

XVI CONVEGNO AITEM

ASSOCIAZIONE ITALIANA
DELLE TECNOLOGIE MANIFATTURIERE

Napoli 13-15 settembre 2023

PROGRAMMA



UNIVERSITÀ DEGLI STUDI DI NAPOLI
FEDERICO II



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DIPARTIMENTO DI ECCELLENZA

MIUR 2023-2027

PROGRAMMA SINTETICO

Martedì 12 settembre	
18:00	Cocktail di benvenuto

Mercoledì 13 settembre	
08:00	Registrazione
09:00	Apertura XVI Convegno AITEM
10:30	Sessione Giovani Ricercatori – Premio “Edoardo Capello”
13:30	Pranzo
14:30	Sessione Giovani Ricercatori – Premio “Edoardo Capello”
16:30	Riunione PAA
17:00	Trasferimento a Pietrarsa (non PAA)
18:30	Trasferimento a Pietrarsa (membri PAA)
19:30	Visita "Museo Ferroviario Nazionale"
21:00	Cena Sociale

Giovedì 14 settembre	
08:30	Sessione “Manufacturing processes design, optimization and engineering”
08:30	Sessione “Additive manufacturing and reverse engineering”
13:00	Pranzo
14:00	Sessione “Assembly, disassembly and circular economy”
14:00	Sessione “Additive manufacturing and reverse engineering”
15:00	Sessione “Process and system simulation, optimization and digital manufacturing”
16:30	Assemblea AITEM

Venerdì 15 settembre	
08:30	Sessione “Materials processing technology”
08:30	Sessione “Additive manufacturing and reverse engineering”
09:50	Sessione “Miscellaneous”
11:30	Sessione “Work in progress”
13:00	Pranzo
14:00	Sessione “White paper”
16:30	Chiusura XVI Convegno AITEM



PROGRAMMA
MERCOLEDÌ 13 SETTEMBRE

PROGRAMMA DETTAGLIATO DELLE SESSIONI

Aula Magna "L. Massimilla"	
Mercoledì 13 settembre, 08:00 – 10:30 Apertura XVI Convegno AITEM <i>Presiede: L. Carrino – Università degli Studi di Napoli Federico II</i>	
08:00	Registrazione
09:00	Saluti di Apertura • Prof. Luigi Carrino, Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università degli Studi di Napoli Federico II • Prof. Matteo Lorito, Rettore dell'Università degli Studi di Napoli Federico II • Prof.ssa Rita Mastrullo, Prorettrice dell'Università degli Studi di Napoli Federico II • Prof.ssa Gioconda Moscariello, Presidente della Scuola Politecnica e delle Scienze di Base dell'Università degli Studi di Napoli Federico II • Prof. Giuseppe Mensitieri, Direttore del Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università degli Studi di Napoli Federico II • Prof. Gaetano Manfredi, Sindaco di Napoli • Dott. Antonio Marchiello, Assessore alle Attività Produttive della Regione Campania • Prof. Luca Settineri, Presidente AITEM
09:30	Keynote 1: Ing. Pietro Diamantini, Direttore Business AV Trenitalia
10:00	Keynote 2: Dott. Stefano Bortoli, Direttore Divisione Aerostrutture Leonardo Company

Aula Magna "L. Massimilla"	
Mercoledì 13 settembre, 10:30 – 13:30 Sessione Giovani Ricercatori – Premio "Edoardo Capello" <i>Presiede: Luigi Maria Galantucci</i>	
10:30	3D printing of shape memory polymers: embedding nichrome-wires to enhance their performance <i>Gianni Stano, Antonio Pavone and Gianluca Percoco</i>
11:00	Manufacturing and testing of shape memory polymer composite actuators <i>Leandro Iorio, Denise Bellisario and Fabrizio Quadrini</i>
11:30	Surface quality improvement techniques for 3D printed metal samples <i>Mariangela Quarto and Giancarlo Maccarini</i>

