

Contents

1	Micromachining	1
1.1	Shear Angle Prediction.	2
	References	5
2	Analysis of Contact Between Chip and Tool Using Nanostructured Coated Cutting Tools	7
2.1	Introduction	7
2.2	Computational Analysis of Machining Conditions	8
2.2.1	Loewen and Shaw's Method to Calculating Cutting Temperatures	8
2.3	Finite Element Studies of Machining Conditions.	18
2.4	Discussion	24
2.5	Conclusions	26
	References	26
3	Characterization and Use of Nanostructured Tools	29
3.1	Introduction	29
3.2	Analysis of Stress in a Loaded Wedge.	31
3.3	Stress Analysis in a Wedge with a Distributed Load	36
3.3.1	Development of Wear Model	39
3.3.2	Computational Stress Analysis of Single Diamond Grains	41
3.4	Experimental Methods	43
3.4.1	Hot Filament Chemical Vapor Deposition	43
3.4.2	Measurement of Wear of Diamond Tools	43
3.5	Discussion	46
3.5.1	Diamond Deposition	46
3.5.2	Wear of Diamonds	50
3.6	Conclusions	52
	References	53
	Index	55

<http://www.springer.com/978-1-4471-4596-7>

Micromachining with Nanostructured Cutting Tools

Jackson, M.J.

2013, VII, 55 p. 25 illus., Softcover

ISBN: 978-1-4471-4596-7