



## Maria Luisa Braunger

**Date of birth:** 29/04/1986 | **Nationality:** Brazilian | **Phone number:**

(+33) 652241361 (Mobile) | **Email address:** [malubraunger@yahoo.com.br](mailto:malubraunger@yahoo.com.br) |

**Address:** 944, Boulevard de la République, Apt 261, 59500, Douai, France (Home)

### WORK EXPERIENCE

01/11/2022 – CURRENT Douai, France

#### RESEARCH AND DEVELOPMENT ENGINEER IMT NORD EUROPE

**Project:** Manufacturing of Highly-Sensitive Gas Sensors based on Conductive Polymers

**Funding:** The CaPPA project (Chemical and Physical Properties of the Atmosphere) is funded by the French National Research Agency (ANR) through the PIA (Programme d'Investissement d'Avenir) under contract "ANR-11-LABX-0005-01" and by the Regional Council "Hauts-de-France" and the "European Funds for Regional Economic Development" (FEDER).

**Department** Centre d'Enseignement, de Recherche et d'Innovation - Énergie Environnement (CERI EE) |

**Website** <https://imt-nord-europe.fr/>

01/03/2021 – 31/10/2022 Presidente Prudente, Brazil

#### POSTDOCTORAL RESEARCHER UNIVERSIDADE ESTADUAL PAULISTA "JÚLIO DE MESQUITA FILHO" (UNESP)

**Project:** Development of an automated platform for sensing applications based on organic thin films

**Funding:** CAPES-PRINT

**Department** Faculdade de Ciências e Tecnologia - Departamento de Física | **Website** <https://www.fct.unesp.br/>

01/10/2015 – 28/02/2021 Campinas, Brazil

#### POSTDOCTORAL RESEARCHER UNIVERSIDADE ESTADUAL DE CAMPINAS (UNICAMP)

Note: The mentioned period encompasses the researcher's tenure at UNICAMP, taking only into account the initial start date and the last end date. However, it's important to acknowledge that within this timeframe, there were instances of financial support interruptions due to periods of unemployment, as well as a one-year period at an overseas institution, which is elaborated upon in the subsequent subsection. Therefore, the cumulative duration of financial support via work contracts amounts to 4 years, as detailed below:

- **Project:** 3D printing technology application for microfluidic developments. **Funding:** FAPESP (3 years; from 01/10/2015 to 31/05/2017, from 06/06/2018 to 05/10/2018, and from 01/03/2019 to 29/02/2020).
- **Project:** Application of an electronic tongue in the development of NPK sensor for soil samples. **Funding:** SOFTEX (6 months).
- **Project:** Manufacture of new electrodes for application in Li-O<sub>2</sub> batteries. **Funding:** FAPESP-Shell (6 months).

**Department** Instituto de Física Gleb Wataghin - Departamento de Física Aplicada |

**Website** <https://portal.ifi.unicamp.br/>

01/06/2017 – 31/05/2018 Philadelphia, United States

#### VISITING SCHOLAR UNIVERSITY OF PENNSYLVANIA (UPENN)

**Project:** Distinct 3D printing technologies applied in microfluidic devices and electronic tongues

**Funding:** FAPESP-BEPE

**Department** Mechanical Engineering and Applied Mechanics - School of Engineering and Applied Science |

**Website** <https://www.seas.upenn.edu/>

## ● LANGUAGE SKILLS

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Mother tongue(s): **PORTUGUESE**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C1	C1	B2	B2	C1
<b>FRENCH</b>	B1	B1	A2	A2	A2
<b>SPANISH</b>	B1	B1	A1	A1	A1

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

## ● EDUCATION AND TRAINING

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01/03/2011 – 19/06/2015 Presidente Prudente, Brazil

**PHD IN MATERIALS SCIENCE AND TECHNOLOGY** Universidade Estadual Paulista “Júlio de Mesquita Filho” (UNESP)

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**Website** <https://www.fc.unesp.br/#!/posmat/> |

**Thesis** Fabrication and electrical characterization of solar cells from organic thin films

01/03/2013 – 28/02/2014 Pau, France

**PHD IN CHEMISTRY** Université de Pau et des Pays de l'Adour (UPPA)

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**Website** <https://www.univ-pau.fr/fr/index.html> |

**Thesis** Fabrication and electrical characterization of solar cells from organic thin films

01/03/2009 – 14/02/2011 Rio Claro, Brazil

**MSC IN APPLIED PHYSICS** Universidade Estadual Paulista “Júlio de Mesquita Filho” (UNESP)

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**Website** <https://igce.rc.unesp.br/#!/pgfisica> |

**Thesis** Impedance spectroscopy of  $22\text{Na}2\text{O} \cdot 0.8\text{CaO} \cdot 0.65\text{SiO}_2 \cdot 0.5\text{MO}_2$  (M = Si, Ti, Ge, Zr, Sn, Ce) glasses, without and with Ag+Na+ ion exchange

