



Curriculum Vitae

Jorge Miguel de Brito Almeida Sampaio

I obtained my Ph.D. in Physics in December 2003 from the University of Aarhus, Denmark. After a brief stay as an assistant researcher at the University of Basel, Switzerland, I returned to Portugal as a postdoctoral researcher at the Center for Nuclear Physics of the University of Lisbon (CFN/UL). From October 2004 to the end of 2008 my research focused on the topic of my Ph.D. thesis. In January 2008, I was invited to give technical support to the new Portuguese regulatory authority in radiation protection - the Independent Commission for Radiological Protection and Nuclear Safety (CIPRSN). As part of my formation, I spent a short period at the CERN radiation protection group, collaborating on MC simulations of dose distributions and induced activity in materials and components for the MedAustron hadron therapy facility. Due to the lack of financial support, CIPRSN was extinct, and in July 2009, I started a research contract under the Ciência 2008 program at the Center for Atomic Physics of the University of Lisbon (CFA/UL). At the CFA/UL, I worked on relativistic calculations of atomic structure and MC applications to X-ray fluorescence (XRF) analysis, and radiation protection. Following the restructuring of the Portuguese research units in 2014, the CFA/UL and the CFN/UL were phased out and researchers moved to new units. The Atomic Physics group resident at the Faculty of Sciences of the University of Lisbon (FCUL) was integrated into the Institute of Biosystems and Integrative Sciences (BioISI). Here, I continued my previous research work and, at the end of 2015, I began to collaborate in a project on the calculation of the Auger electron spectra emitted by radionuclides for applications to targeted cancer therapy. Also in January 2016, I started a new research contract with the Laboratory of Instrumentation and Particle Experimental Physics (LIP), joining the Applications for Space Exploration and the Dosimetry groups. At LIP, I have been working in the flight data analysis and modeling of the CTTB (Component Technological Test Bed) on-board the Alphasat satellite, as part of a contract with the European Space Agency (ESA). I co-supervised the M. Sc. of A. L. Casimiro on the "Effects of the Space Radiation Environment on Manned Missions to Mars" and of D. Pires on "Simulation of Auger electron spectra from nuclides of medical interest". I supervised the M. Sc. of F. Carvalho on the "Conception of a Tissue Equivalent Plastic Dosimeter Using Scintillating Fibres for Hadronic Therapy and Space Radiation Effects Studies" and, currently, I am supervising the M. Sc. of J. Antunes on "Simulations of the effectiveness of nanoparticle radiosensitization in proton therapy" and of M. Xarepe on "Determination of the Sn-118(ρ, ζ)Sb-119 cross-section at astrophysical relevant energies from X-ray yields". I have published 50 papers on peer-reviewed international journals in the subjects of Nuclear and Atomic Physics, and Monte Carlo simulations applied to spectrometry, dosimetry, and radiation protection. I was the PI of a project on "Quantification in X-ray fluorescence spectrometry by Monte Carlo methods" funded by FCT. Currently, I am participating in three projects also funded by FCT: "Industrial Heritage for the Future", "Ultra-high-accuracy X-ray spectroscopy of transition metal oxides and rare earth", and "Proton therapy: real-time prompt gamma imaging and microdosimetry". Since 2009, I have been teaching courses at FCUL related to radiation physics. For the last two years, I have been responsible for the course on Dosimetry and Radiation Protection at FCUL and, since 2020, I am the representative of the research line on "Health and Biomedical Applications" at LIP.

Identification

Personal identification

Full name

Jorge Miguel de Brito Almeida Sampaio

Gender

Male

Birth date

1971/04/02

Citation names

Sampaio, Jorge

Author identifiers

Ciência ID

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Websites

https://www.researchgate.net/profile/Jorge_Sampaio (Social media)

<https://www.lip.pt/?section=about&page=person-details&details&id=457> (Professional)

<https://ciencias.ulisboa.pt/pt/perfil/jmsampaio> (Scholar)

Knowledge fields

Exact Sciences - Physical Sciences - Atomic Physics

Languages

| Language | Speaking | Reading | Writing | Listening | Peer-review |
|----------------------------|-------------------|-------------------|-----------------|-------------------------|-------------------|
| Portuguese (Mother tongue) | | | | | |
| English | Proficiency (C2) | Advanced (C1) | Advanced (C1) | Proficiency (C2) | Proficiency (C2) |
| French | Intermediate (B1) | Intermediate (B1) | Elementary (A2) | Upper intermediate (B2) | Intermediate (B1) |
| Spanish; Castilian | Elementary (A2) | Elementary (A2) | Beginner (A1) | Upper intermediate (B2) | Elementary (A2) |

Education

| | Degree | Classification |
|-------------------------|--|----------------|
| 2008/09/19 Concluded | Expert en Radioprotection (Título de especialista) Centre hospitalier universitaire vaudois Institut de radiophysique, Switzerland | |
| 2003/12/03 Concluded | The Ph.D. Degree in Science (Doktor (PhD)) Major in Física Nuclear Aarhus Universitet Institut for Fysik og Astronomi, Denmark <i>"Weak interactions for core collapse supernovae"</i> (THESIS/DISSERTATION) | N.A. |
| 2000/01/04 Concluded | Física (Mestrado) Major in Altas Energias e Gravitação Universidade de Lisboa Faculdade de Ciências, Portugal <i>"The ${}^7\text{Li}(p,\zeta){}^8\text{Be}$ reaction at astrophysical energies"</i> (THESIS/DISSERTATION) | Muito Bom |
| 1994/12/10 Concluded | Física (Licenciatura) Major in Física Universidade de Lisboa Faculdade de Ciências, Portugal | 14/20 |

