

Technical programme ADM2021 International Conference

9-10 September 2021, Rome

Faculty of Industrial Engineering, Sapienza University



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Session 1.1 – Integrated Methods for System Design, Simulation, Analysis and Optimization (I)

Building RM031 - Room 8

Thursday 09/09/2021, 9:00 - 10:30

09:00 – 09:15 – Paper #119

Fracture toughness characterization of copper-resin interface in power electronics application.

Authors: CALABRETTA, Michele; SITTA, Alessandro; OLIVERI, Salvatore Massimo; SEQUENZIA, Gaetano.

On-site presentation.

09:15 – 09:30 – Paper #122

A Framework for Virtual Evaluation of Body-Attached Sensor Networks.

Authors: SANSEVERINO, Giuseppe; KRUMM, Dominik; ODENWALD, Stephan.

On-site presentation.

09:30 – 09:45 – Paper #154

Towards the upscaling of biomanufacturing process enhanced by Human-Robot collaboration.

Authors: REGA, Andrea; DI MARINO, Castrese; VITOLO, Ferdinando; PATALANO, Stanislaw; LANZOTTI, Antonio.

On-site presentation.

09:45 – 10:00 – Paper #151

An Analytical Model for Robot-Based Grinding of Axisymmetric Mold Inserts Using a Rotary Unit.

Authors: TAMASSIA, Eugenio; HÄHNEL, Sebastian; PINI, Fabio; GRUNWALD, Tim; BERGS, Thomas; LEALI, Francesco.

On-Site presentation.

10:00 – 10:15 – Paper #145

Mobile Robot Navigation in Indoor Environments: Comparison of Lidar-based 2D SLAM Algorithms.

Authors: DHAOUI, Riadh; RAHMOUNI, Amine.

Online presentation.

10:15 – 10:30 – Paper #176

Virtual Prototyping and FEM Analysis of the Crystal Eye Detector.

Authors: RENNO, Fabrizio; PAPA, Stefano; MARZULLO, Domenico; BARBATO, Felicia Carla Tiziana; BARBARINO, Giancarlo.

Online presentation.

Session 1.2 – Design for Additive Manufacturing (I)

Building RM031 - Cloister Room

Thursday 09/09/2021, 9:00-10:30

09:00 – 09:15 – Paper #110

The Role of Rapid Prototyping Devices in the Design and Manufacturing Practices of FabLab Visitors: a Survey.

Authors: BERNI, Aurora; DALLAGO, Florian; MACCIONI, Lorenzo; CONCLI, Franco; BORGIANNI, Yuri.

On-Site presentation.

09:15 – 09:30 – Paper #114

Geometrical Issues in Design for Binder Jetting - The Effect of anisotropic dimensional Change on Sintering.

Authors: ZAGO, Marco; LECIS, Nora Francesca Maria; VEDANI, Maurizio; CRISTOFOLINI, Ilaria.

On-Site presentation.

09:30 – 09:45 – Paper #118

A hollowing Topology Optimization method for additive and traditional manufacturing technologies.

Authors: BARBERI, Emmanuele; CUCINOTTA, Filippo; RAFFAELE, Marcello; SALMERI, Fabio.

Online presentation.

09:45 – 10:00 – Paper #123

A preliminary Study on the Effect of Strut Waviness on the mechanical Properties of BCC Lattice unit Cells.

Authors: TUMINO, Davide; ALAIMO, Andrea; ORLANDO, Calogero; VALVANO, Stefano.

Online presentation.

10:00 – 10:15 – Paper #150

Effects of coating post-processing on the compressive properties of strut-and-node-based FDM lattice structures.

Authors: BARONE, Sandro; NERI, Paolo; PAOLI, Alessandro; RAZIONALE, Armando V.; TAMBURRINO, Francesco.

Online presentation.

10:15 – 10:30 – Paper #155

Examination of additively manufactured auxetic components using a novel testing setup.

Authors: URQUHART, Lewis William Robert; TAMBURRINO, Francesco; WODEHOUSE, Andrew; NERI, Paolo; RAZIONALE, Armando Viviano.

Online presentation.

