Editorial

Adil Baykasoğlu*

Department of Industrial Engineering,
Gaziantep University,
Gaziantep 27310, Turkey
Fax: +90-342-360-4383
E-mail: baykasoglu@gantep.edu.tr
*Corresponding author

Nabil N.Z. Gindy

School of Mechanical, Materials and
Manufacturing Engineering,
University of Nottingham,
University Park,
Nottingham NG7 2RD, UK
E-mail: nabil.gindy@nottingham.ac.uk

Türkay Dereli

Department of Industrial Engineering,
Gaziantep University,
Gaziantep 27310, Turkey
Fax: +90-342-360-4383
E-mail: dereli@gantep.edu.tr

Biographical notes: Adil Baykasoğlu received a BSc and MSc in Mechanical Engineering. He received PhD in Manufacturing Engineering and Operations Management from The University of Nottingham in 1999. From 1993 to 1996, he was with the Department of Mechanical Engineering and Industrial Engineering at the University of Gaziantep, first as a Research Assistant, later as an Instructor. He is presently an Associate Professor and the Head of the Department of Industrial Engineering at the University of Gaziantep. His current research interests include operational research, computational intelligence, meta-heuristics, quality, supply chain management and manufacturing systems design.

Nabil N.Z. Gindy is a Professor of Advanced Manufacturing Technology at the School of Mechanical, Materials and Manufacturing Engineering, University of Nottingham, UK. His current academic research, all undertaken in collaboration with industry, embraces knowledge integrated design and manufacture, intelligent processing technology, robotics and machine tools, generative process planning and responsive manufacturing systems.

Türkay Dereli received a BSc, MSc and PhD in Mechanical Engineering. From 1992 to 1999, he was with the Department of Mechanical Engineering at the University of Gaziantep, first as a Research Assistant, later as an Instructor. He is presently an Associate Professor at the Department of Industrial

Engineering of University of Gaziantep. His current research interests include innovation and technology management, CAD/CAM, process planning, feature technology, TQM, agile/responsive manufacturing/management, soft computing, informatics and applications of artificial intelligence.

Many organisations and manufacturing companies have been required to reduce the time to market of 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 change functional capabilities within a short period of time. Therefore, companies have to be restructured or reorganised in order to overcome the challenges of the 21st century, in which customers are not only satisfied but also delighted. The main goal of 'Responsive Manufacturing (RM)' is to achieve rapid, flexible, agile and integrated development, manufacture and support of complex products within an extended and increasingly global supply chain. The RM 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.

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

In this Special Issue some of the original research papers, which were presented orally at the *'ICRM'2005: 3rd International Conference on Responsive Manufacturing*, 12–14 September 2005 Guangzhou, China', were selected as candidates for this Special Issue. After the resubmission of revised manuscripts and refereeing processes, six papers out of ten papers were finally considered for the publication in the scheduled Special Issue of *International Journal of Industrial and Systems Engineering.* We would like to thank Professor Angappa Gunasekaran (the Editor-in-Chief of *IJISE*) for giving us the opportunity to prepare this Special Issue. This Special Issue provides the reader a collection of six papers, which offers an exclusive perspective on the topics ranging from innovative product design, electromechanical product development, rapid prototyping, DBR planning/control, modelling/design in virtual environments, technology watch.