

Χαρακτηριστικά:

- Covers all the fundamental physics and technological knowledge needed to practise ultrasound effectively, including safety aspects, quality assurance, and the latest techniques and developments
- Clear and concise explanations for those new to ultrasound physics and technology – no prior knowledge or experience necessary
- Step-by-step introduction to the topics, covered in a logical order – each chapter builds on content covered in previous chapters
- Learning outcomes and chapter summaries support learning
- Easy to read and follow – written in non-technical language for readers from a variety of training backgrounds.
- Takes a non-mathematical approach to explain the principles of ultrasound physics
- Uses a variety of examples from clinical practice used to bring learning to life
- Ideal for students but also valuable as a quick reference guide for all medical practitioners of ultrasound, from sonographers to doctors and midwives
- Covers advancements in transducer technology
- Looks at integration of ultrasound with other imaging modalities such as CT and MRI for more accurate diagnostic evaluations.
- Covers new 3D/4D ultrasound in obstetric imaging
- Explores artificial intelligence and machine learning to automate image interpretation and optimise workflow in ultrasound technology

Περιεχόμενα:

1. Introduction to Diagnostic Ultrasound
2. Principles and Physics of Ultrasound Imaging: Simple Terminology Definitions
3. The Piezoelectric Effect
4. Acoustic Impedance
5. The Ultrasound Beam
6. Transducers
7. Resolution
8. Ultrasound Interactions and Attenuation
9. Artifacts
10. Instrumentation and Controls
11. Physical Principles of Doppler Ultrasound
12. Ultrasound Safety

13. Quality Assurance and Performance Testing
14. Technological Advances in Ultrasound Imaging
15. Multiple Choice Questions and Answers