September 28 | Wednesday

	Main Auditorium	Auditorium 1	Auditorium 2	Auditorium 3
08:00 09:00	Conference Registration			
09:00 09:15	**Opening Session**			
09:15 10:00	A New Era for Additive Manufacturing *Terry Wohlers, Wohlers Associates*			
10:00 10:45	A Role of Rapid Prototyping in the Innovation Economy *Jung-Hoon Chun, Massachusetts Institute of Technology*			
10:45 11:00	Coffee Break			
11:00 13:00	**Biomanufacturing**	**Design and Modelling for Rapid Manufacturing**	**Manufacturing Technologies**	**CAD and 3D Data Acquisition Technologies**
	Polycaprolactone-based scaffold plus BMP-2 in a sheep thoracic spine fusion model *M. Yong, F. Melchels, C. Vaquette, D. Hutmacher, C. Adam, M. Domingos & P. Bartolo*	A novel approach to produce functionally graded materials for additive manufacturing *P. Mognol, P. Muller & J.Y. Hascoet*	Optimization of Selective Laser Melting technology using Design of experiments method *M. Averyanova, E. Cicala, Ph. Bertrand & D. Grevey*	Application of contour tracing algorithm for assisting non-contact data acquisition *S. Rianmora, P. Koomsap & P. Kuagoolkijgarn*
	The Calibration of Continuous Digital Light Processing (cDLP) for the Highly Accurate Additive Manufacturing of Tissue Engineered Bone Scaffolds *D. Dean, J. Wallace, A. Siblani, M.O. Wang, K. Kim, A.G. Mikos & J.P. Fisher*	Direct Manufacturing Design Rules *D. Zimmer & G. Adam*	A comparison of laser additive manufacturing using gas and plasma-atomized Ti-6Al-4V powders *M.N. Ahsan, A.J. Pinkerton & L. Ali*	Reverse engineering of casting equipment for process simulation *F. Calignano, P. Minetola, A. Salmi, E. Atzeni & L. Iuliano*
	Production and in-vitro characterization of micro-structured implant surfaces *M. de Wild, Th. Müller, S. Tschumi, R. Schumacher & H. Albrecht*	From functional specifications to optimized CAD model: proposition of a new DFAM methodology *J.Y. Hascoet, R. Ponche, O. Kerbrat & P. Mognol*	Innovative features in implants through Beam Melting – a new approach for Additive Manufacturing of endoprostheses *B. Mueller, T. Toeppel, M. Gebauer & R. Neugebauer*	An innovative methodology for laser scanner integration in a robot cell for small batch production of sculpture artworks *C. Cenati, G. Borroni, L. Cevasco, D. Parazzoli & M. Danesi*
	Fabrication and characterization of Biodegradable Composite Scaffolds for Tissue Engineering *T. Serra, M. Navarro & J. A. Planell*	Software tools for Rapid Prototype as Design *A. Withell, O. Diegel & S. Reay*	Manufacturing of defined porous metal structures using the beam melting technology *J.T. Sehrt & G. Witt*	Touchless Gesture User Interface for 3D Visualization Using the Kinect Platform and Open-Source Frameworks *G.C.S. Ruppert, P.H.J. Amorim, T.F. Moraes & J.V.L. Silva*
	A study of mechanical and biological behavior of porous Ti6Al4V fabricated on EBM *V. Petrović, J.R. Blasco, L. Portolés, I. Morales, V. Primo, C. Atienza, J.F. Moreno & V. Belloch*	"No models, no moulds!" *A. T. Estévez*	Influence of process parameters in the first melting layer of a building platform in a SLM machine *J. Delgado, L. Sereno, J. Ciurana & L. Hernandez*	Comparative analysis between a CAD model design and physical models obtained by manufacturing additive technologies using optical scan *F. de Alencar & P.J. Bártolo*
13:00 14:15	Lunch Break			
14:15 15:00	Additive Manufacturing: A discussion on Sustainability *Ian Gibson, National University of Singapore*			
15:00 15:45	Nano and Bio RAP *Boris N. Chichkov, Leibniz University*			
15:45 16:00	Coffee Break			
16:00 18:00	**RM Platform Meeting**	Technical Session *Socem Inpact* Technical Session *Paralab*		
18:00 19:00	**Trends in additive Manufacturing**			
20:00	RECEPCTION DINNER			

