

Tentative Outline

Special Thematic Issue for the journal

Title of Thematic Issue: Advances in Thoracic and Chest Imaging

Guest Editors: Prof. Dr. Kaan ORHAN/ Prof. Dr. Ayten KAYI CANGIR

- **Scope of the Thematic Issue:**

There have been many remarkable advances in conventional thoracic imaging over the past decade. Perhaps the most remarkable is the rapid conversion from film-based to digital radiographic systems. Computed radiography is now the preferred imaging modality for bedside chest imaging. Opportunities for direct computer-aided detection of various lesions may enhance the radiologist's accuracy and improve efficiency. Newer techniques such as dual-energy and temporal subtraction radiography show promise for improved detection of subtle and often obscured or overlooked lung lesions. Besides, newer techniques such as Micro-CT evaluations are being used for surgical imaging purposes. Micro-CT, is being employed widely for bone research. Micro-CT can provide information about internal structure of variable materials, ranging from industrial equipment to human tissues. Micro-CT as a non-invasive ex-vivo imaging tool, can show the internal 3D structure of an opaque sample at sub-micron resolutions. Another advancement is Artificial Intelligence (AI). AI can perform complex behaviors such as problem-solving, decision making, and object recognition. Deep-learning methods cover a group of AI methods that use multiple simple linked units to perform complex tasks. These algorithms can learn from large numbers of data instead of a set of pre-programmed directions. Convolutional Neural Network (CNN) has become the most popular deep-learning model for the field of the medical imaging area. Radiomics refers to the high-throughput extraction of large numbers of imaging features, thus converting medical images into mineable high-dimensional data; the subsequent quantitative analysis of these data can support decision-making. Radiomics aims to predict patient specific outcomes based on high-throughput analysis and mining of advanced imaging biomarkers by machine learning algorithms. The Scope of the Thematic Issue is to give up to date information to the information about recent developments.

Keywords: Thoracic and Chest Imaging, AI, Micro-CT, texture analysis, radiomics, CT

Sub-topics:

- CT imaging,
- Micro-CT evaluations
- Artificial Intelligence (AI)
- Radiomics
- PET/CT
- USG
- Adenocarcinoma
- 3D printing in medical applications
- Advanced Computational and Learning Approaches for Diagnostic Imaging
- Computational Algorithms on Medical Image Processing

Schedule:

- Manuscript submission deadline: October, 01, 2021
- Announcement of acceptance by the Guest Editors: November 01 , 2021
- Final manuscripts due: December 31, 2021

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