12:00	Arc oscillation for microstructural and geometric control of solids produced by WAAM <i>Gustavo Carvalho and Gianni Campatelli</i>
12:30	Pre-process optimisation of filament feed rate in fused filament fabrication by using digital twins and machine learning <i>Arianna Rossi, Michele Moretti and Nicola Senin</i>
13:00	Unlocking New In-Situ Defect Detection Capabilities in Additive Manufacturing with Machine Learning and a Recoater-Based Imaging Architecture <i>Matteo Bugatti, Marco Grasso and Bianca Maria Colosimo</i>

Biblioteca Storica	
Mercoledì 13 settembre, 13:30 – 14:30	
13:30	Pranzo

Aula Magna “L. Massimilla”	
Mercoledì 13 settembre, 14:30 – 16:30	
Sessione Giovani Ricercatori – Premio “Edoardo Capello”	
Presiede: Loredana Santo	
14:30	Preliminary study on the feasibility of Electrically Assisted Direct Joining of Titanium and PEEK <i>Silvia Ilaria Scipioni, Alfonso Paoletti and Francesco Lambiase</i>
15:00	Milling cutting force model including tool runout <i>Lorenzo Morelli, Niccolò Grossi and Antonio Scippa</i>
15:30	Aerosol Jet Printing Of 3D Biocompatible Gold Nanoparticle-based Micro-structures <i>Miriam Seiti, Paola Serena Ginestra and Eleonora Ferraris</i>
16:00	Control policy for production capacity modulation with waiting-time-constrained work in process <i>Matteo Mastrangelo, Maria Chiara Magnanini and Tullio A.M. Tolio</i>

Aula “S. Bobbio”	
Mercoledì 13 settembre, 16:30 – 18:30	
16:30	Riunione PAA



Mercoledì 13 settembre, 18:30 – 19:30	
17:00	Trasferimento a Pietrarsa (non PAA)
18:30	Trasferimento a Pietrarsa (membri PAA)

Museo di Pietrarsa “Sala delle Locomotive a Vapore” Mercoledì 13 settembre, 19:30 – 23:00	
19:30	Visita "Museo Ferroviario Nazionale"
21:00	Cena sociale



PROGRAMMA
GIOVEDÌ 14 SETTEMBRE

Aula Magna "L. Massimilla"

Giovedì 14 settembre, 08:30 – 12:50

Sessione "Manufacturing processes design, optimization and engineering"

Presiedono: *Andrea Matta e Vincenzo Tagliaferri*

08:30	A bio-inspired reinterpretation of Human-Robot Collaboration in assembly processes <i>Federico Barravecchia, Mirco Bartolomei, Luca Mastrogiamomo and Fiorenzo Franceschini</i>
08:50	Addressing idle and waiting time in short term production planning <i>Erica Pastore, Arianna Alfieri and Claudio Castiglione</i>
09:10	A Digital Twin for setup time reduction in single-screw extrusion of PVC tubes <i>Enrico Bovo, Marco Sorgato and Giovanni Lucchetta</i>
09:30	Analysis of the Pulling Force in the Pultrusion of Glass/Polypropylene Preimpregnated Tapes <i>Fausto Tucci, Felice Rubino and Pierpaolo Carlone</i>
09:50	A numerical methodology for improving the thermoforming process of complex thermoplastic composite components <i>Antonios Stamopoulos, Luca Glauco Di Genova, Francesco Lambiase and Alfonso Paoletti</i>
10:10	Study of compostable materials for the production of transparent food containers <i>Giulia Cappiello, Daniele Rocco, Clizia Aversa and Massimiliano Barletta</i>
10:30	Manufacturing of a hybrid component in Ti6Al4V-ELI alloy by combining the Diffusion Bonding and SuperPlastic Forming processes <i>Pasquale Guglielmi, Antonio Piccininni, Angela Cusanno and Gianfranco Palumbo</i>
10:50	Comparison between two tailored press hardening technologies by means of physical and numerical simulation <i>Maria Emanuela Palmieri and Luigi Tricarico</i>
11:10	Workload and stress evaluation in Advanced Manufacturing Systems <i>Graziana Blandino, Francesca Montagna and Marco Cantamessa</i>
11:30	Modelling the laser overageing treatment of a 6xxx Al alloy by means of physical simulation tests <i>Antonio Piccininni, Pasquale Guglielmi, Angela Cusanno and Gianfranco Palumbo</i>
11:50	An insight into Friction Stir Consolidation Process mechanics through Advanced Numerical model development <i>Abdul Latif, Riccardo Puleo, Giuseppe Ingarao and Livan Fratini</i>
12:10	On the role of intermetallic and interlayer in the dissimilar material welding of Ti6Al4V and SS 304 by Friction stir welding <i>Harikrishnasinh Rana, Gianluca Buffa and Livan Fratini</i>
12:30	Validation of Charge Welds and Skin Contamination FEM predictions in the Extrusion of a AA6082 Aluminum Alloy <i>Marco Negozio, Riccardo Pelaccia, Sara Di Donato, Lorenzo Donati and Barbara Reggiani</i>

