Curriculum Vitae

Pedro Miguel Dinis de Almeida

Lisboa, 2025

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Personal Data

Name: Pedro Miguel Dinis de Almeida
Date of Birth: 12 de Dezembro de 1968
Marital state: Maried
Residency: Rua da Serra do Caramulo, 7, 2835-487 Santo António da Charneca, Portugal
Contact: +351.932004450
e-mail: palmeida@fc.ul.pt ; p.dinis.almeida@gmail.com.

Curriculum Summary

We began our work in the field of Biomedical Engineering during the Master's dissertation in Biophysics (1994), following an undergraduate degree in Technological Physics at FCUL, completed in 1992. Over the past 25 years, after joining FCUL as an Assistant Professor in 1999 and the Institute of Biophysics and Biomedical Engineering (IBEB) as a researcher that same year, the year in which the PhD at the University of Paris was completed, we have dedicated our efforts to teaching and research in Biomedical Engineering and Medical Physics. While the teaching activity addressed the needs of the Department of Physics at FCUL each academic year, including general curricular units in addition to specialized ones, and in particular those of the Master's in Biophysics, the precursor of the current Integrated Master's in Biomedical Engineering and Biophysics, the research followed a path of continuity. It incorporated into FCUL/IBEB the experience gained during the doctoral studies, particularly in the areas of acquisition, reconstruction, visualization, and image analysis in Nuclear Medicine (currently also known as Molecular Medicine or Molecular Imaging in Medicine). We established our research group in Medical Imaging and Diagnostics at IBEB, immediately assuming responsibilities in graduate and doctoral training, an activity that continued over the years and contributed to the training of a significant number of individuals, some of whom currently hold leading positions in prestigious healthcare institutions.

A landmark stage in our trajectory was participation as the leader of one of the research lines in a unique worldwide project, in collaboration with several Portuguese institutions and CERN (the group of projects generally known as PET-mammography projects). These projects developed breast imaging systems using PET capable of measuring the depth of photon interaction within the crystal. The total funding associated with these projects, approximately €6 million, eventually led to the creation of two companies, one of which (PETsys Electronics SA) currently operates successfully in the global market.

In parallel with the teaching and research conducted at FCUL, we have also provided consultancy in Medical Physics applied to Nuclear Medicine to healthcare-sector companies since that same date (1999). This multifaceted experience has enabled the development of an integrated perspective of teaching, research, and the business landscape in our country in the field of Physics applied to Molecular Imaging, as well as an extensive professional network in this area at practically all societal levels. Our current research interests focus on the use of multimodal imaging methods and improved quantification imaging techniques for the quantification and evaluation of theranostics applications in nuclear medicine, including the use of nanoparticles.

Teaching

A1. Course teaching as main responsible.

1999/2000:
a. Biomedical Engineering
b. Medical Physics (Master's in Biophysics)

2000/2001:
a. Biomedical Engineering
b. Medical Physics (Master's in Biophysics)

2001/2002:
a. Biomedical Engineering
b. Medical Physics (Master's in Biophysics)

2002/2003:
a. Medical Physics (Master's in Biophysics)

2003/2004:
a. Internship (Master's in Biophysics)
b. Medical Physics (Master's in Biophysics)

2004/2005:
a. Biophysics (Faculty of Dental Medicine)

2005/2006:
a. Biophysics (Faculty of Dental Medicine)
b. Internship (Master's in Biophysics)
c. Medical Physics (Master's in Biophysics)

2006/2007:
a. Medical Biophysics
b. Internship (Master's in Biophysics)
c. Medical Physics (Master's in Biophysics)

2007/2008:
a. Medical Biophysics

2008/2009:
a. Mechanics and Waves (Department of Energy and Environment, FCUL)

2009/2010:
a. Mechanics and Waves (Department of Energy and Environment, FCUL)
b. Modelling and Simulation in Medicine

2010/2011:
a. Modelling and Simulation in Medicine
b. Medical Equipment, Principles and Applications I
c. Medical Equipment, Principles and Applications II
d. New Technologies in Radiation-based Diagnosis and Therapy

2011/2012:
a. Medical Equipment, Principles and Applications I
b. New Technologies in Radiation-based Diagnosis and Therapy
c. Seminar + Journal Club

2012/2013:
a. Medical Equipment, Principles and Applications I
b. New Technologies in Radiation-based Diagnosis and Therapy
c. Medical Equipment, Principles and Applications II

2013/2014:
a. Medical Equipment, Principles and Applications I
b. New Technologies in Radiation-based Diagnosis and Therapy
c. Medical Equipment, Principles and Applications II

2014/2015:
a. Medical Equipment, Principles and Applications I
b. Seminar
c. Medical Equipment, Principles and Applications II

2015/2016:
a. Medical Equipment, Principles and Applications I
b. Seminar
c. Medical Equipment, Principles and Applications II

2016/2017:
a. Medical Equipment: Principles and Applications I
b. Dissertation Plan

2017/2018:
a. Medical Equipment: Principles and Applications I
b. Dissertation Plan
c. Biomedical Innovation Laboratory
d. New Technologies in Radiation-based Diagnosis and Therapy

2018-2025
Vice-Dean of FCUL (without teaching service).

A2. Other teaching activities.