Affiliation

Science

| | |
|----------------------------|--|
| 2016/01/01 - 2020/06/30 | Contracted Researcher (Research) Laboratório de Instrumentação e Física Experimental de Partículas, Portugal |
| 2014/07/01 - 2015/12/31 | Researcher (Research) Universidade de Lisboa Instituto de Biosistemas e Ciências Integrativas, Portugal |
| 2009/07/01 - 2014/06/30 | Contracted Researcher (Research) Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2004/10/01 - 2007/07/31 | Postdoc (Research) Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2004/04/01 - 2004/08/31 | Contracted Researcher (Research) Universität Basel Philosophisch-Naturwissenschaftliche Fakultät, Switzerland |

Teaching in Higher Education

2009/09/01 - 2019/01/31 Invited Assistant Professor (University Teacher)
Universidade de Lisboa Departamento de Física, Portugal

Others

2014/11/01 - 2018/12/31 Consultant
(COMRSIN) Comissão Reguladora da Segurança das Instalações Nucleares, Portugal

2008/01/01 - 2009/06/30 Consultant
(CIPRSN) Comissão Independente para a Protecção Radiológica e Segurança Nuclear, Portugal

Projects

Grant

| | Designation | Funders |
|-------------------|--|--|
| 2008/03 - 2009/06 | Comissão Independente para Protecção Radiológica e Segurança Nuclear CIPRSN/BGCT/02-2008 Science and Technology Management Fellow (CIPRSN) Comissão Independente para a Protecção Radiológica e Segurança Nuclear, Portugal | Fundação para a Ciência e Tecnologia, Portugal |
| 2004/10 - 2007/09 | Weak interaction processes for core collapse supernovae SFRH/BPD/16295/2004 Pos-doctoral Fellow Universidade de Lisboa Faculdade de Ciências, Portugal | Fundação para a Ciência e Tecnologia, Portugal |
| 2000/09 - 2004/04 | Nuclear inputs in supernovae physics BD/1120/2000 PhD Student Fellow Aarhus Universitet Institut for Fysik og Astronomi, Denmark | Fundação para a Ciência e Tecnologia, Portugal |
| 1996/12 - 1997/12 | The ${}^7\text{Li}(p,g){}^8\text{Be}$ reaction at low energies PRAXIS XXI/BM/8150/96 Master Student Fellow Universidade de Lisboa Faculdade de Ciências, Portugal | Fundação para a Ciência e a Tecnologia, Portugal |

Contract

| | Designation | Funders |
|--|-------------|---------|
|--|-------------|---------|

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|-------------------------|---|--|
| 2019/01/10 - Current | Ultra-high-accuracy X-ray spectroscopy of transition metal oxides and rare earths PTDC/FIS-AQM/30292/2017 Researcher Universidade Nova de Lisboa çLaboratório de Instrumentação Engenharia Biomédica e Física da Radiação, Portugal | Fundação para a Ciência e a Tecnologia, Portugal |
| 2019/01/01 - Current | Projecto Estratégico - Laboratory of Instrumentation and Experimental Particle Physics UID/FIS/50007/2019 Researcher Laboratório de Instrumentação e Física Experimental de Partículas, Portugal | |
| 2018/07/01 - Current | Cultura material, cultura científica: património industrial para o futuro Material culture, scientific culture: industrial heritage for the future PTDC/FIS-AQM/30292/2017 Researcher Universidade Nova de Lisboa çLaboratório de Instrumentação Engenharia Biomédica e Física da Radiação, Portugal | Fundação para a Ciência e a Tecnologia, Portugal |
| 2015/01/01 - Current | Projecto Estratégico - Biosystems & Integrative Sciences Institute UID/Multi/04046/2019 Researcher FCiênciasID Associação para a Investigação e Desenvolvimento de Ciências, Portugal | Fundação para a Ciência e a Tecnologia, Portugal |
| 2016/09/01 - 2019/12/31 | Flight Data Analysis of the TDP8 radiation experiments onboard Alphasat TEC-QEC/CP/SOW/2015-1 Researcher Laboratório de Instrumentação e Física Experimental de Partículas, Portugal | European Space Agency, France |
| 2013/04/01 - 2014/06/30 | Quantification in X-ray fluorescence spectrometry by Monte Carlo methods/Quantificação em espetrometria por fluorescência de raios-X através de métodos de Monte Carlo EXPL/FIS-ATO/0776/2012 Principal investigator Fundação da Faculdade de Ciências da Universidade de Lisboa, Portugal | Fundação para a Ciência e a Tecnologia, Portugal |

