

Sílvia M. R. Cândido

Ph.D. Student in Mechanical Engineering
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EDUCATION

- 2019/- **Ph.D. in Mechanical Engineering**, University of Beira Interior, Portugal
Thesis: Atomization of Electrohydrodynamic Jets - modulation, performance and applications.
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- 2017/19 **M.Sc. in Electromechanical Engineering**, University of Beira Interior, Portugal
Dissertation: Numerical studies about multiphase uniformity of the flow inside mixing chambers using CFD – Analysis of the chamber of the CLOUD experience at CERN.
..... final classification 17/20
- 2014/17 **B.Sc. in Electromechanical Engineering**, University of Beira Interior, Portugal
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EXPERIENCE

- 2022/- **Vice-President Fiscal Council**, Happy Wish Junior Initiative (HW), Portugal
Supervising the financial management of the HW Junior Initiative and performing a report about financial activities.
- 2021/- **Finance Department Associate**, Happy Wish Junior Initiative (HW), Portugal
Support the financial management of the HW Junior Initiative.
- 2020/- **Project Researcher**, University of Beira Interior, Portugal
Individual research grant for Ph.D., from the Portuguese Foundation for Science and Technology.
..... Grant no 2020.04517.BD
- 2023 **Doctoral Research Internship** under ERASMUS+, Universitatea de Vest din Timisoara
Facultatea de Fizica, Romania
Short-term doctoral mobility scholarship, during which I developed proficiency in Lattice Boltzmann Methods for fluid dynamics. Additionally, I utilized GPU computations to expedite complex calculations through parallel acceleration.
- 2019/20 **Project Researcher**, University of Beira Interior, Portugal
Research in complex multi-physics flow, more specifically in electro-hydrodynamic flows with significant tension surfaces.
..... Project IndTech 4.0 – POCI-01-0247-FEDER-026653

2017 **Researcher trainee**, University of Beira Interior, Portugal
Computational modulation of a disc pump, type Tesla. Utilization of the tools of Solidworks
Flow Simulation for calculate the characteristics of the 3D flow in the disc pump.

CERTIFICATIONS

04/2023 **Lean Six Sigma Yellow Belt**
The Lean Six Sigma Company Portugal.

07/2018 **Certified SolidWorks Associate - CSWA**
Certification from the Dassault Systèmes for Mechanical Design in SolidWorks.

OTHER SKILLS

Languages

Portuguese: Native English: C1 French: A2

COMPEMENTARY FORMATION

11/2022 **Power BI**
Instituto CRIAP, Portugal 31h e-learning Course.

02/2022 Hands on **Machine Learning for Fluid Dynamics**
von Karman Institute for Fluid Dynamics, Belgium 2 ECTS e-learning course.

02/2022 **Machine Learning, Maths & Ethics: Hands-on (MOOC)**
Instituto Superior Técnico, Portugal E-learning course.

01/2022 **Energy sustainability**
DECO - Portuguese Association for Consumer Protection, Portugal .. E-learning Course.

11/2021 Introduction to **SQL**
DataCamp 4h E-learning Course.

05/2018 **Python Fundamentals & Data Science**
CFIUTE, University of Beira Interior, Portugal Professional course of 28:00 hours.

12/2017 **Python Fundamentals for engineering applications**
CFIUTE, University of Beira Interior, Portugal Professional course of 20:00 hours.

PUBLICATIONS

Journal Publications

2023 **S. Cândido** , J. Páscoa, “Dynamics of three-dimensional electrohydrodynamic instabilities on Taylor cone jets using a numerical approach”, Physics of Fluids, 2023.

<https://doi.org/10.1063/5.0151109>

- 2022 M. Moreira, F. Rodrigues, **S. Cândido**, J. Páscoa, G. Santos, “Development of a Background Oriented Schlieren (BOS) system for thermal characterization of plasma actuators induced flow”, *Energies*, 2022. <https://doi.org/10.3390/en16010540>