1. Master's and Doctoral Program in Cognitive Sciences (Faculty of Medicine of Lisbon) – Molecular Imaging with Radionuclides (2008 to 2018)
2. NOVA University Lisbon – Faculty of Science and Technology – Nuclear Medicine module within the course "Topics in Biomedical Engineering" of the Integrated Master's in Biomedical Engineering – 12-hour module (2007 to 2013)
3. Master's in Evolutionary and Developmental Biology (FCUL – Department of Animal Biology) – Molecular imaging with radionuclides (2006 to 2010)
4. Master's in Neurosciences (Faculty of Medicine of Lisbon) – Neuroimaging – Physical Principles and Application (2005 to 2008)
5. Medicine Degree – University of Madeira – Lecture in the Molecular Biology unit: Molecular Imaging with Radionuclides (2007)

6. Higher School of Health of the Portuguese Red Cross – Lecture: PET and Applications (2007)
7. NOVA University Lisbon – Faculty of Science and Technology – Lecture: BEST Course – In vivo imaging with radionuclides: selected medical applications (2007)
8. Master's in Neurosciences (Faculty of Medicine of Lisbon) – Lecture: In vivo evaluation of D2 dopamine receptor density (2000 to 2005)
9. Doctoral Program in Neurosciences – Gulbenkian Institute of Science – Lecture: Molecular Imaging of the Brain using Nuclear Medicine Techniques (2005)
10. Master's in Biomedical Inorganic Chemistry (Department of Chemistry – FCUL) – Lecture: Information Acquisition in Conventional Nuclear Medicine (2003)
11. Higher School of Health Technologies of Lisbon – 18-hour module – Positron Emission Tomography: Technical Aspects and Clinical Applications (2002 and 2003)

A.3 New study cycles/initiatives

1. Definition of the curriculum structure of the Integrated Master's in Biomedical Engineering and Biophysics at FCUL, designing the initial syllabi for the following curricular units:
    - Modelling and Simulation in Medicine
    - New Technologies in Radiation-based Diagnosis and Therapy
    - Medical Equipment – Principles and Applications I
    - Medical Equipment – Principles and Applications II
2. Founding member of the ULisboa Mind and Brain College (https://colegiomente-cerebro.ulisboa.pt), with responsibilities in its management bodies.
3. Participation in the creation of a Medical Physics program involving FCUL, Instituto Superior Técnico (ULisboa), and the Faculty of Medicine of ULisboa, which resulted in the current Master's in Medical Physics jointly offered by these institutions.

A.4 Academic Supervisions

A.4.1 Ph.D. Thesis

1. Luís Freire; "Registration of functional MRI time series"; PhD in Biophysics – University of Lisbon (2003)
   *currently Coordinator Professor at the Polytechnic Institute of Lisbon.
2. Luís Janeiro; "Incorporating accurate statistical modeling in PET reconstruction for whole-body imaging"; PhD in Biophysics – University of Lisbon (2007)
   *currently Director of the Higher School of Health of the Portuguese Red Cross.
3. Mónica Martins; "3D image reconstruction for a dual-plate Positron Emission Tomograph: application to mammography"; PhD in Biophysics – University of Lisbon (2008)
   *currently Coordinator Professor at the Polytechnic Institute of Portalegre.
4. Nuno Matela; "2D iterative image reconstruction for a dual planar detector for Positron Emission Tomography"; PhD in Biomedical Engineering and Biophysics – University of Lisbon (2008)
   *currently Assistant Professor at the Faculty of Sciences of the University of Lisbon.
5. Susana Silva; "Small animal PET imaging using Monte Carlo simulations: implementation of physiological and metabolic information"; PhD in Biomedical

Engineering and Biophysics – University of Lisbon (2010)
*currently Adjunct Professor at the Polytechnic Institute of Lisbon.

6. Lina Vieira; "Contribution to the optimization of myocardial perfusion studies using electrocardiogram-gated myocardial perfusion studies"; PhD in Biomedical Engineering and Biophysics – University of Lisbon (2011)
*currently Coordinator Professor at the Polytechnic Institute of Lisbon.
7. Liliana Caldeira; "PET Image Reconstruction using MRI-based anatomical priors: Application to the Siemens 3T MR-BrainPET system"; PhD in Biomedical Engineering and Biophysics – University of Lisbon (2013)
*currently Team Leader of the Data Science in Radiology group at Uniklinik Köln (Germany).
8. Ana Belchior; "Contribution to fundamental aspects of Biophysics, radiobiology, and modeling of cellular response to low radiation doses"; PhD in Biomedical Engineering and Biophysics – University of Lisbon (2014)
*currently Researcher at CTN/IST.
9. Cláudia Ferreira; "The ClearPEM detector in breast cancer: correction methods for improved imaging"; PhD in Biomedical Engineering – Instituto Superior Técnico, University of Lisbon (2014)
*currently Senior Scientist Imaging at Roche, Munich region, Germany.
10. Ana Isabel Gouveia; "Medical Image Registration by Neural Networks: A regression-based approach"; PhD in Biomedicine – University of Beira Interior (2015) – as co-supervisor
*currently Assistant Professor at the University of Beira Interior.
11. Ricardo Miguel Ferreira Capote; "Single Photon Emission mammography with Convergent Collimators"; PhD in Biomedical Engineering and Biophysics – University of Lisbon (2015)
*currently Software Engineer at Deimos Engenharia.
12. Ana Sofia Germano; "Ultrasound in the optimization of malignancy risk stratification of thyroid nodules"; PhD in Medicine – Clinical Research specialty – NOVA Medical School | Faculty of Medical Sciences (2018) – as co-supervisor
*currently Medical Specialist at Hospital Fernando da Fonseca.
13. Ana Cravo Sá; "Assessment of Out-of-Field Dose in Pediatric Radiotherapy Patients: Comparison of 3DCRT and IMRT techniques"; PhD in Biomedical Engineering and Biophysics – University of Lisbon (2021)
*currently Adjunct Professor at the Polytechnic Institute of Lisbon.
14. Ana Margarida Mota; "Enhanced Digital Breast Tomosynthesis diagnostic using 3D visualization and computer-assisted diagnosis"; PhD in Biomedical Engineering and Biophysics – University of Lisbon (2022)
*currently Adjunct Professor at the Polytechnic Institute of Lisbon.

