
Editorial

Sunil Pathak*

HiLase Centre,
Institute of Physics,
Czech Academy of Sciences,
Za Radnicí 828, 252 41 Dolní Břežany, Czech Republic
Email: sunil.pathak@hilase.cz
Email: sunilpathak87@gmail.com
*Corresponding author

Suhas S. Joshi

Department of Mechanical Engineering,
Indian Institute of Technology Bombay,
Mumbai – 400076, India
Email: sjoshi@iitb.ac.in

Daisuke Nakamura

Department of Electrical Engineering,
Faculty of Information Science and Electrical Engineering,
Kyushu University,
744 Motooka, Nishi-ku, Fukuoka 819-0395, Japan
Email: dnakamura@ees.kyushu-u.ac.jp

Biographical notes: Sunil Pathak was awarded his PhD (2016) in Mechanical Engineering from the Indian Institute of Technology Indore (MP), India. He is currently a senior researcher at HiLASE Center, Institute of Physics, Prague. He has conducted extensive research on the advanced finishing of gears. He possesses specialised skills in gear finishing, gear metrology (micro and macro-geometry), and measurement of gear accuracy. Presently, he is currently working on laser shock peening of intricately shaped geometries. He has authored more than 25 research articles, one monograph, two edited books, and more than 15 manuscripts published as book chapters and various international conferences.

Suhas S. Joshi is ‘Rahul Bajaj’ Chair Professor at IIT Bombay, and working here since 1999. His research focuses on physics-based modelling of multi-scale machining processes for improving their productivity. On micro-scale, he works on ‘size-effect’ in micro-cutting, single-spark phenomenon in micro-EDM, and surface texturing, laser-metal and fluid-texture interactions for designing tailored surfaces. On meso-scale, he works on ‘difficult-to-machine’ materials, such as composites, titanium alloys, superalloys and silicon. He is involved in editorial responsibilities of several international journals. He has over 300 international journals and conference publications to his credit. He is a Fellow of the Indian National Academy of Engineering.

Daisuke Nakamura is an Associate Professor in the Department of Electrical Engineering, Kyushu University, Japan. He received his PhD in Engineering from the Graduate School of Information Science and Electrical Engineering, Kyushu University, in March 2009. His research interest includes applications of laser ablation and laser spectroscopy. He has conducted research on the laser-produced plasma dynamics for extreme ultraviolet light source and fabrication of semiconductor nano and micro crystals for optoelectronic devices. He has served as program committee and/or steering committee on several international conferences/workshops, including ICALEO, International Symposium on Laser Precision Microfabrication (LPM), International Congress on Laser Advanced Materials Processing (LAMP), and International Conference on Photo-Excited Processes and Applications (ICPEPA). He is a member of the SPIE, IEEE, Japanese Society of Applied Physics, and senior member of Laser Society of Japan.

It gives us an immense pleasure to contribute as guest editors for a special issue of the *International Journal of Precision Technology (IJPTech)* on ‘Micro manufacturing and finishing for micro and meso-shaped engineering components’. This special issue accommodated selected papers presented in the 11th International Conference on Precision, Meso, Micro & Nano Engineering (COPEN-11) held at Indian Institute of Technology Indore (MP), India. The 4th Industrial Revolution urges all sectors, including manufacturing, to develop and adopt intelligent methods and techniques to stay competitive in the global economy. The manufacturing industry is one of the most significant contributors to the world economy and always busy promoting research, development, and innovations to meet the accelerated demand for productivity, quality and sustainability. Precision and micro-manufacturing processes have always been helpful to attain that.

This special issue has selected six papers with the precision manufacturing theme to highlight the current state of research for precision manufacturing processes and practices. All these papers are from diverse fields of precision manufacturing technology with the underlying theme of COPEN-11. Selected papers mainly cover subject areas such as electrochemical discharge machining, laser ablation, laser micromachining and texturing, design and testing of composites for various application, etc.

Pandey et al. have presented a micromachining application on stainless steel using laser in a manuscript entitled ‘Parametric study on laser marking of circular shape on stainless steel 304’. They have discussed the effect of important laser parameters on the surface finish and circularity of marking on stainless steel substrate. Priyanka et al. have presented an ‘Experimental and numerical investigation of compressive mechanical behaviour on woven carbon-Kevlar hybrid composites’. Melese et al. have presented a case study on ‘Design of a small-scale wind turbine blade of glass fibre/epoxy composite for electrification of rural villages in Ethiopia: a case study’. Ranganayakulu and Srihari have discussed the ‘Investigations on the effect of helical tool diameter assisted with high speed rotation in electrochemical discharge machining’. Murugesh et al. have discussed the ‘Synthesis and characterisation of nanoparticles by pulse laser ablation at solid-solid interface’. Varghese and Joshi have studied the ‘Effect of straight and circular tool paths in micro channel fabrication using micro-milling’.