaws

inspECT DeepFlawDetector
Due to the skin effect, the depth range of the eddy current method is limited to the surface-near area of test objects. In addition, it depends on the eddy current testing frequency used.

However, the depth range can be increased by reducing the testing frequency. This allows to detect flaws that are not accessible to normal eddy current testing and that are also difficult to detect by ultrasound testing, due to its dead zone near the surface. As the measuring effect of the conventional eddy current sensor is based on electromagnetic induction, which decreases with the decrease of the testing frequency, alternative receiver elements must be found for this application.

The DeepFlawDetector system makes use of GMR sensors. Thanks to their high magnetic field sensitivity, even at low frequencies and small dimensions GMR sensors are predestined for low-frequency eddy current testing. These characteristics allowed to develop a compact line array sensor that is able to detect deep-seated flaws (with a covering of up to 30 mm above them) over a wide range. Using the “inspECT” eddy current module and its software developed at the Fraunhofer IZFP allows to perform a C-scan showing the exact position and extension of the flaw within the test specimen.

Advantages

The use of GMR-based receiver elements has enabled the development of a sensor system capable of detecting deep-seated faults and offers other advantages, including:

- Fast testing without a need for coupling agents