Session 1.3 – Human-Related and User-Centered Design (I)

Building RM031 - Room 7

Thursday 09/09/2021, 9:00-10:30

09:00 – 09:15 – Paper #100

The new ergonomic paradigm for academic learning environments during Covid-19 lockdown.

Authors: FIORILLO, Iolanda; CALIFANO, Rosaria; NADDEO, Alessandro.

On-Site presentation.

09:15 – 09:30 – Paper #102

A System to Support the Design and Management of Customer Experience Based on a Customer-Centered Approach.

Authors: CECCACCI, Silvia; GENEROSI, Andrea; MENGONI, Maura.

Online presentation.

09:30 – 09:45 – Paper #141

Trends in human factors integration for the design of Industry 4.0.

Authors: GRANDI, Fabio; PERUZZINI, Margherita; RAFFAELI, Roberto; PELLICCIARI, Marcello.

Online presentation.

09:45 – 10:00 – Paper #174

Heart Sound Processing Model for a Mat-Shaped Device.

Authors: SALVATI, Luca; CAPPETTI, Nicola; D'AMORE, Matteo; FIORENTINO, Anita; PELLEGRINO, Arcangelo; SENA, Pasquale; VILLECCO, Francesco.

Online presentation.

10:00 – 10:15 – Paper #187

Design of wearables for biosignal acquisition: a user centered approach for concept generation and selection.

Authors: CAPORASO, Teodorico; GRAZIOSO, Stanislao; DI GIRONIMO, Giuseppe; LANZOTTI, Antonio.

Online presentation.

10:15 – 10:30 – Paper #194

A Workflow for the Numerical Evaluation of Hemodynamics in a Patient-Specific AAA after Stent-Graft Implantation.

Authors: BERTOLINI, Michele; ROSSONI, Marco; COLOMBO, Giorgio.

On-Site presentation.

Session 2.1 – Human-Related and User-Centered Design (II)

Building RM031 - Room 8

Thursday 09/09/2021, 12:00-13:15

12:00 – 12:15 – Paper #146

Evaluation of Mandibular Advancement Devices in patients suffering from Obstructive Sleep Apnea and Periodontitis.

Authors: MANDOLINI, Marco; CARAGIULI, Manila; BRUNO, Giovanni; DE STEFANI, Alberto; GRACCO, Antonio; MAZZOLI, Alida; BRUNZINI, Agnese.

On-Site presentation.

12:15 – 12:30 – Paper #153

Limitations of Using Generative Design for Maxillo-facial Reconstructive Surgery Applications.

Authors: FILIPPI, Stefano; ROBIONY, Massimo; TEL, Alessandro; MONTOYA BUTELER, Francisco Daniel.

On-Site presentation.

12:30 – 12:45 – Paper #133

Preliminary study of a high-fidelity simulator for the management of paediatric tracheal pathologies.

Authors: SANTARELLI, Chiara; PUGGELLI, Luca; CARFAGNI, Monica; GOVERNI, Lapo.

On-Site presentation.

12:45 – 13:00 – Paper #115

Evaluation of a Morphable Anthropomorphic Articulated Total Body Model.

Authors: PASCOLETTI, Giulia; HUYSMANS, Toon; CONTI, Paolo; ZANETTI, Elisabetta Maria.

Online presentation.

Session 2.2a – Design for Manufacturing and Assembly

Session 2.2b – Industrial Design and Ergonomics

Building RM031 - Cloister Room

Thursday 09/09/2021, 12:00-13:15

12:00 – 12:15 – Paper #136 (2.2a)

Conceptual Design of aircraft cabin assembly: a case study to assess different cabin concepts.

Authors: FORMENTINI, Giovanni; FAVI, Claudio; BOUSSIÈRE, Francois; CUIILLER, Claude; DEREUX, Pierre-Eric; JURBERT, Cédric.

On-Site presentation.

12:15 – 12:30 – Paper #160 (2.2a)

Design and integration of automation systems with manual operation: Small and Medium Enterprises issues.

Authors: SALVATO, Rocco; MARRA, Giovanni; SCARDAMAGLIA, Paola; DI GIRONIMO, Giuseppe; MARZULLO, Domenico; MOZZILLO, Rocco.

