

Special Issue on
Bioimpedance Sensors: Instrumentation, Models, and Applications

CALL FOR PAPERS

The conductive and dielectric properties of tissue/cell result in frequency-dependent complex electrical bioimpedance which can provide meaningful information about its physiology and pathology. Thus, bioimpedance is the technological base of new noninvasive sensors and medical diagnostic devices.

As a diagnostic tool, bioimpedance sensors have the potential to be used in applications such as detection of cancerous cells, brain and pulmonary function monitoring, impedance cardiography and pneumography, diagnosis of cutaneous pathologies, ischemia monitoring, edema determination, and noninvasive measurement of blood pressure or glucose level.

Although these types of sensors are noninvasive, of low cost, portable, and user friendly, more efficient and miniaturized instrumentations, novel models and algorithms, new parameters, and substance characterizations are required. It is important to optimize the sensors for sensitivity and power consumption, especially when used in Lab-on-Chip devices and implantable systems such as cardiac and other monitors and pacemakers. Repeatability and reproducibility are often limitations of this technology; thus, novel sensing techniques are necessary. Moreover, high frequency measurements require in-depth circuit design techniques to overcome challenges.

This special issue intends to publish high-quality research papers as well as review articles that would address recent advances in bioimpedance sensors, devices and applications.

Potential topics include but are not limited to the following:

- ▶ Design and implementation of novel bioimpedance instrumentation
- ▶ New electrode designs and configurations
- ▶ Sources of artifacts and noise in bioimpedance measurements
- ▶ Measurement methods and devices
- ▶ New models, alternative signals and data processing algorithms
- ▶ Novel approaches to bioimpedance spectroscopy (BIS)
- ▶ Bioimpedance for body composition assessment
- ▶ Impedance cardiography (ICG)
- ▶ Transthoracic impedance pneumography and capnography
- ▶ Electrical impedance tomography (EIT)
- ▶ Skin conductance applications
- ▶ Transducers for biosensors and Lab-on-Chip technology
- ▶ Bioimpedance measurements in implantable systems
- ▶ Characterization of new parameters and substances
- ▶ New applications and future challenges of bioimpedance

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/js/bsima/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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