September 29 | Thursday

Main Auditorium

09:15 – 10:00
Combining additive and subtractive laser manufacturing: selective laser melting, ablation and remelting
Jean-Pierre Kruth, K.U.Leuven

10:00 – 10:45
Advances on Development of Functional Materials by Fused Deposition Modeling
Ahmad Safari, Rutgers Universiy

10:45 – 11:00 **Coffee Break**

11:00 – 13:00 **Biomanufacturing**

Additive Manufacturing of Soft Tissue Geometries for Reconstruction Purposes
M. Truscott, G.J. Booysen & D.J. de Beer

Development of patient-specific implants using Direct Metal Laser Sintering in Titanium
G.J Booysen, M. Truscott, J. Els & D.J. de Beer

Development of Functional Graded Device of PCL/PG by Selective Laser Sintering for Drug Delivery Applications
G.V. Salmoria, P. Klauss, K. Zepon, L.A. Kanis & C.R.M. Roesler

Flexible PCL tube scaffolds by winding of micro-extruded filaments
K. Ragaert, L. Cardon & J. Degrieck

A novel protein-based scaffold with macro- and micro-structural features for tissue engineering applications
M.J.J. Liu, S.M. Chou & C.K. Chua

Strategy for optimizing human dental stem cell and 3D scaffolds for tooth tissue engineering
M.T. Duailibi, S.E. Duailibi, E.F.D. Neto, L.M. Ferreira, J.V.L. da Silva, J.P. Vacanti & P.C. Yelick

13:00 – 14:15 **Lunch Break**

14:15 – 15:00
How to Print a Tree: Functionally Graded Digital Fabrication
Neri Oxman, Massachusetts Institute of Technology

15:00 – 15:45
Patterned electrospun nanofibrous scaffolds for NanoMedicine
Gyeong-Man Kim, School of Engineering of the University of Navarra

15:45 – 16:00 **Coffee Break**

16:00 – 18:00 **IREBID Meeting**

18:00 **Carreer Awards**

Auditorium 1

11:00 – 13:00 **Virtual Environments and Simulation**

BIM implementation strategy
A. R. Meireles

SMARTerials for High Performance Buildings
N. Lazarovich, G. Capeluto & M.S. Silverstein

Virtual Reality technology as a support to the maintenance activity of buildings
A.Z. Sampaio & A.R. Gomes

An Ontology-based Automotive Troubleshooting Configuration System Development
J.S. Liang

Prototyping process of a virtual-reality treadmill system for exploration of real world panoramic environments
J. Hu, G.M. Fadel, I. Wood, P. Napieralski & S. Babu

A tactile display for texture perception in virtual environments
M. Mengoni, M.Germani, B. Colaiocco & P.Morichetti

16:00 – 18:00 **Virtual Environments and Simulation**

A comparison between BioCAD and some known methods for Finite Element model generatior
P.Y. Noritomi, T.A. Xavier & J.V.L. Silva

Virtual prototyping of force-feedback robotic instruments for surgery
J.M. Gómez-de-Gabriel, V.F. Muñoz, W.S. Harwin & A. Barrow

Some Studies on dislocation density based finite element modeling of Ultrasonic Consolidation
D. Pal & B.E. Stucker

Warped hexahedral meshing of an ellipsoidal inclusion for design of composite material
L. Podshivalov, A. Fischer & P.Z. Bar-Yoseph

Finite Element Synthesis
N. Oxman

Auditorium 2

11:00 – 13:00 **Materials**

Mechanical behavior of Epoxy-Aluminum Composite for Rapid Tools Applications
G.V. Salmoria, F.A. Yañez-Villamizar , A. Sabino-Netto & G.M.O. Barra

Thermal and dynamic-mechanical behavior of Fullcure 3D Printing Resin post-cured by different methods
L.F. Vieira; R. A. Paggi & G.V. Salmoria

Fabrication of a soft morphing structure using a shape memory alloy (SMA) wire/polymer skeleton composite
J.S Kim & S.H Ahn

New material development for laser additive manufacturing
L. Hao

Fabricating complex shape parts using Additive Layer Manufacturing Technique
R.A. Swamy