Aula "S. Bobbio"	
Giovedì 14 settembre, 08:30 – 12:50	
Sessione "Additive manufacturing and reverse engineering"	
Presiedono: Bianca Maria Colosimo e Eleonora Atzeni	
08:30	Specific cutting energy minimization in dry and wet post- process turning of Ti6Al4V EBM parts <i>Ersilia Cozzolino, Stefania Franchitti, Rosario Borrelli and Antonello Astarita</i>
08:50	Preliminary evaluation of an Additive Manufacturing procedure for producing patient-specific upper-limb orthotic devices <i>Francesca Sala, Mariangela Quarto, Gianluca D'Urso and Claudio Giardini</i>
09:10	Abrasive Fluidized Bed Machining of AlSi10Mg parts produced through Additive Manufacturing: an experimental overview <i>Andrea El Hassanin, Maurizio Troiano, Fabio Scherillo, Alessia Teresa Silvestri, Roberto Solimene, Fabrizio Scala, Piero Salatino and Antonino Squillace</i>
09:30	Additive Foam Manufacturing <i>Daniele Tammaro, Andrea Detry, Luca Landolfi, Massimiliano Villone, Pier Luca Maffettone and Antonino Squillace</i>
09:50	Characterization of the microstructure and mechanical properties of Ti6Al4V alloy parts produced through Cold Metal Transfer technology <i>Andrea El Hassanin, Raffaele Sepe, Alessia Teresa Silvestri, Gianni Campatelli, Giuseppe Venturini and Antonino Squillace</i>
10:10	Exploiting Laser-Direct Energy Deposition for customized components: H13 and 316L Functionally Graded Materials <i>Alessia Teresa Silvestri, Paolo Bosetti, Matteo Perini and Antonino Squillace</i>
10:30	LPBF Process of Zn-Modified NiTi Alloy with Enhanced Antibacterial Response <i>Carlo Alberto Biffi, Jacopo Fiocchi, Francesca Sisto, Chiara Bregoli and Ausonio Tuissi</i>
10:50	Effect of chemical machining on surface quality and fatigue life of electron beam melted Ti6Al4V <i>Fabio Scherillo, Emanuele Manco, Andrea El Hassanin, Alessia Teresa Silvestri, Antonino Squillace, Stefania Franchitti, Rosario Borrelli, Matteo Bruno and Luca Esposito</i>
11:10	Rotating Beam Fatigue testing of chemically machined EBM Ti6Al4V parts <i>Emanuele Manco, Fabio Scherillo, Andrea El Hassanin, Alessia Teresa Silvestri, Antonino Squillace, Stefania Franchitti and Rosario Borrelli</i>
11:30	Effect of layer and raster orientation on bending properties of 17-4 PH printed via Material Extrusion Additive Manufacturing technology <i>Alessandro Pellegrini, Maria Grazia Guerra, Fulvio Lavecchia and Luigi Maria Galantucci</i>

