Machining Characterization, Simulation, Monitoring and Optimization

Chapter in Books

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12. Chua, M.S., M. Rahman, Y.S. Wong and H.T. Loh,"Determination of Optimal Cutting Conditions using Design of Experiments and Optimisation Techniques", International Journal of Machine Tools and Manufacture: Design, Research and Application, Vol. 33, No. 2 (1993), pp.297-305.

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11. Li, X.Q., Y.S. Wong and A.Y.C.,"Tool Condition Monitoring using Acoustic Emission Sensing and an Integerated Multi-ART2 Neural Network", Proc. International Symposium on Advanced Manufacturing Processes, Systems and Technologies, University of Bradford, U.K., 26-27 March 1996, pp.193-200.

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21. Liu, W.D., M. Rahman and Y.S. Wong,"Micro-machining of Silicon by Electrical Discharge Machining", Proceedings of the 4th International Machining & Grinding Conference, 7 May 2001, Detroit, Michigan, U.S.A., pp. 1-8.

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1. Y.S. Wong,"Micro-Machining Techniques and Developments based on Micro-Electrodischarge Machining (uEDM) Processes", Micro-Fabrication Session, MTech 2001 - Manufacturing Technology Forum 2001, 23-25 May 2001, Singapore Expo.

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1. Nee, A.Y.C., Y.S. Wong and K.Y. Chan,"Surface Finish in Milling", Society of Manufacturing Engineers, Technical Paper, No. MRR78-08, U.S.A. (1978).

2. Nee, A.Y.C., Y.S. Wong and K.Y. Chan,"Force Pulsations in Milling", Society of Manufacturing Engineers, Technical Paper, No. MRR78-09, U.S.A. (1978).

3. Wong, Y.S. and C.F. Noble,"A PC-based EDM Pulse-type Recording System for Process Monitoring and Analysis", Society of Manufacturing Engineers, Technical Paper, No. MS88-905, U.S.A. (1988).

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5. Niu, Y.M., G.S. Hong and Y.S. Wong,"A Comprehensive Review on Tool Condition Monitoring Techniques," Technical Report, TR-ME-002-CON-96, Singapore, February 1996, 14pp.

Patents

1. M. Rahman, Wong Y.S., A.S. Kumar and A.N. Poo,"Miniature Machine Tool for Micro Machining", Patent filed, May 2001.

Funded Projects
1. Principal Investigator
Tool Condition Monitoring
(Source: MOE, $312K)
Started in December 1994 and completed in May 1997.

2. Collaborator
High-precision Machine Tool for Micro-machining Applications
(Source: MOE, $218K)
Collaborator: Gintic

Postgraduate Research

#	*PG*	*Title*	*Degree*
1	Yeo S.H.	An Integrated Knowledge-based Machining System for Rotationally Symmetirc Parts	Ph.D.
2	Chua M.S.	An Optimization Strategry for Single- and Multi-pass Turning Operations	M.Eng.
3	Wang Y.K.	Effect of Flushing Pressure on Electro-discharge Machining and Resultant Surface Characteristics	M.Eng.
4	Yang J.D.	An Error Compensation Approach for Machining Operation in an FMS Environment	M.Eng.
5	Zhang S.J.	Fuzzy Feedback Control with Application to Force Control in Milling	M.Eng.
6	Bi L.L.	Tool Condition Monitoring for Turning by Acoustic Emission	M.Eng.
7	Huang X.	A Study on Error Compensation for CNC Machine Tool	M.Eng.
8	Ning T.	Monitoring of Tool Wear in Milling using Cutting Force Sensing	M.Eng.
9	Wang Y.F.	Off-line Planning and Simulation of an Intelligent Fixturing System for High-precision Machining	M.Eng.
10	Zheng H.Q.	Theoretical Modelling and Simulation of Milling Forces	M.Eng.
11	Yan W.	Tool Condition Monitoring in Milling	M.Eng.
12	Li L.	EDM Performance of TiC/Copper-based Sintered Electrodes	M.Eng.
13	Niu Y.M.	Information-Driven Tool Condition Monitoring Techniques	Ph.D.
14	Xu X.	Development of an Online Tool Wear Monitoring System	M.Eng.
15	Yuan N.	Monitoring of Machining Process Stability in High Speed Ball-nose End Milling	M.Eng.
Ongoing:			
1	Abdul Gani	High-speed Machining of Titanium Alloys	M.Eng.
2	Zhang Z	Tool Condition Monitoring	M.Eng.
3	Wang Z.G.	High-speed Machining	M.Eng.