

# Diego Giovanni Manfredi



## Personal details

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| Date of birth | 31 January 1978   |
| Civil status  | Married, three children   |
| Address       | [REDACTED]  |
| Phone         | [REDACTED]  |
| E-mail        | <a href="mailto:diego.manfredi@polito.it">diego.manfredi@polito.it</a> ; <a href="mailto:diego.manfredi78@gmail.com">diego.manfredi78@gmail.com</a> ;<br><a href="mailto:diego.manfredi@iit.it">diego.manfredi@iit.it</a> |
| Occupation    | Assistant Professor at Politecnico di Torino (Scopus Author ID: 23967988600; h-index 29; orcid 0000-0002-2876-143X); Affiliated Researcher at Istituto Italiano di Tecnologia IIT@Polito                                  |

## Education

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| 2018 | <i>Associate Professor National Scientific Qualification (Abilitazione Scientifica Nazionale) in Academic Disciplines Materials Science and Technology (09/D1) and in Industrial Design and Metallurgy (09/A3) for the period April 2018 – April 2024.</i>                        |
| 2008 | <i>PhD in Material Science and Technology at Politecnico di Torino. Thesis "High ceramic content composites: co-continuous ceramic composites", defended on 14<sup>th</sup> March 2008, advisor Prof. Claudio Badini, final evaluation: excellent.</i>                            |
| 2003 | <i>Professional qualifying examination on Materials Engineering.</i>  |
| 2003 | <i>Master Degree in Materials Engineering at Politecnico di Torino. Thesis "Studio e sviluppo di sospensioni per auto in lega di alluminio mediante squeeze casting" with a 6 months stage in Stampal S.p.a., advisor prof. Mario Rosso, final evaluation: 110/110 cum laude.</i> |

## Work experience

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| August 2019-present    | <i>Assistant Professor at Politecnico di Torino. Main activities: teaching, mentoring of post-doc and of PhD students in Material Science and Technology, fund raising through competitive research projects and commercial projects focused on AM technologies.</i>   |
| January 2018-July 2019 | <i>Researcher at the Center for Sustainable Future Technologies (CSFT@Polito) of Istituto Italiano di Tecnologia (IIT). Main activities: fund raising through competitive research projects and commercial projects; mentoring of post-doc and PhD students of the Advanced Materials for Sustainable Future Technologies research line; collaboration with CNR-IEIIT institute to fabricate by AM microwave waveguide filters for satellite telecommunications; collaboration with Università di Torino for the development of high strength Al alloys to be processed by Additive Manufacturing (AM); collaboration with Università degli Studi di Bergamo to investigate the corrosion behavior of AM alloys.</i> |

- 2013-December 2017 *Researcher Technologist at the Center for Sustainable Future Technologies (CSFT@Polito) of Istituto Italiano di Tecnologia (IIT) (formerly known as Center for Space Human Robotics CSHR@Polito). Main activities: fund raising through competitive research projects and commercial projects; mentoring of post-doc and PhD students of the Additive Manufacturing/3DPrinting (AM/3DP) research line, in particular for new materials development; networking with ADVR-IIT Department and with DENERG department of Politecnico di Torino to fabricate functional components by AM like hydraulic manifolds for robotic applications and high performance heat sinks. The research was also focused on open architectures and structures like cellular, lattice and foams for applications as electrodes, radiant burners or heat exchangers.*
- 2010-2012 *Post-doc Researcher at the Center for Space Human Robotics (CSHR@Polito) of Istituto Italiano di Tecnologia (IIT). Main activities: implementation and organization of the Rapid Prototyping Lab in the frame work of Robotic Platform; research activities focused on the development of the Additive Manufacturing technique Direct Metal Laser Sintering (DMLS) to fabricate lightweight components with complex shapes, like a finger exoskeleton with non-assembly joints, and on the materials characterization at the nano-scale.*
- 2008-2009 *Research Fellow at the Materials Science and Chemical Engineering Department of Politecnico di Torino. Research topics: Metal Matrix nano-Composites, multilayered Ceramic Matrix Composites (CMCs) by tape casting for aerospace applications, intermetallic alloys for aerospace engines, ceramic coatings for turbine blades.*
- 2005-2007 *PhD student on Materials Science and Technology at Politecnico di Torino. Research activity focused on co-continuous metal-ceramic composites obtained by Reactive Metal Penetration.*
- 2004 *Quality Engineer at Eaton Automotive Srl. Formation on NDT (Non Destructive Tests) for detecting defects in stainless steels parts and components after hot pressing, heat treatments and post-processing treatments.*

