



Call for Papers



International Journal of Machine Tools and Manufacture Special Issue on

Design of Ultraprecision and Micro Machine Tools and their Key Enabling Technologies

Guest Editors: Professor Kai Cheng and Professor Paul Shore

Ultraprecision and micro manufacturing is emerging as the key enabling technology for engaging high value manufacturing. High precision manufacturing not only offers quality and reliability for conventional products, but also makes possible entirely new products, especially where mechatronics, miniaturization and high performance are important. Although ultraprecision machining has been being used as a major means to manufacture high precision and miniature and micro components/products for a few decades, it still remains a big issue in the predictability, producibility and productivity of manufacture of those components and products in a large commercial scale, especially for those with complex surface features/forms/shapes. Ultraprecision machine tools are essential and vital for fulfilling high precision manufacturing and also for moving onto micro manufacturing. However, design of ultraprecision and micro machines and the associated key technologies have to be further and systematically investigated particularly in the context of micro and nano manufacturing, so as to achieve rapid and economic high value manufacturing of products and components in a wide variety of engineering materials and to ensure the machines and associated machining technology easily accessible to the wider precision manufacturing industry.

The aim of collating this special issue is to provide a forum for researchers and practitioners to present and review the state-of-the-art development of ultraprecision and micro machine tools and the key enabling technologies, and to identify directions for next/future generation of machines research and development as well. Possible topics, within this scope, include but are not limited to:

- Novel and innovative machine development and applications
- Machine design methodology and case studies
- Machine configuration, structural design and analysis
- Design of drive systems including slideways, spindles and actuators, etc.
- Tooling and fixture design and characterization, and their integration with the machine
- Machine and in-process monitoring and inspection including sensors, devices and the system integration, etc.
- Machine control system and implementation perspectives
- Machine system integration
- Machine performance assessment and cutting trials
- Design of next/future generation of machines

Contributions will be reviewed by at least two referees in a stringent manner. The papers should not normally exceed 3000 words with an average of 8 figures and 2 tables (the inclusion of more figures and tables will reduce the word allowance, and vice versa). Interested authors are welcome to send in their tentative titles and abstracts through email. Full electronic manuscripts (MS-Word, or PDF file) should be sent to the guest editors at kai.cheng@brunel.ac.uk or paul.shore@cranfield.ac.uk by **16th March 2009**. The papers must be prepared using the [Guides for Authors of IJMTM](#). Publication of the special issue is tentatively scheduled in the fall of 2009.

Guest editors:

Professor Kai Cheng	Professor Paul Shore
Chair in Manufacturing Systems School of Engineering and Design Brunel University Middlesex UB8 3PH, UK	McKeown Chair of Ultra Precision Technologies School of Industrial & Manufacturing Science Cranfield University Cranfield, Bedfordshire MK43 0AL, UK
Email: kai.cheng@brunel.ac.uk	Email: paul.shore@cranfield.ac.uk
Tel: 44-1895-267255	Tel: 44 -1234-750111 ext: 2943
Fax: 44-1895-269763	Fax: 44-1234-754086

Important dates:

Express of interest (Title + Abstract + Date) through email	10 th December 2008
Submission of full papers	16 th March 2009
Notification of reviews to authors	18 th May 2009
Submission of revised manuscripts	15 th July 2009
Final notification and re-reviews	14 th August 2009
Final submission and decision	28 th August 2009
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