A.4.2 Undergraduate dissertations

1. Paula Santos; "Conventional Nuclear Medicine: Technical aspects and application to hyperthyroidism"
Technological Physics, FCUL – Collaboration with Hospital Garcia de Orta (2000)
2. Ana Faustino; "Fractionated Stereotactic Radiotherapy: Physical aspects and Quality Control"
Physics Engineering, FCUL – Collaboration with Hospital de Santa Maria (2001)
3. Cristina Gonçalves; "Image Reconstruction in Nuclear Medicine: Practical aspects and detection of cold lesions"
Physics Engineering, FCUL – Collaboration with Hospital de Santa Cruz (2001)

4. Mónica Martins; "Gastric Emptying in Conventional Nuclear Medicine – physical aspects and Compton scatter correction"
   Technological Physics Engineering (IST) – Collaboration with Hospital Garcia de Orta (2002)
5. Ana Gouveia; "Gastric Emptying in Conventional Nuclear Medicine – quantitative aspects"
   Technological Physics Engineering (IST) – Collaboration with Hospital Garcia de Orta (2002)
6. Nuno Matela; "Nuclear Medicine Imaging (SPECT) – Optimization and Corrections in Tomographic Reconstruction using OSEM"
   Technological Physics Engineering (IST) – (2003)
7. Pedro Nunes; "Monte Carlo Simulation in Positron Emission Mammography"
   Physics Engineering, FCUL – (2003)
8. Nuno Oliveira; "Visualization and analysis of images in positron emission mammography"
   Physics Engineering, FCUL – (2004)
9. Elizabeth Cruz; "Realignment of SPECT and CT images"
   Technological Physics Engineering (IST) – Collaboration with Hospital Garcia de Orta (2004)
10. Carla Cardoso; "Attenuation correction in Positron Emission Mammography"
    Physics Engineering, FCUL – (2005)
11. Hugo Cordeiro; "Implementation and testing of a data reordering algorithm for Positron Emission Mammography"
    Physics Engineering, FCUL – (2005)
12. Marta Correia; "Application of the John equation to image reconstruction"
    Technological Physics Engineering (IST) – (2005)
13. Ana Oliveira; "Commissioning, Modelling, and Quality Control of the XiO planning system"
    Physics Engineering, FCUL – Collaboration with Hospital de Santa Maria (2005)
14. Filipa Leal; "Calibration of semiconductor detectors for implementation of an in vivo radiotherapy dosimetry protocol"
    Physics Engineering, FCUL – Collaboration with Hospital de Santa Maria (2006)
15. Rita Malveiro; "Image processing in Nuclear Medicine with application to Nephrology"
    Physics Engineering, FCUL – Collaboration with Hospital Garcia de Orta (2006)
16. Ricardo Bento; "Image Reconstruction in SPECT"
    Physics Engineering, FCUL – Collaboration with Hospital Garcia de Orta (2008)
17. Micaela Alves; "Correction of attenuators and scatter in SPECT"
    Physics Engineering, FCUL – (2008)

A.4.3. Master's Theses and Integrated Master's Thesis

1. Luís Janeiro; "The OS-EM algorithm in image reconstruction in SPECT: implementation aspects and application to fan-beam geometry"; Master in Biophysics, FCUL – (2001)
2. Paula Santos; "Impact of acquisition geometry and patient habitus on tumor detectability in whole-body FDG-PET"; Master in Biophysics, FCUL; Collaboration with Brigham and Women's Hospital – Harvard (2002)
3. Ana Gouveia; "Multimodal Medical Image Registration"; Master in Biophysics, FCUL – (2004)
4. Susana Silva; "Implementation of a Monte Carlo simulation system for PET applied to small animals"; Master in Biophysics, FCUL – (2005)

5. Ana Soares; “Coding and implementation of a compartmental model for 18F-FLT-PET retention”; Master in Biomedical Engineering (FCT-UNL) – (2007)
6. Joana Mesquita; “Optimization of the 2D ART reconstruction algorithm for PET mammography”; Master in Biomedical Engineering (FCT-UNL) – (2007)
7. Ana Oliveira; “Motion in neurological Positron Emission Tomography studies”; Master in Biophysics, FCUL – (2007)
8. Vânia Martins; “Complementary software for renogram processing in Nuclear Medicine for evaluation of diuretic response”; Master in Biomedical Engineering (FCT-UNL) – Collaboration with Garcia de Orta Hospital (2008)
9. Carina Guerreiro; “Development of methodologies for normalization correction in the Clear-PEM positron emission mammography system”; Master in Biophysics, FCUL – (2008)
10. Maria Silva; “Physical characterization of a PET/CT imaging system”; Master in Engineering Physics (IST); Collaboration with Clínica Quadrantes (2008)
11. Nuno Oliveira; “Evaluation of attenuation and scatter corrections in single-photon emission computed tomography”; Master in Biophysics, FCUL – (2008)
12. Paula Madeira; “Dose in Computed Tomography – Diagnostic Reference Levels”; Master in Biophysics, FCUL; Collaboration with ITN and Hospital de São José (2008)
13. Filipe Moura; “Amorphous silicon detector panel damage: correlating physical parameters to clinical usability”; Master in Biophysics, FCUL – (2008)
14. João Pais; “Evaluation of radiation doses to the fetus”; Master in Biophysics, FCUL; Collaboration with ITN (2009)
15. Fernando Marques; “Quality Control in Computed Tomography”; Master in Biophysics, FCUL – (2009)
16. Telma Rodrigues; “Fractionated Cranial Stereotactic Radiotherapy – Implementation and assessment of the process”; Master’s Thesis in Biophysics, FCUL – Collaboration with Clínica Quadrantes (2009)
17. Iola Cardoso; “Implementation of IMRT technique at CODNC – Implementation procedures”; Master’s Thesis in Biophysics, FCUL – Collaboration with Clínica Quadrantes (2009)
18. Eva Sousa; “Construction and validation of a normal database in nuclear cardiology”; Master’s Thesis in Biophysics, FCUL – Collaboration with Clínica Quadrantes (2009)
19. Gonçalo Picado; “Guided reconstruction in positron emission mammography”; Master’s Thesis in Physical Engineering, FCUL – (2009)