Online presentation.

12:30 – 12:45 – Paper #190 (2.2b)

User Experience Design in Software and Hardware Components studied in Human-Computer Interaction.

Authors: BERNI, Aurora; BORGIANNI, Yuri.

On-Site presentation.

12:45 – 13:00 – Paper #177 (2.2b)

A detailed analysis of the most promising concepts of soft wearable robots for upper-limb.

Authors: PANARIELLO, Dario; GRAZIOSO, Stanislao; CAPORASO, Teodorico; DI GIRONIMO, Giuseppe; LANZOTTI, Antonio.

Online presentation.

13:00 – 13:15 – Paper #189 (2.2b)

A New Sedan Concept Car in Stylistic Design Engineering (SDE) Enhanced with Augmented Reality.

Authors: SANTI, Gian Maria; FRIZZIERO, Leonardo; DONNICI, Giampiero; FRANZIA, Daniela; NERI, Marco; LIVERANI, Alfredo.

Online presentation.

Session 2.3 – Ecodesign

Building RM031 - Room 7

Thursday 09/09/2021, 12:00-13:15

12:00 – 12:15 – Paper #108

Investigating a circular economy application: Reuse of end of life tire fibers in a plastic compound.

Authors: LANDI, Daniele; MARCONI, Marco

Online presentation.

12:15 – 12:30 – Paper #125

Ephemeral products: opportunities for circularity based on ideation for reuse. An experience.

Authors: LÓPEZ-FORNIÉS, Ignacio; SIERRA-PÉREZ, Jorge.

Online presentation.

12:30 – 12:45 – Paper #134

A design for de-manufacturing methodology to improve the product end of life environmental sustainability.

Authors: ROSSI, Marta; CAPPELLETTI, Federica; MARCONI, Marco; GERMANI, Michele.

Online presentation.

12:45 – 13:00 – Paper #135

An approach for the responsible design of the packaging employed in household appliances.

Authors: LANDI, Daniele; CICCIONI, Paolo.

Online presentation.

13:00 – 13:15 – Paper #172

Implementation of eco-design actions in the development of a sustainable heat exchanger in a life cycle perspective.

Authors: BOIX RODRÍGUEZ, Núria; ROSSI, Marta; CAPPELLETTI, Federica; FAVI, Claudio.

On-Site presentation.

Session 3.1a – Reverse Engineering, Digital Acquisition and Inspection (I)

Session 3.1b – Design for Additive Manufacturing (II)

Biomedical Applications

Building RM031 - Room 8

Thursday 09/09/2021, 14:15-15:45

14:15 – 14:30 – Paper #107 (3.1a)

A CAD-based Tool for Tissue-mimicking Replica of Human Costal Cartilage.

Authors: SERVI, Michaela; MUSSI, Elisa; FURFERI, Rocco; VOLPE, Yary.

On-Site presentation.

14:30 – 14:45 – Paper #112 (3.1a)

A Rapid Prototyping Strategy for Manufacturing of Personalized Bolus.

Authors: MUSSI, Elisa; SIMONTACCHI, Gabriele; TALAMONTI, Cinzia; SERVI, Michaela; FURFERI, Rocco; VOLPE, Yary; PROTESTI, Lorenzo; CARFAGNI, Monica; PALLOTTA, Stefania.

On-Site presentation.

14:45 – 15:00 – Paper #113 (3.1a)

CNN Approach for Monocular Depth Estimation: Ear Case Study.

Authors: MAGHERINI, Roberto; SERVI, Michaela; MUSSI, Elisa; FURFERI, Rocco; BUONAMICI, Francesco; VOLPE, Yary.

On-Site presentation.

15:00 – 15:15 – Paper #158 (3.1a)

A Depth-Camera Based System for the Real-time Scanning of Upper Limb Anatomy.

Authors: NERI, Paolo; BARONE, Sandro; PAOLI, Alessandro; RAZIONALE, Armando Viviano; TAMBURRINO, Francesco.

Online presentation.

15:15 – 15:30 – Paper #199 (3.1b)

3D Printing of Prototypes Starting from Medical Imaging: a Liver Case Study.

