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Titolo	Innovative developments in design and manufacturing : advanced research in virtual and rapid prototyping : proceedings of the 4th International Conference on Advanced Research and Rapid Prototyping, Leiria, Portugal, Oct. 6-10 2009 // editors, Paulo Jorge da Silva Brtolo. [et al.]
Pubbl/distr/stampa	Boca Raton ; ; London, : CRC, c2010 Boca Raton : , : CRC Press, , 2009
ISBN	0-429-20649-6 1-135-16613-7 0-203-85947-2
Edizione	[1st ed.]
Descrizione fisica	1 online resource (748 p.)
Altri autori (Persone)	BartoloPaulo
Disciplina	670.285
Soggetti	Computer-aided design Manufacturing processes Rapid prototyping
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	A Balkema Book.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front cover; Table of contents; Preface; Sponsors; International scientific committee; Invited lectures; New challenges for Reverse Engineering in facial treatments: How can the new 3-D non invasive surface measurements support diag; Biomanufacturing; Scaffold micro-architecture optimization based on bio-mimetic principles; A minibioreactor for developing "perfused" capillaries in cardiomyocyte aggregates; Spinning of biomaterial microfibers for tendon tissue engineering; Stereolithographic rendering of low molecular weight polymer scaffolds for bone tissue engineering Process flow for designing functionally graded tissue engineering scaffoldsIndirect fabrication of tissue engineering scaffolds using rapid prototyping and a foaming process; Fractal tool paths for layered manufacturing of scaffolds with matched bone properties; BioExtruder: Study of the influence of process parameters on PCL scaffolds properties; The use of periodic minimal surfaces for scaffolds design;

Intelligent biopolymer selector system for medical applications; CAD and 3D data acquisition technologies

Rapid Prototyping models of fetuses built from Ultrasound 3D and Magnetic Resonance files A Computer Aided Design (CAD) support tool for parametric design of products for Rapid Manufacture (RM);

Comparison of CT and CBCT for fabrication of dentistry models via rapid prototyping technology; Global approach to design and manufacture Direct Parts; Novel methodology in design of custom-

made hip prosthesis; Use of BioCAD in the development of a growth compliant prosthetic device for cranioplasty of growing patients

Artificial teeth manufacturing: Inspection of mould and teeth by contactless scanning systems Guided dental surgery based on integrating 3D image slicing and structured light scanning; A robotic system for 3D optical scanning of large surfaces; A simple

photogrammetric system for automatic capture and measurement of facial soft tissues during movement; 3D digitation of museum

sculptures for model-making purposes: Difficulties and possible solutions; The use of technologies as Rapid Prototyping and scanner

inspection in surgical planning to medical application

Performance evaluation of non contact measuring systems considering bias A surgical training model manufacture using rapid prototyping technology; Image based modeling and morphological analysis of the

human knee; Design of customised bioceramic medical implants by layered manufacturing; Reverse Innovative Design in Rapid Modelling

and Reverse Engineering industrial applications; 3D-Digitalization of ankle movement and 3D-CAD-method for patient specific external

ankle support development and Rapid Manufac; Materials; Experimental investigation of Charpy impact tests on metallic SLM parts

Series production of CE-certified orthopaedic implants with integrated network structures for improved bone ingrowth

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## Sommario/riassunto

Essential reading on the latest advances in virtual prototyping and rapid manufacturing. Includes 110 peer reviewed papers covering: 1. Biomanufacturing, 2. CAD and 3D data acquisition technologies, 3. Materials, 4. Rapid tooling and manufacturing, 5. Advanced rapid prototyping technologies and nanofabrication, 6. Virtual environments and simulation and 7. Novel Applications. For all those working on V&RP, focused on inducing increased collaboration between industry and academia.

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