Peer-Reviewed Conference Proceedings

- 2022 **S. Cândido**, J. Páscoa, “Numerical Simulation of Axisymmetric Electrohydrodynamic Jets with Volume of Fluid Method”, in *ICEUBI - International Congress on Engineering, Covilhã, Portugal* November 28, 29 and 30, 2022. Paper no. 5527
- 2022 M. Moreira, F. Rodrigues, J. Páscoa, **S. Cândido**, “Development and validation of a background oriented Schlieren (BOS) system for air density and temperature quantification”, in *ICEUBI - International Congress on Engineering, Covilhã, Portugal* November 28, 29 and 30, 2022.
- 2022 **S. Cândido**, J. Páscoa, “Numerical Analysis of Interfacial Electrohydrodynamic Flow With Modal Decomposition”, in *IMECE - International Mechanical Engineering Congress and Exposition, Columbus, Ohio* October 30 — November 3, 2022. <https://doi.org/10.1115/IMECE2022-95100>
- 2021 **S. Cândido**, J. Páscoa, “Numerical Simulation of Electrified Liquid Jets Using a Geometrical VoF Method”, in *IMECE - International Mechanical Engineering Congress and Exposition, Virtual, Online*, 2021. <https://doi.org/10.1115/imece2021-69817>
- 2020 **S. Cândido**, J. Páscoa, “Numerical Analysis on the Stability Conditions of an Electrohydrodynamic Jet”, in *IMECE - International Mechanical Engineering Congress and Exposition, Portland, Oregon*, 2020. <https://doi.org/10.1115/imece2020-24101>
- 2019 **S. Cândido**, J. Páscoa, A. Tomé, A. Amorim, and S. Weber, “CFD Analysis of Flowstructures in a Mixing Chamber”, in *International Mechanical Engineering Congress and Exposition, Salt Lake City*, November 11-14, 2019. <https://doi.org/10.1115/IMECE2019-11747>
- 2019 **S. Cândido**, J. Páscoa, “3D unsteady RANS computation of the mixing on a T-junction”, in *International Congress on Engineering, Covilhã*, November 27-29, 2019. <https://doi.org/10.18502/keg.v5i6.7076>
- 2018 J. C. Pascoa, **S. Candido**, F. Charrua-Santos, A. Espirito-Santo and M. Canario, “Disc Turbine for Energy Harvesting”, in *International Mechanical Engineering Congress and Exposition, Pittsburgh*, November 9-15, 2018. <https://doi.org/10.1115/IMECE2018-88143>

TALKS

Invited Oral Presentation

- 2023 **Numerical Modelling of the Atomization of Electrohydrodynamic Jets**, in *Seminars of the Research Center in Theoretical Physics*. West University of Timisoara (Timisoara, România). Link ✧

Oral Conference Presentation

- 2022 Numerical Simulation of Axisymmetric Electrohydrodynamic Jets with Volume of Fluid Method,
in *ICEUBI - International Congress on Engineering*, Covilhã (Portugal), November 29.
- 2022 Numerical Analysis of Interfacial Electrohydrodynamic Flow With Modal Decomposition
in *IMECE - International Mechanical Engineering Congress and Exposition*, Columbus (Ohio-EUA) November 1.
- 2021 Numerical Simulation of Electrified Liquid Jets Using a Geometrical VoF Method,
in *IMECE - International Mechanical Engineering Congress and Exposition*, Virtual, Online, November.
- 2020 Numerical Analysis on the Stability Conditions of an Electrohydrodynamic Jet,
in *IMECE - International Mechanical Engineering Congress and Exposition*, Online Virtual, Online, November.
- 2019 3D unsteady RANS computation of the mixing on a T-junction,
in *ICEUBI - International Congress on Engineering* Covilhã (Portugal), November 27-29.

Other Presentations

- 2020 **Talk on Environmental Sustainability**, at University of Beira Interior, Covilhã (Portugal)
Talk to students of the University of Beira Interior (UBI) on the importance of recycling and aspects of environmental sustainability. In collaboration with the Social Action Services of the University of Beira Interior. Date: 10/03/2020.

GRANTS, AWARDS

- 2023 **Erasmus+ mobility grant** to the Doctoral School of Physics, West University of Timisoara (Roménia)
- 2021 **Ph.D. Grant** at Center for Mechanical and Aerospace Science and Technologies (C-MAST), Covilhã, Portugal.
..... FCT grant no. 2020.04517.BD
- 2020 **Merit Scholarship**, DGES, Portugal
First of the class scholarship, due to the classifications of the curricular units obtained in the academic year 2018/2019

PROFESSIONAL MEMBERSHIP

- 2022/- **Student Fellow** at ASME: The American Society of Mechanical Engineers
..... Member Number: 000103654845

VOLUNTEER EXPERIENCE

Short-term activities

- 03/2023 **Tutor at STEAM junior academy**, at AJSTEAM UBI, Covilhã (Portugal)
For two days (totaling 30 hours), I guided and supported high school students in the concluding activities of the UBI STEAM Academy, focusing primarily on organization and orientation activities.
- 11/2021 **Conference Session Co-Chair**, at Conference IMECE2021 , ASME (USA)
Session co-chair at the International Mechanical Engineering Congress and Exposition for the topic: *Aerodynamics & Novel Aerospace Propulsion Systems*

Long-term activities

- 2019/— **Volunteer** of ReFood Covilhã, Covilhã (Portugal)
Volunteer activities during 2h every week. Being in charge of the facilities, receiving food donations from restaurants, and taking care of the appropriate food storage.
- 2016/17 **Treasurer** of Rotaract Club de Tavira, Tavira (Portugal)
Responsible for maintaining club financial records and dues payments for administrative service accounts.
- 2013/14 **Founding fellow** of Rotaract Club de Tavira, Tavira (Portugal)
Organizing and participating in fundraising events for support of local associations and international movements (e.g. End Polio Now).
- 2012/14 **Fellow Volunteer** of Interact Club de Tavira, Tavira (Portugal)
Organizing and participating in fundraising events to support local and international associations (e.g. End Polio Now). Participation in national conferences and leadership training events.



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