Authors: GUACHI, Robinson; BICI, Michele; BINI, Fabiano; CALISPA, Marcelo Esteban; OSCULLO, Cristina; GUACHI, Lorena; CAMPANA, Francesca; MARINOZZI, Franco.

On-Site presentation.

15:30 – 15:45 – Paper #178 (3.1b)

A further investigation toward the design of topology optimized solid-lattice hybrid structures for biomedical applications.

Authors: DE CRESCENZO, Chiara; RICETTA, Maria; MARTORELLI, Massimo; GLORIA, Antonio; LANZOTTI, Antonio.

On-Site presentation.

Session 3.2 – Integrated Methods for System Design, Simulation, Analysis and Optimization (II)

Building RM031 - Cloister Room

Thursday 09/09/2021, 14:15-15:45

14:15 – 14:30 – Paper #149

Firefly algorithm for structural optimization using ANSYS.

Authors: MARANNANO, Giuseppe; RICOTTA, Vito.

On-Site presentation.

14:30 – 14:45 – Paper #159

A Coarse-Grained Lattice Spring Model to Characterize Nanoindented Stem Cells

Authors: VAIANI, Lorenzo; FIORENTINO, Michele; GATTULLO, Michele; MANGHISI, Vito Modesto; UVA, Antonio Emmanuele; BOCCACCIO, Antonio.

On-Site presentation.

14:45 – 15:00 – Paper #192

An innovative mechanical solution to better understand human-robot interaction forces.

Authors: PIPPO, Irene; ZENZERI, Jacopo; BERSELLI, Giovanni; TORAZZA, Diego.

On-Site presentation.

15:00 – 15:15 – Paper #147

An integrated modular design and group decision-making method in complex design environments.

Authors: RENZI, Cristina; LEALI, Francesco.

Online presentation.

15:15 – 15:30 – Paper #161

Analysis of possible Algorithms for Active Noise Control of Siren Noise into an Ambulance.

Authors: BUTTARAZZI, Massimo Generoso; BARTALUCCI, Chiara; BORCHI, Francesco; CARFAGNI, Monica; PAOLUCCI, Libero.

On-Site presentation.

15:30 – 15:45 – Paper #171

Finite Element Model proposed for determine the rotational equilibrium around of the Subtalar Joint Axis (SJA).

Authors: LOSTADO LORZA, Rubén; SOMOVILLA GOMEZ, Fátima; ÍÑIGUEZ MACEDO, Saúl; CORRAL BOBADILLA, Marina; MARTINEZ CALVO, María Ángeles; PÉREZ SALA, Álvaro; LARRÁYOZ, Ignacio M..

Online presentation.

Session 3.3a – Integrated Product and Process Design

Session 3.3b - Experimental Methods in Product Development (I)

Building RM031 - Room 7

Thursday 09/09/2021, 14:15-15:45

14:15 – 14:30 – Paper #180 (3.3a)

Design of a Bioinspired Multi-Fingered Soft Pneumatic Gripper with Embedded Suckers.

Authors: GRAZIOSO, Stanislao; CAPORASO, Teodorico; DI GIRONIMO, Giuseppe; LANZOTTI, Antonio.

On-Site presentation.

14:30 – 14:45 – Paper #197 (3.3a)

Investigation of Warpage and Tolerances in Injection Moulding Components based on Simulation and Experimental Validation.

Authors: GARLASCHELLI, Giovanni; GHERARDINI, Francesco; MALAGOLA, Simone; LEALI, Francesco.

On-Site presentation.

14:45 – 15:00 – Paper #162 (3.3a)

An integrated approach to ensure requirements traceability during the product development process.

Authors: VIAPIANA, Domenico; RIGGIO, Giovanni; BARBIERI, Loris; BRUNO, Fabio.

Online presentation.

15:00 – 15:15 – Paper #105 (3.3a)

Modular Design Assessment: Development and Application of a Product Characteristic-Based Tool.

Authors: ASIÓN-SUÑER, Laura; LÓPEZ-FORNIÉS, Ignacio.

Online presentation.

