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Nota di contenuto	1. Early diagnosis system for lung nodules based on the integration of a higher-order MGRF appearance feature model and 3D-CNN -- 1.1. Introduction -- 1.2. Methods -- 1.3. Experimental results -- 1.4. Conclusion 2. Capsule networks for lung cancer screening -- 2.1. Introduction -- 2.2. Capsule network -- 2.3. Fast capsule network -- 2.4. Dataset -- 2.5. Experiments -- 2.6. Results and discussion -- 2.7. Conclusions 3. Quantitative malignancy recognition of lung cancer using non-invasive image modalities -- 3.1. Introduction -- 3.2. Materials and methods -- 3.3. Conclusion 4. Epidemiology of lung cancer -- 4.1. Descriptive epidemiology of lung cancer -- 4.2. Risk factors of lung cancer -- 4.3. Lung cancer in never-smokers -- 4.4. Screening -- 4.5. Conclusion 5. Use of biomarkers in lung cancer diagnosis, prognosis, and treatment -- 5.1. Introduction -- 5.2. Histological subtypes and respective personalized medicine -- 5.3. Available screening assays to

detect molecular alterations and genetic rearrangements -- 5.4. Molecular methods used to detect mutations -- 5.5. Genomic markers -- 5.6. Proteomic markers -- 5.7. Metabolic markers -- 5.8. Immunotherapy markers -- 5.9. The emerging role of microRNAs -- 5.10. Clinical trials with targetable oncogenic drivers -- 5.11. Conclusion
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7. Photodynamic diagnosis and treatment of lung cancer -- 7.1. Introduction -- 7.2. Cancer -- 7.3. Photodynamic diagnosis -- 7.4. Photodynamic therapy -- 7.5. Conclusion
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11. Electromagnetic imaging and lung ablation -- 11.1. Introduction -- 11.2. Electrical impedance tomography -- 11.3. Magnetic induction tomography -- 11.4. Microwave imaging -- 11.5. Lung ablation -- 11.6. Current trends and future perspectives -- 11.7. Conclusion.

Sommario/riassunto

Lung cancer is one of the most common cancers in both men and women worldwide. Early diagnosis of lung cancer can significantly increase the chances of a patient's survival, yet early detection has historically been difficult. As a result, there has been a great deal of progress in the development of accurate and fast diagnostic tools in recent years. Lung Cancer and Imaging provides an introduction to both the methods currently used in lung cancer diagnosis and the promising new techniques that are emerging. Areas covered include the major trends and challenges in lung cancer detection and diagnosis, classification of cancer types, lung feature extraction in joint PET/CT images, and algorithms in the area of low dosage CT lung cancer images. Part of Series in Physics and Engineering in Medicine and Biology.