Pedro Catalão Moura

Pedro Catalão Moura received his Doctorate degree in biomedical engineering from NOVA University of Lisbon. He was awarded a Doctoral Grant by Fundação para a Ciência e Tecnologia, FCT - Portugal, and he is a Researcher and PhD Student in Biomedical Engineering at LIBPhys - Laboratory for Instrumentation, Biomedical Engineering and Radiation Physics - NOVA School of Science and Technology - NOVA University of Lisbon since 2019. Pedro has focused his research work on the assessment of indoor and outdoor air quality with emphasis on industrial and heavily populated locations, and on the evaluation of the impacts of exposure to hazardous air contaminants on human health. Pedro has published several scientific articles in international peer review journals and conferences and is a co-author in three book chapters. Since 2019, Pedro has lectured the disciplines of Mechanics, Biophysics, Imagiology, Electrophysiology and Instrumentation as an Invited Assistant at the Department of Physics - NOVA School of Science and Technology and at Universidade Lusófona.

Experience

09/2020 Today	**Invited Assistant** **Physics Department, FCT-NOVA, Lisbon, Portugal** Academic activity at NOVA School of Science and Technology (Mechanics, Biophysics, Imageology, Electrophysiology)
02/2024 Today	**Invited Assistant** **Faculty of Engineering, Lusófona University, Lisbon, Portugal** Academic activity at Lusófona University (Instrumentation)
01/2024 Today	**Researcher** **FCT-NOVA, Lisbon, Portugal** Research activity in Biomedical Engineering at NOVA School of Science and Technology. Project: "PG2CRM-Phosphogypsum processing to critical materials"
06/2019 04/2024	**PhD Student** **FCT-NOVA, Lisbon, Portugal** Research activity in Biomedical Engineering at NOVA School of Science and Technology
02/2022 08/2022	**Scientific Mission (Doctoral Internship)** **Leibniz University Hannover, Hannover, Germany** Scientific research internship under the scope of the doctoral project and supervised by Professor Doctor Stefan Zimmermann
05/2019 09/2019	**Internship** **NMT – Tecnologia, Inovação e Consultoria, S.A., Lisbon, Portugal** Investigation work in different areas, such as food conservation (Project Alga4food), with the techniques of Gas Chromatography - Ion Mobility Spectrometry (GC-IMS)
09/2018 03/2019	**Master Thesis in Biomedical Engineering, FCT-NOVA, Lisbon, Portugal** Data acquisition of electroencephalography and electromyography. Development of data processing software. Statistical Analysis of the obtained results. Teamwork with volunteers, colleagues and advisors.
01/2016 02/2016	**Internship** **Portuguese Institute of Oncology, Lisbon, Portugal** Specific work in neurology and neurophysiology with acquisition and processing of electroencephalography and electromyography data. Contact with medical and scientific investigation environment. Teamwork with adviser doctors and researchers.

Personal Info

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Date of birth
25/06/1995

Skills

- Excellent communication and speech skills;
- Highly flexible and with capability to work in a team and under pressure;
- Focused, motivated and capable of dealing with different problems efficiently;
- Proactive, creative, organised and with critical thinking.

Technical Skills

- Excellent domain of Microsoft Office;
- Programming languages such as C, Matlab, and Java;

09/2010 Today	**Tutoring** Private lessons of disciplines such as mathematics, physics, chemistry, biology and english to young students.	
06/2011 07/2011	**Internship** **Department of Genetics and Biotechnology, UTAD, Portugal** Investigation work in the areas of genetics and in-vitro fertilization. Direct contact with investigators from both areas.	

- Knowledge in economics and finances.