Nanoscale Rapid Prototyping and Manufacturing with focused electron and ion beam triggered chemistry
I. Utke, M.S. Gabureac & M.G. Jenke

16:00 – 18:00 **Rapid Tooling**

Rapid Tooling in metal forming processes using 3D-printed tools
S. Junk, R. Wagner, M. Tränkle & S. Côté

Conformal cooling in moulds with special geometry
M.A. García, C. García-Pando & C. Marto

Thermoplastic Resin Transfer Moulding in a rapid manufactured mould
E. Atzeni, F. Calignano, L. Iuliano, P. Minetola, A. Salmi, E. Bassoli, L. Denti & A. Gatto

A study on the mouldability of technical parts using hybrid moulds and structural foams
A.A. Nogueira, P.G. Martinho, A.M. Brito & A.S. Pouzada

Auditorium 3

11:00 – 13:00 **Applications**

The application of Laser Sintering for archaeological model-making
S.P. Soe, D.R. Eyers, A.T. Potter, T. Jones & N. Nayling

The Corinthian Capital according to Alberti: Generative modelling and digital prototyping of classical architectural elements
E. Castro e Costa, F. Coutinho, J.P. Duarte & M. Krüger

Rapid prototyping in collaborative architectural design process
R. Pupo, R. Ruschel & M. Andrade

Developing Ti jewelry through additive manufacturing and conversion technologies
B. Paiva, R.J. Neto & J. Lino

Production of functional parts using SLM – Opportunities and limitations
A.B. Spierings, G. Levy, L. Labhart & K. Wegener

A prototype of a spherical tippe top
M.C. Ciocci, B. Malengier & B. Grimonprez

16:00 – 18:00 **Applications**

Functionally Graded Rapid Prototyping
N. Oxman, S. Keating & E. Tsai

A-footprint: Ankle and Foot Orthotic Personalization via Rapid Manufacturing
J. Munguía, KW. Dalgarno, J. Pallari & S.Cook

Using Additive Manufactured Tooling in the Fabrication of Poly (L-Lactide-co-Glycolide) Implants
S.F. Khan, K.W. Dalgarno & M.J. German

Application of time compression techniques to dental restoration: a procedure for quality evaluation
A. Salmi, E. Atzeni & L. Iuliano

Rapid Manufacturing of Removable Complete Denture Components
S. Wahab, N. Kassim & Z.A. Rajion

