

## Non-destructive Magnetic Evaluation of Ground Surfaces Made of Bearing Steel of Variable Hardness

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**This paper deals with non destructive magnetic evaluation of ground surfaces of variable hardness based on Barkhausen noise (BN) technique. Except magnetic investigation, obtained BN signals are correlated with metallographic observation, microhardness readings as well as residual stress measurements. The results show that regime of heat treatment – annealing after hardening significantly affects the possible concept for monitoring surfaces after grinding. Conventionally heat treated surfaces of hardness 62 HRC indicate the typical surface thermal softening induced by grinding cycle whereas samples of lower hardness exhibit rehardening effect associated with the progressive decrease of Barkhausen noise responses along with the developed grinding wheel wear.**

**Keywords:** Heat treatment, grinding, Barkhausen noise

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