Editorial

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There are fundamental changes in the development of micro and nanomanufacturing processes at the present time that are being encouraged by the development of systems that link the micro and nanoscale with the macro and mesoscales. Such developments are driven by the increasing popularity of electronic consumer goods and the advent of radio frequency micro electro mechanical systems (RF-MEMS). Owing to the rapid changes in consumer purchasing habits, there is a constant need to advance the knowledge required to manufacture micro and nanoscale devices. This special issue addresses a portion of that effort by publishing state-of-the-art papers in the area of advances in micro and nanomanufacturing processes and systems.

The modelling and simulation of the dynamic cutting process and its surface topography is described admirably by Zhou and Cheng in the first paper. The second paper focuses on the generation of surface profiles using carbon nanotubes and is followed by a research article on the monitoring of desktop machine tools and micro sheet forming. The modelling of the silicon micromachining process is explained lucidly by Floarea, Packirisamy and Stiharu and the control of regenerative chatter in micromachining is further developed by Zhang, Jackson and Ni. The evaluation of critical parameters in micromachining is performed by Aramchareon and Mativenga, which is followed by a number of papers on the analysis of micromachined surfaces, the performance evaluation of miniature machine tools and the adaptive compensation of tool deflection in micromilling processes.

We hope that this special issue will serve as a reference volume consisting of high quality research papers especially for research workers and industrial engineers. Peer reviewers whom are experts in the field of micro and nanomanufacturing have refereed the papers presented in this volume. The referees have been extremely helpful and have returned reviews as per schedule. We wish to thank them for their reviews and the authors for submitting such high quality research papers.