
Editorial

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Biographical notes: B.B. Ahuja is the Director, and Professor at Department Production Engineering & Industrial Management at College of Engineering, Pune, published over 130 technical papers in National & International Journals and Conferences, guided 21 Doctoral, 89 postgraduate students, filed 14 patents, established CAD/CAM laboratory and indigenously developed FMS laboratory in the Institute and currently developing the 3D Printing lab and working on a major project in Biomedical Engineering for developing low cost medical devices/implants which is sponsored by Rajiv Gandhi Science & Technology Commission Govt. of Maharashtra, worked on two major projects of DST and CSIR, honoured with Best Teacher Award by Government of Maharashtra in the year 2009–2010. Currently also Chairman of AIBTE, AICTE New Delhi, and member of Executive Committee of NBA, New Delhi, worked as Chairman, BOAT, WR under Ministry of HRD, Chairman, All India Board of Vocational Education, AICTE, New Delhi, member of the Governing Council of AICTE, New Delhi.

S.K. Basu. PhD (Moscow). DSc (Engg); FNAE. FIMechE (London), FIE, FORSI, is a Professor Emeritus in the Department of Production Engineering and Industrial Management at the College of Engineering, Pune. He is the former Director, Central Mechanical Engineering Research Institute, Durgapur; Professor of Prod. Engg., Jadavpur University; Head of the Department of Mechanical Engineering, R.E. College, Durgapur and Chair Professor of IIT Delhi. During the period 1959–1961, he worked in the machine tools research institute (EMMS). Moscow, as a UNESCO Fellow. He has approximately 250 technical papers to his credit in national and international journals and guided 32 PhD students in the area of manufacturing, reliability, tribology and machine tool. He is recipient of numerous awards such as AIMTDR, NRDC, Chandra Prakash Memorial Prize (IEI), Sir R.N. Mukherjee Memorial Gold Medal (IEI), Critic Circle of India Award as well as CORPS of Engineers Gold Medal. He has Eight Engineering textbooks and has many patents to his credits and also successfully executed several research and consultancy projects for various agencies such as DRDO, CSIR, DST, AICTE etc.

It gives us an immense pleasure to contribute as guest editors for a special issue of *International Journal of Precision Technology (IJPTech)* on *6th International and 27th All India Machine Tool Design and Research (AIMTDR) Conference*. The selected papers of precision engineering domain from the AIMTDR 2016 conference held at

College of Engineering Pune during 14–16 December, 2016 undergone peer review and few papers are accepted for publication in this special issue of *International Journal of Precision Technology*.

It provides us immense pleasure to remember the humble beginning of *All India Machine Tool Design and Research Conference* with the untiring efforts of Professor Gopal Sen and Dr. Amitabha Bhattacharya of Jadavpur University in the year 1967, which afforded the golden opportunity to devote ourselves wholeheartedly to the ever expanding areas of research and studies in the field of design and manufacture of machine tools. Design and manufacture of machine tools provided us with the challenging opportunities, having been involved in the said field, for more than two decades with ever increasing growth in the area of automation and digital technologies. The design of machine tools and manufacturing processes, are undergoing spectacular changes, as are evident, from the new age depended computer numerical controlled machines, aggregate machines etc., paving the path towards the present, as well as, future development of such machines & equipment for automated as well as semi-automated productions.

Modular concepts in designing NC, CNC or Special purpose machines, with built-in inspection in a ‘close-loop’, coupled with feedback concept, reduce the rejection of parts manufactured to absolutely nil. Modular design based on the Preferred Renard Series, reduces the time of design and development as well. The development of various techniques of Rapid prototyping and sensing technologies minimise the time, as well as, cost of manufacturing.

The rapid advances in manufacturing processes and sensing technologies are finding expanding ranges of applications. The papers of high repute from the field of design of machines and various relevant processes contributing to the field of precision engineering are incorporated in this special issue.

Manufacturing has revolutionised itself from its contemporary form to its current digital access, more so in the era of Industry 4.0. Manufacturing today seeks innovation to be ubiquitous by inventing ways to produce more with less. In an era of integration where technologies complement one another, design and manufacturing face a daunting task in regard to quality and cost effectiveness of products. Concentrated efforts focusing on quality research need to be endorsed in improving the manufacturing processes, technology and systems and to adopt world class manufacturing technologies. The manufacturing education should also emphasise its importance, in order to attract the young, the talented in this area and equip themselves with skills that embrace knowledge, information and technique. Organising AIMTDR-2016 gave an opportunity to share the state-of-the-art research knowledge/outcome in the field of design and manufacture of machine tools with the budding researchers. With this special issue we are very happy to showcase/share the outstanding research outcomes to the professionals/researchers working in the field of precision engineering and guide them to further their research journey.

We are sure this issue will not only provide insight into the design and manufacturing practices from the precision engineering point of view, but also serve as useful material for researchers in these areas. We would like to express our special thanks to reviewers of the papers for their valuable remarks towards the peer review process.