Other

Designation

Funders

2020/01/01 - 2021/12/31

Proton therapy: real-time prompt gamma imaging and microdosimetry

CERN/FIS-TEC/0019/2019

Researcher

Laboratório de Instrumentação e Física Experimental de Partículas, Portugal

Fundação para a Ciência e a Tecnologia, I.P., Portugal

Outputs

Publications

- | | | |
|------------------|---|--|
| Conference paper | 1 | Sampaio, Jorge. 2016. "Dose calculations from the RADFETs response onboard the ALPHASAT CTTB experiment". <i>Germany</i> , 1-3. Germany. 10.1109/RADECS.2016.8093214 |
| | 2 | Juodagalvis, A.; Sampaio, J.M.; Langanke, K.; Martínez-Pinedo, G.; Hix, W.R.; Janka, H.-Th.. 2006. "Neutral-current neutrino-nucleus inelastic reactions for core collapse supernovae". |
| | 3 | Hix, W.R.; Messer, E.B.; Mezzacappa, A.; Liebendörfer, M.; Dean, D.J.; Langanke, K.; Sampaio, J.; Martínez-Pinedo, G.. 2005. "Terascale input physics: The role of nuclear electron capture in core collapse supernovae". 400-404. 10.1088/1742-6596/16/1/055 |
| | 4 | Martínez-Pinedo, G.; Langanke, K.; Sampaio, J.M.; Dean, D.J.; Hix, W.R.; Messer, O.E.B.; Mezzacappa, A.; et al. 2003. "Weak Interaction Processes in Core-Collapse Supernovae". In <i>Springer Proceedings in Physics: Cosmic Explosions</i> , 321-326. Springer-Verlag. 10.1007/3-540-26633-x_44 |
| <hr/> | | |
| Journal article | 1 | Daoudi, S.; Kahoul, A.; Kup Aylikci, N.; Sampaio, J.M.; Marques, J.P.; Aylikci, V.; Sahnoune, Y.; Kasri, Y.; Deghfel, B.. 2020. "Review of experimental photon-induced K β /K α intensity ratios". <i>Atomic Data and Nuclear Data Tables</i> 132: 101308. http://dx.doi.org/10.1016/j.adt.2019.101308 . 10.1016/j.adt.2019.101308 |
| | 2 | Pessanha, Sofia; Queralt, Ignasi; Carvalho, Maria Luísa; Sampaio, Jorge Miguel. 2019. "Determination of gold leaf thickness using X-ray fluorescence spectrometry: Accuracy comparison using analytical methodology and Monte Carlo simulations". <i>Applied Radiation and Isotopes</i> 152: 6-10. http://dx.doi.org/10.1016/j.apradiso.2019.06.014 . 10.1016/j.apradiso.2019.06.014 |
| | 3 | Ménesguen, Y.; Lépy, M.-C.; Ito, Y.; Yamashita, M.; Fukushima, S.; Polasik, M.; Slabkowska, K.; et al. 2019. "Precise x-ray energies of gadolinium determined by a combined experimental and theoretical approach". <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> 236: 106585. http://dx.doi.org/10.1016/j.jqsrt.2019.106585 . Published · 10.1016/j.jqsrt.2019.106585 |
| | 4 | Sahnoune, Y.; Kahoul, A.; Daoudi, S.; Sampaio, J.M.; Aylikci, N. Kup; Aylikci, V.; Kasri, Y.; et al. 2019. "Updated database, new empirical and theoretical values of average L shell fluorescence yields of elements with 23=Z=96". <i>Radiation Physics and Chemistry</i> : 108495. http://dx.doi.org/10.1016/j.radphyschem . |

2019.108495.

Accepted · 10.1016/j.radphyschem.2019.108495

- 5 Marques, José P.; Sampaio, Jorge M.; Santos, José Paulo; Indelicato, Paul; Parente, Fernando. 2019. "Theoretical fluorescence yields and widths of the K shell and the L subshells, for the Ne, Ar, and Kr isoelectronic sequences". *X-Ray Spectrometry* 49 (1): 69-73. <http://dx.doi.org/10.1002/xrs.3056>.
Published · 10.1002/xrs.3056
- 6 Pessanha, S.; Manso, M.; Antunes, V.; Carvalho, M.L.; Sampaio, J.M.. 2019. "Monte Carlo simulation of portable X-ray fluorescence setup: Non-invasive determination of gold leaf thickness in indo-Portuguese panel paintings". *Spectrochimica Acta Part B: Atomic Spectroscopy* 156: 1-6. <http://dx.doi.org/10.1016/j.sab.2019.04.006>.
10.1016/j.sab.2019.04.006
- 7 Zeeshan, Faisal; Hoszowska, Joanna; Dousse, Jean-Claude; Sokaras, Dimosthenis; Weng, Tsu-Chien; Alonso-Mori, Roberto; Kavcic, Matjaz; et al. 2019. "Diagram, valence-to-core, and hypersatellite K β X-ray transitions in metallic chromium". *X-Ray Spectrometry* 48 (5): 351-359. <http://dx.doi.org/10.1002/xrs.3019>.
10.1002/xrs.3019
- 8 Ménesguen, Y.; Lépy, M.-C.; Sampaio, J.M.; Marques, J.P.; Parente, F.; Guerra, M.; Indelicato, P.; et al. 2018. "A combined experimental and theoretical approach to determine X-ray atomic fundamental quantities of tin". *X-Ray Spectrometry* 47 (5): 341-351. <http://www.scopus.com/inward/record.url?eid=2-s2.0-85051497425&partnerID=MN8TOARS>.
10.1002/xrs.2948
- 9 Ménesguen, Y.; Lépy, M.-C.; Sampaio, J.M.; Marques, J.P.; Parente, F.; Guerra, M.; Indelicato, P.; Santos, J.P.. 2018. "Experimental and theoretical determination of the L-fluorescence yields of bismuth". *Metrologia* 55 (5): 621-630. <http://www.scopus.com/inward/record.url?eid=2-s2.0-85053873591&partnerID=MN8TOARS>.
10.1088/1681-7575/aad1d6
- 10 Guerra, M.; Sampaio, J.M.; Parente, F.; Indelicato, P.; Hönicke, P.; Müller, M.; Beckhoff, B.; Marques, J.P.; Santos, J.P.. 2018. "Theoretical and experimental determination of K - And L -shell x-ray relaxation parameters in Ni". *Physical Review A* 97 (4). <http://www.scopus.com/inward/record.url?eid=2-s2.0-85045310419&partnerID=MN8TOARS>.
10.1103/PhysRevA.97.042501
- 11 Pessanha, S.; Manso, M.; Costa, M.; Ferreira, A.; Silva, R.J.C.; Sampaio, J.M.; Carvalho, M.L.. 2018. "Suitability of X ray spectrometry to distinguish a handwritten 16th century real estate sales document from its copy". *Spectrochimica Acta - Part B Atomic Spectroscopy* 146: 21-27. <http://www.scopus.com/inward/record.url?eid=2-s2.0-85046646656&partnerID=MN8TOARS>.
10.1016/j.sab.2018.04.021
- 12 Ito, Y.; Tochio, T.; Yamashita, M.; Fukushima, S.; Vlaicu, A.M.; Syrocki, Å.L.; Slabkowska, K.; et al. 2018. "Structure of high-resolution K $\beta_{1,3}$ x-ray emission spectra for the elements from Ca to Ge". *Physical Review A* 97 (5). <http://www.scopus.com/inward/record.url?eid=2-s2.0-85046969270&partnerID=MN8TOARS>.
10.1103/PhysRevA.97.052505

