Europass Curriculum Vitae

Personal informations

Name and surname	DANIELE CAROSI
Street address	VIA PASUBIO, 104 - BOLOGNA (BO)
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Nationality	Italian
Date of birth	14/02/1995

Professional experience

Period	November 2022 -
Occupation or position held	Ph.D. Student of Aerospace Science and Technology – DAST school
Main activities and responsibilities	Mathematical modeling of magnetization process and total energy loss of ferromagnetic materials; microstructural characterization of Fe-Si alloys via optical and SEM microscopy with EDS chemical composition anlyses; EBSD analyses with implementation of Matlab scripts for the aim.
Name and address of the employer	Alma Mater Studiorum - University of Bologna, Via Zamboni, 33 - 40126 Bologna, BO
Type of business or sector	Metallurgical and Steel Industry

Period	June – November 2022
Occupation or position held	Research fellow
Main activities and responsibilities	Study of magnetic powder for applications in electric motors. Study of Fe-Si steel for applications in electric motors: implementation of new models aimed at correlating chemical composition of the Fe-Si steels and their magnetic behavior.
Name and address of the employer	Alma Mater Studiorum - University of Bologna, Via Zamboni, 33 - 40126 Bologna, BO
Type of business or sector	Metallurgical and Steel Industry

Period	September - December 2021
Occupation or position held	Internship
Main activities and responsibilities	Study of Fe-Si steels for applications in electric motors: development of models aimed at correlating the chemical composition of the Fe-Si steels and their magnetic behavior

Name and address of the employer	Marcegaglia spa, Via Baiona, 141, Ravenna, RA
Type of business or sector	Metallurgical and Steel Industry
Period	March - May 2021
Occupation or position held	Internship
Main activities and responsibilities	Study of bonding by brazing of Cu-Ag sheets: fractographic and compositional analysis of the brazing material and of the bonding between copper and silver.
Name and address of the employer	Pietro Galliani spa, Via Molino Malpasso, 65, Vergato, BO
Type of business or sector	Semi-finished non-ferrous metal rolling Industry
Period	October - December 2018
Occupation or position held	Internship
Main activities and responsibilities	Study of the effect of prolunged high temperature exposition on the mechanical properties of high performance aluminum alloys for pistons.
Name and address of the employer	Alma Mater Studiorum - University of Bologna, Via Zamboni, 33 - 40126 Bologna, BO
Type of business or sector	Automotive

Education and training

Period	2019 - 2022
Title of qualification awarded	Master's Degree in Mechanical Engineering
Period	2014 - 2019
Title of qualification awarded	Bachelor's Degree in Mechanical Engineering
Name and type of organization providing education and training	Alma Mater Studiorum - University of Bologna

Main topics / professional skills possessed

USE OF SOFTWARE:

- WOLFRAM MATHEMATICA 9.1: CALCULATION SOFTWARE.
  USED FOR STRUCTURAL, THERMAL AND FINITE ELEMENT CALCULATIONS.
- QFORM 9.01: SIMULATION SOFTWARE FOR PLASTIC DEFORMATIONS AND THERMAL LOADS.
  USED FOR SIMULATION OF HOT AND COLD PLASTIC DEFORMATION PROCESSES WITH AND WITHOUT FRICTION OF BILLETS INTO SEMI-FINISHED PRODUCTS IN TWO-DIMENSIONAL VECTOR SPACE BY HAMMER, MECHANIC, SCREW AND HYDRAULIC PRESS.
- ANSYS R2 2020: STRUCTURAL AND THERMAL ANALYSIS SOFTWARE USING FINITE ELEMENTS AND TOPOLOGICAL OPTIMIZATION.
  USED TO STUDY THE SIMULATION OF MECHANICAL LOADS AND TOPOLOGICAL OPTIMIZATION OF SUSPENSION FOR RACING MOTORCYCLES PRODUCED BY MOTORSTUDENT UNIBO.
- MATLAB R2021B: CALCULATION SOFTWARE.
  USED FOR SOLVING LINEAR, NON-LINEAR AND ORDINARY DIFFERENTIAL EQUATIONS ASSOCIATED WITH THE STUDY OF THE KINEMATICS AND DYNAMICS OF ROBOT ARMS, VEHICLES AND DRONES.
  USED FOR SOLVING NON-LINEAR AND DIFFERENTIAL EQUATIONS ASSOCIATED WITH MAGNETIZATION, ANHYSTERETIC MAGNETIZATION AND THE MAGNETOMECHANICAL EFFECT.
  USED FOR MATHEMATICAL MODELLING OF MAGNETIZATION PROCESSES AND TOTAL ENERGY LOSS OF FERROMAGNETIC MATERIALS.
  USED FOR MAKING SCRIPTS TO DO EBSD ANALYSES.
- CREO PARAMETRIC 7.0.2: CAD SOFTWARE.
  USED FOR MODELLING COMPONENTS EXTRACTED FROM ASSEMBLIES WITH CORRECTION AND REWORKING OF THEIR FEATURES ACCORDING TO UNI ISO STANDARDS.

