

---

## Editorial

---

### Suhas S. Joshi

Department of Mechanical Engineering,  
Indian Institute of Technology Bombay,  
Powai, Mumbai – 400076, India  
E-mail: [ssjoshi@iitb.ac.in](mailto:ssjoshi@iitb.ac.in)

**Biographical notes:** Suhas S. Joshi is a Professor of Mechanical Engineering at Indian Institute of Technology Bombay since 1999. After obtaining his PhD from the same institute in 1997, he worked with Engineering Research Center of Tata Motors India. His research interests are micro- and precision-machining and process modelling. He was Post-doctoral Researcher at Georgia Institute of Technology, USA in 2002 and Visiting Professor at University of Illinois, Urbana-Champaign, USA during 2005–2006. He is currently serving as Associate Editor of *Transactions of ASME, Manufacturing Science and Engineering*, and *Machining Science and Technology*, and editorial board member of *International Journal of Mechatronics and Manufacturing Systems*. He has more than 140 referred international journal and conference publications to his credit.

---

This special issue of the *International Journal of Mechatronics and Manufacturing Systems (IJMMS)* on ‘Electric discharge-based multi-scale machining processes and systems’ includes ten research articles focusing on newer aspects of electric discharge machining (EDM). Nearly one third of the papers concentrate on micro-scale EDM process including fundamental aspects of single-discharge characteristics, material removal phenomenon in deep micro-hole drilling and new process of reverse micro-EDM for arrayed microstructure fabrication. The other one third focuses on optimisation of macro-scale EDM process. These include the papers that use multi-objective optimisation method like genetic algorithm, artificial neural network and classical method like response surface optimisation. Interestingly, most of the papers in this group discuss machining of ‘difficult-to-machine’ materials like Invar, tool steel and composites. The final medley group of the papers include the papers on deep-hole drilling of Inconel, use of powder mixed dielectric, biocompatibility of ED machined Ti surfaces and state of the art review on micro-EDM process. It is hoped that the papers will provide excellent reading experience to the readers of this journal besides offering substantial research contents.

The guest editor wishes to acknowledge the support and encouragement provided by the Editor-in-Chief Prof. T. Özel, as well as expresses sincere gratitude to all the authors for contributing their recent research work for this special issue. Last, but not the least, the guest editor would like to thank all the reviewers of this special issue for sparing their time and efforts in reviewing manuscripts promptly amidst their busy schedules.