September 30 | Friday

	Main Auditorium	Auditorium 1	Auditorium 2	Auditorium 3
09:15 10:00	A 3D interactive multi-scale inspection system for material micro-structures using SEM stereo images *Anath Fischer, Technion, Israel Intstitute of Technology*			
10:00 10:45	Manufacturing of smart skeleton structures using 3D printer *Sung-Hoon Ahn, Seoul National University*			
10:45 11:00	Coffee Break			
11:00 13:00	**Biomanufacturing**	**Design and Modelling for Rapid Manufacturing**	**Materials**	**Manufacturing Technologies**
	Drug-Eluting, Osteointegrative Coatings for EBM Titanium Lattice Implants *H.K. Hudson, A. Christensen, S.P. James & D.A. Prawel*	BioCAD Techniques: Example on Maxilla for Rapid Expansion Simulation *D.T. Kemmoku, C.A.R.Laureti, P.Y. Noritomi & J.V.L. Silva*	A review of different techniques to characterise the mechanical properties of SLS parts - focus on resistivity measurements *E. Boillat, D. Fivat, J. Jhabvala, M. Matthey & R. Glardon*	An additive manufacturing method based on xerography *Y.E. Tan & C.K. Chua*
	New approaches to prototype 3D vascular-like structures by additive layer manufacturing *E. Bassoli, L. Denti, A. Gatto, A. Paderno, G. Spaletta, N. Zini, V. Strusi, D. Dallatana & R. Toni*	Integrated strategy for sustainable product development *A.L. Santos, H.A. Almeida, H. Bártolo & P. Bártolo*	Production of alumina parts through Selective Laser Sintering of alumina-polyamide composite powder *J. Deckers, S. Khuram, J. Vleugels, J.-P. Kruth & S. Boury*	Electrochemical Micromilling with ultra short pulses *R. Zemann, F. Bleicher, C. Habersohn & R. Zisser-Pfeifer*
	Medical application of rapid prototyping in orthopedics surgical planning *C.B.L. Ulbrich, C.A.C. Zavaglia, T.P. Leivas & F. Teixeira*	AsTeRICS – A Rapid Prototyping Platform for Assistive Technologies *C. Weiß & C. Veigl*	Influence of hygrothermal aging on the mechanical properties of Nylon 12 composites processed by selective laser sintering *R. Seltzer, J.S. Escudero & F.M. de la Escalera Cutillas*	Porosity as a key to increase material properties of laser sintered parts *S. Rüsenberg, L. Schmidt, H. Hosse & H.J. Schmid*
	Automation design and simulation of a stent *E.L. Melgoza, L. Serenó, J. Ciurana & A. Rosell*	Knowledge Based Process Planning and Design for Additive Manufacturing (KARMA) *B. Singh & N. Sewell*	Layerwise slurry deposition (LSD) of classic ceramics - an alternative to improve designing in the traditional ceramic industry? *C. Gomes*	Microchannels fabrication in Direct Metal Laser Sintering (DMLS) *A.R.R. Bineli; A.L. Jardini; A.P.G. Peres; L.F. Bernardes & R.M. Filho*
	Surgical training and post-surgery evaluation using rapid prototyped biomodels *L. Queijo, J. Rocha, P. M. Pereira & M. S. Juan*	Image-based direct slicing of a single line drawing for rapid prototyping *N. Chansri & P. Koomsap*	Porous Ceramic Filters through 3d Printing *A. Withell, O. Diegel, I. Grupp, S. Reay, D. de Beer & J. Potgieter*	Methodology for analyzing the depth of sintering in the building platform *J. Delgado, L. Sereno, J. Ciurana & L. Hernandez*
