

Editorial

A special issue on sustainability? How timely. With global warming, the European Union pledging to have 20% alternative energy sources by 2020, our students are eager to embrace this 'hit' subject. Sustainability in engineering should contribute to averting (or at least delaying) a disaster of primordial dimensions. Curricula are straggling to incorporate relevant subjects: alternative energies, hazardous materials, design optimization, environmentally optimized construction, ecologically sustainable agriculture and more. These curricula touch upon engineering courses taught at third level institutions. Mechanical, Chemical, Civil, Electrical—as a matter of fact all engineering courses. In addition to the imperative of being involved with these 'Green Engineering' topics they are making an impact on world economies. Alternative energies developments and applications are a significant component of research, development, production and installation in industrialised countries. Wind generators are everywhere changing our landscape, followed by solar energy, hybrid cars and urban transportation developments. All this is engineering, and presents a challenge to our universities and colleges in developing appropriate engineering education modules. There is an emphasis in many of the papers presented in this issue on the social, cultural, global and environmental responsibilities of the professional engineer. There is a paradigm shift—technical expertise needs to pair up with social awareness and communication skills. Never before in history have such pressing problems required engineering solutions to sustain humans on our planet. The papers in this first issue on sustainability concentrate on course developments and the methodologies of implementation of sustainability education for engineers. The second issue will concentrate on case studies and course examples.

Lynn Katz and John Sutherland did an outstanding and taxing job in selecting, reviewing, revising and finally presenting the papers for publication. We must all thank them for making this issue available to us and the world of engineering educators.

As is our practice the special issue section is followed by a variety of papers also covering timely topics. The decision matrix (Malicky, Lord and Huang) is a pedagogical assessment tool incorporating novel factors to be used in course development. Problem based learning as well as web strategies are current favourite topics for engineering education developers. All of these as well as other relevant topics such as robotics and rapid prototyping are included in part II of this issue.

Journal production and policy are currently undergoing some major developments. Part of our printing is moving to Spain. The journal is also negotiating presence in INGENTA connect, a universal content providing platform.

Michael Wald