

1. Record Nr.	UNINA9910298423303321
Titolo	Cutting-Edge Enabling Technologies for Regenerative Medicine // edited by Heung Jae Chun, Chan Hum Park, Il Keun Kwon, Gilson Khang
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2018
ISBN	981-13-0950-7
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (490 pages)
Collana	Advances in Experimental Medicine and Biology, , 0065-2598 ; ; 1078
Disciplina	576
Soggetti	Biomedical engineering Regenerative medicine Tissue engineering Biomedical Engineering/Biotechnology Regenerative Medicine/Tissue Engineering Biomedical Engineering and Bioengineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	I.3D Printing and 3D Electro-spun for Regenerative Medicine -- 1.3D bioprinting of adipose-derived stem cells for organ manufacturing -- 2.3D printed gelatin scaffold with desired porosity and its biological effects in vitro -- 3.Electrospun 3D scaffolds for tissue regeneration -- 4.Scaffolds fabricated from natural polymers/composites by electrospinning for guided bone tissue-regeneration -- 5.Electrospun and electrosprayed scaffolds for tissue engineering -- II.Intelligent Nanocomposite Biomaterials for Regenerative Medicine -- 6.Graphene-based nanocomposites as promising options for hard tissue regeneration -- 7.Modifications of poly(methyl methacrylate) cement for potential applications in orthopedic surgery -- 8.Intrinsically conductive nanocomposite biomaterials for cellular applications -- 9. Nanobiomaterials for the application for smart contact-lens biosensors -- 10.Polymeric multilayer bioconstructs in tissue engineering and regenerative medicine: A Review -- III.Drug Delivery Systems for Regenerative Medicine -- 11.Evolution of PEG & PEGylation -- 12.Role of cross-linkers in advanced drug delivery and tissue engineering application -- 13.Bone tissue engineering strategies in co-delivery of

bone morphogenetic protein-2 and biochemical signaling factors -- 14. Biomaterials-based bioimaging technologies for regenerative medicine -- 15. Growth factors delivery systems for regenerative medicine -- 16. Recent advances in polymer-based nanoparticles for biomedical applications -- 17. Reactive oxygen species responsive polymeric drug -- 18. Nanocarrier-based immunotherapy for Hepatitis vaccination -- IV. Future Enabling Technologies for Regenerative Medicine -- 19. Biomaterials developments for brain tissue engineering -- 20. Conductive polymers in regenerative medicine -- 21. Design of temperature-responsive cell culture surfaces for cell-sheet based regenerative therapy and 3D tissue fabrication -- 22. Harnessing nanotopography of electrospun nanofibrous nerve guide conduits (NGCs) for neural tissue engineering -- 23. Biomechanics in annulus fibrosus regeneration -- 24. Nanopatterned scaffolds for tissue engineering and regenerative medicine -- 25. Process system engineering methodologies applied to tissue development and regenerative medicine.

Sommario/riassunto

This book explores in depth the latest enabling technologies for regenerative medicine. The opening section examines advances in 3D bioprinting and the fabrication of electrospun and electrosprayed scaffolds. The potential applications of intelligent nanocomposites are then considered, covering, for example, graphene-based nanocomposites, intrinsically conductive polymer nanocomposites, and smart diagnostic contact lens systems. The third section is devoted to various drug delivery systems and strategies for regenerative medicine. Finally, a wide range of future enabling technologies are discussed. Examples include temperature-responsive cell culture surfaces, nanopatterned scaffolds for neural tissue engineering, and process system engineering methodologies for application in tissue development. This is one of two books to be based on contributions from leading experts that were delivered at the 2018 Asia University Symposium on Biomedical Engineering in Seoul, Korea – the companion book examines in depth novel biomaterials for regenerative medicine.
