

Tentative Outline

Special Thematic Issue for Current Medical Imaging

Title: Intelligent electronic devices and circuit for low power secured biomedical systems

Guest Editors: Dr. Suman Lata Tripathi, Dr. S. K. Mohapatra, Dr. Mamoun Alazab, Dr. Manuel Cardona

Aims & Scope:

Changing environmental conditions and the increase in diseases have affected human life up to a large extent. Post COVID-19 developments also lead researchers & designers to think about new smart, efficient biomedical devices that cope up with all possible challenges in future healthcare systems. Electronic devices and circuits are now an integral part of health diagnosis and monitoring systems. Also, the increasing demand for portable devices and wearable for health monitoring leads to the demand for ultra-low power-efficient devices. Low power consumptions lead to several design challenges at ICs level with variations in device structure, material and connectivity with other supporting biomedical equipment. The special issue explores the changes required at the design and implementation of intelligent electronic devices and circuits to enhance adaptability, accuracy, reliability and security for biomedical systems with low power consumption and artificial intelligence techniques. The major area of concern for this issue is the design and development of intelligent biomedical devices and circuits with enhanced performance in terms of power consumption, frequency, noise immunity and IC area etc.

Keywords: MATLAB, FPGA, ASIC, VLSI signal and image processing, Privacy and security, Low Power, Artificial intelligence, Machine learning model, Nano-bio material, Biosensors, COVID-19 etc.

The topics relevant to this special issue include but are not limited to:

- Real-time examples of biomedical application with MATLAB or Python software
- Signal Quality Assessment and Sensor Fusion
- Medical devices for the diagnosis, monitoring, and treatment of diseases
- Biomedical applications of oscillators, active filters, and wave-shaping circuits.
- Ultralow-Power Electronics for Biomedical Applications
- ASIC Design for biomedical signal processing
- Biosensors
- System privacy and security.
- Advanced materials and their uses for intelligent biomedical devices
- Real time biomedical application with FPGA

Timeline:

- Manuscript submission deadline: **March 30, 2021**
- Announcement of acceptance by the Guest Editors: **June 20, 2021**
- Final manuscripts due: **August 20, 2021**

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