		Multi-material Blending for Complex-shaped Heterogeneous Objects *I.T. Ozbolat & B. Koc*	Fatigue behavior of additive manufacturing parts: A preliminary analysis *J. Munguia, KW. Dalgarno & R. Reid*	Automation for building manufacturing *F. Craveiro, J.M. Matos, H. Bártolo & P.J. Bártolo*
13:00 14:15	Lunch Break			
14:15 15:00	Direct Digital Manufacturing of Airfoils *Suman Das, Georgia Institute of Technology*			
15:00 15:45	Physical simulation phantoms for otolaryngology surgery training *Russell Harris, Loughborough University*			
15:45 16:00	Coffee Break			
16:00 18:00	**Biomanufacturing**	**CAD and 3D Data Acquisition Technologies**	**Materials**	**Applications**
	Spatially Varying Porosity with Continuous Path Plan for Hollowed Tissue Scaffolds *AKM B. Khoda, I.T. Ozbolat & B. Koc*	Hyperbolic CAD elements for cellular structures *H.A. Almeida & P.J. Bártolo*	Metallurgical, accuracy and cost analysis of Ti6Al4V dental coping fabricated by electron beam melting process *W.P. Syam, A.M. Al-Ahmari, M.A. Mannan, H.A. Al-Shehri & K.A. Al-Wazzan*	A creative solution for rapid and inexpensive model-making in product design processes *F. Veloso, A.M. Sampaio, F. Chaves & R. Simoes*
	Heterogeneous Tissue Scaffolds for Spatiotemporally Controlled Release Kinetics *I.T. Ozbolat, AKM B. Khoda, M. Marchany, J. A. Gardella & B. Koc*	Design and Additive Manufacturing of Cellular Lattice Structures *L. Hao, D. Raymont, C. Yan, A. Hussein & P. Young*	Metallurgical, accuracy and cost analysis of Ti6Al4V dental coping fabricated by electron beam melting process *W.P. Syam, A.M. Al-Ahmari, M.A. Mannan, H.A. Al-Shehri & K.A. Al-Wazzan*	Investigation of wear behaviour of FDM fixtures *P. Minetola & L. Iuliano*
	The Semi-Automated Design & Manufacture of Patient-Specific Intervertebral Disc Implants *N. de Beer*	Cellular Structure Design for Lightweight Components *J. Nguyen, S-I. Park & D.W. Rosen*	Investigation on the Inclusions in Maraging Steel Produced by Selective Laser Melting *L. Thijs, J. Van Humbeeck, K. Kempen, E. Yasa, J.P. Kruth & M. Rombouts*	Physical prototypes in cross-functional team collaboration: A study of the Model-T^2 concept car project *S. Datta, S Hanafin, B. Rolfe & T. de Souza*
	Enabling Technologies for Robotic Organ Printing *R.A. Rezende, F.D.A.S. Pereira, B. D. T. Kemmoku, J.V.L. da Silva, V. Mironov, V. Kasyanov & T. Vilbrandt*	Gaussian Vault Geometry: integrated approach in design and fabrication of physical prototypes *M.P. Sharman & S. Datta*	Structural and functional properties of NiTi shape memory alloys produced by Selective Laser Melting *H. Meier, C. Haberland & J. Frenzel*	Novel Concept for Manufacturing Lightweight Centrifuge Rotors for Laboratories *U. Klaeger & V. Galazky*
	Ultrastructural Analysis of the hDSC interactions with biodegradable 3D scaffolds *S.E.Duailibi, M.T.Duailibi, L.M.Ferreira, F.A.O.Tanaka, J.P.Vacanti & P.C.Yelick*		Material study of laser cladded Inconel 625 *M. Rombouts, G. Maes & R. Persoons*	The Potential for Additive Manufacturing in Jewellery Design *T. Ferreira, P. Bártolo & R.I. Campbell*
20:00	GALA DINNER			

