

## Using of Barkhausen Noise Analysis and X-Ray Diffraction for Evaluation Of Surface Integrity

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**This paper presents results of study of grinded gears in order to describes surface integrity and verify the correlation between Barkhausen noise analysis and X-ray diffraction. Gears are used in the wind power plant and made of case-hardened steel 18CrNiMo7-6. Barkhausen noise analysis and X-ray diffraction was used for measurement. Barkhausen analysis method is one of the fast nondestructive methods used to assess the integrity of surface. For comparison of grinding processes were used different cutting speeds and numbers of material removal. X-ray diffraction method was used also for measurement of residual stresses. Due to correlation between measured values the optimization of grinding process of gears will be done.**

**Keywords:** Barkhausen noise, x-ray diffraction, grinding of gears, surface integrity

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