

Examples of research activity of Laboratory of non-destructive testing IFTR PAS, Warsaw Poland.

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ABSTRACT

Within a presentation a short description of the Institute of Fundamental Technological Research PAS and four examples of research activity of Laboratory of non-destructive testing will be shown. The chosen activities of the Laboratory are following. (1) Developing of the instrumentation for ultrasonic detection of transversal cracks and other defect arising in exploited rail heads. The research is in progress under the financial support of Polish Railway authority. (2) Ultrasonic procedure of determination of dynamic Young Modulus of light alloy composites. The preliminary tests were performed applying the specimens delivered by IMSAS. (3) The use of acoustic emission for monitoring of duration of phase transitions occurring in steels during austempering. The presented experiments tests were carried out on bearing steel 100CrMnSi6-4 and tool steel C105U, hardened within a process of an isothermal transformation. (4) Fault detection in a working injectors of Diesel engines using an in-house prepared instrumentation and original testing procedure.

BIOGRAPHY

Zbigniew Ranachowski is a full Professor employed at the Institute of Fundamental Technological Research, Polish Academy of Sciences, at the post of the Head of the Laboratory of non-destructive testing. His research interests are non-destructive testing methods including ultrasound and acoustic emission. Since several years he has cooperated with IMSAS. His passions are rock climbing and contemporary history of Central Europe countries.



- Research Interest: non-destructive testing, acoustic emission