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## Editorial

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### N.K. Batra, Kapil Kumar Goyal and Rakesh Kumar Phanden\*

Department of Mechanical Engineering,  
M.M. Engineering College,  
M.M. University,  
Mullana (Ambala), Haryana – 133 207, India  
Email: hodme@mmumullana.org  
Email: kapilgoyal@mmumullana.org  
Email: phanden@mmumullana.org  
\*Corresponding author

### J. Paulo Davim

Department of Mechanical Engineering,  
University of Aveiro,  
Campus Santiago, 3810-193 Aveiro, Portugal  
Email: pdavim@ua.pt

**Biographical notes:** N.K. Batra received his PhD in Mechanical Engineering from the National Institute of Technology, Kurukshetra, India in 2014. Presently, he is serving as a Professor and the head of Mechanical Engineering Department at the M.M. University, Mullana (Ambala), India. He has 22 years of teaching and research experience in mechanical engineering with specialisation in tribology and design. His areas of interest include tribology, fluid mechanics and design. He has also published 35 articles in international and Indian journals.

Kapil Kumar Goyal obtained his BE in 1999 from the REC Kurukshetra (currently NIT Kurukshetra), India and MTech from the NITTTR Chandigarh, India. He received his PhD from the IIT Roorkee, Roorkee. Presently, he is working as a Professor in the Mechanical Engineering Department at the M.M. University, Mullana (Ambala). He has 15 years of teaching experience and more than 30 publications to his credit and has published research articles in the international journals of repute like *International Journal of Production Research*, *Journal of Manufacturing Systems*, *International Journal of Simulation and Modeling*, *International Journal of Advanced Manufacturing Technology*, etc. His research interests include performance optimisation of manufacturing processes, performance modelling of manufacturing systems, nature inspired optimisation algorithms and multiple objective optimisation.

Rakesh Kumar Phanden completed his graduation in Mechanical Engineering from the U.P. Technical University, Lucknow, India and post-graduation in Integrated Product Design and Manufacturing from the Department of Mechanical Engineering, G.J.U. of Science and Technology, Hisar, India. He completed his PhD in Mechanical Engineering from the National Institute of Technology, Kurukshetra, India in 2013. He is currently working as an Associate Professor in the Department of Mechanical Engineering at the

M.M. University, Mullana (Ambala), India. He has eight years of teaching experience at private and government institutes and universities. He has contributed more than 30 papers at the national/international levels. His current areas of interest include manufacturing systems, production scheduling, integration of process planning and scheduling and product design and manufacturing.

J. Paulo Davim received his PhD in Mechanical Engineering from the University of Porto in 1997 and the aggregation from the University of Coimbra in 2005. Currently, he is a Professor in the Department of Mechanical Engineering of the University of Aveiro and Head of MACTRIB – Machining and Tribology Research Group. He has 30 years of teaching and research experience in manufacturing, materials and mechanical engineering with special emphasis in machining and tribology. He is the editor of six international journals, guest editor, editorial board member, reviewer and scientific advisory for many international journals and conferences. He has also published more than 300 articles in journals and conferences (more than 200 articles in Web Science, H-index 35+).

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In the past two decades, many new techniques have emerged for machining the composites and hard to machine materials. This special issue on ‘Advancements in modern machining methods’ is a detailed description of advanced machining practices in the secondary processing of newly developed composite materials and high strength alloys. In fact, the demand of new materials is growing on a very fast pace in the field of medical, aerospace, defence and automotive industries, etc. Therefore, the research and development of unconventional machining methods to process these materials is the need-of-the-hour to attain the economical sustainability and productivity improvement. In addition, the effective use of DOE methods and various optimisation algorithms are equally important to establish the newer machining methods and optimising the machining parameters for the processing of newly developed materials.

This special issue consists of six research articles which are extended version of the papers presented in ICNDME-2014. The first paper studies the drilling behaviour of Al6061 MMC; in second article, the thermal necrosis during bone drilling has been discussed in detail. Third paper presents the surface quality in electrochemical-mechanical finishing of bevel gears and fourth paper studies the cutting forces and surface roughness behaviour of Al-6061 by the addition of B<sub>4</sub>C ceramic particulate. Fifth paper presents the modelling and process optimisation for WEDM of MMC and the last paper presents the cutting behaviour of ZrSiO<sub>4</sub>/Al 6063 MMC through WEDM.

The International Conference on Newest Drifts in Mechanical Engineering (ICNDME-2014), from which this special issue has been derived, was organised by the Department of Mechanical Engineering at M.M. University, Mullana (Ambala), India, during 20–21 December 2014. ICNDME-2014 has attracted renowned academicians/researchers, noted industry representatives and the delegates from countries like the USA, Canada, France and India.

We would like to express our sincere thanks to all the authors for contributing their valuable articles in this special issue. Finally, we would like to acknowledge the conference organising committee and reviewers from *IJMMM*, without their expert advice and diligent reviews this special issue would not have been possible.