USE OF PROGRAMMING LANGUAGE:

- EIA / ISO STANDARD FOR CNC MACHINES TO PRODUCE MECHANICAL COMPONENTS.
- FORTRAN FOR THE IMPLEMENTATION OF NUMERICAL SOLUTION ALGORITHMS TO OBTAIN SOLUTIONS OF LINEAR AND NON-LINEAR EQUATIONS AND NUMERICAL INTEGRATION

MANUAL TECHNICAL DRAWING ACCORDING TO UNI ISO STANDARDS.

USE OF METALLURGICAL LABORATORY INSTRUMENTATION:

- HOT EMBEDDING WITH RESINS FOR EVALUATION OF CRYSTALLINE TEXTURES IN MAGNETIC STEELS PRODUCED BY MARCEGAGLIA SPA
- COLD EMBEDDING WITH RESINS TO EVALUATE ADHESION BETWEEN COPPER AND SILVER AND THE PRESENCE OF BRAZING AS A BINDER BETWEEN THE TWO METALS PRODUCED BY PIETRO GALLIANI S.P.A.
- ZEISS OPTICAL MICROSCOPE, FOR DUROMETRIC IMPRESSIONS ANALYSIS.
- MULTIFOCAL MICROSCOPE TO DO FAILURE ANALYSIS OF BROKEN BRAZED CU-AG SHEETS DURING LAMINATIONS.
- SEM MICROSCOPE AND EDS PROBE CHEMICAL COMPOSITION ANALYSES ON FE-SI ALLOYS.
- DUROMETER, TO FIND ALUMINIUM ALLOY, COPPER AND SILVER HARDNESS.

- CUTTING WHEEL, TO DISSECT THE ALUMINIUM ALLOY AND OBTAIN PIECES ON WHICH TO MAKE HARDNESS MEASUREMENTS.
- LAPPING MACHINE WITH ABRASIVE PAPERS, TO POLISH SURFACES ON WHICH TO OBTAIN THE HARDNESS MEASUREMENTS OF THE ALUMINIUM ALLOY
- IMAGEPROPLUS, TO OBTAIN THE HARDNESS OF THE ALUMINIUM ALLOY USING IMAGE ANALYSIS TECHNIQUES

Personal skills

Mother language (s) Italian

Other language (s) English

Self-evaluation	**Understanding**		**Spoke**		**Written**
European level (*)	I listen	Reading	Interaction oral	Production oral	
English	B2	B2	B2	B2	B2

(*) Common European framework of reference for languages

Social skills and competences: Good

Organizational skills: Good

Technical skills and competences: Good

Computer skills and competences:
Windows 10
Google Chrome / Microsoft Edge
Office (Word / Excel / PowerPoint / Outlook)
Microsoft Teams
Zoom / Skype / Meet

Artistic skills: THEATRE COURSE AND STAGING OF PROSE SHOWS

Other skills and competences:
FITNESS
NLP
KARATE

Driving license Driving license B (Car owner)

Further information PARTICIPATION IN COILTECH FAIR IN PORDENONE ABOUT MAGNETIC STEELS FOR ELECTRIC MOTORS APPLICATIONS

I authorize the processing of personal data contained in my curriculum vitae based on art. 13 of Legislative Decree 196/2003 and art. 13 of EU Regulation 2016/679 concerning the protection of individuals with regard to the processing of personal data.

Date 6/10/2023

Signature