Integrated Master’s Theses

1. Ana Teixeira; “Sensitivity correction of images obtained with the Clear-PEM prototype in a pre-clinical environment”; Integrated Master in Biomedical Engineering (FCT-UNL) – (2009)
2. Miguel Abreu; “Implementation and testing of lesion segmentation methods in digital mammography images”; Integrated Master in Biomedical Engineering (FCT-UNL) – (2009)
3. André Coelho; “Optimization of image reconstruction in positron emission mammography using data regularization methods”; Integrated Master in Biomedical Engineering (FCT-UNL) – (2010)
4. Ana Mota; “Noise minimization in positron emission mammography images by optimizing acquisition time and voxel size”; Integrated Master in Biomedical Engineering (FCT-UNL) – (2010)
5. Bernardo Lopes Abreu; “Medical image reconstruction/processing with GPU in Tomosynthesis”; Integrated Master in Biomedical Engineering (FCT-UNL) – (2011)

6. Sérgio Alexandre Mendes; “Medical image reconstruction in positron emission mammography (PEM) with GPU”; Integrated Master in Biomedical Engineering (FCT-UNL) – (2011)
7. Pedro Miguel Cascalho; “Implementation of a testing platform for computer-aided detection/diagnosis (CAD) algorithms in mammography”; Integrated Master in Biomedical Engineering (FCT-UNL) – (2011)
8. Luís Miguel Ribeiro; “Implementation of a system for monitoring ambient radiation dose in a Nuclear Medicine Department”; Integrated Master in Biomedical Engineering (FCT-UNL) – (2011)
9. Ana Margarida Valente; “SPECT image reconstruction using a convergent collimator and pixelated detectors”; Integrated Master in Biomedical Engineering (FCT-UNL) – (2011)
10. João Monteiro; “Implementation and evaluation of different scaling methods in Single Scatter Simulation for the Siemens BrainPET scanner”; Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2012)
11. André Ribeiro; “Bone recognition in UTE MR images by artificial neural networks for attenuation correction in brain imaging with MR/PET scanners”; Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2012)
12. Débora Salvado; “Evaluation of the D-SPECT system: geometric considerations and respiratory motion”; Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2012)
13. Filipa Costa; “Evaluation of the D-SPECT system: region-centric acquisition and tracer kinetics”; Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2012)
14. Nuno André Silva; “On the use of image-derived input function for quantitative PET imaging with a simultaneously measuring MR-BrainPET”; Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2012)
15. Cátia Alves; “Ionizing radiation monitoring in clinical diagnostics – development of adaptive models”; Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2012)
16. Ana Raquel Reis; “Acquisition, Processing, and Analysis of Nuclear Medicine Images”; Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2012)
17. Melissa Botelho; “Improving resolution of the Brain PET-MRI system”; Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2015)
18. Mariana Neves; “In vivo dosimetry with diodes in breast cancer patients undergoing hypofractionated IMRT” – Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2015)
19. Mauro Sansana e Costa; “Myocardial partial volume correction of internal left ventricular structures in emission tomography images” – Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2015)
20. Liliana Pereira; “A SiPM-based PET-TOF demonstrator: testing and evaluation of the image reconstruction software and implementation of a TOF algorithm for improved imaging”; Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2016)
21. Inês Costa; “Parametric imaging of FET PET using nonlinear based fitting” – Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2016)
22. Daniela Medley; “Proof of concept of a simultaneous PET-MRI system for breast imaging” – Integrated Master in Biomedical Engineering (FCT-UNL) – (2016)
23. Gonçalo Cosme; “Image reconstruction for ultra-fast PET systems” – Integrated Master in Biomedical Engineering (FCT-UNL) – (2016)
24. Sara Russo; “From effective dose study in PET/CT to the proposal of DRLs based on control charts” – Integrated Master in Biomedical Engineering (FCT-UNL) – (2017)

25. Ana Mafalda Costa Silva; “Generation and characterization of a Cerl2 KO embryonic stem cell line” – Integrated Master in Biomedical Engineering (FCT-UNL) – (2017)
26. Kasia Wieciorek; “Links between defective endocytosis and mitochondria” – Integrated Master in Biomedical Engineering (FCT-UNL) – (2017)
27. Joaquim Costa; “MR-based pseudo-CT generation using water-fat decomposition and Gaussian mixture regression” – Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2018)
28. Miguel Santana; “Enhancing reprogramming and transdifferentiation through long non-coding RNAs” – Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2017)
29. Pedro Borges; “Neuronal connectivity: new biomarkers of neuronal dysfunction” – Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2018)
30. Pedro Miguel dos Santos Borges; “Automatic classification of HER2 expression in in-situ hybridization images of breast tissue” – Integrated Master in Biomedical Engineering and Biophysics, FCUL – (2018)

A.5. Relevant Professional Experience.