Languages
- Portuguese – Native
- English – Certified

Extra

- Driving License – B1

Personal Pages
- [Orcid](#)
- [CiênciaID](#)
- [Scopus](#)
- [Web of Science](#)
- [Google Scholar](#)
- [ResearchGate](#)
- [SciProfiles](#)
- [Loop Profile](#)

Education

06/2019 04/2024	**Doctoral Program in Biomedical Engineering, NOVA University of Lisbon – NOVA School of Science and Technology (FCT-NOVA) and Volkswagen AutoEuropa** Thesis title: Development of method for automatic on-line monitoring of VOC in automotive plant and direct evaluation of its impact on employees Score: Approved with unanimity
09/2018 04/2019	**Master Thesis in Biomedical Engineering, NOVA University of Lisbon – NOVA School of Science and Technology (FCT-NOVA)** Thesis title: Study of corticomotor control using multichannel electromyography and electroencephalography. Score: 18/20
09/2016 06/2018	**Master Student of Biomedical Engineering, NOVA University of Lisbon – NOVA School of Science and Technology (FCT-NOVA)** Study of specific areas related to engineering such as programming, electronics, medicine, economics and management, among others.
09/2013 09/2016	**Graduation in Biomedical Engineering Sciences, NOVA University of Lisbon – NOVA School of Science and Technology (FCT-NOVA)** Study of generic areas such as mathematics, physics, chemistry, anatomy, and programming, among others.

Conferences/Seminars

- Organizer of the Biomedical Engineering Workshop "PhD Trajectory: Pathways, Progress and Analysis", FCT-NOVA, 2023
- Speaker at Biomedical Engineering Workshop "PhD Trajectory: Pathways, Progress and Analysis", FCT-NOVA, 2023
- Invited chair at 11th Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, 2020
- Invited speaker at 11th Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, 2020
- Participation in the NOVA Biomedical Engineering Workshop, FCT-NOVA, 2016, 2017, 2018
- Tutor at FCT-NOVA open day, Department of Physics, FCT-NOVA, 2014
- Participation in the workshop "The Role of Biomedical Engineering in Space Exploration", FCT-NOVA, 2013
- Invited speaker at Young People's Parliament, Portuguese Parliament, 2010

Publications

2024	Moura, P. C., Raposo, M., Vassilenko, V. **Breath biomarkers in Non-Carcinogenic diseases**. Clinica Chmica Acta, 552, 117692. https://doi.org/10.1016/j.cca.2023.117692
2024	Moura, P. C., Santos, F., Fujão, C., Vassilenko, V. **Towards the identification of the volatile organic compounds emitted by the coatings used in a car factory painting line**. Journal of Coatings Technology and Research, 21, 665-682. https://doi.org/10.1007/s11998-023-00847-7
2023	Moura, P. C., Ribeiro, P. A., Raposo, M., Vassilenko, V. **The State-of-the-art on Graphene-based Sensors for Human Health Monitoring Through Breath Biomarkers**. Sensors, 23, 9271. https://www.mdpi.com/1424-8220/23/22/9271
2023	Vassilenko, V., Moura, P. C., Raposo, M. **Diagnosis of Carcinogenic Pathologies through Breath Biomarkers: Present and Future Trends**. Biomedicines, 11: 3029. https://doi.org/10.3390/biomedicines11113029
2023	Moura, P. C., Santos, F., Fujão, C., Vassilenko, V. **In Situ Indoor Air Volatile Organic Compounds Assessment in a Car Factory Painting Line**. Processes, 11: 2259. https://doi.org/10.3390/pr11082259