- 13 Casimiro, Ana Luísa; Sampaio, Jorge Miguel; Gonçalves, Patrícia. 2018. "ASSESSMENT OF RADIATION EXPOSURE IN MANNED MISSIONS TO MARS FOR THREE PROFILES". *RAD Association Journal* 3 (1). <http://dx.doi.org/10.21175/radj.2018.01.006>.
10.21175/radj.2018.01.006
- 14 Kup Aylikci, N.; Sampaio, J.M.; Kahoul, A.; Aylikci, V.; Karahan, I.H.; Guerra, M.; Santos, J.P.; Marques, J.P.; Tirasoglu, E.. 2017. "The investigation of K-shell fluorescence parameters of Zn-Fe alloys with different grain size and microstrain values". *X-Ray Spectrometry* 46 (4): 242-251. <http://www.scopus.com/inward/record.url?eid=2-s2.0-85016442722&partnerID=MN8TOARS>.
10.1002/xrs.2763
- 15 Pessanha, S.; Alves, M.; Sampaio, J.M.; Santos, J.P.; Carvalho, M.L.; Guerra, M.. 2017. "A novel portable energy dispersive X-ray fluorescence spectrometer with triaxial geometry". *Journal of Instrumentation* 12 (1). <http://www.scopus.com/inward/record.url?eid=2-s2.0-85012078046&partnerID=MN8TOARS>.
10.1088/1748-0221/12/01/P01014
- 16 J.M. Sampaio; M. Guerra; F. Parente; T.I. Madeira; P. Indelicato; J.P. Santos; J.P. Marques. 2016. "Calculations of photo-induced X-ray production cross-sections in the energy range 1-150 keV and average fluorescence yields for Zn, Cd and Hg". *Atomic Data and Nuclear Data Tables* 111-112: 67-86. <http://dx.doi.org/10.1016/j.adt.2016.02.001>.
10.1016/j.adt.2016.02.001
- 17 Marques, J. P.; Indelicato, P.; Parente, F.; Sampaio, J. M.; Santos, J. P.. 2016. "Ground-state Lande g factors for selected ions along the boron isoelectronic sequence". *Physical Review A* 94 (4). http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcAuth=ORCID&SrcApp=OrcidOrg&DestLinkType=FullRecord&DestApp=WOS_CPL&KeyUT=WOS:000384603100003&KeyUID=WOS:000384603100003.
10.1103/PhysRevA.94.042504
- 18 Sampaio, J. M.; Madeira, T. I.; Guerra, M.; Parente, F.; Indelicato, P.; Santos, J. P.; Marques, J. P.. 2016. "Relativistic calculations of K-, L- and M-shell X-ray production cross -sections by electron impact for Ne, Ar, Kr, Xe, Rn and Uuo". *Journal of Quantitative Spectroscopy & Radiative Transfer* 182: 87-93. http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcAuth=ORCID&SrcApp=OrcidOrg&DestLinkType=FullRecord&DestApp=WOS_CPL&KeyUT=WOS:000381321600009&KeyUID=WOS:000381321600009.
10.1016/j.jqsrt.2016.05.012
- 19 Pessanha, S.; Costa, M.; Sampaio, J.M.; Carvalho, M.L.. 2016. "Revealing the hidden preliminary version of Eça de Queiroz "the Illustrious House of Ramires" using X-ray micro-analysis". *Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms* 371: 396-400. <http://www.scopus.com/inward/record.url?eid=2-s2.0-84960251648&partnerID=MN8TOARS>.
10.1016/j.nimb.2015.10.046
- 20 Sampaio, J M; Guerra, M; Madeira, T I; Parente, F; Indelicato, P; Santos, J P; Marques, J P. 2015. "Relativistic calculations of atomic parameters in Ununoctium". *Journal of Physics: Conference Series* 635 (9): 092095. <http://dx.doi.org/10.1088/1742-6596/635/9/092095>.
10.1088/1742-6596/635/9/092095

