Editorial

I.S. Jawahir

Department of Mechanical Engineering; and
Center for Manufacturing – Sustainable Manufacturing Program,
University of Kentucky,
Lexington, KY 40506, USA
E-mail: jawahir@engr.uky.edu

Biographical notes: I.S. Jawahir is a Professor of Mechanical Engineering and James F. Hardymon Endowed Chair in Manufacturing Systems at the University of Kentucky, Lexington, KY, USA. He received his PhD from the University of New South Wales (Australia) in 1986, and has published over 170 research papers in refereed journals and conference proceedings. His current research includes modelling and optimisation of machining operations and sustainable manufacturing. He is a Fellow of the International Academy of Production Engineering (CIRP) and a member of ASME, NAMRI/SME. He is the Chairman of the ASME Research Committee on 'Sustainable Products and Processes'. He currently serves as the Editor-in-Chief for the *International Journal of Sustainable Manufacturing*.

It is with great pleasure that we are launching this new international journal to serve those actively involved in promoting the discipline of sustainable manufacturing. This journal seeks to fill the *gap between new technology development and deployment* through the promotion of *basic and applied knowledge generation and dissemination* in all topical areas of sustainable manufacturing. As such it aims to extend **lean** and **green** manufacturing concepts to the next level – **sustainable manufacturing.**

In this inaugural issue of the journal, we are indeed privileged to present a collection of eleven selected peer-reviewed papers written by some of the most prominent researchers and their co-workers in a range of fields associated with sustainable manufacturing and life cycle engineering. These papers represent and offer a class of scientific and technological needs, methods and approaches for solving current and future problems in sustainable manufacturing and set the stage for growing collaboration among researchers with roots in a wide range of disciplines. In keeping with the multi-faceted nature of sustainability, our journal will emphasise the need for interdisciplinary research for sustainable manufacturing in three broad areas:

- *coupled human and natural systems*: alternate sources of energy resources – solar, wind, biochemical, geothermal, etc.; environmental science and engineering; sociology; and economics for manufactured products and manufacturing processes
- *coupled biological and physical systems*: chemistry and chemical engineering; materials science and engineering; industrial ecology; molecular biology; geology and soil sciences; modeling, monitoring and controls for products and processes for sustainability

- *people and technology*: sociology; consumer interface and communications; manufacturing science and technology; marketing and management; political sciences; ethics; public health; and safety.

The journal will, on a quarterly basis, publish original ***research papers, short technical communications*** of current and ongoing research activities; and **review papers** presenting the state-of-the-art knowledge and practices in closely related areas to sustainable manufacturing involving **principles and practices of life cycle engineering**, including **applications in manufactured products, manufacturing processes and systems**. The key attributes of published papers will be a focus on environmentally benign technologies offering enhanced **societal values** and **economic impact.** For example, interrelated topics such as *design and manufacture of high quality/performance products with improved/enhanced functionality using energy-efficient, non-toxic and emissions-free, hazardless, safe and secure technologies, and manufacturing methods utilising optimal resources and energy by producing minimum wastes and emissions, and providing maximum recovery, recyclability, reusability, remanufacturability, with redesign features,* would be appropriate. However, this listing is not intended to be, and should not be read as, exclusionary, and the Editorial Board welcomes all submissions which address the core environmental issues affecting societal values and economic impact of sustainable manufacturing.

Our international editorial board includes researchers, discipline experts and technical leaders from academia, industry and agencies based in three major geographic regions (North and South Americas, Europe and Australasia). I thank them for their willingness to support this new journal and I will continue to actively involve them, and to seek their input, as we move past the launch of this new endeavor to the challenging task of keeping the journal **relevant, timely** and **focused**. We plan to expand this editorial board by including more experts from other unrepresented regions and topical areas of sustainable manufacturing.

The continued success of this journal depends on the quality, relevance and utility value of the published papers. In turn, this requires that a continuing flow of manuscripts be maintained, and an efficient and effective paper review process be implemented. Therefore, we invite all readers of this journal to participate in its success by submitting original papers of archival quality, which we will endeavor to publish in a timely fashion after full and rigorous review.