

Jeanne Le Soud er

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Education

October 1st 2023 - Present

Doctoral Student, IFP ENERGIES NOUVELLES, ENS PARIS-SACLAY

On the topic *Impact of manufacturing on magnetic properties of electrical steel sheet – Application to optimization of traction machines*. Supervised at IFPEN by A. Gilson, at SATIE (ENS PS) by F. Mazaleyrat and O. de la Barri re, at LMPS (ENS PS) by O. Hubert and Y. Guilhem.

2022 – 2023

ARPE, ENS PARIS-SACLAY, AALTO UNIVERSITY SCHOOL OF ELECTRICAL ENGINEERING

“Ann e de recherche pr doctorale   l’ tranger”. A ten months internship in Finland at Aalto University, School of Electrical Engineering, Electromechanics team. Topic of research: magneto-mechanical characterization of 3D-printed ferromagnetic materials (see Professional Experience).

2021 – 2022

Master 2 MAGIS, ENS PARIS-SACLAY

Masters degree in Mechanics of Materials for Engineering and Integrity of Structures
Specialized in metal manufacturing and 3D printing

Relevant courses studied:

- Material science: study of the physical mechanisms of deformation and hardening in both metal and polymer materials.
- Thermodynamics of solids: study of models describing material behaviour from a thermodynamic perspective.
- Advanced experimental methods: study of the main tools for experimental work in mechanics.
- Algorithmic modelling of multi-physical processes: study of finite difference method to resolve coupled problems.
- Plastic strain processing: study of solid transformations in metal materials and microstructure aspects.

2020-2021

Master 1 MIP, ENS PARIS-SACLAY

Masters degree in Mechanics and Production Engineering

Relevant courses studied:

- Solid and fluid mechanics: study of models and methods allowing the resolution of both solid and fluid problems.

- Vibration study: study of vibration behavior of structures.
- Numerical method: study of bases of finite differences, finite element and finite volume methods to solve solid and fluid problems.
- Material science: study of the physical mechanisms of deformation and microstructure aspects.
- 3D measurements: study of the basis of projective geometry for 3D measurements.
- Robot control: study of Denavit-Hartenberg method for robot trajectory control.

2019 – 2020

License SAPHIRE, ENS PARIS-SACLAY

A reenforced bachelors degree in Applied Physics and Engineering Sciences for Research and Teaching with a semester specialized in Mechanical Engineering.

Relevant courses studied:

- Mathematics for engineering: study of partial differential equation and distribution.
- Solid and fluid mechanics: study of models and methods allowing the resolution of both solid and fluid problems
- Signal processing: study of the main methods for signal processing: Fourier and Laplace transforms.
- Systems engineering: study of methods allowing the description of functional specification for a product.
- Introduction to manufacturing processes: study of the main technologies used for manufacturing.

2017 – 2019

Classe Préparatoire aux Grandes Ecoles PTSI/PT, LYCEE JEAN-BAPTISTE SAY

An intensive two-year class preparing for entrance examinations to the French Grandes Ecoles, specialized in Physics and Engineering Sciences.

2014-2017

Baccalauréat Scientifique Mention Très Bien, LYCEE JEAN-BAPTISTE SAY

Graduated with an equivalent to A-levels in science subjects (Mathematics, Physics, Engineering Sciences).

Professional Experience

October 2023-Present

Doctoral student at IFP Energies Nouvelles, in laboratories of SATIE and LMPS (Ecole Normale Supérieure Paris-Saclay), *Impact of manufacturing on magnetic properties of electrical steel sheet – Application to optimization of traction machines*

- Literature review on the impact of punching on electrical steel sheets and on magneto-mechanical coupling
- Mechanical and magnetic characterisations of chosen electrical steel
- ABAQUS modelling of a punching scenario

September 2022-July 2023

Internship at Aalto University School of Electrical Engineering, Electromechanics team, *Magneto-mechanical characterization of 3D-printed ferromagnetic materials*

- Assessment of the magnetic behaviour of 3D-printed Fe₃Si subjected to uniaxial mechanical loading
- Modelling of the melting of Fe₃Si powder under moving heat source using COMSOL

February 2022-July 2022

M2 Internship at Ecole Normale Supérieure Paris Saclay, Laboratory of Mechanics Paris Saclay (LMPS), *Measurement and modelling of second order magnetoelastic phenomena in biaxial mechanical loading situation*

- Assessment of the magnetic behaviour of a high performance steel subjected to uniaxial then biaxial mechanical stress
- parameter identification of the second-order magneto-elastic energy term

April 2021-July 2021

M1 Internship at Université Paris Sorbonne, laboratory Lutherie, Acoustique, Musique *Vibration with contact, application to the electric bass guitar*

- Measurements of G string vibrations with contact with the neck of the fretless bass
- Identification of parameters to model the influence of a continuous contact

During the school year, October 2020-April 2021

TER (research project) in *Design and simulation of a symmetric triaxial Hopkinson bar system*
Adaptation of the biaxial system to a triaxial system
Dynamic simulation of the system, gauge placement, study of wave propagation

During the school year, October 2018-June 2019

Multidisciplinary supervised project (TIPE) on *recreating an acoustic atmosphere by simulating the reverb.*

2017-2020

Private Teacher for high school age students in Mathematics and Physics.

Summers 2017, 2018 and 2019

Camp Worker at Apple Hill Center for Chamber Music as well as music student

Technical Skills

- Basic skills in Idle, Matlab, Excel, CATIA, Abaqus, COMSOL Multiphysics, LaTeX

Language Skills

- French native speaker
- Proficient in English
- Basic knowledge of German

Personal Interests

- Classical music: student in Francis Poulenc Conservatoire in Paris from 2007 to 2019, amateur oboist.
- Sports: Vice-President of the ENS Paris-Saclay Tracks Team (KULTTE) from 2020 to 2021, participation to charity and amateur races.