#### Project Grants - as Principal Investigator (PI) for IIT

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##### Competitive projects

- 2019-2021 *Call ESA GSTP AO/1-9376/19/NL/HK "Evaluation and Consolodation of Additive Manufacturing Processes and Materials for the Manufacturing of RF Hardware".*
- 2018-2022 *European project ECCO "Energy Efficient Coil Coating Process", call H2020-SPIRE-2017, Innovation Action 768692. The main idea is to find novel solution for the curing oven operation within coil coating industrial process, increasing the compactness and energetic efficiency of the system, and the production flexibility. IIT is involved in the development and characterization of advanced materials processed by additive manufacturing/3D printing to be used in IR radiant porous burners.*
- 2016-2019 *Regional Project STAMP "Sviluppo Tecnologico dell'Additive Manufacturing in Piemonte", funded by Regione Piemonte with Grant POR FESR Piemonte 2014/2020 "Fabbrica Intelligente". IIT is involved in the fabrication of end-users demonstrators for aeronautics, aerospace, automotive in different alloys by Laser Powder Bed Fusion process, in the development of new alloys for the same process and in the optimization of process and post-process conditions.*

2014-2017 European project *HELMETH "Integrated High-Temperature Electrolysis and Methanation for Effective Power to Gas Conversion"*, EU FP7 for the Fuel Cells and Hydrogen JTI under Grant Agreement 621210 (Call: FCH-JU-2013-1). IIT is a third party to Politecnico di Torino (DISAT Department) with the aim of designing and fabricating heat exchanging elements for high temperature and harsh environments by DMLS.

#### Commercial projects

2015-2016 Contract with *ASE (Aerospace Electrical Systems) Spa* for the re-design and subsequent manufacturing by the Additive Manufacturing technique DMLS of a brushless starter generator.

2015 Contract with *Fondazione Bruno Kessler (FBK)* for the production by the Additive Manufacturing technique DMLS of mechanical components to be used for automotive applications in aluminum and titanium alloys.

2014-2015 Contract with *ASTRA Refrigeranti Spa* for the production of a compact heat exchanger by DMLS in aluminum alloy with a remarkably enhanced convective heat transfer coefficient, taking advantage of artificial roughness typical of this technology.

#### PhD mentoring

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2019-present *Fabrizio Marinucci*, Title proposed "Light alloys development for Laser Powder Bed Fusion process" IIT Project on Sustainable Future Technologies, in collaboration with Department of Applied Science and Technology, Politecnico di Torino, XXXV Cycle, Tutor: Prof. F. Bondioli

2018-present *Enrico Virgillito*, Title proposed "Powders for Metallic Additive Manufacturing from wastes", IIT Project on Sustainable Future Technologies, in collaboration with Department of Applied Science and Technology, Politecnico di Torino, XXXIV Cycle, Tutor: Prof. M. Lombardi

2016-2019 *Simone Parizia*, Title "Study of heat treatments for the Inconel 625 and process optimization for the Inconel 939 produced by Laser Powder Bed Fusion", IIT Project on Sustainable Future Technologies, in collaboration with Department of Applied Science and Technology, Politecnico di Torino, XXXII Cycle, Tutor: Prof. P. Fino; Supervisor: Dr. D. Manfredi

