# **EUROPASS** CURRICULUM



### **Personal details**

# Sara Di Donato

Address Phone E-mail Nationality Date of birth

Name

### Via Giacomo Antonio Perti 2, 40134, Bologna, Italia +39 3201522555 sara.didonato2@unibo.it Italy 14/06/1992



### Work experience

#### Date 01/11/2021 - present

and process optimization;

process optimization;

Occupation or position held Main activities and responsibilities - Research activities in the field of industrial production metal forming processes; - Experimental research activity on the copper wire drawing process; analysis, theoretical modeling, - Experimental research activity on the lightweight metal alloys extrusion process; FEM simulation and

 Analysis of data regression methods for the materials flow stress constitutive laws. Name and address of the employer Work

Type of sector

Alma Mater Studiorum - University of Bologna, DIN - Department of Industrial Engineering Via Terracini 24, 40131 - Bologna Research and Development, Engineering and Industrial Design, Manufacturing Technologies, Metal Forming, Metallurgy.

PhD student - DIMSAI course Mechanics and Advanced Engineering Sciences (DIMSAI)

- Theoretical and experimental research activity on the elastic-plastic behavior of metals; - Experimental activity on material characterization tests: torsion, compression, and tensile tests;

#### Date 15/05/2024 - 15/08/2024

Occupation or position held	Research period abroad
Main activities and responsibilities	<ul> <li>Aluminum Extrusion process design and planning</li> <li>Extrusion die design and optimization</li> <li>Digital twin model development for the aluminum extrusion process using the QformUK<sup>®</sup> finite element code.</li> </ul>
Name and address of the employer Work	Fraunhofer Institute for Machine Tools and Forming Technology IWU Reichenhainer Strasse 88, 09126 - Chemnitz (Germany)
Type of sector	Research and Development, Engineering and Industrial Design, Manufacturing Technologies

#### Date 01/05/2021 - 31/10/2021

Occupation or position held	Scholarship for postgraduate research activities
Main activities and responsibilities	<ul> <li>Experimental analysis of the copper multi-pass wire drawing process;</li> <li>Investigation of wire breaks that occur during the process, data collection, and analysis;</li> <li>Monitoring and investigation of the level of wear of the dies, data collection, and analysis;</li> <li>Material characterization tests.</li> </ul>
Name and address of the employer Work	Alma Mater Studiorum - University of Bologna, DIN - Department of Industrial Engineering Via Terracini 24, 40131 - Bologna, ICEL s.c.p.a, Massimo Zacchi - operations director, Lugo (RA), 48022, Via Torricelli 4/6 – S/D
Type of sector	Industrial production processes

#### 01/01/2021 - 31/03/2021 Date

Occupation or position held Student collaboration activities (part-time 150 hours) at the Industrial Chemistry Library.

Alma Mater Studiorum - University of Bologna - Industrial Chemistry Library, Viale delRisorgimento 4,

Student collaboration activities (part-time 150 hours) at the "G.P.Dore" Engineering and Architecture

Alma Mater Studiorum - University of Bologna - Industrial Chemistry Library, Viale del Risorgimento 2,

Main activities and responsibilities - Library service;

- Organization and administration of documents and bibliographic material;
- Assistance with bibliography research.

Name and address of the employer Work Type of sector

# Administrative - Librarian

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40136 - Bologna

Date	1/10/2020 - 31/01/2021
Occupation or position held	Curricular internship
Main activities and responsibilities	<ul> <li>Analysis of the copper wire drawing process on multi-pass drawing machines:</li> <li>Study and analysis of the mechanical working of the multi-wire drawing machine;</li> <li>Study of the drawing process technology;</li> <li>Analytical modeling, kinematic, and dynamic of the drawing process within the industrial machine.</li> </ul>
Name and address of the employer Work	ICEL s.c.p.a, Massimo Zacchi - operations director, Lugo (RA), 48022, Via Torricelli 4/6 – S/D
Type of sector	Industrial production processes
Date	01/06/2019 - 31/10/2019

Occupation or position held

Main activities and responsibilities

- Library service; - Organization and administration of documents and bibliographic material;

Library.

Name and address of employer Work Type of sector

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Administrative - Librarian

40136 - Bologna

- Assistance with bibliography research.

Date	1/10/2017 – 28/02/2018
Occupation or position held	Curricular internship
Main activities and responsibilities	<ul> <li>Analysis of the surface roughness of pockets on steel obtained by LASER Engraving process;</li> <li>Application of LASER technology by differentiating the process parameters;</li> <li>Samples analysis and surface roughness measurements;</li> <li>Correlation between process parameters and results;</li> <li>Data analysis.</li> </ul>
Name and address of employer Work	Alma Mater Studiorum - University of Bologna, DIN - Department of Industrial Engineering Via Terracini 24, 40131 - Bologna,
Type of sector	Technology and mechanical processing
Date	1/02/2017 – 31/05/2017
Occupation or position held	Curricular internship at il DIN - Department of Industrial Engineering of the University of Bologna
Main activities and responsibilities - Study of surface LASER hardening technology on cast iron components; - Heat treatment of components with LASER technology and improvement of process para	

- Creation of samples for metallurgical analysis, observation via optical microscope, microhardness test; - Use of laboratory instruments for microstructural and metallographic analyses; - Data collection and analysis.

