Editorial

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This special issue of the *International Journal of Mechatronics and Manufacturing Systems* (*IJMMS*) includes six research papers related to various aspects of applications of smart methods in manufacturing processes and systems. These methods include Artificial Neural Networks (ANN), deep learning using Convolutional Neural Networks (CNN) and other machine learning techniques and algorithms.

This special issue brings researchers together to explore the latest progress in the field of smart manufacturing and their potential for addressing further challenges and opportunities in manufacturing processes, additive manufacturing and 3D printing systems, machining systems, forming processes, and quality inspection metrology, and improvements on process monitoring, sensing, and control across multiple platforms.

In this special issue, three review papers are presented covering various aspects of smart manufacturing including current technology and methodologies in-situ process sensing, monitoring and control in fusion based additive manufacturing, a review of physics-based models and machine learning methods for fatigue prediction in industrial applications, and a review and case studies in unmanned aerial vehicles (UAV) equipped with high-quality cameras for photogrammetry in smart manufacturing applications.

The special issue continues with high quality papers leading research groups including deep learning, ANN, and CNN models for detection part quality in additive manufacturing and 3D printing, improving geometric accuracy in incremental sheet forming, and predicting machined part accuracy from computer numerical controlled (CNC) machine errors. Other smart manufacturing approaches are covered with several papers using metaheuristics for optimising robotic drilling, using smart thermo-fluidic models to understand the fluid dynamics effects in cooling channels fabricated with a material jetting additive manufacturing technique, using control signals with smart approaches for detecting workpiece inhomogeneities in milling processes.

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