2015-2018 *Giulio Cattano*, Title "Feasibilities studies on Laser Powder Bed Fusion of powder mixtures based on Aluminium Alloys or High Entropy Alloys", IIT Project on Sustainable Future Technologies, in collaboration with Department of Applied Science and Technology, Politecnico di Torino, XXXI Cycle, Tutor: Prof. P. Fino; Supervisor: Dr. D. Manfredi

2014-2017 *Francesco Trevisan*, Thesis "Study and characterisation of different metal alloys processed through Laser Powder Bed Fusion", IIT Project on Sustainable Future Technologies, in collaboration with Department of Applied Science and Technology, Politecnico di Torino, XXX Cycle, Tutor: Prof. P. Fino; Supervisor: Dr. D. Manfredi

2014-2017 *Jukka Pakkanen*, Thesis "Designing for Additive Manufacturing: Product and Process driven design for Metals and Polymers", IIT Project on Sustainable Future Technologies, in collaboration with Department of Applied Science and Technology, Politecnico di Torino, XXX Cycle, Tutor: Prof. P. Fino

2012-2014 *Riccardo Canali*, Thesis "Study, development and characterization of aluminum based materials by additive manufacturing", IIT Project on Space Human Robotics, in collaboration with Department of Applied Science and Technology, Politecnico di Torino, XXVII Cycle, Tutor: Prof. P. Fino

2011-2013 *Manickavasagam Krishnan*, Thesis "Investigation of material and mechanical properties of Al alloy and Al based MMC parts produced by DMLS for industrial application", IIT Project on Space Human Robotics, in collaboration with Department of Management and Production Engineering and Department of Applied Science and Technology, Politecnico di Torino, XXVI Cycle, Tutors: Prof. L. Iuliano, Prof. P. Fino

## Post-doc mentoring

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- 2014-2020 *Massimo Lorusso*: his research activities are mainly focused on the preparation and characterization of samples with very fine microstructures (as processed by Additive Manufacturing techniques) by mechanical tests: tensile and fatigue tests, micro- and nano-hardness, macro- micro- and nano- wear resistance evaluation.

## Teaching - Lecturing

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- 2020-2021 *Lecturer* in the course “*Scienza e Tecnologia dei Materiali*” (ING-IND 22) of Laurea Magistrale Ingegneria Aerospaziale (48 hours), in the course “*Nuovi Materiali per il Design*” (ING-IND 22) of Laurea Magistrale Design e Comunicazione visiva (30 hours), and in the course “*Scienza e Tecnologia dei Materiali Ceramici*” (ING-IND 22) of Laurea Magistrale Ingegneria dei Materiali (21 hours).
- 2019-2020 *Lecturer* in the course “*Scienza e Tecnologia dei Materiali*” (ING-IND 22) of Laurea Magistrale Ingegneria Aerospaziale (48 hours), and in the course “*Scienza e Tecnologia dei Materiali Ceramici*” (ING-IND 22) of Laurea Magistrale Ingegneria dei Materiali (21 hours).
- 2018-2019 *Tutor of students* in the course “*Materiali e Tecnologie per il design*” (ING-IND 22) of Design e Comunicazione Visiva, Prof. Mariangela Lombardi, Politecnico di Torino (30 hours).
- 2017-2018 *Lecturer* in the course “*Tecnologia dei Materiali da Costruzione*” (ING-IND 22) of Laurea Magistrale Ingegneria Civile, Politecnico di Torino (30 hours).
- 2017-2018 *Adjunct Lecturer* in the course “*Materiali e Tecnologie per il design*” (ING-IND 22) of Design e Comunicazione Visiva, Prof. Mariangela, Lombardi Politecnico di Torino (20 hours).
- 2015-2018 *Lecturer* in the Second level Specializing Master course *Additive Manufacturing* of Politecnico di Torino, module “*Materials for additive manufacturing*”, on Steels, Ti based alloys and Ni based Superalloys.
- 2016-2017 *Adjunct Lecturer* in the course “*Materiali Metallici*” (ING-IND 22) of Ingegneria Meccanica, Prof. Marina Cabrini, Università degli Studi di Bergamo (3 hours).
- 2016-2017 *Adjunct Lecturer* in the course “*Biomateriali*” (ING-IND 22) of Ingegneria Tecnologie per la Salute, Prof. Marina Cabrini, Università degli Studi di Bergamo (3 hours).
- 2009-2010 *Invited Professor* from Scuola Universitaria Professionale della Svizzera Italiana (SUPSI), Manno (Lugano), in the Master of Science in Precision Manufacturing, module Materials for Precision Manufacturing, lecturer for the course “*Materials for Cutting Tools*” (22 hours).
- 2009-2010 *Adjunct Lecturer* of Prof. Paolo Fino in the course “*Scienza e Tecnologia dei Materiali Ceramici*” of Ingegneria dei Materiali, Politecnico di Torino (30 hours).
- 2008-2019 *Adjunct Lecturer* of Prof. Paolo Fino in the course “*Scienza e Tecnologia dei Materiali Ceramici*” of Ingegneria dei Materiali, Politecnico di Torino (30 hours).
- 2006-2007 *Adjunct Lecturer* of Prof. Paolo Fino in the course “*Tecnologia dei Materiali*” of Ingegneria Logistica e della Produzione, Politecnico di Torino (14 hours).