- 21 Marques, J P; Guerra, M; Parente, F; Santos, J P; Indelicato, P; Sampaio, J M. 2015. "K-shell width, fluorescence yield, and $K\beta/K\alpha$ intensity ratio calculation for Fe in the Dirac-Fock approach". *Journal of Physics: Conference Series* 635 (9): 092094. <http://dx.doi.org/10.1088/1742-6596/635/9/092094>.
10.1088/1742-6596/635/9/092094
- 22 Sampaio, Jorge. 2015. "Relativistic calculations of M-shell photoionization and X-ray production cross-sections for Hg at 5.96keV excitation energy". *Radiation Physics and Chemistry*.
10.1016/j.radphyschem.2014.09.006
- 23 Guerra, M.; Sampaio, J. M.; Madeira, T. I.; Parente, F.; Indelicato, P.; Marques, J. P.; Santos, J. P.; et al. 2015. "Theoretical and experimental determination of L-shell decay rates, line widths, and fluorescence yields in Ge". *Physical Review A* 92 (2). http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcAuth=ORCID&SrcApp=OrcidOrg&DestLinkType=FullRecord&DestApp=WOS_CPL&KeyUT=WOS:000359857100007&KeyUID=WOS:000359857100007.
10.1103/PhysRevA.92.022507
- 24 Madeira, T. I.; Sampaio, J. M.; Guerra, M.; Parente, F.; Indelicato, P.; Santos, J. P.; Marques, J. P.. 2015. "Relativistic calculation of K-, L- and M-shell x-ray fluorescence yields for Ba". *Physica Scripta* 90 (5). http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcAuth=ORCID&SrcApp=OrcidOrg&DestLinkType=FullRecord&DestApp=WOS_CPL&KeyUT=WOS:000356498700010&KeyUID=WOS:000356498700010.
10.1088/0031-8949/90/5/054009
- 25 Sampaio, J. M.; Madeira, T. I.; Guerra, M.; Parente, F.; Santos, J. P.; Indelicato, P.; Marques, J. P.. 2015. "Dirac-Fock calculations of K-, L-, and M-shell fluorescence and Coster-Kronig yields for Ne, Ar, Kr, Xe, Rn, and Uuo". *Physical Review A* 91 (5). http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcAuth=ORCID&SrcApp=OrcidOrg&DestLinkType=FullRecord&DestApp=WOS_CPL&KeyUT=WOS:000355169700003&KeyUID=WOS:000355169700003.
10.1103/PhysRevA.91.052507
- 26 Manso, M.; Schiavon, N.; Queralt, I.; Arruda, A.M.; Sampaio, J.M.; Brunetti, A.. 2015. "Alloy characterization of a 7th Century BC archeological bronze vase - Overcoming patina constraints using Monte Carlo simulations". *Spectrochimica Acta - Part B Atomic Spectroscopy* 107: 93-96. <http://www.scopus.com/inward/record.url?eid=2-s2.0-84925114363&partnerID=MN8TOARS>.
10.1016/j.sab.2015.03.001
- 27 Ito, Y.; Tochio, T.; Fukushima, S.; Taborda, A.; Sampaio, J. M.; Marques, J. P.; Parente, F.; Indelicato, P.; Santos, J. P.. 2015. "Experimental and theoretical determination of the $K\alpha(2)/K\alpha(1)$ intensity ratio for zinc". *Journal of Quantitative Spectroscopy & Radiative Transfer* 151: 295-299. http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcAuth=ORCID&SrcApp=OrcidOrg&DestLinkType=FullRecord&DestApp=WOS_CPL&KeyUT=WOS:000347263000031&KeyUID=WOS:000347263000031.
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- 28 Sampaio, Jorge. 2014. "Relativistic M-subshell radiationless transition probabilities and energies for Zn, Cd and Hg". *Atomic Data and Nuclear Data Tables*.
10.1016/j.adt.2014.04.001

- 29 J. M. Sampaio. 2014. "SCATTER FRACTION WITH SIMULATIONS". *Radiation Protection Dosimetry*.
10.1093/rpd/ncu217
- 30 Sampaio, J.M.; Madeira, T.I.; Marques, J.P.; Parente, F.; Costa, A.M.; Indelicato, P.; Santos, J.P.; Lépy, M.-C.; Ménesguen, Y.. 2014. "Approaches for theoretical and experimental determinations of K -shell decay rates and fluorescence yields in Ge". *Physical Review A - Atomic, Molecular, and Optical Physics* 89 (1). <http://www.scopus.com/inward/record.url?eid=2-s2.0-84894431701&partnerID=MN8TOARS>.
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- 31 Sampaio, J.M.; Parente, F.; Indelicato, P.; Marques, J.P.. 2013. "Relativistic calculations of M-shell decay rates and yields in Zn, Cd and Hg". *Journal of Physics B: Atomic, Molecular and Optical Physics* 46 (6). <http://www.scopus.com/inward/record.url?eid=2-s2.0-84875362645&partnerID=MN8TOARS>.
10.1088/0953-4075/46/6/065001
- 32 Sampaio, J. M.; Parente, F.; Naze, C.; Godefroid, M.; Indelicato, P.; Marques, J. P.. 2013. "Relativistic calculations of 1s(2)2s2p level splitting in Be-like Kr". *Physica Scripta* T156. http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcAuth=ORCID&SrcApp=OrcidOrg&DestLinkType=FullRecord&DestApp=WOS_CPL&KeyUT=WOS:000329022300016&KeyUID=WOS:000329022300016.
10.1088/0031-8949/2013/T156/014015
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Report