October 1 | Saturday

	Main Auditorium	Auditorium 1	Auditorium 2	Auditorium 3
09:15 10:00	"Idea 2 Product lab" – A low cost alternative to introduce AM in South Africa *Deon de Beer, Vaal University of Technology*			
10:00 10:45	Additive Manufacturing, The New Frontier *Olaf Diegel, Auckland University of Technology*			
10:45 11:00	Coffee Break			
11:00 13:00	**Biomanufacturing**	**Manufacturing Technologies**	**Materials**	**Applications**
	A route toward the development of 3D magnetic scaffolds with tailored mechanical and morphological properties for hard tissue regeneration: preliminary study *R. De Santis, A. Gloria, T. Russo, U. D'Amora, S. Zeppetelli, A. Tampieri, T. Herrmannsdörfer & L. Ambrosio*	Surface finishing techniques for SLM manufactured stainless steel 316L components *W. Morton, S. Green, A.E.W. Rennie & T.N. Abram*	Rheological study of poly vinyl alcohol with two thermo-initiator for use in rapid prototyping *L.L. Lima, C.B.L. Ulbrich , C.A.C. Zavaglia, V.P. Bavaresco, J.G.M. Coelho & C.G.B.T. Dias*	The integration of solutions that evolved by nature, into innovative products of the future *R. Becker*
	Routes to Rapid Manufacturing of Plastic Parts with Spatially Varying Properties *G. Mitchell*	A priori process parameter adjustment for SLM process optimization *S. Clijsters, T. Craeghs & J.P. Kruth*	Characterisation of carbon fibre reinforced nylon-12 composites for selective laser sintering process *C. Yan, L. Xu, L. Hao & Y. Shi*	Patient specific parametric geometric modelling of cementless hip prosthesis *G. Saravana Kumar & M. Gupta*
	Electrospun PCL meshes for cartilage regeneration *J.R. Dias, F.E. Antunes,G. Mitchell & P.J.Bártolo*	Surface Roughness Analysis in Selective Laser Melting *G. Strano, L. Hao, R.M. Everson & K.E. Evans*	Thermal characterization of laser sintering of nylon-12 *T.T. Diller, M.M. Yuan, D.L. Bourell & J.J. Beaman*	Use of rapid prototype techniques for large prosthetic cranioplasty *C.B.L. Ulbrich, C.A.C. Zavaglia, G.H.L. Paschoal, J.V.L. Silva & J.F.D. Zullo*
	Improved biomechanical properties of PCL based scaffolds for tissue en-gineering *T. M. F. Patrício, M. Domingos, P. J. S. Bártolo, J. F. J. Coelho & A. Gloria*	Preliminary investigation on cellular support structures using SLM process *A. Hussein, C. Yan, R. Everson & L. Hao*	Material Characterisation of Additive Manufacturing Components Made From a Polyetherketone (PEK) High Temperature Thermoplastic Polymer *M.A. Beard, O.R. Ghita, J. Bradbury, S. Flint & K. E. Evans*	Rapid prototyping techniques for individualized medical prosthesis manufacturing *A. Fiorentino, G.P. Marenda, R. Marzi, E. Ceretti, D.T. Kemmoku & J.V.L. Silva*
	Individual Contour Adapted Functional Implant Structures in Titanium *C. Schoene, R. Stelzer, P. Sembdner, L. Betrol, J. Markwardt, B. Reitemeier & G. Engel*	Towards surface topography: Quantification of Selective Laser Melting (SLM) built parts. *A. Diatlova, D. Buchbinder, W. Meiners, K. Wissenbach & J. Bültmann*	Selective Laser Melting for Near-Net Shape Manufacturing: Investigation into Structure-Parameter relationships and Phase Determination by X-ray Diffraction in stainless steel alloy systems *N. O'Meara & S. Green*	Fabrication of a Biopsy Micro-Forceps Prototype with Incremental Sheet Forming *R. Perez-Santiago, M. García-Romeu & I. Bagudanch*
		Thermoplastic filament extruder head for desktop additive manufacturing machines *P.I. Neto & A.L.L. Filho, F.D.A.S. Pereira, J.V.L. Silva & Z.C. Silveira*		
13:00 14:15	Lunch Break			
14:15 15:00	Strategic implementation of Additive Manufacturing, more than a technological question *Olivier Jay, Danish Technological Institute*			
15:00 15:15	Best Papers Awards			
15:15 15:30	Coffee Break			
15:30 17:30	**Manufacturing Technologies**	**Virtual Environments and Simulation**	**CAD and 3D Data Acquisition Technologies**	**Applications**
	Comparison of five Rapid Prototype techniques (SLS/FDM/DLP/3DP/Polyjet) *C.B.L. Ulbrich, C.A.C. Zavaglia, P.I. Neto, M.F. Oliveira & J.V.L. Silva*	Comparison of bone remodeling algorithms for hip implants *J. Frazão, H.A. Almeida, P. Bártolo & N. Alves*	Cross-section morphological study *B. Bauer, A. Tibi & U. Shavit*	Rapid prototyping for original design *N.G. Harris & T.J. Coole*
	Variable Fused Deposition Modelling – Analysis of Benefits, Concept Design and Tool Path Generation *H.L. Brooks, A.E.W. Rennie, T.N. Abram, J. McGovern & F. Caron*	Computer Modelling and Simulation of Reaction Injection Moulding: Filling and Curing Stages *R.T. Dias, A. Mateus, G.R. Mitchell & P.J Bártolo*	Evaluation of different fitting algorithms using CMM and white fringe projection systems *F. Domingues, C. Silva, N.M. Alves, H.A. Almeida & P.J. Bártolo*	Continuous contour printing versus layer by layer printing in an additive manufacturing technology *G. Vallicrosa, J. Delgado, L. Serenó & J. Ciurana*
	Investigating the influence of build parameters on the mechanical properties of FDM parts *J. Giannatsis, K. Sofos, V. Canellidis, D. Karalekas & V. Dedoussis*	Numerical Simulations Applied in a Protocol for Virtual Prototype of a Femoral Prosthesis Stem Fatigue Life Test *C.A.R. Laureti, D.T. Kemmoku, P.Y. Noritomi & J.V.L. Silva*	Robust STL processing for extrusion-based manufacturing *M.B. Gaspar & N. Martins-Ferreira*	Customization tool for people with special needs *B. Providência, J. Ciurana & J. Cunha*
	Droplet Impact Dynamics in Ink-Jet Manufacturing *W. Zhou, D. Loney, A.G. Fedorov, F.L. Degertekin & D.W. Rosen*	Towards Simulation of a Bioreactor Environment for Biofabricated Tissue Maturation *R.A. Rezende, C.A.R. Laureti, J.V.L. da Silva, V. Mironov, V. Kasyanov, & R.M. Filho*	3D scanning and digital manufacturing technologies applied in research projects in archaeology *J.R.L. Santos, S.A.K. Azevedo, S. Belmonte, A.B. Junior & R.C. Fontes*	Design and development of large rigid plastic packaging for Olives *M.F. Castro, C.I. Martins & A.J. Pontes*
	Additive manufacturing of porous metal components *K. Hojbjerre*			
17:30	Closing Ceremony			