## Language Skills

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- Italian: mother tongue  
English: advanced level  
French: basic level

## Reviewer

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Book proposals on Additive Manufacturing for Elsevier and Springer.

International Journals (Elsevier): Materials Science & Engineering A, Journal of Alloys & Compounds, Journal of Material Processing Technology, Additive Manufacturing.

## Technical Skills

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Materials Processing:

Laser Powder Bed Fusion (LPBF), also known as Selective Laser Melting (SLM) or Direct Metal Laser Sintering (DMLS). Certificates of advanced training on EOSINT M270/M280 system and on Concept Laser MLab R.

Direct Light Processing (DLP), Reactive Metal Penetration (RMP), Tape casting, Spark Plasma Sintering (SPS).

Materials Characterization:

Field Emission Gun Scanning Electron Microscopy (FEGSEM), Energy Dispersive X-Ray Spectroscopy (EDX), Nanoindentation (through a Hysitron TI-950 Triboindenter), X-ray Diffraction (XRD), Mechanical materials testing (tensile, flexural, hardness, Young's Modulus, wear), Optical Microscopy, Thermal materials analyses (DTA, DSC, TGA, TMA).

## Invited Talks & Seminars

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- 2019 In the *MAM Study days, Additive Manufacturing the Products (27-29 November)*, sponsored by Baker Hughes, GE Florence Learning Center, Florence, talk on "*State of the Art of AM Products for aerospace turbines*" (27<sup>th</sup> November)
- 2019 In the *NIS Colloquium - project STAMP dissemination*, Dipartimento di Chimica dell'Università di Torino, Prof. Livio Battezzati, talk on "*Overview on Selective Laser Melting: equipment, alloy processing, critical aspects, innovative outlook, mechanical requirements*" (14<sup>th</sup> February)
- 2019 In the *Corso di formazione per Intermediari* (operatori della Camera di Commercio e soggetti del Poli di Innovazione), *La trasformazione digitale: un'opportunità per le PMI*, organizzato da CSP all'interno del progetto SMART SPACE - Smart Manufacturing for Alpine Space SME's, Torino, talk on "*Additive Manufacturing – enabling technology for Industry 4.0*" (22<sup>nd</sup> January)
- 2018 In the *EPMA (European Powder Metallurgy Association) Summer School 2018 (2-6 July 2018)*, Vienna, talk on "*Additive Manufacturing*" (3<sup>rd</sup> July)
- 2017 In the *Emerging Technologies and Security Course (4-8 December 2017)*, UNICRI (United Nations Interregional Crime and Justice Research Institute), Torino, talk on "*New technologies: 3D Printing Additive Manufacturing – AM*" (7<sup>th</sup> December)
- 2017 *University of Bergamo*, invited by prof M. Cabrini, corso di Biomateriali della laurea in Ingegneria Meccanica (A.A. 2017-2018), seminar on "*Tecnologie additive e stampa 3D in ambito biomedicale*", Dalmine (BG) (4<sup>th</sup> December)
- 2017 *Cardiff University*, invited by prof A. Porch, *Centre for High Frequency Engineering (CHFE)*, seminar on "*Laser Powder Bed Fusion of Al and Ti alloys for Microwave Waveguide Devices*" (9<sup>th</sup> May)

