
Preface

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Biographical notes: P.K. Jain is working as a Professor in the Department of Mechanical and Industrial Engineering at Indian Institute of Technology Roorkee. Currently, he is also the Head of the Department. He obtained his PhD in the area of Computer Aided Process Planning (CAPP) from Indian Institute of Technology Roorkee. His research interests include design and analysis of manufacturing systems, CAPP, reconfigurable manufacturing systems and manufacturing processes. He has published more than 300 research papers in International Journals and Conferences. He has guided several MTech and PhD thesis and also working as an Editor and Reviewer for many International and National Journals. He is also the recipient of several prestigious awards from various National and International bodies for recognition of his research and administrative work.

Uday S. Dixit is a Faculty Member in the Department of Mechanical Engineering, Indian Institute of Technology Guwahati since 1998. Prior to it, he spent more than four years in manufacturing industry. He is engaged in the modelling of manufacturing processes since last 23 years. He has authored a number of research papers as well as books and edited three books related to manufacturing. Presently, he is an Associate Editor of the *Journal of Institution of Engineers (India), Series C*. He was the Organising Secretary of AIMTDR conference held at IIT Guwahati during December 12–14, 2014.

We are pleased to bring this special issue on ‘Precision in Machining and Finishing Processes’ for publication in *International Journal of Precision Technology (IJPTech)*.

The papers were selected from *AIMTDR-2014 Conference* held at IIT Guwahati, India, 12–14 December, 2014. The special issue includes expanded manuscripts of some of the papers presented on the topics of precision machining and precision finishing during AIMTDR-2014. Selected papers mainly cover subject areas such as electrochemical machining, water jet cutting, abrasive finishing, electrochemical honing, grinding and magnetorheological finishing, etc.

International conferences are good places to facilitate larger interaction among researchers, engineers and other professionals in the era of rapid technological developments. Despite the surge in conferences held on topics related to precision machining, in India, the full text of good research findings presented at these conferences have rarely been brought out. The usual practise in these events is to bring out only abstract/synopsis in printed form at the time of the conference. The organisers of AIMTDR-2014 in consultation of Editor-in-Chief of *IJPTECH* have decided to bring extended manuscripts of a few selected papers in the form of this special issue on the theme of 'Precision in Machining and Finishing Processes'. All selected papers were peer reviewed to maintain the high standards of quality and finally only 10 out of 30 manuscripts were selected after meeting the norms and rigour of publication formalities.

The selected manuscripts present research findings on several challenging tasks such as magneto-rheological nano-finishing of polycarbonate, sizing and finishing of non-circular internal bores using elasto-abrasives, empirical modelling and parametric optimisation of surface roughness of silicon carbide advanced ceramics in surface grinding, effect of continuous and pulse DC on processing time, electrolyte composition and electrolyte concentration of electrochemical honing, experimental investigations of chemo-ultrasonic assisted magnetic abrasive finishing process, characterisation and performance evaluation of developed alternative polymer abrasive gels for abrasive flow finishing process, microstructural investigation and multi response optimisation using Fuzzy-TOPSIS during the electrochemical machining of Inconel 825, studies on surface integrity and its optimisation in turning Ti-6Al-4V, parametric analysis and optimisation on abrasive water jet cutting of silicon nitride ceramics, preliminary investigations into finishing of artificial dental crown.

We hope that the research findings presented in this special issue will bring more advanced level research outcome in the area of machining and finishing.