

Special Issue

Physiological Sound Processing for Medical Diagnostics: Innovations, Challenges, and Applications

Message from the Guest Editors

The scope of this Special Issue includes, but is not limited to, the following topics:

- Heart Sounds: AI-driven auscultation techniques for detecting arrhythmias, murmurs, and valvular diseases.
- Lung Sounds: Advanced signal processing methods for diagnosing asthma, COPD, pneumonia, and other respiratory conditions.
- Cough Analysis: Automated tools for differentiating between viral, bacterial, and chronic respiratory diseases, including tuberculosis and COVID-19.
- Sleep Apnea and Snoring: Acoustic analysis for detecting and characterizing sleep-related breathing disorders.
- Wearable Devices: The development and validation of mobile and wearable technologies for capturing and processing physiological sounds.
- Explainability and Ethical AI: Designing explainable AI models for sound diagnostics and addressing ethical challenges in clinical deployment.
- Standardization and Clinical Validation: Efforts to standardize datasets, protocols, and clinical trials for sound-based diagnostics.

Guest Editors

Dr. Oliver Faust

School of Computing and Information Science, Anglia Ruskin University,
East Road, Cambridge CB1 1PT, UK

Prof. Dr. Prabal Datta Barua

School of Mathematics Physics and Computing, University of Southern
Queensland, Toowoomba, QLD 4350, Australia

Deadline for manuscript submissions

closed (30 November 2025)



Diagnostics

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CiteScore 5.9
Indexed in PubMed



mdpi.com/si/229320

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
diagnostics@mdpi.com

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Prof. Dr. Andreas Kjaer
Department of Clinical Physiology, Nuclear Medicine & PET National
University Hospital, Rigshospitalet, University of Copenhagen,
Blegdamsvej 9, DK-2100 Copenhagen, Denmark

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