Name and address of employer	Alma Mater Studiorum - University of Bologna, DIN - Department of Industrial Engineering
Work	Via Terracini 24, 40131 - Bologna
Type of sector	Technology and mechanical processing

# **Education and Qualifications**

Date	2018 - 2021
Title of qualification awarded	Master's Degree in Mechanical Engineering - training course in Mechanical Design and Modelling, with a thesis in Manufacturing Processes and Methods entitled "Study of the copper wire drawing process and analytical modeling"
Vote	104/110
Main topics/professional skills acquired	Advanced aspects of modeling, design, optimization, verification, and structural analysis, industrial technologies, systems, and logistics; Advanced knowledge of conventional and CNC production machines; Advanced knowledge of the structure and properties of conventional materials and their use; Advanced knowledge of mechanical manufacturing processes, traditional and specialty manufacturing technologies; Advanced knowledge of the methodological-operational aspects of mathematical disciplines, basic sciences, technical and mechanical drawing.
Name and type of school/ organization	Alma Mater Studiorum-University of Bologna, Master's Degree Course in Mechanical Engineering
Date	2012 - 2018
Title of qualification awarded	Bachelor's Degree in Mechanical Engineering with a thesis in Mechanical Technology entitled "LASER Engraving: analysis of the roughness of pockets with variable depth"
Vote	94/110
Main topics/professional skills acquired	Basic scientific knowledge in the physical-mathematical field; Application of mathematical methods to model, analyze, and solve mechanical, physical, and engineering problems; Mechanical drawing; Design and verification of structural components; Metallurgy; Basics of the structure of metallic materials, their mechanical properties, primary production processes, thermal, mechanical and surface treatments, characterization methods and different joining technologies; Manufacturing process technology, traditional and numerically controlled machine tools, methodologies for defining component
Name and type of school/ organization	Alma Mater Studiorum-University of Bologna, Bachelor's Degree Course in Mechanical Engineering
Date	2006 - 2011
Title of qualification awarded	High school leaving qualification in classical studies

Vote Name and type of school/ organization High school leaving qualification in classical studies 84/100 State Classical High School "G. D'Annunzio" (Pescara)

### **Personal skills**

## Mother tongue ITALIAN

Other languages

Self-assessment

European level (\*)

ENGLISH

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
B2	B2	B2	B2	B2

(\*) Common European Framework of Reference for Languages

Social skills and competencies	I am a person with a very positive life attitude, and I love meeting new people and having new experiences. I have always had the ambition and determination to achieve my goals, and as a pragmatic person, I have always been attracted to the world of science and engineering. I believe in nature and its respect is fundamental to me, so I have a strong interest in recycling, environmental protection, and renewable resources and I trust in innovative and sustainable technologies. Other interests are music, art, and food. During my free time, I like playing sports, cooking, traveling, and discovering new places.
Organizational skills	Strong practical and organizational sense. Ability to manage work independently with good problem-solving skills. Teamwork skills.
Technical skills and competencies	<ul> <li>Material characterization tests (torsion test, tensile test, compression test, Vickers microhardness test): theoretical and practical knowledge;</li> <li>Optical microscope: theoretical and practical knowledge;</li> <li>Metallographic analysis: theoretical and practical knowledge;</li> <li>LASER machines: theoretical and practical knowledge.</li> </ul>
Computer skills and competencies	<ul> <li>FEM SIMULATION SOFTWARE: QForm VX/UK: excellent knowledge; DEFORM: good knowledge; Ansys Student 2019 R3: basic knowledge; COMSOL Multiphisic: basic knowledge;</li> <li>Microsoft Office Suite: excellent knowledge;</li> <li>CREO PARAMETRIC 6.0, 5.0: good knowledge;</li> <li>MATLAB R2019, R2020: good knowledge;</li> <li>Wolfram Mathematica: good knowledge;</li> </ul>
Driver's license	В
Training courses and seminars	<ul> <li>Study day "Innovazione dei materiali per la mobilità elettrica" - Associazione Italiana di Metallurgia - 10 October - 2023</li> <li>Short course on DOE - Training course provided by the doctoral course DIMSAI-UniBo - 6-7 June - 2023</li> </ul>
	<ul> <li>HOW TO GIVE A SCIENTIFIC PRESENTATION - Training course provided by the doctoral course DIMSAI-UniBo - 10 February - 2023</li> </ul>

• An introduction to the stability of Dynamical systems - Training course provided by the doctoral course DIMSAI-UniBo - 18 January -30 January 2023