01/03/2005 – 15/12/2009 Rio Claro, Brazil

**LICENTIATE DEGREE IN PHYSICS** Universidade Estadual Paulista “Júlio de Mesquita Filho” (UNESP)

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**Website** <https://igce.rc.unesp.br/>

01/03/2005 – 15/12/2008 Rio Claro, Brazil

**BSC IN PHYSICS** Universidade Estadual Paulista “Júlio de Mesquita Filho” (UNESP)

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**Website** <https://igce.rc.unesp.br/> | **Thesis** Electric conductivity of soda-lime-silica glasses with tin and silver

## ● ADDITIONAL INFORMATION

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### MANAGEMENT AND LEADERSHIP SKILLS

#### Ongoing Co-Supervision of Theses

- Maria Eduarda Rocha Santos Medina. Degree: MSc in Materials Science and Technology. Institution: UNESP (Campus Presidente Prudente-SP/Brazil). Thesis Title: Nanostructured Films and Nanofibers of Organic Semiconductors for Photovoltaic Applications. Start Date: 2022. Funding: FAPESP.
- Marcelo Soares Borro. Degree: PhD in Materials Science and Technology. Institution: UNESP (Campus Presidente Prudente-SP/Brazil). Thesis Title: Nanostructured Films and Nanofibers of Low Band Gap Polymer Semiconductors for Gas Sensor Applications. Start Date: 2021. Funding: FAPESP.
- Tatiana Américo da Silva. Degree: PhD in Food Engineering. Institution: UNICAMP (Campus Campinas-SP/Brazil). Thesis Title: Food Analysis Using a Microfluidic Electronic Tongue. Start Date: 2021. Funding: CAPES.

Note: Additionally, I can affirm that unofficially I have guided approximately 20 students, with expressions of gratitude from both advisors and students in many thesis and dissertation defenses, acknowledging my pivotal role in the development of these projects. My responsibilities have included training undergraduate and graduate students in experimental techniques, supervising their work, composing project documents, and reviewing reports. Furthermore, I have served as a jury member in qualification exams and defense proceedings.

### COLLABORATION WITH ENTERPRISES

01/07/2019 – 31/10/2022

#### Consulting services

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From 2019 to 2022, I actively facilitated collaboration between academia and industry. My responsibilities included conducting research on soil samples and investigating flavor masking in pharmaceuticals, working with my previous supervisor, Prof. Antonio Riul Jr. at UNICAMP. This collaborative effort served as a crucial bridge connecting various companies with the academic community, such as Brainfarma (<https://www.brainfarma.ind.br/>), Aché (<https://www.ache.com.br/en/about-us/>), and FlipFlop Lab associated with Viter/Votorantim (<https://viteragro.com.br/>).

### TEACHING ACTIVITIES

01/08/2011 – 20/12/2011

#### Teaching assistant

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Physics laboratory at UNESP, Presidente Prudente/Brazil.

01/08/2012 – 20/12/2012

#### Teaching assistant

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Classical Mechanics at UNESP, Presidente Prudente/Brazil.

01/08/2022 – 20/12/2022

#### Teaching at graduate level

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Principles of Organic Electronics at UNESP, Presidente Prudente/Brazil.

01/03/2022 – 15/07/2022

#### Teaching at graduate level

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Introduction to Quantum Mechanics Concepts at UNESP, Presidente Prudente/Brazil.

01/04/2022 – 15/08/2022

#### Teaching at undergraduate level

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Applied Physics to Engineering at UNESP, Presidente Prudente/Brazil.

### CONFERENCES AND SEMINARS

10/09/2023 – 13/09/2023 – Lecce, Italy

#### XXXV Eurosensors

29/05/2022 – 01/06/2022 – Aveiro, Portugal

#### International Symposium on Olfaction and Electronic Nose (ISOEN)

25/09/2022 – 29/09/2022 – Foz do Iguaçu, Brazil

**XX B-MRS Meeting**

30/08/2021 – 03/09/2021 – Virtual

**Brazil MRS Meeting & International Union of Materials Research Societies – International Conference on Electronic Materials (IUMRS-ICEM 2021)**

22/09/2019 – 26/09/2019 – Balneário Camboriú, Brazil

**XVIII B-MRS Meeting**

25/09/2016 – 29/09/2016 – Campinas, Brazil

**XV B-MRS Meeting**

11/05/2015 – 15/05/2015 – Lille, France

**E-MRS Spring Meeting**

28/09/2014 – 02/10/2014 – João Pessoa, Brazil

**XIII B-MRS Meeting**

18/06/2013 – 20/06/2013 – Grenoble, France

**9th International Conference on Organic Electronics (ICOE2013)**

27/05/2013 – 31/05/2013 – Strasbourg, France

**E-MRS Spring Meeting**

23/09/2012 – 27/09/2012 – Florianópolis, Brazil

**XI B-MRS Meeting**

25/09/2011 – 29/09/2011 – Gramado, Brazil

**X B-MRS Meeting**

**REVIEWING ACTIVITIES**

13/10/2022 – CURRENT

**Member of editorial board**

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Guest editor at Chemosensors for the Special Issue “Developments on Supramolecular Thin Films to Sensing Applications”. Available at [https://www.mdpi.com/journal/chemosensors/special\\_issues/I15NVN22N5](https://www.mdpi.com/journal/chemosensors/special_issues/I15NVN22N5).