11:50	Non-Newtonian, non-isothermal three-dimensional modeling of strand deposition in screw-based material extrusion <i>Alessio Pricci and Gianluca Percoco</i>
12:10	Development of an innovative procedure for the rheological behavior modelling applied to injection molding <i>Keltoum Oubellaouch, Riccardo Pelaccia, Barbara Reggiani, Simone Carmignato, Nicolò Bonato, Paolo Pozzi, Nicola Bettoni, Leonardo Orazi and Lorenzo Donati</i>
12:30	Influence of the energy density on the Young modulus and fatigue strength of Inconel 718 produced by L-PBF <i>Michele Abruzzo, Giuseppe Macoretta, Luca Romoli and Gino Dini</i>

Biblioteca Storica	
Giovedì 14 settembre, 13:00 – 14:00	
13:00	Pranzo

Aula Magna “L. Massimilla”	
Giovedì 14 settembre, 14:00 – 15:00	
Sessione “Assembly, disassembly and circular economy”	
Presiede: Gino Dini	
14:00	Circular economy strategies at the manufacturing system scheduling level: the impacts on Makespan <i>Claudio Castiglione, Arianna Alfieri and Erica Pastore</i>
14:20	Laser Welding With and Without Filler Wire of Aluminum Sheets Produced by Rolling and Additive Manufacturing for E-Mobility Applications <i>Alessandro Ascari, Erica Liverani, Alessandro Fortunato, Stefano Cattaneo and Marco Franzosi</i>
14:40	Application of High Voltage Fragmentation to treat End-of-Life wind blades <i>Marco Diani, Shravan Torvi and Marcello Colledani</i>

Aula Magna “L. Massimilla”	
Giovedì 14 settembre, 15:00 – 16:20	
Sessione “Process and system simulation, optimization and digital manufacturing”	
Presiede: Pierpaolo Carlone	
15:00	The ranking-aggregation problem in manufacturing: potential, pitfalls, and good practices <i>Fiorenzo Franceschini, Domenico Maisano and Luca Mastrogiacomo</i>

15:20	Digital upgrade of a bandsaw machine through an innovative guidance system based on the digital shadow concept <i>Federico Scalzo, Davide Bortoluzzi, Giovanni Totis and Marco Sortino</i>
15:40	The influence of material properties and process parameters on energy consumption in the single-screw extrusion of PVC tubes <i>Andrea Pieressa, Enrico Bovo, Marco Sorgato and Giovanni Lucchetta</i>
16:00	Numerical evidence of submerged arc welding at changing of the main process parameters <i>Francesco Raffaele Battista, Romina Conte, David Rodriguez Izquierdo, Francesco Gagliardi, Luigino Filice and Giuseppina Ambrogio</i>

Aula "S. Bobbio"	
Giovedì 14 settembre, 14:00 – 16:20	
Sessione "Additive manufacturing and reverse engineering"	
Presiede: Livan Fratini	
14:00	Development of a 3D printer optimized for rapid prototyping with Continuous Fiber Fabrication technology <i>Matteo Benvenuto, Enrico Lertora, Chiara Mandolino, Marco Pizzorni, Alberto Parmiggiani, Mirko Prato and Luigi Benvenuto</i>
14:20	Reverse bending fatigue of 316L stainless steel components produced by laser powder bed fusion <i>Gennaro Salvatore Ponticelli, Simone Venettacci, Emanuele Mingione and Stefano Guarino</i>
14:40	Process parameters optimization in Fused Deposition Modeling of polyether ether ketone <i>Emanuele Vaglio, Erica Billè, Marina Franulović, Alessandro Gambitta, David Liović, Alfredo Rondinella, Marco Sortino and Giovanni TotiStes</i>
15:00	Experimental analysis of FDM structures in shape memory polylactic acid <i>Mariapia Desole, Franco Maria Di Russo, Annamaria Gisario and Massimiliano Barletta</i>
15:20	Dimensional and geometric deviations of parts in PA12 manufactured by Selective Laser Sintering: numerical and experimental analyses <i>Valentina Vendittoli, Achille Gazzero, Wilma Polini and Luca Sorrentino</i>
15:40	Mechanical properties and dynamic response of 3D printed parts in PLA/P(3HB)(4HB) blends <i>Daniele Almonti, Clizia Aversa, Alessandra Piselli and Massimiliano Barletta</i>
16:00	In-process monitoring of lattice geometry with laser line scanning and optical tomography in fused filament fabrication <i>Michele Moretti, Arianna Rossi and Nicola Senin</i>



