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H. Zaidi (Ed.)

**Molecular Imaging of Small Animals**

Instrumentation and Applications

- ▶ Explores the rapidly expanding field of multimodality small-animal molecular imaging
- ▶ Examines various imaging modalities including CT, MRI, SPECT and PET
- ▶ Demonstrates the increasing role of *in vivo* small-animal imaging in understanding human molecular biology and pathophysiology

This book examines the fundamental concepts of multimodality small-animal molecular imaging technologies and their numerous applications in biomedical research. Driven primarily by the widespread availability of various small-animal models of human diseases replicating accurately biological and biochemical processes *in vivo*, this is a relatively new yet rapidly expanding field that has excellent potential to become a powerful tool in biomedical research and drug development.

In addition to being a powerful clinical tool, a number of imaging modalities including but not limited to CT, MRI, SPECT and PET are also used in small laboratory animal research to visualize and track certain molecular processes associated with diseases such as cancer, heart disease and neurological disorders in living small animal models of disease. *In vivo* small-animal imaging is playing a pivotal role in the scientific research paradigm enabling to understand human molecular biology and pathophysiology using, for instance, genetically engineered mice with spontaneous diseases that closely mimic human diseases.



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