

Book Review

Tribology of Abrasive Machining Processes, Ioan Marinescu, Brian Rowe, Boris Dimitrov, and Ichiro Inasaki. ISBN 0-8155-1490-5.

REVIEWED BY HANS KURT TÖNSHOFF¹

The monograph *Tribology of Abrasive Machining Processes* is written by highly esteemed experts in abrasive and grinding processes. The authors looked on these important, quality of high tech products determining processes from the view of tribological science which makes the book unique and most interesting both for advanced practitioners in the manufacturing field as well as students and scientists. It gives fundamentals and practical advice and is a comprehensive basis for industrial applications and academic interest.

The book starts with a systematic approach of the tribosystem

and shows the main kinematic models of grinding and abrasive processes in general, from where the contact mechanics, forces and energy are derived. Consequently, the thermal balance and the surface impact on the work piece are discussed. The very modern tool of molecular dynamics (MD) has been successfully introduced into the grinding process. It gives an interesting insight in mechanisms of plastomechanics and tribology in an atomic and nanogeometric scale.

The book is rounded up by a thorough report and discussion of all objects which take part in the process: the grinding tool, the coolant and fluid delivery, typical materials to be machined, and—most deserving—the dressing and conditioning processes. The tribochemical aspects of the interactions of these objects are explained. *Tribology of Abrasive Machining Processes* is a standard monograph for finishing processes and the newest R&D achievements in the field.

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