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Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	1. Engineering in Translational Medicine: An Introduction -- 2. Stem Cells: The Holy Grail of Regenerative Medicine -- 3. Engineering T Cells to Target Tumor Cells -- 4. Engineering Biomaterials for Anchorage-Dependent and Non-Anchorage-Dependent Therapeutic Cell Delivery in Translational Medicine -- 5. Tissue Engineering Applications for Peripheral Nerve Repair -- 6. Structure, Function and Development of Blood Vessels: Lessons for Tissue engineering -- 7. Engineering Gene Activated Matrices for the Repair of Articular Cartilage Defect -- 8. Engineering Luciferases for Assays and Imaging -- 9. Engineered Split Reporter Systems for Molecular Imaging of Protein-Protein Interactions in Living Subjects -- 10. Engineering Aspects of Bioluminescence Resonance Energy Transfer Systems -- 11. Antibody Engineering in Translational Medicine -- 12. Engineered Affibodies in Translational Medicine -- 13. Alternative Protein Scaffolds for Molecular Imaging and Therapy -- 14. Engineering Multivalent and Multispecific Protein

Therapeutics -- 15. Engineering Aptamers for Biomedical Applications: Part 1 -- 16. Engineering Aptamers for Biomedical Applications: Part 2 -- 17. Engineering DNA Vaccines for Cancer Therapy -- 18. Multifunctional Nanoscale Delivery Systems for Nucleic Acids -- 19. Engineering Nanomaterials for Biosensors and Therapeutics -- 20. Engineering Fluorescent Nanoparticles for Biomedical Applications -- 21. Magnetic Nanoparticles for Biomedical Applications: From Diagnosis to Treatment to Regeneration -- 22. Engineering Upconversion Nanoparticles for Biomedical Imaging and Therapy -- 23. Engineering of Mesoporous Silica Nanoparticles for in Vivo Cancer Imaging and Therapy -- 24. Engineering Carbon Nanomaterials for Stem Cell-Based Tissue Engineering -- 25. Engineering Peptide-Based Carriers for Drug and Gene Delivery -- 26. Activation Approaches on Delivery of Imaging and Therapeutic Agents -- 27. Opportunities for New Photodynamic Molecular Beacon Designs -- 28. Engineering the next generation PET detectors -- 29. Photoacoustic Imaging: Development of Imaging Systems and Molecular Agents -- 30. Engineering Miniature Imaging Instruments -- 31. Engineering Small Animal Conformal Radiotherapy Systems -- 32. Plasmonic Nanobubbles for Cancer Theranostics -- 33. Cell-Based Microfluidic Assays in Translational Medicine -- 34. Engineering of Photo-Manipulatable Hydrogels for Translational Medicine -- 35. Engineering AApeptides for Translational Medicine.

Sommario/riassunto

This book covers a broad area of engineering research in translational medicine. Leaders in academic institutions around the world contributed focused chapters on a broad array of topics such as: cell and tissue engineering (6 chapters), genetic and protein engineering (10 chapters), nanoengineering (10 chapters), biomedical instrumentation (4 chapters), and theranostics and other novel approaches (4 chapters). Each chapter is a stand-alone review that summarizes the state-of-the-art of the specific research area. Engineering in Translational Medicine gives readers a comprehensive and in-depth overview of a broad array of related research areas, making this an excellent reference book for scientists and students both new to engineering/translational medicine and currently working in this area.