15:15 – 15:30 – Paper #106 (3.3a)

Concept assessment using objective-based metrics on functional models.

Author: LÓPEZ-FORNIÉS, Ignacio.

Online presentation.

15:30 – 15:45 – Paper #120 (3.3b)

Mechanical characterization of Power Electronics solder materials.

Authors: CALABRETTA, Michele; SITTA, Alessandro; MESSINA, Angelo Alberto; OLIVERI, Salvatore Massimo;

SEQUENZIA, Gaetano.

On-Site presentation.

Keynote Speaker I – Plenary Session

Building RM031 - Room 1

Thursday 09/09/2021, 16:15 - 17:15

“Advanced Topology optimization and beyond: new mathematics approach for fast simulation”

Dr. Giulio TURINETTI

Altair Italia Technical Director

Session 4.1 – Geometrical Product Specification and Tolerancing

Building RM031 - Room 8

Thursday 09/09/2021, 17:15 - 18:15

17:15 – 17:30 – Paper #164

Model Based Approach for Optimal Allocation of GD&T.

Authors: PETRUCCIOLI, Andrea; PINI, Fabio; LEALI, Francesco.

On-Site presentation.

17:30 – 17:45 – Paper #117

The ASME Y14.43 Standard and its Root in the American Pragmatism.

Authors: RIZZUTI, Sergio; DE NAPOLI, Luigi.

Online presentation.

17:45 – 18:00 – Paper #138

Proposal for a method for advanced search of information and standards in the field of Geometrical Product Specification.

Authors: BODINI, Ileana; BARONIO, Gabriele; PADERNO, Diego; VILLA, Valerio; MARTINELLI, Paolo; FRIZZA, Roberto; BALSAMO, Alessandro; UBERTI, Stefano.

Online presentation.

Session 4.2 – Special Session on Engineering Methods and Applications in Cultural Heritage (I)

Building RM031 - Cloister Room

Thursday 09/09/2021, 17:15 - 18:15

17:15 – 17:30 – Paper #143

Automatic Segmentation of Sweep Features of Constant Radius from Archaeological Artifacts.

Authors: DI ANGELO, Luca; DI STEFANO, Paolo; MORABITO, Anna.

On-Site presentation.

17:30 – 17:45 – Paper #169

A review on computer-based methods for archeological pottery classification and reconstruction.

Authors: DI ANGELO, Luca; DI STEFANO, Paolo; GUARDIANI, Emanuele; PANE, Caterina.

On-Site presentation.

17:45 – 18:00 – Paper #181

A photogrammetry reconstruction of Emissario Romano in Capistrello.

Authors: DI ANGELO, Luca; DI STEFANO, Paolo; GUARDIANI, Emanuele.

On-Site presentation.

Session 4.3 – Virtual Reality and Interactive Design (I)

Building RM031 - Room 7

Thursday 09/09/2021, 17:15 - 18:15

17:15 – 17:30 – Paper #111

Spatial Augmented Reality as a Visualization Support for Engineering Analysis.

Authors: MOROSI, Federico; CARUSO, Giandomenico; CASCINI, Gaetano.

Online presentation.

17:30 – 17:45 – Paper #121

Investigating the application of Augmented Reality to support wire harness activities.

Authors: PAPETTI, Alessandra; CICCARELLI, Marianna; BRUNZINI, Agnese; GERMANI, Michele.

Online presentation.

17:45 – 18:00 – Paper #127

User-Centered Design of an Augmented Reality tool for smart operator in production environment.

Authors: MARINO, Emanuele; BARBIERI, Loris; COLACINO, Biagio; BRUNO, Fabio.

Online presentation.

18:00 – 18:15 – Paper #128

HoloLens 2 for Maxillofacial Surgery: a Preliminary Study.

Authors: BRUNZINI, Agnese; MANDOLINI, Marco; CARAGIULI, Manila; GERMANI, Michele; MAZZOLI, Alida; PAGNONI, Mario.

Online presentation.

Session 5.1 – Geometric Modelling and Analysis

Building RM031 - Room 8

Friday 10/09/2021, 09:00 - 10:30

09:00 – 09:15 – Paper #109

On the Geometrical Complexity Index as a Driver for Selecting the Production Technology.

