1. Record Nr. UNINA9910797776903321

Titolo	Characterisation and design of tissue scaffolds / / edited by Paul Tomlins ; contributors, S. F. Badylak [and twenty others]
Pubbl/distr/stampa	Amsterdam, [Netherlands] : , : Woodhead Publishing, , 2016 ©2016
ISBN	1-78242-087-8 1-78242-095-9
Descrizione fisica	1 online resource (296 p.)
Collana	Woodhead Publishing Series in Biomaterials ; ; Number 106
Disciplina	610.284
Soggetti	Tissue engineering - Materials Tissue scaffolds Biomedical materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	""Front Cover""; ""Characterisation and Design of Tissue Scaffolds""; ""Copyright Page""; ""Contents""; ""List of contributors""; ""Woodhead publishing series in biomaterials""; ""1 Material types for tissue scaffolds""; ""Introduction""; ""Polymers""; ""Naturally occurring polymers""; ""Polysaccharides""; ""Alginates""; ""Chitosan""; ""Xanthan""; ""Proteins""; ""Collagen""; ""Fibrin and fibrinogen""; ""Hyaluronic acid""; ""Synthetic polymers""; ""Polyesters""; ""Polyethers""; ""Synthetic proteins""; ""Ceramics""; ""De-cellularized matrices""; ""Characterization of materials"" ""Sterilization""""""Future trends""; ""Sources of further information""; ""References""; ""2 Designing and modeling pore size distribution in tissue scaffolds""; ""Background""; ""Modeling of pore architecture and its effect on the process of tissue engineering""; ""Selection of fabrication technique in terms of pore size distribution-with emphasis on polymer-based scaffolds""; ""Electrospinning of tissue engineered vascular grafts-the effect of pore morphology on the mechanical and biological functio...""; ""Conclusion""; ""References"" ""3 Computer modeling of the degradation behavior of polyester-based tissue engineering scaffolds""""""Introduction""; ""Tissue engineering

scaffolds""; ""Factors controlling the degradation rate of scaffolds""; ""Material factors""; ""The effect of geometry""; ""Environmental conditions""; ""A mathematical model for the degradation of bioresorbable polyesters""; ""Degradation maps""; ""Computer modeling of scaffold degradation using finite element methods""; ""FE modeling procedure""; ""Foamlike scaffolds""; ""Size effect zone""; ""Molecular weight""; ""Scission rate""
""Short chain diffusion""""""Fibrous scaffolds""; ""Size effect zone""; ""Molecular weight""; ""Scission rate""; ""Short chain diffusion""; ""Conclusion""; ""References""; ""4 Decellularization of mammalian tissues: preparing extracellular matrix bioscaffolds""; ""Introduction""; ""Rationale and relevance for clinical use of decellularized tissues""; ""Establishing a criteria for decellularization efficacy""; ""Decellularization agents""; ""Hypertonic and hypotonic solutions""; ""Acids and alkaline bases""; ""Acids""; ""Alkaline bases""; ""Detergents""; ""Nonionic detergents""
""Ionic detergents""""""Zwitterionic detergents""; ""Solvents""; ""Tri(n-butyl)phosphate""; ""Alcohols""; ""Biological agents""; ""Enzymes""; ""Nonenzymatic biologic agents""; ""Chelating agents""; ""Toxins""; ""Decellularization techniques""; ""Immersion and agitation""; ""Use of pressure as a decellularization technique""; ""Supercritical fluid""; ""Perfusion decellularization of whole organ constructs""; ""Terminal sterilization of decellularized tissues""; ""Decellularization agents that act as disinfectants""; ""Depyrogenation""; ""Ionizing radiation""; ""Ethylene oxide exposure""
""Conclusion""