

A.I. Grabchenko, D.V. Romashov, D.O. Fedorenko, V.A. Fedorovich, A.G. Mamalis and J. Kundrak

Prevention of manufacturing defects of diamond composite materials by simulating the process at the micro level

ABSTRACT. The efficiency of diamond abrasive tools is degraded for several reasons, one of the most significant being the destruction of most of the grains during the process of the manufacture of the tools. This paper presents a methodology for complex research into the destructive stresses in diamond composite tools during manufacture. Analysis of the stress-strain state of the diamond layer was carried out using the finite-element method in applications such as Ansys, CosmosWorks and LS-Dyna.

Nanotechnology Perceptions **8** (2012) 171–180

Nonsubscribers: [purchase individual article](#)