

## Automatic defect classification in inductive thermo-graphical testing

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### Abstract

Thermo-graphical investigation with a short inductive heating pulse can be well used for detection of surface cracks in metallic materials. Irregularities in the surface cause anomalies in the temperature distribution, therefore cracks become visible in the infrared images. But not only cracks, but also edges of the sample become warmer, which has to be distinguished. Separation of the geometry effects and real cracks is based on the evaluation of the time dependency of the temperature, calculating a phase value of the Fourier transformation, similarly to the PPT technique. With a combined evaluation of the infrared image and the phase image a much more reliable and fully automated decision about the work-pieces could be realized.

**Keywords:** thermography, induction heating, crack detection, image processing, classification

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