Aula Magna "L. Massimilla"

Giovedì 14 settembre, 16:30 – 19:30

16:30	Assemblea AITEM
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PROGRAMMA
VENERDÌ 15 SETTEMBRE

Aula Magna "L. Massimilla"

Venerdì 15 settembre, 08:30 – 12:50

Sessione "Materials processing technology"

Presiedono: *Stefania Bruschi e Luigino Filice*

08:30	Augmented multi-scale Instrumented Indentation Test characterization of complex multi-layered coatings for tribological application <i>Giacomo Maculotti, Gianfranco Genta and Maurizio Galetto</i>
08:50	Effect of Sub-zero Deformation Temperatures and Anisotropy on the formability of AISI316 stainless steel <i>Rachele Bertolini, Enrico Simonetto, Andrea Ghiotti and Stefania Bruschi</i>
09:10	A novel application of cryogenics in dieless tube piercing <i>Paolo Albertelli, Valerio Mussi and Michele Monno</i>
09:30	Surface functionalisation of Li-ion battery electrodes via laser ablation <i>Adrian Lutey and Luca Romoli</i>
09:50	UV picosecond laser processing for microfluidic applications <i>Vincenzina Siciliani, Alice Betti, Claudio Ongaro, Leonardo Orazi, Barbara Zardin and Barbara Reggiani</i>
10:10	Effect of carbon nanotube content on the mechanical behaviour of CFRP composite materials <i>Serena Gentili, Marina Andreozzi, Archimede Forcellese, Luciano Greco, Chiara Mignanelli, Michela Simoncini, Alessio Vita, Iacopo Bianchi and Tommaso Mancia</i>
10:30	Static indentation properties of basalt fiber reinforced composites for naval applications <i>Chiara Borsellino, Mohamed Chairi, Jalal El Bahaoui, Federica Favaloro, Fabia Galantini and Guido Di Bella</i>
10:50	Surface micro – texturing of tapping tools with complex geometry <i>Manuel Mazzonetto, Vincenzina Siciliani, Riccardo Pelaccia and Leonardo Orazi</i>
11:10	Influence of silica aerogel filler on strength-to-weight ratio of carbon/epoxy composite made by vacuum resin infusion <i>Luigi Benvenuto, Enrico Lertora, Marco Pizzorni, Chiara Mandolino and Matteo Benvenuto</i>
11:30	PET foaming: development of a new class of rheological additives for improved processability <i>Clizia Aversa, Massimiliano Barletta, Annamaria Gisario and Annalisa Genovesi</i>
11:50	Study of autoclave process to manufacture thermoplastic composites constituted by PP/flax fibers <i>Gianluca Parodo, Luca Sorrentino and Sandro Turchetta</i>
12:10	A Feasibility Study to Improve the Processability of Pure Copper Produced Via Laser Powder Bed Fusion Process <i>Abdollah Saboori, Marta Rocchetti Campagnoli, Manuela Galati, Flaviana Calignano and Luca Iuliano</i>

12:30	Mechanical Recycling of CFRPs: Manufacturing and Characterization of Recycled Laminates <i>Dario De Fazio, Luca Boccarusso, Antonio Formisano, Antonio Langella, Fabrizio Memola Capece Minutolo and Massimo Durante</i>
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Aula "S. Bobbio"	
Venerdì 15 settembre, 08:30 – 09:50	
Sessione "Additive manufacturing and reverse engineering"	
Presiede: Elisabetta Ceretti	
08:30	Effect of process parameters on the thermal properties of polymeric additive manufactured parts obtained by Material Extrusion <i>Luigi Morfini, Nicola Gurrado and Roberto Spina</i>
08:50	Robust in-line qualification of lattice structures manufactured via laser powder bed fusion <i>Bianca Maria Colosimo, Marco Luigi Giuseppe Grasso, Federica Garghetti and Luca Pagani</i>
09:10	Ductility and Linear Energy Density of Ti6Al4V parts produced with additive Powder Bed Fusion technology <i>Gianluca Buffa, Dina Palmeri, Gaetano Pollara, Livan Fratini and Alessandro Benigno</i>
09:30	Part quality in Metal Binder Jetting: a preliminary investigation on the effects of powder and printing parameters <i>Paolo Parenti, Bianca Maria Colosimo</i>

