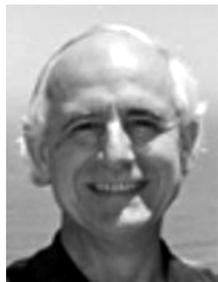


## Special Issue on Intelligent Computation in Design and Manufacturing



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To solve problems underlying design and manufacturing we often rely on methodologies of computational intelligence such as machine learning, artificial neural networks, fuzzy logic, fuzzy inference systems and smart optimization algorithms. In this Special Issue of the International Journal of Automation Technology, original articles are presented with reference to the engagement of intelligent computation in diverse application areas of design and manufacturing, including manufacturing process monitoring, manufacturing systems management, scheduling, design theory and methodology.

The six research papers in this Special Issue propose the use of intelligent computation methodologies to deal with various topics related to manufacturing and design. In particular, the first three papers focus on manufacturing process moni-

toring with reference to different manufacturing technologies, including tool wear monitoring in drilling of composite materials, sensor monitoring in CNC turning and residual stress prediction in welding. Diverse intelligent approaches such as artificial neural networks and adaptive neuro-fuzzy inference systems are proposed to support manufacturing process monitoring. The fourth paper deals with the manufacturing system level, proposing the employment of a solution algorithm combining metaheuristics and operation simulation for scheduling of production processes. The fifth paper aims at developing tools to guide the manufacturers to manage the technology investment and cost saving target for customer satisfaction based on the application of internet of things. The last paper proposes a methodology to support the introduction of customer requirements in product and service design via a decision support system which exploits artificial intelligence algorithms (machine learning) based on inductive inference, allowing knowledge related to product/service to be mapped, structured and managed to design the service and product semantic model.

The editors deeply appreciate all the authors and anonymous reviewers for their effort and excellent work to make this Special Issue unique. We hope that future research on intelligent computation in manufacturing and design will advance manufacturing technology and systems as well as design methodologies.