A.5.1. Profissional Certifications

Medical Physics Expert (Nuclear Medicine) since 2021
Certificate No. 37
Central Administration of Health Services, IP

Expert in Radiation Protection (Nuclear Medicine) since 2018
Certificate R3/2018
Directorate-General of Health

A.5.2. Consulting Activities

1. Consultant to the Directorate-General of Health for the field of Nuclear Medicine, participating in the development of the Hospital Referral Network for Nuclear Medicine (2004–2006).
2. Member of the Evaluation Committee for Higher Education Programs in Nuclear Medicine at the Polytechnic Institutes of Porto and Lisbon (2005).
3. Consultant in Medical Physics applied to Nuclear Medicine (in accordance with Decree-Law 108/2018, acting as a Medical Physics Specialist in the field of Nuclear Medicine):

   a. Joaquim Chaves Saúde Group (https://www.jcs.pt) since 2001
   b. Western Lisbon Hospital Centre (http://www.chlo.min-saude.pt) since 2000
   c. Garcia de Orta Hospital (http://www.hgo.pt) from 1999–2006 and since 2017
   d. Lusíadas Lisboa Hospital (https://www.lusiadas.pt/pt/unidades/HospitalLisboa/) since 2017

4. Technical manager of the occupational dosimetry laboratory PLURIRAD, Lda since 2022.

Institutional Appointments related to Professional Qualifications:

1. Responsible for Radiation Protection at the Faculty of Sciences of the University of Lisbon, appointed by the Dean of FCUL on 20 June 2024.
2. Representative of the University of Lisbon in the ACSS Working Group on Medical Physics Training (Rectoral Appointment).

Reseaarch

B.1. Scientific Publications

B.1.1 Books and book chapters

L1. **"Evaluation of the Respiratory Motion Effect in Small Animal PET Images with GATE Monte Carlo Simulations"**; Susana Branco, Pedro Almeida and Sébastien Jan *in* "Applications of Monte Carlo Methods in Biology, Medicine and Other Fields of Science"
Editor: Charles J. Mode
ISBN 978-953-307-427-6, Hardcover, 424 pages
Publisher: InTech
2011

L2. **"Digital Breast Tomoshynthesis"** *in* "Mammography: Procedure, Results and Risks"
Series: Cancer Etiology, Diagnosis and Treatments, 152 pages
Editores**:** Andrea Palmetti e Raphaël Roux
ISBN: 978-1-61470-589-5
Publisher: NOVA Science Publishers (www.novapublishers.com)
2012

L3. **"Digital Breast Tomosynthesis. A review of Population-Based Screening/Clinical Trials"**, Ana M. Mota, Pedro Almeida, Nuno Matela *in* "Tomosynthesis: Benefits, Clinical uses and Limitations"
Series: Biotechnology in Agriculture, Industry and Medicine, 113 pages
Editores**:** Lucia Gutierrez
ISBN: 978-1-63485-132-9 (softcover)
Publisher: NOVA Science Publishers (www.novapublishers.com)
2016

L4. **"Introduction to PET"**, H. Herzog and P. Almeida in "Hybrid PET-MRI Imaging: Systems, Methods and Applications", 409 pages
Editor: N. Jon Shah
ISBN: 9787-1-78801-074-0 (Print ISBN)
Publisher: Royal Society of Chemistry (www.pubs.rsc.org)
2018

B.1.2. Papers

A1. A.Traverse, G. Leo, J.G. Alves, P.M. Almeida, M.F. Da Silva and J.C. Soares; **"Disorder creation and annealing in Hg implanted CdTe"**, Nucl. Instr. and Meth. in Phys. Res. (1993), B80/81, pp 938-942

A2. O. de Dreuille, V. Strijckmans, P. Almeida, C. Loc'h, B. Bendriem; **"Bone equivalent liquid solution to assess accuracy of transmission measurements in SPECT and PET"** - IEEE Transactions on Nuclear Science (1997), 44 (3), pp 1186-1190

A3. Pedro Almeida, Bernard Bendriem, Olivier de Dreuille, Arnaud Peltier, Claudine Perrot, Vincent Brulon **"Dosimetry of transmission measurements in nuclear medicine: A study using anthropomorphic phantoms and thermoluminescent dosimeters"** - Eur. J. Nucl. Med. (1998), 25 (10), pp 1435-1441.

A4. Georges N. El Fahkri, Irène Buvat, Habib Benali, Mélanie Pélégrini, Pedro Almeida, Bernard Bendriem, Robert Di Paola, **"Respective roles of scatter, attenuation, collimator response and partial volume effect in cardiac SPECT quantitation: a Monte-Carlo study"** - Eur. J. Nucl. Med. (1999), 26 (5), pp 437-446

A5. Maria-João Ribeiro, Pedro Almeida, Daniel Strul, Nuno Ferreira, Christian Loc'h, Vincent Brulon, Régine Trébossen, Bernard Bendriem **"Comparison of Fluorine-18 and Bromine-76 imaging in PET"** - Eur. J. Nucl. Med. (1999), 26 (7), pp 758-766