## Conferences Chairman

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- 2020 *Euro PM2020 Virtual Congress*, in: "*Session 23: Impurities in AM Powders*" (5-7 October)
- 2018 *Euro PM2018 Congress & Exhibition*, in: "*Session 48: AM Post Treatment*" and "*Session 54: AM Post Processing*", Bilbao, Spain (14-18 October)

- 2017 *Euro PM2017 Congress & Exhibition*, in: “*Session 1: AM Beam Based Technologies*” and “*Session 14: Special Materials for AM*”, Milano, Italy (1-5 October)
- 2017 *ICEAA'17 & IEEE-APS APWC'17*, in the special session: “*Additive Manufacturing: Technologies and Microwave Applications*”, Verona, Italy (11-15 September)
- 2017 *KES-SDM2017 4th International Conference on Sustainable Design and Manufacturing*, in the session: “*Sustainability of 3D Printing and Additive Manufacturing*”, Bologna, Italy (26-28 April)

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#### Conferences with oral presentations

- 2019 *AAMS2019 Alloys for Additive Manufacturing Symposium*, "A method to process new alloys by Laser Powder Bed Fusion saving time and powders" Chalmers University of Technology, Gothenburg, Sweden (18-20 September)
- 2018 *Convegno Additive Manufacturing e controlli non distruttivi*, “Laser powder bed fusion of aluminum, titanium and nickel based alloys: example of applications”, organized by Ordine degli Ingegneri della Provincia di Torino in collaboration with Associazione Italiana Prove non Distruttive (AIPnD), Torino, Italy (21-22 November)
- 2018 *THERMEC'2018, International Conference on Processing & Manufacturing of Advanced Materials* Session E8: *Additive Manufacturing*, “3D Printing of Al, Ti and Ni based alloys by laser powder bed fusion”, Paris, France (8-13 July) - INVITED
- 2017 *ICEAA'17 & IEEE-APS APWC'17*, Special Session: *Additive Manufacturing: Technologies and Microwave Applications*, “Laser Powder Bed Fusion of Aluminum, Titanium and Nickel Based Alloys: Materials and Design Investigations”, Verona, Italy (11-15 September) - INVITED
- 2017 *XIV Convegno Nazionale AIMAT – XI Convegno Nazionale INSTM*, sessione *Metalli*, “Selective Laser Melting of Aluminum Alloys: Relations Among Process, Microstructure and Mechanical Properties”, Ischia Porto (Na), Italy (12-15 July)
- 2017 *XXIII AIV Conference*, session *Materials and Technologies for Additive Manufacturing*, “Laser powder bed fusion of Aluminium alloys: process, microstructure and mechanical properties”, Florence, Italy (5-7 April)
- 2016 *1° Workshop Nazionale su Additive Manufacturing per lo Spazio: Stato dell'arte, Sviluppi e Prospettive*, “Presente e futuro dell'AM al Politecnico di Torino”, ASI (Italian Space Agency), Tor Vergata, Rome, Italy (20-22 July)
- 2015 *Aerospace & Defense Meetings 5<sup>th</sup> edition*, “Materials development produced by Selective Laser Melting (SLM) for aerospace applications”, Turin, Italy (17-19 November) - INVITED
- 2015 *Nanotaly 1st edition*, “Additive Manufacturing for Robotic Components”, Rome, Italy (21-24 September) - INVITED
- 2014 *Workshop Strategic Research Cluster in Horizon 2020*, ASI (Italian Space Agency), Tor Vergata, Rome, Italy (13 January)
- 2013 *ECCOMAS Thematic Conference on Smart Structures and Materials SMART2013*, special session on *Application to robotics for human in space*, “Lightweight Metal Structures By DMLS”, Turin, Italy (24-26 June) - INVITED
- 2013 *6th International Conference on Advanced Research on Virtual and Rapid Prototyping (VRAP)*, “Aluminium Matrix Composites (AMCs) by DMLS”, Leiria, Portugal, (1-5 October)
- 2012 *ECCM15 – 15th European Conference on Composite Materials*, “Realization and characterization of AlSiMg/SiC composites by Direct Metal Laser Sintering”, Venice, Italy (24-28 June)
- 2009 *ICCM-17, 17th International Conference on Composite Materials*, “Co-continuous metal/ceramic composites made by Reactive Metal Penetration of commercial aluminium alloys into cordierite”, Edinburgh International Convention Centre (EICC), Edinburgh, UK, (27-31 July)