2023	Santos, P. H. C., Moura, P. C., Vassilenko, V. **Suitability of Short- and Long-Term Storage of Volatile Organic Compounds Samples in Syringe-Based Containers: A Comparison Study**. Metabolites, 13: 903. https://doi.org/10.3390/metabo13080903
2023	Moura, P. C., Vassilenko, V. **Long-Term In Situ Air Quality Assessment in Closed Environments: A Gas Chromatography – Ion Mobility Spectrometry Applicability Study**. European Journal of Mass Spectrometry, 29: 231-239. https://doi.org/10.1177/14690667231187502
2023	Moura, P. C., Raposo, M., Vassilenko, V. **Breath Volatile Organic Compounds (VOCs) as Biomarkers for Respiratory Diseases and Cancer Diagnosis: A Review**. Biomedical Journal, 46: 100623. https://doi.org/10.1016/j.bj.2023.100623
2023	Moura, P. C., Fernandes, J. F., Diniz, M. S., Fetter, V., Vassilenko, V. (2023). **Differentiation of the Organoleptic Volatile Organic Compound Profile of Three Edible Seaweeds.** Metabolites, 13: 713. https://doi.org/10.3390/metabo13060713
2023	Moura, P. C., Vassilenko, V., Ribeiro, P. (2023). **Ion Mobility Spectrometry Towards Environmental Volatile Organic Compounds Identification and Quantification: A Comparative Overview Over Infrared Spectroscopy.** Emission Control Science and Technology, 9: 25-46. https://doi.org/10.1007/s40825-022-00220-x
2023	Moura, P. C., Vassilenko, V. (2023). **Contemporary Ion Mobility Spectrometry Applications and Future Trends Towards Environmental, Health and Food Research: A Review.** International Journal of Mass Spectrometry, 486: 117012. https://doi.org/10.1016/j.ijms.2023.117012
2023	Moura, P. C., Pivetta, T. P., Vassilenko, V., Ribeiro, P. A., Raposo, M. (2023). **Graphene Oxide Thin Films for Detection and Quantification of Industrially Relevant Alcohols and Acetic Acid.** Sensors, 23: 462. https://doi.org/10.3390/s23010462
2022	Moura, P. C., Vassilenko, V. (2022). **Gas Chromatography – Ion Mobility Spectrometry as a Tool for Quick Detection of Hazardous Volatile Organic Compounds in Indoor and Ambient Air: A University Campus Case Study.** European Journal of Mass Spectrometry, 28: 113-126. https://doi.org/10.1177/14690667221130170
2021	Santos, P. H. C., Vassilenko, V., Moura, P. C., Conduto, C., Fernandes, J. M., Bonifácio, P. (2021). **Instrumentation for Differentiation of Exhaled Air.** 15th International Conference on Correlation Optics (12126). Vinnytsia, Ukraine: SPIE. https://doi.org/10.1117/12.2617391
2021	Santos, P. H., Vassilenko, V., Conduto, C., Fernandes, J. M., Moura, P. C., Bonifácio, P. (2021). **Pilot Study for Validation and Differentiation of Alveolar and Esophageal Air.** 12th Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2021 (331-338). Costa da Caparica, Portugal: Springer. https://doi.org/10.1007/978-3-030-78288-7_32
2021	Fernandes, J. M., Vassilenko, V., Moura, P. C., Fetter, V. (2021). **Gas Chromatography-Ion Mobility Spectrometry Instrument for Medical Applications: A Calibration Protocol for ppb and ppt Concentration Range.** 12th Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2021 (pp. 349-357). Costa da Caparica, Portugal: Springer. https://doi.org/10.1007/978-3-030-78288-7_34
2020	Moura, P. C., Vassilenko, V., Fernandes, J. M., & Santos, P. H. (2020). **Indoor and Outdoor Air Profiling with GC-IMS.** 11th Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2020 (pp. 437-444). Costa de Caparica, Portugal: Springer. https://doi.org/10.1007/978-3-030-45124-0_43
2019	Moura, P. C. (2019). **Estudo do Controlo corticomotor com recurso a eletromiografia multicanal** (Master Thesis). NOVA School of Science and Technology, NOVA University of Lisbon. Lisbon, Portugal

Reviews

2023/Today	**ChemistrySelect -** 2 Reviews
2023/Today	**Global Health Journal -** 2 Reviews
2023/Today	**Ecotoxicology and Environmental Safety -** 2 Reviews
2023/Today	**Journal of Environmental Science and Health -** 1 Reviews
2023/Today	**Acta Alimentaria -** 2 Reviews

2023/Today	**Journal of King Saud University – Science -** 1 Review
2023/Today	**Diagnostics -** 1 Review
2022/Today	**Indoor and Built Environment -** 7 Reviews

Scientific Divulgation

2023	**Database of Volatile Organic Compounds Biomarkers for the Diagnosis of Pathological Conditions** Creation of an online open-source database of breath biomarkers for diagnosis of pathological conditions. Available at: https://neomeditec.com/VOCdatabase/
2023	**Diagnosis of Carcinogenic Pathologies through Breath Biomarkers:** Invited Article in Scholarly Community Encyclopedia. Available at: https://encyclopedia.pub/entry/51538
2023	**Graphene Sensors for Biomarker Detection:** Invited Article in Scholarly Community Encyclopedia. Available at: https://encyclopedia.pub/entry/51538

Non-Scientific Publications

| 2024 | **Quando o Vaticano Caiu.** Book, Edições Saída de Emergência. |