

Guest Editorial

We would like to thank Professor Michael Wald, the Editor-in-Chief for inviting us to be guest editors of this special issue of the International Journal of Engineering Education on Current Trends in Electronics Education. We would also like to thank the prominent engineering educators from across the world who helped us as anonymous reviewers. Their help is highly appreciated. Finally we would like to thank the authors who contributed to this issue and made it successful.

Electronics is a dynamic field and its teaching and learning need to be even more dynamic because of the intrinsic growth of knowledge in the area of Electronics and the progress in its applications. Such progress has also led to the introduction of new tools at the disposal of educators for innovation in teaching the subject matter.

We hope that the readers find this issue interesting, intriguing, informative, and thought provoking. The topics covered are diverse, yet related. They present ideas such as the use of technology, including multimedia and the Web, for innovative assessment and delivery techniques, the introduction of new complex topics to undergraduate teaching, innovative approaches to Electronics laboratory design and delivery, and Electronics curriculum design and assessment.

The papers of this special issue appear in two parts: Vol. 20, No. 1 and Vol. 20, No. 2. In this part (Vol. 20, No. 1) there are 11 papers. The following is a quick overview.

The paper by Berezin, a leading authority in Isotopic Engineering, introduces a conceptual framework for a course in Microelectronics and Quantum Informatics based on Isotopic Engineering. It presents a holistic approach that builds on students' knowledge of basic physics, chemistry, and mathematics to address advanced concepts in Electronics.

Although the paper by Murovec and Kocijancic is focused on an Electronics laboratory topic, its approach could be of interest to educators across most science, engineering, and technology disciplines.

Again, the paper by Prat *et al.* would appeal to both Electronics educators of narrow specialization and to educators in various areas of engineering who may find the experience described useful. The objectives of minimizing the physical presence of students at the university campus while maintaining quality and success rate raise important points about which educators and administrators may ponder.

Affordability of matching the growing needs of Electronics laboratories is addressed by Alonso and Barreto. They introduce an affordable platform for hands-on learning and detail its development. It is based on enhancing a commonly used commercially available platform to meet new educational needs. The approach provides students with enhanced experience while minimizing the expenses.

In the paper by Salzer and Levin an intriguing approach to teaching logic control is introduced.

The paper by Al-Dhaher reflects the need to match new developments in the Electronics industry and provides a specific example. It discusses the design, implementation, testing, and experiences gained in a project based on both a microcontroller and FPGA.

Gani and Salami introduce an approach to teach Electronics students important concepts of a relatively new topic using tools created by the progress in Electronics applications. The paper would be of interest to educators in Mechanical engineering as well.

The paper by Chaudhry details an educational approach to introduce the applications of advanced computational techniques to Electronics students. The approach is innovative and simple, yet accurate enough for use in industry.

Although ABET accreditation is an American approach for quality assurance, some universities outside the USA find it advantageous to apply it. Bilsel describes the experience gained applying the criteria at the Electrical/Electronics Engineering program at the Eastern Mediterranean University in Turkey. One may expect that the paper would add to the debate on the topic among educators within Turkey and internationally.

The paper by Waks and Helps addresses the *large discontinuous steps* of change in Electronics education. They identify the roots of the change and their implications on Electronics education curricula. The paper is a milestone in curriculum design, so it will not be a surprise if it fuels an international debate on the topic.

Kassim *et al.* introduce a framework for Web-based teaching and learning that attempts to avoid the pitfalls of numerous other systems. The ideas presented would generate discussions among educators who are interested in Web applications in engineering education.

With this feast of papers it is hoped that the readers feel intrigued enough to look forward to the second instalment of papers to appear in Vol. 20, No. 2.

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