A6. Pedro M. Almeida, Maria J. Ribeiro, Michel Bottlaender, Christian Loc'h, Oliver Langer, Daniel Strul, Patrick Hugonnard, Pierre Grangeat, Bernard Mazière, Bernard Bendriem, **"Absolute quantitation of I-123 Labeled Epidepride in Baboon Brain Using SPECT"** - Eur. J. Nucl. Med. (1999), 26 (12), pp 1580-1588

A7. MJ Ribeiro, P Almeida, B Bendriem, P Hugonnard, P Grangeat, R Trébossen **"Quantification absolue de la fixation radioactive dans les noyaux gris centraux en TEMP: étude sur fantôme anthropomorphique"**, *Médécine Nucléaire* (2000), vol24, n.2, pp 85-97

A8. Maria-João Ribeiro, Régine Trébossen, Pedro Almeida, Nuno Ferreira, Vincent Brulon, Philippe Remy, Bernard Bendriem **"Production of a Normal Subject Database for F-18-L-DOPA PET: Comparison of Data Sets Acquired on Different Tomographs"** – Eur. J. Nucl. Med. (2000), n.6, pp 707-712

A9. Georges El Fakhri, Irène Buvat, Pedro Almeida, Bernard Bendriem, Andrew Todd Pokropek, Habib Benali, **"Should scatter be corrected in both transmission and emission data for accurate quantitation in cardiac SPECT ?"** – Eur. J. Nucl. Med. (2000), n.9, pp 1356-1364

A10. R.Ribeiro, C. Abreu, P. Almeida, F. Balau, P. Bordalo, N.C. Ferreira, S. Fetal, F. Fraga, P. Lecoq, M. Martins, N. Matela, R. Moura, C. Ortigão, L. Peralta, S. Ramos, P. Rato, P. Rodrigues, A.I. Santos, A. Trindade, J. Varela, **"Breast Imaging with a dedicated PEM"** – Nuclear Instruments and Methods in Physics Research *A527* (2004), pp 87-91

A11. M.C. Abreu, P. Almeida, F. Balau, N.C. Ferreira, S. Fetal, F. Fraga, M. Martins, N. Matela, R. Moura, C. Ortigão, L. Peralta, P. Rato, R. Ribeiro, P. Rodrigues, A. I. Santos, A. Trindade, J. Varela, **"Clear-PEM: A dedicated PET camera for improved breast cancer detection"** – Radiation Protection Dosimetry (2005), vol. 116, nº 1-4, pp 208-210

A12. Maria C. Abreu, João D. Aguiar, Fernando G. Almeida, Pedro Almeida, Pedro Bento, Bruno carriço, Miguel Ferreira, Nuno C. Ferreira, Fernando Gonçalves, Carlos Leong, Filipe Lopes, Pedro Lousã, Mónica V. Martins, Nuno Matela, Pedro R. Mendes, Rui Moura, João Nobre, Nuno Oliveira, Catarina Ortigão, Luís Peralta, Rui Pereira, Joel Rego, Rui Ribeiro, P. Rodrigues, José Sampaio, Ana I. Santos, Luís Silva, José C. Silva, Patrick Sousa, Isabel C. Teixeira, João P. Teixeira, Andreia Trindade, João Varela, **"Design and evaluation of the Clear-PEM detector for positron emission mammography"** – IEEE Transactions in Nuclear Science (2006), 53(1), pp 71-77

A13. L. Janeiro, C. Comtat, C. Lartizien, P.E. Kinahan, M. Defrise, C. Michel, R. Trébossen, P.Almeida, **"Numerical observer studies comparing FORE+AWOSEM, FORE+NECOSEM and NEC based fully 3D OSEM for 3D whole-body PET imaging" –** IEEE Transactions in Nuclear Science (2006), 53(3), pp 1194-1199.

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B.1.3. Abstracts

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C122. Vaz, Tãnia; Vieira, Lina; Sousa, EVa; Costa, Durval C.; Almeida, Pedro; **"The influence of count's number in myocardium in the determination of reproducible parameters in Gated-SPECT studies simulated with GATE"**, SYMCOMP 2013 - International Conference on Algebraic and Symbolic Computation – Setembro 2013 – Lisboa

C123. Pedro Almeida, Etiennette Auffray, Ricardo Bugalho, Liji CAO, Jun DANG, Nuno Ferreir, Sofia Ferreira, Benjamin Frisch, Valerie Juhan, Paul Lecoq, Olivier Mundler, Jorge A Neves, Catarina Ortigao, Marco Pizzichemi, Jose Carlos Rasteiro Da Silva, Manuel Rolo, Pascale Siles, Rui Silva, Laurent Tessonier, Stefaan Tavernier, Viesturs Veckalns, Carlos Zorraquino Gastón, Marco Paganoni, Joao Varela, **"A dedicated PET scanner for breast imaging"** – IEEE NSS&MIC Conference – Seoul – South Korea (November 2013) – oral presentation.

C124. Filipa Costa, Pedro Teles, Alexandra Flora, Amália Nogueira, Ana Catarina Barreto, Ana Isabel Santos, Ana Luísa Carvalho, Ana Teresa Fonseca, Bruno Martins, Carlos Gaspar, Catarina Barros, Diana Neves, Elisa Botelho, Elisa Rodrigues, Fernando Godinho, Francisco Alves, Gabriela Cardoso, Guilhermina Cantinho, Isabel Conde, Joana Vale, João Miranda dos Santos, Jorge Isidoro, Jorge Pereira, M. João Cunha, M. Teresa Rézio, Paula Simãozinho, Pedro Almeida, Rosa Gradim Castro, Rui Parafita, Sofia Bastos, Sophia Pintão, Teresa Lúcio, Teresa Reis, Pedro Vaz, **"Estimation of the collective dose in the Portuguese population, due to nuclear medicine exams for the years 2011 and 2012."** – "Protecção radiológica na Saúde" – 18 a 20 Setembro – Lisboa (2013)

C125. Cláudia Ferreira, LiJI Cao, N. Matela, C. Ortigão, Pedro Almeida, João Varela, **"Scatter and Attenuation Corrections for a PEM Detector Using List-Mode OSEM"** –

Poster Presentation at the IEEE NSS and MIC Conference – Seoul (South Korea) – October 2013.

