# Martina Riccio

Born on 23/09/1991 in Piedimonte Matese (CE)

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## WORK EXPERIENCE

**Jan 2017 - present** | **Process and R&D engineering leader** – BEAMIT SpA Metal Additive Manufacturing, Fornovo di Taro (PR)

I coordinate a group of different people working in the processes engineering and materials characterization.
I follow the activities of our internal laboratory for material testing (metallographic analyses, tensile and hardness tests) and I work with different students for the projects related to their master thesis. Our group is working in different research areas: AM process parameter development and optimization both for already used alloys and new designed ones; Heat treatment process parameter development; AM process simulation via FEM software; Design for additive manufacturing; SLM online process monitoring (comparison between signals and defects); Post processing (superfinishing processes: Coolpulse, BINC, REM, AFM, etc; surface treatments: anodizing and nitriding).
I match the process capabilities with the customers' requirements and the production department needs.
I am in contact with our main AM system suppliers for resolving the issues and for discussing and planning new opportunities, projects and developments.
I often take part in different conferences and events related to the AM topics as speaker.
For quality assurance reasons, I write all the procedures related to the processes, AM system management and laboratory.
In the last months, I started to work for qualifying our vacuum furnaces in accordance to the AMS 2750 with the target to obtain the Nadcap accreditation next year.

**Jun 2016 – Dec 2016** | **R&D Engineer** – BEAMIT SpA Metal Additive Manufacturing, Fornovo di Taro (PR)

I worked in metal additive manufacturing field as R&D engineer.
The main tasks of the work were:
- Use and improvement of Laser and EBM metal additive manufacturing systems (EOS, SLM solution, Renishaw and Arcam)
- Process control and optimization (DoE and ANOVA)
- Material controls (metallographic, density, mechanical characterization,..)
- State of the art analysis with the scope of find new exciting project to develop.
- Collaboration with universities and research centers for different R&D projects (mechanical characterization, process and product development, etc).
- Customers interface for customizing and optimizing their products for additive manufacturing
- Supplier interface for working out each systems problems and for optimizing them

**Mar 2015 – Apr 2016** | **Development and optimization of a micro Laser Metal-Wire Deposition system for Additive Manufacturing** – SITEC: Laboratorio per applicazioni LASER, *Politecnico di Milano*

I have been working for more than one year in a Laser laboratory for developing my master thesis. I adapted an old manual laser welding system in an automated one for Wire-feed Metal Additive Manufacturing. I designed and manufactured a wire feeder and its control unit. I developed a LabVIEW program and I used a NI DAQ board for managing the process and for integrating the wire feeder on the CNC of the pre-existent system. I designed and carried out experimental campaigns, using the Design of Experiment (DOE) methodology, for optimizing the process and for manufacturing thin wall based components made of stainless steel.

**Sept 2015 – Apr 2016**  **Responsible of the PowerWeld workstation** - SITEC, *Politecnico di Milano*

I worked on the following projects:
- research on butt joint laser welding between dissimilar metals obtaining excellent results checked with tensile tests and metallography.
- research on laser welding of Magnesium sheets, 0.2 mm in thickness, for the manufacturing of biodegradable Stents (micro tubes).

**Oct 2014 – Jan 2015**  **Monitoring and Optimization of Fiber Laser Welding of Ti6Al4V** – SITEC, *Politecnico di Milano*

I designed and carried out experimental campaigns (DOE) for the optimization of process parameters for Fiber Laser Welding of an aerospace Titanium alloy. I used the online monitoring system called TOCM (Trought Optical Combined Monitoring) that uses photodiode for controlling the melt pool temperature, the plasma emission and the laser back reflection.

## EDUCATION

| Feb 2014 – Apr 2016 | **M.Sc. Mechanical Engineering,** *Politecnico di Milano*, 104/110 Advanced Materials and Technologies |
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| 2010 – Feb 2014 | **B.Sc. Mechanical Engineering,** *Politecnico di Milano*, 98/110 |
| 2005 – 2010 | **Scientific High School Diploma,** *Liceo Scientifico G. Galilei*, Piedimonte Matese (CE), 100/100 cum Laude |

## TRAININGS AND CERTIFICATIONS

| Jun 2018 | **AMS 2750: Pirometry for heat treatment furnaces - AERONDI** |
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| Mar 2018 | **EOState OT (Optical tomography) Application Engineer - EOS** |
| May 2017 | **Tensile tester operator – Zwick Roell** |
| May 2017 | **Process parameter development with EOSprint, Application Engineer - EOS** |
| Apr 2017 | **Hardness tester operator – Q-ness** |
| Mar 2017 | **Q10 Operator and Application Level 1 - Arcam** |
| Jan 2016 | **Health and safety on working place for high rick level (16h)** |
| Aug 2016 | **SLM500 Operator and Application Levels – SLM Solutions** |
| Aug 2016 | **SLM280 Operator and Application Levels – SLM Solutions** |
| Jul 2016 | **Space Claim base training - Ansys** |
| Jun 2016 | **Magics RP - Materialize** |
| Dec 2015 | **LabView Core 1 – National Instruments** |
| Nov 2013 | **MSC Nastran\Patran Base** |

## PUBLICATIONS

| 2018 | **On the fatigue strength enhancement of additive manufactured AlSi10Mg parts by mechanical and thermal post-processing** – S.Bagherifard-N.Beretta-S.Montia-M.Riccio-M.Bandini-M.Guagliano (Materials & Design) |
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**Development and optimization of a micro Laser Metal-Wire Deposition system for Additive Manufacturing** – M.Sc. thesis (Politecnico di Milano)

## SKILLS

**Team Working** I worked in teams many times and for different reasons. I have been part of a group of volunteers in Portugal for three weeks, where I have had the chance to work with 20 people from all over the word sharing experiences and habitudes.

**Additive Manufacturing** I have a general knowledge of all the AM technologies that I acquired through wide researches and studies that I took with the scope of finding the most exiting one for my thesis work. Moreover, I developed a deeper knowledge of the powder bed processes (SLM and EBM) during the lasts month both in theoretical and in practical areas. I often visit AM exhibitions in order to be always updated regarding new technologies and systems.

**Design and Analysis of Experiments** It can design experimental campaigns (DOE). I carried out statistical analyses (ANOVA) using software such as Minitab or Matlab. I can prepare and analyze samples with different microscopes (optical, Alicona, stereo, etc).

**Computed skills** Matlab, Minitab, Magics RP & SG+ suite, SLM Build Processor suite and material development module, Arcam Build Assembler, Renishaw Build Processor, EosPrint, Simufact, EoState OT, Ansys SpaceClaim, SolidWorks, LabVIEW, Abaqus, LaTEX.

**AM systems** EOS M270-M280-M290-M400, SLM 500HL and 280HL, Renishaw AM250, Arcam Q10

**English** I have a good knowledge of both written and oral English.

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Firma _____