

## Editorial

Since 1997, a special issue on electronics has been published every next year after the regular biennially held Baltic Electronics Conference (BEC). This time, exceptionally, two special issues are published consecutively. The papers of both, the present (vol. 17, No. 3) and the previous issue (vol. 17, No. 2) of the Estonian Journal of Engineering, are based on the presentations given at the IEEE 12th International Baltic Electronics Conference (BEC2010), held in Tallinn on 4–6 October 2010. While the previous special issue revealed the results of joint work of Estonian and foreign researchers, then this issue reflects the interdisciplinary collaborative work of Estonian scientists from different departments and faculties of the Tallinn University of Technology (TUT) and the University of Tartu (UT).



The first paper by Sergei Kostin and his experienced colleagues represents a traditionally strong research field at the Department of Computer Engineering in TUT – the testing and diagnostics of digital electronics. This time, the main attention is paid on physical defects.

The second paper is written by Dr. Andrei Krivoshei. He is with Th. J. Seebeck Department of Electronics, TUT. His work is devoted to the development of a software-based decomposer of cardiac and respiratory components of the thoracic bio-impedance signal.

The third paper, by Heigo Mölder with co-authors, describes a method, introduced specially for the mixing of electrically molten metal. This is a joint work of the Faculties of Energy and Information Technology at TUT.

Next paper by a young researcher Kristo Paisnik and his co-authors Galina and Toomas Rang from the Th. J. Seebeck Department of Electronics, TUT, describes the results of their investigation on time dependence of the parameters of LED light sources.

The last work has been performed jointly by the researchers from Tartu University (Dr. Jüri Vedru et al., Department of Physics) and Tallinn University of Technology (Dr. Rauno Gordon, Th. J. Seebeck Department of Electronics). The paper describes the results of further development of the bio-impedance method for the diagnostics of the heart, using induced or Eddy currents (also known as the Foucault cardiogram method).

The papers selected for publication in the present issue are the extended and further developed formulations of the scientific problems and results, which were reported and discussed in different sessions during the BEC2010.

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Guest editor