Aula "S. Bobbio"	
Venerdì 15 settembre, 09:50 – 11:30	
Sessione "Miscellaneous"	
Presiede: Archimede Forcellese	
09:50	A novel Quality Map for monitoring human well-being and overall defectiveness in product variants manufacturing <i>Elisa Verna, Stefano Puttero, Gianfranco Genta and Maurizio Galetto</i>
10:10	Feasibility study and stress analysis of Friction Stir Extruded rods and pipes: a simulative model <i>Sara Bocchi, Cristian Cappellini, Gianluca D'Urso and Claudio Giardini</i>
10:30	Reinforcement Learning for Energy-Efficient Control of Multi-Stage Production Lines with Parallel Machine Workstations <i>Alberto Loffredo, Marvin Carl May and Andrea Matta</i>
10:50	Tool path strategies for a new Agile incremental bending system <i>Enrico Simonetto, Andrea Ghiotti, Enrico Savio and Stefania Bruschi</i>

11:10	The effects of dry grinding processing parameters on the electromagnetic and geometrical properties of Nd ₂ Fe ₁₄ B permanent magnets <i>Lorenzo Cestone, Erica Liverani and Alessandro Fortunato</i>
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Aula "S. Bobbio"	
Venerdì 15 settembre, 11:30 – 12:45	
Sessione "Work in progress"	
Presiede: Wilma Polini	
11:30	Laser for accelerated near zero defects in e-mobility component's manufacturing <i>Caterina Angeloni, Michele Francioso, Erica Liverani, Alessandro Ascari, Alessandro Fortunato and Luca Tomesani</i>
11:45	Development of depositions strategies for edge repair using a WAAM process <i>Francesco Baffa, Giuseppe Venturini and Gianni Campatelli</i>
12:00	Reverse Engineering for measurement and analysis of tooth movements during orthodontic treatment with transparent aligners <i>Marino Calefati, Francesco De Palo, Maria De Rosa, Ugo Marco Ferrulli, Andrea Verani, Giorgio Giustizieri, Eliana Di Gioia and Luigi Maria Galantucci</i>
12:15	A digital solution for slender workpiece turning: the DRITTO project <i>Niccolò Grossi, Antonio Scippa, Lorenzo Sallese and Gianni Campatelli</i>
12:30	Influence of long and short glass fiber on the mechanical behaviour of a single cell metamaterial <i>Luca Giorleo, Antonio Fiorentino, Stefano Pandini and Elisabetta Ceretti</i>

Biblioteca Storica	
Venerdì 15 settembre, 13:00 – 14:00	
13:00	Pranzo

Aula Magna "L. Massimilla"	
Venerdì 15 settembre, 14:00 – 16:30	
Sessione "White paper"	
Presiede: Luigi Carrino	
14:00	LaserEMobility- Challenges and opportunities for lasers in e-vehicle manufacturing <i>Demir Ali Gökhan</i>
14:30	BioManPi- Conventional and Innovative Aspects of Bespoke Metal Implants Production <i>Paola Ginestra</i>

15:00	DFT- Digital Twin for Factories: Challenges and Industrial Applications <i>Walter Terkaj</i>
15:30	Realize- Surface Functionalization of Metallic Biomaterials: Present Trend and Future Perspectives <i>Giovanna Rotella</i>
16:00	INJOIN- White Paper on Innovative Joining Technologies for Naval Applications <i>Guido Di Bella</i>

Aula Magna "L. Massimilla"	
Venerdì 15 settembre, 16:30 – 17:00	
16:30	Chiusura XVI Convegno AITEM e saluti