Authors: GRECO, Alessandro; MANCO, Pasquale; GERBINO, Salvatore.

On-Site presentation.

09:15 – 09:30 – Paper #185

A bespoke neck orthosis for additive manufacturing with improved design method and sustainable material.

Authors: AMBU, Rita; OLIVERI, Massimo; CALI', Michele.

Online presentation.

09:30 – 09:45 – Paper #188

Battens modelling and optimization in air-sail interaction analysis.

Authors: CALÌ, Michele; SAPIENZA, Ignazio Davide; OLIVERI, Salvatore Massimo.

Online presentation.

09:45 – 10:00 – Paper #130

Enhanced Statistical Shape Model: a statistical-based tool to design custom orthopaedic devices.

Authors: MARZOLA, Antonio; BUONAMICI, Francesco; GUARIENTO, Lorenzo; GOVERNI, Lapo.

On-Site presentation.

10:00 – 10:15 – Paper #182

Design of a Low Cost 3D Printable Single-Component Compliant Mechanism for FWMAV's Wing Actuation.

Authors: CAROLLO, Giovanni; INGRASSIA, Tommaso; PANTANO, Antonio.

Online presentation.

10:15 – 10:30 – Paper #129

A voxel-based 2.5D panel method for fluid-dynamics simulations.

Authors: BACCIAGLIA, Antonio; CERUTI, Alessandro; LIVERANI, Alfredo.

Online presentation.

Session 5.2a – Reverse Engineering, Digital Acquisition and Inspection (II)

Session 5.2b – Special Session on Engineering Methods and Applications in Cultural Heritage (II)

Building RM031 - Cloister Room

Friday 10/09/2021, 09:00 - 10:30

09:00 – 09:15 – Paper #126 (5.2a)

A fast scanning system for automatic 3D object reconstruction.

Authors: SEVERINO, Umberto; FUOCO, Fabrizio; MANFREDI, Felix; BARBIERI, Loris; MUZZUPAPPA, Maurizio.

On-Site presentation.

09:15 – 09:30 – Paper #137 (5.2a)

Online 3D Reconstruction in underwater Environment using a low-cost Depth Camera.

Authors: SCARFONE, Luigi; AIELLO, Rosario; SEVERINO, Umberto; BARBIERI, Loris; BRUNO, Fabio.

Online presentation.

09:30 – 09:45 – Paper #184 (5.2b)

A Methodological Proposal for the Comparison of 3D Photogrammetric Models.

Authors: DI FILIPPO, Andrea; VILLECCO, Francesco; CAPPETTI, Nicola; BARBA, Salvatore.

Online presentation.

09:45 – 10:00 – Paper #193 (5.2b)

A CAD-based Framework for Interactive Analysis in the Restoration of Bronze Statues.

Authors: CICCONE, Paolo; BICI, Michele; COLACICCHI ALESSANDRI, Olimpia; D'ERCOLI, Giorgio; CAMPANA, Francesca.

On-Site presentation.

10:00 – 10:15 – Paper #198 (5.2b)

Development of the New Inner Frame for the Vittoria Alata di Brescia: How Engineering Design May Support Ancient Bronze Restoration.

Authors: BICI, Michele; BRINI, Annalena; CAMPANA, Francesca; CAPOFERRI, Sergio; GUARNIERI, Riccardo; MORANDINI, Francesca; PATERA, Anna.

On-Site presentation.

Session 5.3 – Engineering Education

Building RM031 - Room 7

Friday 10/09/2021, 09:00 - 10:30

09:00 – 09:15 – Paper #140

Students creativity assessment through Gray's "Forward Flow" tool: a preliminary study.

Authors: BODINI, Ileana; BANNÒ, Mariasole; PADERNO, Diego; BARONIO, Gabriele; UBERTI, Stefano; VILLA, Valerio.

On-Site presentation.

09:15 – 09:30 – Paper #148

Reasoning about Technical Drawing online teaching during COVID-19.

Authors: MOTYL, Barbara; FILIPPI, Stefano; BARONIO, Gabriele; VILLA, Valerio.

On-Site presentation.