06/03/2023 – CURRENT

**Member of editorial board**

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Guest editor at Micromachines for the Special Issue “Multisensor Arrays”. Available at [https://www.mdpi.com/journal/micromachines/special\\_issues/2G55P7Z6Y0](https://www.mdpi.com/journal/micromachines/special_issues/2G55P7Z6Y0).

**PUBLICATIONS**

[Exploration of an impedimetric electronic tongue and chemometrics for characterization of black tea from different origins](#)

– 2023

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[Information visualization and machine learning driven methods for impedimetric biosensing](#) – 2023

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[Sensing Materials: Functionalized Advanced Carbon-Based Nanomaterials](#) – 2023

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[Electrical Impedance-Based Electronic Tongues](#) – 2023

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[Influence of solvents on the morphology of Langmuir and Langmuir-Schaefer films of PCBM and PCBM-based oligomers and polymers](#)

– 2022

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[Using Langmuir-Schaefer deposition technique to improve the gas sensing performance of regiorandom polythiophene films](#)

– 2022

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[Electronic Nose based on Poly\(vinylidene fluoride\)-modified Nanofibers for Discriminative Detection of Volatile Organic Compounds](#)

– 2022

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[Insights into nano-heterostructured materials for gas sensing: a review](#) – 2021

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[Controlled Incorporation of Silver Nanoparticles into Layer-by-Layer Polymer Films for Reusable Electronic Tongues](#)

– 2021

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[High Electrical Anisotropic Multilayered Self-Assembled Organic Films Based on Graphene Oxide and PEDOT:PSS](#)

– 2021

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[Electronic Tongues: Fundamentals and recent advances](#) – 2021

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[Recent developments on devices applied to impedimetric electronic tongues](#) – 2021

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[Supramolecular architecture and electrical conductivity in organic semiconducting thin films](#) – 2020

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[Microfluidic Mixer with Automated Electrode Switching for Sensing Applications](#) – 2020

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[Influence of the Flow Rate in an Automated Microfluidic Electronic Tongue Tested for Sucralose Differentiation](#)

– 2020

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[Multilayered Nanostructures Integrated with Emerging Technologies](#) – 2020

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[FDM 3D Printing in Biomedical and Microfluidic Applications](#) – 2020

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[Electronic Tongues](#) – 2020

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[Two-Dimensional Transition Metal Dichalcogenides for Gas Sensing Applications](#) – 2020

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[A Microfluidic E-Tongue System Using Layer-by-Layer Films Deposited onto Interdigitated Electrodes Inside a Polydimethylsiloxane Microchannel](#)

– 2019

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[Volatile organic compounds detection by electrical sensors using polyalkylthiophene-based Langmuir-Blodgett films](#)

– 2019

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[Regioregularity and deposition effect on the physical/chemical properties of polythiophene derivatives films](#)

– 2019

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[Heavy Metal/Toxins Detection Using Electronic Tongues](#) – 2019

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[3D-Printed Graphene Electrodes Applied in an Impedimetric Electronic Tongue for Soil Analysis](#) – 2019

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[Electronic Tongues for Inedible Media](#) – 2019

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[Langmuir and Langmuir-Blodgett films of low-bandgap polymers](#) – 2018

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[Molecular organization relationship of low-bandgap polymers at the air-water interface and in solid films](#)

– 2018

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[Comparison of activation energies for the electrical conductivity of silicate glasses obtained by dc and ac techniques](#)

– 2017

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**Influence of the Supramolecular Arrangement in the Electrical Conductivity of Poly(thiophene) Thin Films**

- 2017

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**Microfluidic Electronic Tongue Applied to Soil Analysis** - 2017

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**Study of the Nanostructure Effect on Polyalkylthiophene Derivatives Films Using Impedance Spectroscopy**

- 2017

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**Ultra-Thin Films of Reduced Graphene Oxide (RGO) Nanoplatelets Functionalized with Different Organic Materials**

- 2016

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**Electrical and electrochemical measurements in nanostructured films of polythiophene derivatives** - 2015

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**Supramolecular Organization-Electrical Properties Relation in Nanometric Organic Films** - 2015

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**Supramolecular Architecture and Electrical Properties of a Perylene Derivative in Physical Vapor Deposited Films**

- 2015

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**Electrical conductivity of Ag-Na ion exchanged soda-lime glass** - 2014

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**Poly(3-octylthiophene)/stearic Acid Langmuir and Langmuir-Blodgett films: Preparation and characterization**

- 2014

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**Electrical conductivity of silicate glasses with tetravalent cations substituting Si** - 2012

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**Molecular Architecture and Electrical Properties in Evaporated Films of Cobalt Phthalocyanine** - 2012

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