 Aitem Academy specialized training: INTELLIGENZA ARTIFICIALE PER IL MONITORAGGIO DEI SISTEMI DI PRODUZIONE - Associazione Italiana delle Tecnologie Meccaniche - 10-11 November 2022

Training course on the use of Stereomicroscopio Leica - Microcontrol N.T. S.r.I- 13 April 2022

• Training course on the use of universal testing machines - Lloyd materials testing - 22 March 2022

• AlTeM Academy - "L'innovazione in ambito tecnologie e sistemi di lavorazione manifatturieri"-Associazione Italiana delle Tecnologie Meccaniche - 17-19 January 2022

• TMP-Focus on Professional Maintenance - Confindustria Romagna. - 08-10 June 2021

• CERTIFICATIONS:

Attestati di formazione sulla sicurezza per gli studenti e I lavoratori che rispondono ai requisiti previsti dal DLGS 81/2008 e accordo G.U. N. 8 DELL'11/01/2012 per la formazione generale dei lavoratori su sicurezza e salute nei luoghi di lavoro.

**Conferences** • **ET 2024** - Thirteenth International Aluminum Extrusion Technology Seminar & Exposition - 29-30 April 1-2 May 2024 - Conference - Orlando, Florida, USA

• Aluminium 2000 - International Conference on Extrusion and Benchmark 2023- 19-23 September 2023 - Conference - Bologna, Italia

• XVI CONVEGNO AITEM - 13-15 September 2023 - Conference - Napoli, Italia

• ET 2022 - Twelfth International Aluminum Extrusion Technology Seminar & Exposition - 2-5 May 2022 - Conference - Orlando, Florida, USA

• ESAFORM 2022 - 25th International Conference on Material Forming - 27-29 April 2022 - Conference - Braga, Portugal

 Dissemination
 Di Donato S, Pelaccia R, Negozio M. Phase Field Method for the Assessment of the New-Old Billet Material Interaction during Continuous Extrusion Using COMSOL Multiphysics. J of Materi Eng and Perform 2024. https://doi.org/10.1007/s11665-024-10013-8.

> Di Donato S, Pelaccia R, Negozio M, Mehtedi ME, Reggiani B, Donati L. Hot Torsion Tests of AA6082 Alloy. Key Engineering Materials 2024;988:21-9. https://doi.org/10.4028/p-5c0Lli.

 Pelaccia R, Negozio M, Di Donato S, Reggiani B, Donati L. Extrusion Benchmark 2023: Effect of Die Design on Profile Speed, Seam Weld Quality and Microstructure of Hollow Tubes. Key Engineering Materials 2024;988:47-62. https://doi.org/10.4028/p-gNXRC5.

 Pelaccia R, Negozio M, Donato SD, Donati L, Reggiani B. Recent Trends in Nitrogen Cooling Modelling of Extrusion Dies. Key Engineering Materials 2024;987:11-22. https://doi.org/doi:10.4028/p-Q0NDkB.

 Negozio M, Pelaccia R, Donati L, Reggiani B, Di Donato S. Microstructure Evolution and FEM Prediction on AA6XXX Alloys. Key Engineering Materials 2024;987:3-10. https://doi.org/doi:10.4028/pqO8WAd.

• Pelaccia R. Numerical simulation of the extrusion process with different FEM code approaches: analysis of thermal field, profile speed, defects evolution, and microstructure of hollow tubes, 2024, p. 771-80. https://doi.org/10.21741/9781644903131-85.

• Di Donato S. Experimental, analytical, and numerical analysis of the copper wire multi-pass drawing process, 2024, p. 742-52. https://doi.org/10.21741/9781644903131-82.

 Negozio M. Validation of charge welds and skin contamination FEM predictions in the extrusion of a AA6082 aluminum alloy, 2023, p. 86-93. https://doi.org/10.21741/9781644902714-11.

• Negozio M. Experimental analysis and modeling of the recrystallization behaviour of a AA6060 extruded profile, 2023, p. 477-86. https://doi.org/10.21741/9781644902479-52.

• Kniazkin I. Investigation of the skin contamination predictability by means of QForm UK extrusion code, 2023, p. 543-52. https://doi.org/10.21741/9781644902479-59.

• Pelaccia R. Investigation on the topological optimization of cooling channels for extrusion dies, 2023, p. 533-42. https://doi.org/10.21741/9781644902479-58.

• Di Donato S, Donati L, Negozio M. Copper Wire Multi-Pass Drawing: Process Modeling and Optimization. KEM 2022;926:499-510. https://doi.org/10.4028/p-g4wbpz.

• Donati L, Reggiani B, Pelaccia R, Negozio M, Di Donato S. Advancements in extrusion and drawing: a review of the contributes by the ESAFORM community. Int J Mater Form 2022;15:41. https://doi.org/10.1007/s12289-022-01664-w.

Bologna, 14/10/2024 Signature

Era Di Donato

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV and application for recruiting purposes.