Nondestructive micromagnetic evaluation of surface damage after grinding

Mária Čilliková, Marián Mičúch, Miroslav Neslušan, Anna Mičietová
University of Žilina, Faculty of Mechanical Engineering, Department of Machining and Manufacturing Engineering, Univerzitná 1, 010 26, Slovak Republic, maria.cillikova@fstroj.uniza.sk

This paper deals with investigation of surface damage induced by grinding operation as a result of dry grinding through micromagnetic technique based on Barkhausen noise. This study presents information about wet and dry grinding and associated surface integrity expressed in such term as residual stresses, structure alterations beneath the ground surface and corresponding magnetoelastic responses. Lack of coolant or insufficient coolant supply can be found as a reason of surface burn during grinding. Therefore, this paper compare magnetoeslatic responses of surface obtained during wet and dry grinding. Results of experiment indicate that properly suggested monitoring system can reliably detect surface burn induced by thermal overload of ground surface.

Key words: Barkhausen noise, grinding, coolant

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