- 1 Sampaio, J. M.; Gonçalves, P.. 2019. *Flight Data Analysis of the TDP8 radiation experiments onboard ALPHASAT*.
- 2 Sampaio, Jorge. 2015. *ACHIEVEMENTS IN STRENGTHENING RADIOACTIVE WASTE MANAGEMENT CAPABILITIES - Country Report Portugal*.
- 3 Sampaio, Jorge. 2010. *ORIENTAÇÕES PARA A GESTÃO SEGURA DE RESÍDUOS RADIOATIVOS PARA ARMAZENAGEM À SUPERFÍCIE*.
- 4 Sampaio, Jorge; Gieb, Martin; Dias, Sónia; Sousa Ferro, Miguel; Meruje, Maria Manuel. 2010. *Parecer sobre o pedido de licenciamento da instalação de produção de radiofármacos contendo um ciclotrão*.

Thesis /
Dissertation

- 1 Sampaio, Jorge. 2003. "Weak Interaction Processes in Nuclei for core-collapse supernovae". PhD Thesis, Aarhus Universitet Institut for Fysik og Astronomi.
10.13140/RG.2.1.1090.8009
- 2 Sampaio, Jorge. 2000. "A reacção ${}^7\text{Li}(p, \gamma){}^8\text{Be}$ reaction a energias astrofísicas". Master's Diss., Universidade de Lisboa Faculdade de Ciências.

Activities

Oral presentation

| | Presentation title | Event name Host (Event location) |
|------------|---|---|
| 2020/02/05 | Particles Against Cancer | Fifth Lisbon mini-school on Particle and Astroparticle Physics LIP - Laboratório de Instrumentação e Física Experimental de Partículas (Caparica, Portugal) |
| 2019/07/11 | Atomic physics perspective on targeted therapy with Auger Emitting radionuclides | IBERIAN JOINT MEETING ON ATOMIC AND MOLECULAR PHYSICS Universidade de Évora (Évora, Portugal) |
| 2019/07/08 | Workshop on Dosimetry and Proton Therapy | Workshop Hands on Particles and Light for Life LIP - Laboratório de Instrumentação e Física Experimental de Partículas (Lisbon, Portugal) |
| 2019/05/21 | High-Resolution dosimetry R&D at LIP for medical and space applications | 1st International Biophysics Collaboration meeting at GSI GSI Helmholtzzentrum für Schwerionenforschung (Darmstadt, Germany) |
| 2019/05/16 | Fundamental Atomic Parameters for the Multi-Messenger Physics | Quant - EXSA Quantitative Methods in X-Ray Spectrometry Faculdade de Ciências e Tecnologia Universidade Nova de Lisboa (Caparica, Portugal) |
| 2018/11/19 | Space Radiation Effects on Humans and Machines | Seminar CENTRA-SIM Universidade de Lisboa Faculdade de Ciências (Lisboa, Portugal) |
| 2018/09/10 | Atomic structure calculations needs for the kilonova modelling | (SPARC 2018) 15th Topical Workshop of the Stored Particles Atomic Physics Research Collaboration Universidade Nova de Lisboa Faculdade de Ciências e Tecnologia (Caparica, Portugal) |
| 2018/09/01 | UMA PERSPECTIVA DA FÍSICA ATÓMICA NA TERAPIA DIRECIONADA COM RADIONUCLÍDEOS EMISSORES AUGER | (FÍSICA2018) 21ª Conferência Nacional de Física e 28º Encontro Ibérico para o Ensino da Física, Universidade da Beira Interior Faculdade de Ciências da Saúde (Covilhã, Portugal) |
| 2018/06/06 | Atomic Structure Calculations at Lisbon | EMMI Rapid Reaction Task Force: The physics of Neutron Star Mergers at GSI/FAIR GSI Helmholtz Centre for Heavy Ion Research (Darmstadt, Germany) |