C126. Liliana Caldeira, P. Almeida, J. Scheins, H. Herzog, **"Influence of MRI Artifacts on PET Image Reconstruction Using MRI-Based Priors"** – Poster Presentation at the IEEE NSS and MIC Conference – Seoul (South Korea) – October 2013.

C127. Ana Mota, Nuno Oliveira, Nuno Matela, Pedro Almeida, **"An iterative algorithm for Total Variation minimization in DBT imaging"** - VipIMAGE 2015 - V ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing (www.fe.up.pt/~vipimage) Conference Proceedings – Oral presentation.

C.128. Ana Mota, Nuno Oliveira, Pedro Almeida, Nuno Matela, **"3D Total Variation minimization filter for Breast Tomosynthesis imaging"** - 13th International Workshop on Breast Imaging (2016) Proceedings (pag 501) – Malmo, Sweden (https://www.malmokongressbyra.se/) - published by SPRINGER (Lecture Notes on Computer Science).

C129. Pedro Almeida (on behalf of the FAST collaboration), **"The FAST Cost initiative – an overview"** – PSMR2016 – Cologne 2016

C130. P.M. Correia, I.F. Castro, A.L. Silva, N. Romanyshyn, V. Arosio, M. Caccia, R. Santoro, A. C. Santos, P. Sá, N. MAtela, P. Almeida, J.F. Veloso, **"easyPET – a new approach for axial preclinical PET"** – IEEE NSS&MIC Conference 2016 – Strasburg – France.

C131. P.M. Correia, I.F. Castro, A.L. Silva, N. Romanyshyn, V. Arosio, M. Caccia, R. Santoro, A. C. Santos, P. Sá, N. MAtela, P. Almeida, J.F. Veloso, Coordenador do núcleo de Radioesterelização do CTN – PSMR2017 – Lisboa – Portugal

C132. R. Rosa, B. Guerreiro, P. Pereira, L. Vieira, E. Sousa, F. Branco, S. Valente, T. Freixo, P. Almeida, F.D. Jonge, T.C: Ferreira **"Evaluation of the influence of adipose tissue in attenuation and scattering correction in Myocardial perfusion SPECT/CT."** – EANM Annual Congress – Vienna – 2017 (Oral Communication).

C133. João Veloso, Pedro Correia, Joana Menoita, Ana Silva, Fabiana Ribeiro, Nazar Romanyshyn, Ismael Castro, Filipe Alves, Pedro Encarnação, Fabiana Rodrigues, Ana Santos, Carlos Ramos, Francisco Caramelo, Nuno Ferreira, Diniz Sá, Nuno Matela, Pedro Almeida, Pedro Sá, Valentina Arosio, Massimo Caccia, Romualdo Santoro, **"EasyPET for Preclinical: First Results of a System Demonstrator with SiPMs"** - 8th International Conference on New Developments in Photodetection - Tours, France, 3-7 July 2017 (Oral Communication) - http://ndip.in2p3.fr/tours17/scientific-program/program/

C134. P. Almeida **"Radiation Protection: CT- Optimisation of Hybrid Imaging: Peadiatrics"** – EANM Annual Congress – Vienna – 2017 (Invited Oral Communication).

C135. Ana Mota, Matthew Clarkson, Pedro Almeida, Nuno Matela **"An enhanced visualization of DBT imaging using blind deconvolution and total variation minimization regularization"** – MICCAI 2018

C136. Travado, Luzia; Reis, Joaquim C.; Costa, Durval; Sousa, Berta; Almeida, Pedro; Antoni, Michael; Domingos, Ana; Seixas, Elsa; Maia, Albino; Castanheira, Joana Castanheira **"Distress, Brain Metabolism And Inflammatory Processes: A Study With**

Metastatic Breast Cancer Patients ", Poster at the 20th International Psycho-Oncology Society World Congress of Psycho-Oncology – Hong-Kong (November 2018)

C137. P. M. M. Correia, A. L. M. Silva, J. Menoit, F. Ribeiro, N. Romanyshyn, F. C. Rolo, I. F. Castro, P. M. C. C. Encarnação, F. Rodrigues, A. C. Santos, C. Ramos, F. Caramelo, N. C. Ferreira, D. A. Sá, N. Matela, P. M. Sá, P. Almeida, V. Arosio, M. Caccia, S. Romualdo, J. F. C. D. A. Veloso , **"Intelligent scanning preclinical PET: project status and first animal imaging"** , Oral presentation at IEEE NSS&MIC Conference – Sydney (November 2018)

C138. P. M. M. Correia, A. L. M. Silva, F. D. M. Ribeiro, I. F. Castro, P. M. C. Encarnação, I. Mohammadi, A. C. Santos, C. Ramos, D. A. Sá, N. C. Ferreira, N. Matela, P. Almeida, A. I. Veloso, S. Lomazzi, M. Caccia, C. Mattone, J. F. C. D. A. Veloso, **"EasyPET-3D: boosting price-performance of preclinical PET"** Poster at IEEE NSS&MIC Conference – Manchester (November 2019) - accepted

C139. S. D. Almeida, F. P. M. Oliveira, D. C. Costa, J. C. Castanheira, M. Silva, J. C. Reis, P. Almeida, L. Travado, **"Assessment of Brain Regional Hypometabolism in Metastatic Breast Cancer Patients with 18F-fluorodeoxiglucose: Influence of the Reference Region"** – EANM Annual Conference (Poster) – 2019 – accepted

C140. Ana Margarida Mota, Matthew J. Clarkson, Lurdes Orvalho, Pedro Almeida, Nuno Matela, (2020). **Calculation of transfer functions for volume rendering of breast tomosynthesis imaging.** 15th International Workshop on Breast Imaging (IWBI2020).

