Editorial

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Biographical notes: T. Özel is Full Professor of Industrial and Systems Engineering and the Director of Manufacturing & Automation Research Laboratory at Rutgers University. He received his PhD degree in Mechanical Engineering from The Ohio State University in 1998. His current research interests include advanced manufacturing, precision machining processes, additive metal manufacturing, micro/nano manufacturing sciences, mechatronics and automation. He has extensive experience in teaching and researching about manufacturing processes and manufacturing automation. He advised over 70 graduate students in their master's theses, projects, and dissertations. He has published over 150 refereed papers in international journals and conferences. He has been editor, guest editor, reviewer, and editorial board member for several international journals and member of scientific committee for many international conferences.

Iñigo Flores Ituarte is Industry Professor in Digital Manufacturing at Tampere University, Faculty of Engineering and Natural Sciences in Finland. He received his Doctor of Science (Technology) degree from Aalto University, Finland in 2017. He previously taught in Technical University of Denmark and Aalborg University in Denmark. He obtained research experiences as post-doctoral researcher in Singapore University of Technology and Design and Aalto University, and Guest Associate Professor in Technical University of Denmark. He advised 17 students in their bachelor theses, master's theses, and doctoral dissertations. He published 37 journal articles in prestigious journals in manufacturing and design. He serves in the editorial board of *International Journal of Mechatronics and Manufacturing Systems*.

This special issue of the *International Journal of Mechatronics and Manufacturing Systems* (*IJMMS*) includes five research papers related to various aspects of Additive Manufacturing Systems.

As additive manufacturing (AM) processes shift from part prototyping to part manufacturing, emphasis is being put on in-process monitoring and control to strengthen

the quality control standard for the next generation of commercial digital AM machines. Additive processes provide a unique perspective on quality incompliance as part production is carried out track-by-track, layer-by-layer. Potential quality issues are not only available for the viewing but are also accessible for in-process repair, providing a unique advantage over conventional manufacturing processes and opening the door for first-time quality if methodologies can be developed to take advantage of this technology.

This special issue brings researchers together to explore the latest progress in the field of sending, monitoring and control of digital AM processes, equipment, and related sub-systems; digital manufacturing, process innovation, material development, process modelling, control and optimisation; digital twin design, computational modelling and data analysis.

In this special issue, various aspects of additive manufacturing issues are covered ranging from physics-based models for digital twin development, pyrometer process sensing and monitoring in additive manufacturing, analysing operator's learning behaviour of additive manufacturing via digital tools, to investigation of process parameter effects in properties in metal additive manufacturing and part build orientation effects in multi-material 3D printing systems as presented by several papers from leading research groups.

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