DESCRIPTION

The International Journal of Machine Tools and Manufacture is devoted to advances in scientific understanding of essential mechanics of processes and machines applied to the manufacture of engineering components, mainly in metals, but also in composites, ceramics and other structural/functional materials. To this end coverage is given to a range of topics that includes:

- Essential mechanics of processes involving material removal, accretion and deformation, in solid, semi-solid or particulate form
- Significant scientific development of existing or new processes and machines
- In-depth characterisation of workpiece materials (structure/surfaces) by advanced techniques (e.g. SEM, EDS, TEM, EBSD, AES, Raman spectroscopy) to reveal new phenomenological aspects that govern manufacturing processes
- Tool design, utilisation and in-depth studies of failure mechanisms
- Novel concepts of machine tools/fixtures/tool holders supported by modelling and demonstrations that are relevant to manufacturing processes within the journal's remit
- Novel scientific contributions dealing with interactions between the machine tool, control system, software design and processes.
- Studies of specific mechanisms governing niche processes (e.g. ultra-high precision, nano/atomic level manufacturing with either mechanical or non-mechanical "tools")
- Novel approaches, supported by adequate in-depth scientific analysis, addressing emerging/breakthrough processes (e.g. bio-inspired manufacturing) and/or applications (e.g. ultra-high precision optics)

The above list is not exhaustive and papers on other topics associated with process science/technology or manufacturing hardware are welcome. Significant and useful advance of the current state of knowledge is an essential factor and it is important that papers are presented in a manner that will be appreciated by both academics and practising engineers. It is unlikely that papers dealing with theory or modelling alone will be acceptable, unless a significant proven advance in scientific/technological knowledge is demonstrated. Likewise, papers in which the use of methodology predominates over technological advance would probably be rejected. Normally, multipart papers are not acceptable.

AUDIENCE

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