Editorial

George Chryssolouris*

Laboratory for Manufacturing Systems and Automation, Department of Mechanical Engineering and Aeronautics, University of Patras, Patras 26500, Greece E-mail: xrisol@lms.mech.upatras.gr *Corresponding author

Mark J. Jackson

Center for Advanced Manufacturing and Birck Nanotechnology Center, College of Technology, Purdue University, West Lafayette, IN 47907-2021, USA E-mail: jacksomj@purdue.edu

Biographical notes: George Chryssolouris is a Professor (1993-) in the Department of Mechanical Engineering and Aeronautics at the University of Patras, Greece, and the Director of the Laboratory for Manufacturing Systems and Automation (LMS). He was the President of CIRP (2006–2007), the Paris based International Academy for Production Engineering. He worked at Massachusetts Institute of Technology (MIT) in the USA between 1980 and 1993. He has more than 300 publications in international scientific journals and refereed conferences. He is the author of two books published by Springer. He was granted the Frederick W. Taylor Research Medal by SME (2001) for his outstanding contributions to manufacturing Engineer Award (1986). He received a PhD (Dr.-Ing.) in Engineering from the University of Hannover, Germany in 1979 and a Diploma (MS) in Mechanical/Electrical Engineering from the National Technical University of Athens, Greece in 1975.

Mark J. Jackson received his degrees in Mechanical Engineering from Liverpool John Moores University, and conducted research at the University of Cambridge and the University of Liverpool. His research interests are in the area of micro and nanomanufacturing and he is currently Professor at Purdue University. He has ten years of experience in industry and 15 years of experience in the academic environment. He has published over 100 papers and numerous book chapters and edited books in the area of manufacturing and materials science and engineering.

There is an increasing interest, worldwide, for the potential of nanotechnology in many scientific and technological sectors. From the manufacturing point of view, most of the existing nanotechnology related techniques are still in an early stage of development. It is expected that nanomanufacturing may bring the promise of the nanoscale science/technology within the grasp of the average consumer. Since most of the products, in our lives, still belong to the macroscale, the blossoming of nanotechnologies in production would be achieved if nanotechnologies were adapted to various sectors

Copyright © 2010 Inderscience Enterprises Ltd.

2 G. Chryssolouris and M.J. Jackson

of producing goods in the macro scale. In order for this to be accomplished, integration of the nanoscale sciences with manufacturing attributes such as cost, productivity, quality and flexibility is required for providing solutions to multi-domain (mechanical, thermo-fluid, electrical, optical, chemical, biological, etc.) and multi-scale (nano-, micro-, and macro-scale) problems.

It is our hope that this special issue will provide an overview of the state-of-the-art and inspire new ideas/collaborations that will build on these approaches and results. Towards this end, topics that have been included in this special issue are derived from the *Proceedings of the 6th International Symposium on Nanomanufacturing (ISNM)*, hosted by the University of Patras, Laboratory for Manufacturing Systems and Automation, in Athens from 12–14 November 2008.

The ISNM fosters interaction between the manufacturing community and the emerging nanotechnology communities. Through the ISNM, scholars, engineers and members of the business community address basic research, education, dissemination and implementation issues that are related to the manufacturing of products that utilise the characteristics of nanoscale features and phenomena. The latest theoretical and applied research issues pertaining to processes, systems, equipment and instrumentation have been discussed through these technical presentations.

Each paper has been refereed by peer reviewers whom are experts in their field. We wish to thank the authors and the reviewers for their effort, and comments. Special thanks to Dr. K. Salonitis, Dr. P. Stavropoulos, Dr. A. Stournaras and Mrs. A. Sbarouni for their help to put this special issue together.