09:30 – 09:45 – Paper #101

A Systematic Approach to Innovative MCAD Education Based on Negative Knowledge Development and Formative Feedback.

Authors: MANDORLI, Ferruccio; OTTO, Harald E.

Online presentation.

09:45 – 10:00 – Paper #103

The Problem-Solution Network for Systematic Conceptual Design: Lesson Learned.

Authors: FIORINESCHI, Lorenzo; ROTINI, Federico; CARFAGNI, Monica.

Online presentation.

10:00 – 10:15 – Paper #116

A new Table to Manage 1D Tolerance Stack-Up.

Authors: RIZZUTI, Sergio; DE NAPOLI, Luigi.

Online presentation.

10:15 – 10:30 – Paper #124

A Service- Learning Experience applied in Corporate Identity Design of Newly Created Companies.

Authors: MUÑOZ LÓPEZ, Natalia; BIEDERMANN, Anna; SANTOLAYA SÁENZ, José Luis; BERTRAND, Camille.

Online presentation.

Keynote Speaker II – Plenary Session

Building RM031 - Room 1

Friday 10/09/2021, 11:00 - 12:00

Topic: “Engineering for Cultural Heritage”

Prof. Francesca Romana STASOLLA

Science of Antiquities Department

Sapienza University, Rome

Session 6.1a – Integrated Methods for System Design, Simulation, Analysis and Optimization (III)

Session 6.1b – Experimental Methods in Product Development (II)

Building RM031 - Room 8

Friday 10/09/2021, 14:30-16:15

14:30 – 14:45 – Paper #175 (6.1a)

Requirements Engineering in complex systems design.

Authors: MARZULLO, Domenico; DI GIRONIMO, Giuseppe; LANZOTTI, Antonio; MOZZILLO, Rocco; TARALLO, Andrea.

On-Site presentation.

14:45 – 15:00 – Paper #163 (6.1a)

A Graph-Based Multi-Level Framework to support the Designing of Collaborative Workplaces.

Authors: DI MARINO, Castrese; REGA, Andrea; FRUGGIERO, Fabio; PASQUARIELLO, Agnese; VITOLO, Ferdinando;

PATALANO, Stanislao.

On-Site presentation.

15:00 – 15:15 – Paper #183 (6.1a)

Virtual Prototyping as a Supporting Tool for the Design of Complex Robotic Cells.

Authors: RAFFAELI, Roberto; NERI, Federico; PERUZZINI, Margherita; BERSELLI, Giovanni; PELLICCIARI, Marcello.

On-Site presentation.

15:15 – 15:30 – Paper #196 (6.1a)

Finite Element Analysis of the Interaction between an Endo-Surgical Tool and Colorectal Tissue for Setting up Force Feedback Evaluation in Virtual Reality-Based Applications.

Authors: GUACHI, Robinson; BICI, Michele; BINI, Fabiano; CAMPANA, Francesca; MARINOZZI, Franco.

On-Site presentation.

15:30 – 15:45 – Paper #152 (6.1b)

3D-printed pure copper: density and thermal treatments effects.

Authors: RAGO, Ilaria; IANNONE, Marco; MARRA, Francesco; BRACCIALE, Maria Paola; PAGLIA, Laura; ORLANDI,

Donato; CORTIS, Daniele; PETTINACCI, Valerio.

On-Site presentation.

15:45 – 16:00 – Paper #104 (6.1b)

Recent Findings about the Novelty Metric of Shah.

Authors: FIORINESCHI, Lorenzo; FRILLICI, Francesco Saverio; ROTINI, Federico; CARFAGNI, Monica.

Online presentation.

16:00 – 16:15 – Paper #167 (6.1b)

Design and validation of a block-on-ring test bench.

Authors: PADERNO, Diego; BODINI, Ileana; BARONIO, Gabriele; UBERTI, Stefano; MONTESANO, Lorenzo; TONOLI,

Simone; POLA, Annalisa; VILLA, Valerio.

On-Site presentation.