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|------------|---|--|
| 2018/05/24 | Micro-dosimetry of High-LET particles | 2016 1st Joint International Workshop on Parallel Data Storage and data Intensive Scalable Computing Systems (PDSW-DISCS) Universidade do Minho (Braga, Portugal) |
| 2018/04/27 | Space Radiation Environment and Effects at LIP | MAT Science Week GSI Helmholtz Centre for Heavy Ion Research (Darmstadt, Germany) |
| 2017/09/08 | Mulheres no Espaço | IGNITE Portugal Universidade Nova de Lisboa Faculdade de Ciências e Tecnologia (Caparica, Portugal) |
| 2017/04/12 | Targeted Radiotherapy with Auger Electrons - An Atomic Physics Perspective | 2nd NOVA Biomedical Engineering Workshop Universidade Nova de Lisboa Faculdade de Ciências e Tecnologia (Caparica, Portugal) |
| 2015/09 | Strengthening Radioactive Waste Management Capabilities COUNTRY REPORT Portugal | IAEA Regional Workshop RER9107 International Atomic Agency (Viena, Austria) |
| 2015/06/19 | Report on practices and problems in Portugal | IAEA Workshop on methodology for development of safety case and safety assesment for storages and repositories Siberian Federal Universty (Krasnoyarsk, Russia) |
| 2015/04/16 | Improved calculations of fundamental atomic parameters | 8th Fundamental Parameters Workshop Universidade Nova de Lisboa Faculdade de Ciências e Tecnologia (Caparica, Portugal) |
| 2014/05/27 | Revisiting radiation scatter in x-ray imaging with simulations | (RAD 2014) Second International Conference on Radiation and Dosimetry in Various Fields of Research Faculty of Electronic Engineering University of Nis (Nís, Serbia) |
| 2014/02/24 | Determination of gold leaf thickness by realistic Monte Carlo simulations of an EDXRF spectrometer: Application to a renaissance illumination | Monte Carlo simulation tools for X-ray imaging and fluorescence Workshop ESRF - The European Synchrotron Radiation Facility (Grenoble, France) |
| 2013/09/10 | Developments in quantitative EDXRF analysis | (IBER2013) Iberian Joint Meeting on Atomic and Molecular Physics Universidad Pablo de Olavide (Sevilha) |

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|------------|--|---|
| 2013/09/09 | Scattered radiation in radiographic installations | (PSR2013) Proteção Radiológica na Saúde Hospital Júlio de Matos (Lisboa, Portugal) |
| 2011/11 | Estaremos a sobrestimar o dimensionamento das barreiras de proteção radiológica? | Seminar of the Physics Department Universidade de Lisboa Faculdade de Ciências (Lisboa, Portugal) |
| 2011/09/03 | Should we reassess structural shielding design of mammography installations? | (EMPEC2011) European Medical Physics and Engineering Conference Trinity College (Dublin, Ireland) |
| 2008/01 | Nuclear weak interactions for supernova simulations | Seminar of CENTRA Instituto Superior Técnico (Lisboa, Portugal) |
| 2006/04 | Neutrino-nucleus reactions for core collapse supernovae | Seminar of CFNUL Complexo Interdisciplinar da Universidade de Lisboa (Lisboa, Portugal) |
| 2004/01 | Nuclear electron captures for the supernova mechanism | Seminar of the Physics Department Universidade de Lisboa Faculdade de Ciências (Lisboa, Portugal) |
| 2001/10/10 | Weak interactions in supernovae | (NRAD2001) NEW PERSPECTIVES WITH NUCLEAR RADIOACTIVITY Instituto Superior Técnico (Lisboa, Portugal) |

Supervision

| | Thesis Title Role | Degree Subject (Type) Institution / Organization |
|----------------------|--|--|
| 2020/01/01 - Current | Simulations of radiosensitization efficacy of nanoparticles in proton therapy Supervisor of Joana Isabel do Carmo Antunes | Mestrado Integrado em Eng. ^a Biomédica (Master) Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2020/01/01 - Current | Determination of Sn-118(p,ζ)Sb-119 cross section at astrophysical relevant energies from X-ray yields Supervisor of Manuel António Tavares Xarepe | Ciências da Engenharia - Engenharia Física (Master) Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2016/09/01 - Current | Simulation of Auger electron spectra from nuclides of medical interest Co-supervisor of Maria Daniela Pires | Física Universidade de Lisboa Faculdade de Ciências, Portugal |

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| 2019/01/01 - 2019/11/07 | Design of a tissue-equivalent plastic dosimeter for studies on hadron therapy and radiation effects in space Supervisor of Filipa Duque Fragoso de Almeida Carvalho | Engenharia Biomédica (Master) Universidade Nova de Lisboa Faculdade de Ciências e Tecnologia, Portugal |
| 2015/09/01 - 2016/06/08 | Efeitos do Ambiente de Radiação Espacial em Missões Tripuladas a Marte Co-supervisor | Engenharia Física Tecnológica (Master) Universidade de Lisboa Instituto Superior Técnico, Portugal |