- 2008 *ETDCM8, Eighth International Seminar on Experimental Techniques and Design in Composite Materials, "Preparation and properties of NiAl-Al<sub>2</sub>O<sub>3</sub> co-continuous composites obtained by Reactive Metal Penetration", Castiadas, Costa Rei (Ca), Italy (3-6 October)*

#### Patents

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- 2012 *Giunto articolare per esoscheletro, in particolare per applicazioni aerospaziali*. On behalf of Politecnico di Torino e Fondazione Istituto Italiano di Tecnologia. Inventors: Atzeni E., Bruno E., Calignano F., Manfredi D., Ambrosio E.P. Date 16/10/2012, n. TO2012A000902.

#### Publications

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##### Journal articles

- 2020 S. Parizia, G. Marchese, M. Rashidi, M. Lorusso, E. Hryha, D. Manfredi, S. Biamino. *Effect of heat treatment on microstructure and oxidation properties of Inconel 625 processed by LPBF*. Journal of Alloys and Compounds, 846, 156418
- 2020 G. Marchese, E. Bassini, S. Parizia, D. Manfredi, D. Ugues, M. Lombardi, P. Fino, S. Biamino. *Role of the chemical homogenization on the microstructural and mechanical evolution of prolonged heat-treated laser powder bed fused Inconel 625*. Materials Science and Engineering A, 796, 140007
- 2020 D. Gianoglio, S. Marola, L. Battezzati, A. Aversa, F. Bosio, M. Lombardi, D. Manfredi, M. Lorusso. *Banded microstructures in rapidly solidified Al-3 wt% Er*. Intermetallics 119, 106724
- 2020 S. Marola, D. Gianoglio, F. Bosio, A. Aversa, M. Lorusso, D. Manfredi, M. Lombardi, L. Battezzati. *Alloying AlSi10Mg and Cu powders in laser Single Scan Tracks, melt spinning, and Laser Powder Bed Fusion*. Journal of Alloys and Compounds, 821, 153538
- 2020 G. Marchese, S. Parizia, M. Rashidi, A. Saboori, D. Manfredi, D. Ugues, M. Lombardi, E. Hryha, S. Biamino. *The role of texturing and microstructure evolution on the tensile behavior of heat-treated Inconel 625 produced via laser powder bed fusion*. Materials Science & Engineering A 769, 138500
- 2020 C. Testa, M. Cabrini, S. Lorenzi, T. Pastore, D. Manfredi, M. Lorusso, F. Calignano, M. Lombardi. *Corrosion behavior of Ti6Al4V alloy for biomedical application manufactured by Additive Manufacturing*. La Metallurgia Italiana, Issue 2, Pages 6-11
- 2019 P. Petrousek, T. Kvackaj, R. Kocisko, J. Bidulska, M. Luptak, D. Manfredi, M. Actis Grande, R. Bidulsky. *Influence of cryorolling on properties of L-PBF 316L stainless steel tested at 298k and 77k*. Acta Metallurgica Slovaca, Vol. 25, No. 4, p. 283-290
- 2019 M. Lorusso, A. Aversa, G. Marchese, F. Calignano, D. Manfredi, M. Pavese. *Understanding Friction and Wear Behavior at the Nanoscale of Aluminum Matrix Composites Produced by Laser Powder Bed Fusion*. Adv. Eng. Mater., 1900815, DOI: 10.1002/adem.201900815
- 2019 F. Bosio, A. Aversa, M. Lorusso, S. Marola, D. Gianoglio, L. Battezzati, P. Fino, D. Manfredi, M. Lombardi. *A time-saving and cost-effective method to process alloys by Laser Powder Bed Fusion*. Materials & Design, 181, 107949
- 2019 M. Cabrini, S. Lorenzi, C. Testa, T. Pastore, F. Brevi, S. Biamino, P. Fino, D. Manfredi, G. Marchese, F. Calignano and F. Scenini. *Evaluation of Corrosion Resistance of Alloy 625 Obtained by Laser Powder Bed Fusion*. Journal of The Electrochemical Society, 166 (11) C3399-C3408
- 2019 M. Cabrini, S. Lorenzi, C. Testa, F. Brevi, S. Biamino, P. Fino, D. Manfredi, G. Marchese, F. Calignano and T. Pastore. *Microstructure and Selective Corrosion of Alloy 625 Obtained by Means of Laser Powder Bed Fusion*. Materials, 12, 1742; doi:10.3390/ma12111742
- 2019 A. Aversa, G. Marchese, A. Saboori, E. Bassini, D. Manfredi, S. Biamino, D. Ugues, P. Fino, M. Lombardi. *New Aluminum Alloys Specifically Designed for Laser Powder Bed Fusion: A Review*. Materials, March 2019, Vol. 12, Issue 7, doi: 10.3390/ma12071007

