

Guest Editorial

This is the second part of the special issue on the Current Trends in Electronics Education (the first part appeared in Vol. 20, No.1). In this part of the special issue there are 13 papers, and what follows is a bird's eye view.

The first paper is by Szabados, a leading authority in power systems, electronics, and education. The author presents an innovative, self-paced, interactive method for teaching the subject of Power Electronics. The method developed overcomes the limitations of typical instructional packages. Feedback received from his students over the years fine-tuned the approach to near perfection.

The paper to follow is by Maurice and Day who discuss important lessons learned from online testing. It is one of the rare comprehensive studies that is focused on how students perceive online testing. It is important for educators and administrators to read this paper and reflect on the results and discussion presented in this landmark work.

The third paper is authored by Hussmann *et al.* They present a novel Web-based tutorial and assessment tool for teaching and learning electronics at the third year level in a four-year Bachelor degree programme. The tool developed has numerous advantages over other tools in its class.

Next, Almendra *et al.* present an experience in de-localizing hardware-based laboratories via the Internet. Technical solutions were discussed and pedagogical advantages were described. One may expect that the paper would appeal to a wide range of readers including administrators.

Interdisciplinary learning through a connected classroom is the paper by Watkins *et al.* The method discussed integrates Web-based tutorials, lectures, and group assignments, in addition to laboratory exercises to overcome the difficulties faced in an interdisciplinary course, such as Smart Materials and Sensors, in which students have mixed academic backgrounds.

An approach to help students relate the theory learned through lectures to actual hands-on laboratories in analog electronics is discussed by Moure *et al.* It is based on using a virtual laboratory as a tool to enhance the performance and efficiency of students in actual laboratories.

Another approach to help enhancing the laboratory experience for students is proposed by Chiu and Chiu in their paper: *An open-ended laboratory system with computer-aided simulation for undergraduate electronic engineering*. The approach is meant to foster creativity and address issues such as quality assurance, communications and project management.

More on the theme of laboratory work is discussed by López in his paper: *An undergraduate laboratory in communication fundamentals*. It is an exploration on how a relatively new university is responding to dynamic demands.

The next four papers relate to advanced topics in Electronics education. The paper by Dessouky *et al.* introduces the idea of exposing undergraduates to graduate-level research through the final year undergraduate project. The paper by Suárez *et al.* compares four control schemes based on neural networks for teaching purposes and put forward recommendations for learning and teaching advanced control strategies. Elmas and Akcayol discuss a tool designed to help students understand fuzzy logic controllers and their applications. Levin *et al.* present a methodology developed to help students overcome the difficulty of relating the theoretical knowledge of a complex subject to its practical aspects. The authors describe an approach for designing and implementing the control part of a Mechatronics system.

The final paper of this issue by Kocijancic and Jamsek addresses the important problem of the apparent lack of interest among high school students in the study of engineering. Although the authors refer to this problem as occurring in Slovenia, it is experienced by numerous engineering schools around the world. Many educators may share similar concerns and could find the approach described most interesting.

We hope that the readers find the papers of this issue to be thought provoking, informative, and intriguing. Once again we would like to thank professor Wald for his kind invitation to be the guest editors of the issue and express our gratitude to all the prominent educators who helped us as anonymous reviewers. Again we appreciate the wonderful contributions by the authors and we wish to thank them for making this issue 'special'.

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