Jury of academic degree

| | Theme Role | Candidate name (Type of degree) Institution / Organization |
|------------|--|---|
| 2019 | Monte Carlo simulations of ionization chamber perturbation factors in proton beams (Thesis) Main arguer | Daniela Botnariuc (Master) Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2018 | LET-and radiation quality-dependence of the complexity of DNA damages (Thesis) Main arguer | João de Figueiredo Canhoto (Master) Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2016/11/04 | Desenho e Dimensionamento de um Sistema de Detecção de Metais de Desgaste em Lubrificantes Automóveis, Navais e Aeronáuticos (Thesis) Main arguer | Cláudia Cristina de Oliveira Luís Nunes Barata (Master) Universidade Nova de Lisboa Faculdade de Ciências e Tecnologia, Portugal |
| 2016/06/07 | Radiation Environment and its Effects on the Martian Surface and Underground Thesis Member | Pedro Miguel Silva de Magalhães (Master) Universidade de Lisboa Instituto Superior Técnico, Portugal |
| 2015/12/15 | Reactores a tório - O futuro da energia nuclear de fissão (Thesis) Main arguer | João Pedro Martins Vilares (Master) Instituto Politécnico de Lisboa Instituto Superior de Engenharia de Lisboa, Portugal |
| 2015/12/15 | Reatores de Fusão: Confinamento Inercial (Thesis) Main arguer | Nelson Jesus de Carvalho Graça (Master) Instituto Politécnico de Lisboa, Portugal |
| 2015/11/10 | Otimização da técnica de micro Fluorescência de Raios-X para o estudo dos ossos (Thesis) Main arguer | Adriana Clotilde da Costa (Master) Universidade Nova de Lisboa Faculdade de Ciências e Tecnologia, Portugal |
| 2015 | In vivo dosimetry to narrow down proton range uncertainties (Thesis) Main arguer | Tiago Mateus Madaleno (Master) Universidade de Lisboa Faculdade de Ciências, Portugal |

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|------------|---|---|
| 2013/07/29 | Spectroscopic techniques for characterizing Portuguese glazed ceramics: a contribution to the study of ancient faience of Coimbra (Thesis) Main arguer | Ana Cristina de Oliveira Guilherme Buzanich (PhD) Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2012/11/19 | Desenvolvimento de um dosímetro com base num fotodíodo Si-PIN (Thesis) Main arguer | Yoenls Parta Alicerces Bahu (Master) Universidade de Lisboa Faculdade de Ciências, Portugal |

Association member

| | Society Organization | Role |
|----------------------|--|------------------|
| 2018/10/17 - Current | EURADOS - European Radiation Dosimetry Group | Associate member |
| 2016/05/16 - Current | SPF - Sociedade Portuguesa de Física | Membro associado |
| 2013/03/13 - Current | SPARC - Stored Particles Atomic Physics Research Collaboration | Associate member |

Consulting

| | Activity description | Institution / Organization |
|-------------------------|---|---|
| 2014/09/01 - 2018/12/31 | Regulation of safety criteria of installations for management of spent fuel and radioactive waste from activities in Medicine, Industry, Agriculture, Research and Education. | (COMRSIN) Comissão Reguladora da Segurança das Instalações Nucleares, Portugal |
| 2008/01/01 - 2009/06/30 | Technical support on radiation protection issues related to the legal framework on radiation protection. Collaboration with the Radiation Protection group at CERN on Monte Carlo simulations for shielding design of accelerators. | (CIPRSN) Comissão Independente para a Protecção Radiológica e Segurança Nuclear, Portugal |

Course / Discipline taught

| | Academic session | Degree Subject (Type) | Institution / Organization |
|----------------|------------------------------------|---|--|
| 2018 - Current | Dosimetria e Protecção Radiológica | Engenharia Biomédica e Biofísica (Mestrado integrado) | Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2017 - Current | Física e Tecnologia das Radiações | Engenharia Biomédica e Biofísica (Mestrado integrado) | Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2016 - 2018 | Física Experimental III | Engenharia Física (Mestrado integrado) | Universidade de Lisboa Faculdade de Ciências, Portugal |

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|-------------|-------------------------------------|--|--|
| 2015 - 2016 | Dosimetria e Protecção Radiológica | Engenharia Biomédica e Biofísica (Mestrado integrado) | Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2015 - 2016 | Física Atómica | Física (Licenciatura) | Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2013 - 2014 | Física e Tecnologia das Radiações | Engenharia Biomédica e Biofísica (Mestrado integrado) | Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2012 - 2014 | Dosimetria e Protecção Radiológica | Engenharia Biomédica e Biofísica (Doutoramento) | Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2011 - 2012 | Dosimetria e Protecção Radiológica | Engenharia Biomédica e Biofísica (Mestrado integrado) | Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2009 - 2012 | Produção e Dosimetria das Radiações | Radiações Aplicadas às Tecnologias da Saúde (Mestrado integrado) | Instituto Politécnico de Lisboa Escola Superior de Tecnologia da Saúde de Lisboa, Portugal |
| 2010 - 2011 | Dosimetria e Protecção Radiológica | Engenharia Biomédica e Biofísica (Mestrado integrado) | Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2009 - 2011 | Física e Tecnologia das Radiações | Engenharia Biomédica e Biofísica (Mestrado integrado) | Universidade de Lisboa Faculdade de Ciências, Portugal |
| 2009 - 2010 | Física Atómica | Física (Licenciatura) | Universidade de Lisboa Faculdade de Ciências, Portugal |

Journal scientific committee

| | Journal title (ISSN) | Publisher |
|----------------|---|----------------|
| 2017 - Current | Journal of Quantitative Spectroscopy and Radiative Transfer (0022-4073) | ELSEVIER |
| 2016 - Current | Journal of Physics B: Atomic, Molecular and Optical Physics (0953-4075) | IOP Publishing |
| 2014 - Current | Atomic Data and Nuclear Data Tables (0092-640X) | ELSEVIER |

Distinctions

Award

| | |
|------|--|
| 2014 | Best paper award (RAD2014) The 2nd International Conference on Radiation and Dosimetry in Various fields of Research, Serbia |
| 2004 | Excellence in Science and Technology UT-Battelle LLC, United States |
