
Editorial

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Biographical notes: Adil Baykasoğlu received his BSc, MSc and PhD in the areas of Mechanical and Industrial Engineering from the University of Gaziantep and University of Nottingham. He is presently a Professor and the Head of the Department of Industrial Engineering at the University of Gaziantep. He took active roles in many academic and industry projects. He has published more than 250 academic papers, three books and edited several conference books on operations research, computational intelligence, logistics and manufacturing systems. He is also an active referee for many scientific journals and serving on the editorial board of several academic journals.

Welcome to the *Int. J. Industrial and Systems Engineering's* special issue on 'Responsive Manufacturing'. Responsiveness is gaining more and more importance in today's highly unpredictable and volatile manufacturing environments. This is mainly due to the fact that most of the manufacturing companies have been required to reduce the time to market of their products with shorter life cycles, greater part variation, lower costs and higher product quality. This means that characteristics such as flexibility, adaptability, agility and responsiveness are essential in order to be able to compete and meet the challenges of today's demanding markets. The main goal of 'Responsive Manufacturing' is to achieve rapid, flexible, agile and integrated development, manufacture and support of complex products within an extended and increasingly global supply chain. Responsive manufacturing is also employed to counter the increase in unpredictability of market conditions and the need to reorganise manufacturing activities, enabling manufacturing enterprises to thrive under conditions of uncertainty.

As stated by Professor Dr Nabil Gindy (who is one of the first researcher who coined the term Responsive Manufacturing)

"The seamless integration of information to improve the speed of product realization and concurrency of product and process development; the utilization of intelligent manufacturing technologies to improve competitiveness and speed of the product development; and the deployment of reconfigurable manufacturing systems to improve flexibility, optimize performance and improve the manufacturing system's ability to cope with disturbances are considered as critical elements in achieving responsiveness in design and manufacturing"

Based on this motivation, Professor Gindy and his colleagues at the University of Nottingham were decided to organise international conferences on responsive manufacturing in 1998. After that time, we have managed to organise four successful conferences on this important topic. The first conference was organised in

Nottingham-UK; the second one was organised in Gaziantep-Turkey; the third one was organised in Guangzhou-China and the fourth one is organised in Nottingham-UK. In this special issue, some of the original research papers, which were presented orally and discussed at the 'ICRM'2007: 4th International Conference on Responsive Manufacturing, 17–19 September 2007, Nottingham, UK', were selected as candidates for this special issue. After re-submission of the revised manuscripts, and rigorous refereeing processes, 9 papers out of 15 candidate papers were finally considered for the publication in the scheduled special issue of *Int. J. Industrial and Systems Engineering*. We would like to thank Professor Dr Angappa Gunasekaran (the editor of IJISE) for giving us the opportunity to prepare this special issue. This special issue provides the reader a collection of nine articles, which offers an exclusive perspective on the topics ranging from new product development, knowledge management in technology, production planning and scheduling, simulation modelling, biological manufacturing systems, manufacturing systems modelling, sensing technology and manufacturing technology.