

Magnetic Adaptive steel Testing for industry

Highly sensitive nondestructive tests of microstructural changes in steel and cast iron industrial objects

Long tradition of the Institute of Physics in investigation of ferromagnetic materials and of details of their magnetization processes made it possible to develop a highly sensitive nondestructive method of Magnetic Adaptive Testing (MAT).

MAT is able to discover tiny modifications of microstructure and appearance of defects inside ferromagnetic construction objects.

MAT can sensitively indicate thinned wall-thickness of an inside-eroded pipeline, fatal changes due to excess mechanical loading, serious steel degradation by long-termed neutron irradiation and any other dangerous consequences of heavy-duty history of an industrial application. It can even distinguish quality welding from a bad one and sort out cast iron pieces with different characteristics.

Technical data:

- Microstructural degradation of industrial steel and cast iron objects can be discovered and tested with unusual sensitivity.
- Manifold applicability to a number of ways of the material degradation.
- Simple inductive multi-parametric measurement.
- No magnetic saturation of the tested objects is required.

Benefits:

- Highly sensitive nondestructive tests of degradation of steel and cast iron objects due to their industrial heavy-duty service.
- Use of low magnetic field (magnetic saturation of the objects is not necessary – in contrast to the traditional magnetic hysteresis methods).
- Multi-parametric results enhancing their reliability.
- Simple and fast in-field measurements.

For more information please contact:
Centre for Innovation and Technology Transfer
Mr. Oskar Lazansky
lazansky@fzu.cz