Session 6.2 – Design for Additive Manufacturing (III)

Building RM031 - Cloister Room

Friday 10/09/2021, 14:30-16:15

Session Chair:

14:30 – 14:45 – Paper #173

Additive Manufacturing Design of an Argon Condenser made with Pure Copper Powder for High-Purity Physics Applications: Technological Issues.

Authors: CORTIS, Daniele; LALLI, Alessandro; ORLANDI, Donato.

On-Site presentation.

14:45 – 15:00 – Paper #156

Heterogeneous Materials Additive Manufacturing: An Overview.

Authors: SPONCHIADO, Riccardo; GRIGOLATO, Luca; FILIPPI, Stefano; CONCHERI, Gianmaria; MENEGHELLO, Roberto; SAVIO, Gianpaolo.

On-Site presentation.

15:00 – 15:15 – Paper #157

Conformal Lattice Structures: Modeling and Optimization.

Authors: DAL FABBRO, Pierandrea; ROSSO, Stefano; CERUTI, Alessandro; MENEGHELLO, Roberto; CONCHERI, Gianmaria; SAVIO, Gianpaolo.

On-Site presentation.

15:15 – 15:30 – Paper #170

A numerical model for simulating the Selective Laser Melting of closed impellers.

Authors: MANDOLINI, Marco; SANTUCCI, Federica; CICCONI, Paolo; SANTECCHIA, Eleonora; GERMANI, Michele; PALLADINO, Marco; FAVI, Claudio; MARCONI, Marco.

On-Site presentation.

15:30 – 15:45 – Paper #165

Optimization of an Engine Piston through CAD Platforms and Additive Manufacturing-based Systematic Product Redesign.

Authors: DALPADULO, Enrico; PINI, Fabio; LEALI, Francesco.

On-Site presentation.

15:45 – 16:00 – Paper #179

A preliminary analysis of the effects of process parameters on the impact resistance of 3D printed PETG and HIPS.

Authors: MARTORELLI, Massimo; GALLICCHIO, Vito; GLORIA, Antonio; LANZOTTI, Antonio.

Online presentation.

Session 6.3 – Virtual Reality and Interactive Design (II)

Building RM031 - Room 7

Friday 10/09/2021, 14:30-16:15

14:30 – 14:45 – Paper #131

CompassbAR: a Technique for Visualizing Out-Of-View Objects in a Mixed Reality Environment.

Authors: EVANGELISTA, Alessandro; MANGHISI, Vito Modesto; LAERA, Francesco; GATTULLO, Michele; UVA, Antonio Emmanuele; FIORENTINO, Michele.

On-Site presentation.

14:45 – 15:00 – Paper #132

Cinematic Virtual Reality as a Rehabilitative Tool in Subjects affected by Schizophrenia.

Authors: MANGHISI, Vito Modesto; EVANGELISTA, Alessandro; BOCCACCIO, Antonio; GATTULLO, Michele; FIORENTINO, Michele; SEMISA, Domenico; LATORRE, Valeria; UVA, Antonio Emmanuele.

On-Site presentation.

15:00 – 15:15 – Paper #139

Mixed Reality in STEM didactics: case study of assembly drawings of complex machines.

Authors: LAVIOLA, Enricoandrea; GATTULLO, Michele; BOCCACCIO, Antonio; EVANGELISTA, Alessandro; FIORENTINO, Michele; MANGHISI, Vito Modesto; UVA, Antonio Emmanuele.

On-Site presentation.

15:15 – 15:30 – Paper #142

Defining the Potential of Extended Reality Tools for Implementing Co-creation of User Oriented Products and Systems.

Authors: SANTHOSH, Sandhya; DE CRESCENZIO, Francesca; VITOLO, Bonaventura.

On-Site presentation.

15:30 – 15:45 – Paper #166

A new approach for CAD modelling of customised orthoses by Generative Design.

Authors: BRAGONZONI, Laura; INGRASSIA, Tommaso; MARANNANO, Giuseppe; NIGRELLI, Vincenzo; RICOTTA, Vito.

Online presentation.

15:45 – 16:00 – Paper #168

Semi-Automatic Analysis of Spoken Interaction Dynamics in Collaborative Design Sessions.

Authors: BECATTINI, Niccolò; ALBERIO, Luca.

Online presentation.



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