# Editor's Column

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> A man who thinks he knows everything, stands below the one who knows nothing.
>
> *St. Nikolaj Velimirovic*

*Editorial Letter*
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IN 2023, we continued hard working to deliver high-quality and interesting research reports from the authors in diverse fields of electronics to our readers. I also use the opportunity to remind the research community that we recently announced a call for papers for special issue on *Advances in Artificial Intelligence for Healthcare*, which can be found on the website of the journal. Therefore, I invite all potential authors, whose research covers topics related to the special issue, to submit their work. The tentative publication date of the issue is October 2023.

In this issue we published four papers, each focused on a different field of electronics, as I already mentioned above.

In the first paper, entitled "Novel Renewable Energy Source in Standalone Microgrid Application with Island Load Management," authored by M. Teke, M.Ö. Yatak, and E. S. Y. Yaseen, a thermoelectric generator that uses hot water from the hot spring area to generate free electricity as a new renewable energy source in a microgrid application is proposed. The main advantage of the described approach reflects in generating electricity from renewable sources (photovoltaic and thermoelectric) without wasting energy by controlling loads according to the proposed load management algorithm. The microgrid and energy management control is modeled with MATLAB/Simulink and the results show that the essential load is always active through thermoelectric generator even in the absence of battery storage system.

The second paper, entitled "Fault Coverage Improvement of CMOS Analog Circuits Using Supply Current Testing Method," by A. Arabi, M. Ayad, M. Benziane, N. Bouroubа, and A. Belaout, brings in a testing technique, based on supply current verifying, for fault detection of analog circuits containing CMOS operational amplifiers. The testing method is based on the over-sighting of the quiescent supply current ($I_{ddq}$) of the CMOS operational amplifier operating in its quiescent mode and the supply current of the CMOS operational amplifier when it is used as a Sallen-Key band pass filter in the AC and transient operating domains. The authors demonstrated that the proposed method achieved 100% classification accuracy for the case of bridging faults, whereas the fault coverage ratio attained 57.14% for all open faults injected in the two circuits under test. By using different machine learning classifiers, the authors managed to increase the coverage of open faults from 57.14% to 66.7%.

In the third paper, "Efficient Modulo Multiplier," authors R. U. Ahmed, S. D. Thabah, M. Haque, and P. Saha, presented a methodology for computing modulo multiplication with a moduli set $2^n$, $2^n-1$, $2^n+1$. In addition, they proposed designs of the modulo multipliers based on half-adders, full-adders, 4:3 compressor, 7:3 compressor, and multi-column compressor 5, 5:4. The designs are implemented using VHDL and simulated using Xilinx 14.2 design suite on Virtex-6 device to estimate delay, power consumption, and power-delay-product. Moreover, the same designed circuits are simulated in Cadence RC compiler using 0.18 $\mu m$ technology to estimate the area. The presented results showed 66.34% improvement in terms of area for the case of the modulo $2^n - 1$ multiplier of 4-bit operand size when compared with the best design reported by other authors. In addition, the modulo $2^n + 1$ multiplier of 4-bit operand size demonstrated improvement of 58.59% in terms of area and improvement of 22.72% for 8-bit operand size in comparison to the best design reported in other papers.

Final paper, "Compact Ultra-Wideband Planar Inverted F Antenna on Laminated Paper-Based Substrate with Reduced Specific Absorption Rate," by S. Kumari and V. R. Gupta, deals with a laminated paper-based Planar Inverted F Antenna (PIFA) for wireless body area network (WBAN) applications. As reported by the authors, the measured specific absorption rate of the proposed antenna is 0.64 Watt/kg, which is much below the SAR radiation safety guidelines. Moreover, the designed antenna has a group delay lesser than 2.3 ns, which indicates better phase linearity and the maximum measured peak gain of 9.53 dB (free space) and 6.07 dB (on-body). Thus, it is an ideal antenna for a wireless body area network as it can serve multiple applications.

As always, I thank the authors for their contribution to this issue of the journal and send great appreciation to all the reviewers who participated in the editorial process by providing valuable comments in timely manner to the editors and authors.