- 2019 M. Cabrini, S. Lorenzi, T. Pastore, C. Testa, D. Manfredi, M. Lorusso, F. Calignano, P. Fino. *Statistical approach for electrochemical evaluation of the effect of heat treatments on the corrosion resistance of AlSi10Mg alloy by laser powder bed fusion*. *Electrochimica Acta*, May 2019, Vol. 305, pp. 459-466, doi: 10.1016/j.electacta.2019.03.103
- 2019 M. Cabrini, S. Lorenzi, T. Pastore, C. Testa, D. Manfredi, M. Lorusso, F. Calignano, M. Pavese, F. Andreatta. *Corrosion behavior of AlSi10Mg alloy produced by laser powder bed fusion under chloride exposure*. *Corrosion Science*, Vol. 152: 101-108, <https://doi.org/10.1016/j.corsci.2019.03.010>
- 2018 M. Cabrini, S. Lorenzi, T. Pastore, C. Testa, D. Manfredi, G. Cattano, F. Calignano. *Corrosion resistance in chloride solution of the AlSi10Mg alloy obtained by means of LPBF*. *Surface and Interface Analysis* 1–6. DOI: 10.1002/sia.6601
- 2018 M. Calandri, D. Manfredi, F. Calignano, E. P. Ambrosio, S. Biamino, R. Lupoi, D. Ugues. *Solution Treatment Study of Inconel 718 Produced by SLM Additive Technique in View of the Oxidation Resistance*. *Advanced Engineering Materials*, Vol. 20, No.11, DOI:10.1002/adem.201800351
- 2018 G. Addamo, O. A. Peverini, F. Calignano, D. Manfredi, F. Paonessa, G. Virone, G. Dassano. *Additive manufacturing of ka-band dual-polarization waveguide components*. *IEEE Antennas and Wireless Propagation Letters*, Vol. 17, No. 1: 2036-2040, DOI: 10.1109/LAWP.2018.2859828
- 2018 G. Addamo, O. A. Peverini, D. Manfredi, F. Calignano, F. Paonessa, G. Virone, R. Tascone. *3D Printing of High-Performance Feed Horns from Ku to V Bands*. *IEEE Transactions on Microwave Theory and Techniques*, Vol. 66, No. 8: 3589-3596, DOI: 10.1109/TMTT.2018.2854187
- 2018 S. Marola, D. Manfredi, G. Fiore, M.G. Poletti, M. Lombardi, P. Fino, L. Battezzati. *A comparison of Selective Laser Melting with bulk rapid solidification of AlSi10Mg alloy*. *Journal of Alloys and Compounds*, 742: 271-279, DOI: 10.1016/j.jallcom.2018.01.309
- 2018 M. Cabrini, F. Calignano, P. Fino, S. Lorenzi, M. Lorusso, D. Manfredi, C. Testa and T. Pastore. *Corrosion Behavior of Heat-Treated AlSi10Mg Manufactured by Laser Powder Bed Fusion*. *Materials* 11, 1051; doi:10.3390/ma11071051
