Editorial

Mohammad Muzammil*, Abid Ali Khan and Faisal Hasan

Ergonomics Research Division,
Department of Mechanical Engineering,
Aligarh Muslim University,
Aligarh, India
Email: m.muzammil.me@amu.ac.in
Email: abida.khan@amu.ac.in
Email: f.hasan.me@amu.ac.in
*Corresponding author

Biographical notes: Mohammad Muzammil is a Professor of Mechanical Engineering and in charge of Ergonomics Research Division at Aligarh Muslim University, Aligarh (India). He self-supplicated his PhD from AMU Aligarh. His research interest is hand tool design, HR to vibration, noise and its control, HCI and human cognitive performance. He has published around 100 papers in various international and national journals and conferences and some of the journals in which his articles have been published are *Quality Engineering*, *Theoretical Issues in Ergonomics Science*, *Occupational Ergonomics*, *Journal of Occupational Safety and Ergonomics*, *Work* and *Journal of Low Frequency Noise Vibration & Active Control*, etc.

Abid Ali Khan is a Professor in the Department of Mechanical Engineering and associated with the Centre for Interdisciplinary Biomedical and Human Factors Engineering, AMU, Aligarh. He obtained his BSc Engineering (Mechanical) and MSc Engineering (Industrial and Production) from AMU, Aligarh. He obtained his PhD from the University of Limerick, Ireland. He is teaching Ergonomics, Experimental Methods & Analysis and Design of Experiments. His work has been published in *Ergonomics*, *IJIE*, *Applied Ergonomics*, *JOSE*, *Work: A Journal of Prevention*, *Assessment and Rehabilitation*, etc. His research interest is occupational ergonomics, human response to vibration, WMSD, EMG-based prosthetics, etc.

Faisal Hasan is an Associate Professor in the Department of Mechanical Engineering, Aligarh Muslim University. He has obtained his PhD in the area of Reconfigurable Manufacturing System from the Indian Institute of Technology Roorkee. His teaching and research areas are manufacturing systems, human factors and operations management. He has published papers and book chapters in edited conference proceeding and in various international journals like *International Journal of Advanced Manufacturing Technology*, *Opsearch*, *Occupational Ergonomics*, *Work*, *International Journal of Industrial and Systems Engineering*, and *International Journal of Operations Management*.

It has been proved beyond doubt that ergonomics can improve worker performance and help improve the system work better. In addition, ergonomics is widely relied upon to prepare international standards for different work situations. The reason being the fundamental theme that the worker must occupy a central place in the development of a system. We can design a better work system by removing barriers such as inadequacies, workplace injuries, worker problems, etc. responsible for degraded performance. New technologies have come out with new ergonomic risk factors as a by-product of development. Mechanisation has taken its toll thanks to targeted levels of work. When designing new systems, we must keep in mind that the system should not be overloaded as this will affect performance.

A good workplace gives a feeling of care and positivity to the worker and motivates towards putting better performance. When ergonomics is not given due consideration taken into account, many problems viz. fatigue, excessive sensory and cognitive loading, motor demands, etc. are likely to arise. The ergonomic design of the human-work interface can help us to remove the various obstacles that stand in the way. The combination of ergonomic principles together with quantitative and qualitative research gives an output in the form of an optimised work system. The first step in designing a work system is to identify and understand the problems and their impact on the worker. Technology, if synergised with human capabilities, can do wonders for improving worker performance. Improving productivity needs to be examined in detail. Each factor that can be linked to the worker or the work environment must be identified and taken into account to monitor performance, since injuries in the workplace are one of the main causes of poor productivity. It is simply not possible to get the improved output by ignoring the ergonomics. The overall effect of the ergonomic design/redesign may not be visible immediately, but it will be significantly reflected over time.

This special issue on 'Ergonomics and human factors engineering' is a compilation of selected work presented by various researchers at the XV International Conference on Ergonomics – Humanizing Work and Work Environment (HWWE2017). These papers were accepted for publication following a separate review process as per the standard of *IJFEM*. The objective of the special issue is to make the readers appreciate the importance of research conducted in the field. Although the main areas of research in ergonomics and human factors engineering have been covered, there are many others that still need to be addressed for a variety of reasons. A total of nine articles are featured in the special issue. The research/user-centric approaches combined can serve as a milestone in achieving the desired goal. The authors' efforts have made the issue a good source of knowledge for understanding various aspects related to the field. We are confident that these publications will be able to increase the discernibility of this vital area of research and that they will encourage academics/researchers to spark relevant future research.

On behalf of the conference organisers, we thank the Editor-in-Chief of the *International Journal of Forensic Engineering and Management* (*IJFEM*) for giving us the opportunity to publish the special issue. We are also grateful to the Indian Ergonomics Society and the International Ergonomics Association for helping us organise this conference at the Aligarh Muslim University of Aligarh (India).