- 2018 G. Marchese, M. Lorusso, S. Parizia, E. Bassini, J.-W. Lee, F. Calignano, D. Manfredi, M. Ternner, H.-U. Hong, D. Ugues, M. Lombardi, S. Biamino. *Influence of heat treatments on microstructure evolution and mechanical properties of Inconel 625 processed by laser powder bed fusion*. *Materials Science & Engineering A* 729: 64–75, DOI: 10.1016/j.msea.2018.05.044
- 2018 F. Calignano, G. Cattano, D. Manfredi. *Manufacturing of thin wall structures in AlSi10Mg alloy by laser powder bed fusion through process parameters*. *Journal of Materials Processing Tech.*, 255: 773-783, DOI: 10.1016/j.jmatprotec.2018.01.029
- 2018 A. Lamberti, D. Manfredi, F. Calignano, C.F. Pirri. *TiO<sub>2</sub> nanotube-based smart 3D electrodes by anodic oxidation of additively manufactured Ti6Al4V structures*. *Materials Today Communications*, Vol. 15, Pages 165-170, DOI: 10.1016/j.mtcomm.2018.02.009
- 2018 C.G. Ferro, S. Varetta, P. Maggiore, M. Lombardi, S. Biamino, D. Manfredi and F. Calignano. *Design and characterization of trabecular structures for an anti-icing sandwich panel produced by additive manufacturing*. *Journal of Sandwich Structures & Materials*, DOI: 10.1177/1099636218780513
- 2018 A. Aversa, G. Marchese, D. Manfredi, M. Lorusso, F. Calignano, S. Biamino, M. Lombardi, P. Fino, M. Pavese. *Laser Powder Bed Fusion of a High Strength Al-Si-Zn-Mg-Cu Alloy*. *Metals*, 8, 300, DOI: 10.3390/met8050300
- 2018 O.A. Peverini, M. Lumia, G. Addamo, F. Paonessa, G. Virone, R. Tascone, F. Calignano, G. Cattano, D. Manfredi. *Integration of a H-plane Bend, a Twist and a Filter in Ku/K-band through Additive Manufacturing*. *IEEE Transactions on Microwave Theory and Techniques*, Print ISSN: 0018-9480, Online ISSN: 1557-9670, DOI: 10.1109/TMTT.2018.2809505
- 2018 F. Trevisan, F. Calignano, A. Aversa, G. Marchese, M. Lombardi, S. Biamino, D. Ugues, D. Manfredi. *Additive manufacturing of titanium alloys in the biomedical field: processes, properties and applications*. *J Appl Biomaterials & Functional Mat.*, Vol. 16, issue 2, page(s): 57-67; e-ISSN 2280-8000, PubMed 28967051, DOI: 10.5301/jabfm.5000371
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Torino, 22 October 2020

Diego Giovanni Manfredi

Handwritten signature of Diego Giovanni Manfredi in black ink.

I authorize the use of my personal data in compliance with Legislative Decree 196/03.