C141. Filipa Pegarinhos, Júlia Alves, Jorge Alves, Miguel Brito, Pedro Almeida e Margarida Santos-Reis (2020). "**Concurso de ideias para a sustentabilidade no campus de ciências - uma abordagem participativa"** - 2.ª Conferência Campus Sustentável 2020

C142. R. Booelard et al, (2021) "**Quality control in PET/CT and PET/MRI: results of an EFOMP survey amongst Europe"** – 3rd European Congress on Medical Physics – 16-19 June 2021 (Oral).

C143. Ana Mota, Matthew Clarkson, Pedro Almeida, Nuno Matela, **"Detection of Microcalcifications in Digital Breast Tomosynthesis using Faster R-CNN and 3D Volume Rendering"** in Proceedings of the 15th International Joint Conference on Biomedical Engineering Systems and Technologies, Online Streaming, 2022, doi: 10.5220/0010938800003123

C144. A. Martins, P. Almeida, I. Rodrigues, S. Carmona, M. J. Vieira, C. Pio, T. Martins, A. Alvernaz, & L. Oliveira. (2022). Diagnostic Reference Levels in Nuclear Medicine: Development of a Simple Tool to Help Assessing the Portuguese Reality. *European Journal of Nuclear Medicine and Molecular Imaging*. https://doi.org/10.1007/s00259-022-05924-4

C145. A. Martins, P. Almeida, I. Rodrigues, S. Carmona, M. J. Vieira, C. Pio, A. Alvernaz, & L. Oliveira. (2022). "Clinical Audits in Nuclear Medicine: a Modifed Model Adapted to the Portuguese Reality". *European Journal of Nuclear Medicine and Molecular Imaging*. https://doi.org/10.1007/s00259-022-05924-4

C146. Martins A, Almeida P, Rodrigues I, Vieira MJ, Pio C., Carmona S., Alvernaz A, Oliveira L, **"Clinical Audits in Nuclear Medicine: a Modified Model Adapted to the Portuguese Reality",** RPW2022 - October – Estoril – Portugal (Oral Presentation)

C147. Martins A, Almeida P, Rodrigues I, Vieira MJ, Pio C, Carmona S., Martins T., Alvernaz A, Oliveira L, **"Diagnostic Reference Levels in Nuclear Medicine: Development of a Simple Tool to Help Assessing the Portuguese Reality",** RPW2022 - October – Estoril – Portugal (Oral Presentation)

C148. M. Carmo Baptista, P. Almeida, *"***Evaluating radiation risks to non-monitored professionals following a terminal event in a nuclear Medicine Department" -** RPW2022 - October – Estoril – Portugal (Poster Presentation)

C149 Ana Margarida Mota, Nuno Matela, Pedro Almeida, **"Enhancing image quality in pediatric renal scintigraphy: A path towards dose reduction"** – European Congress on Medical Physics 2024 – Munich – (Poster presentation)

C150 Ildefonso Pinto, Cláudia Machado, Rúben Pinto, António Rodrigues, Filomena Oliveira, Diana Pimparel, Anabela Gregório Dias, Mauro Trindade, Rui Barros, João Fatana, Cecilia Borges, Fernando Marques, Ana Felício, Pedro Almeida **"Assessment of table transmission factors in angiographic systems"** - European Congress on Medical Physics 2024 – Munich – (Poster presentation)

C152 Martins A, Rodrigues I, Vieira, MJ, Almeida P, Carmona S, Martins T, Alvernaz A, Oliveira L, **"BMI-Based Myocardial Perfusion Imaging: Reducing Patient Exposure by Optimizing the Administered Activity"** – Annual Congress of the European Association of Nuclear Medicine (October 19-23, 2024 - Hamburg, Germany) – Oral presentation.

B.1.4. Participation in Research Projects

PI1. Principal investigator of project CERN/FP/116368/2010, "Collaboration in the ClearPEM-Sonic project at CERN", funded by the Foundation for Science and Technology.

PI2. Principal investigator of project PEst-OE/SAU/UI0645/2011, "Strategic project of Research Unit U645 – Institute of Biophysics and Biomedical Engineering", funded by the Foundation for Science and Technology.

PI3. Principal investigator of project PTDC/BBB-IMG/3310/2012, "Improvement of image quality and dose reduction in tomosynthesis for mammography using statistical image reconstruction algorithms", funded by the Foundation for Science and Technology.

PI4. Principal investigator of project PEst-OE/SAU/UI0645/2014, "Strategic project of Research Unit U645 – Institute of Biophysics and Biomedical Engineering", funded by the Foundation for Science and Technology.

PI5. Principal investigator of Marie Curie Project No. 301269 – *BreastCancerDetect*.

PP1. PET Project (POSI, DGDR-SIFEC/14/01/03/FDR/00134), "PET-mammography Project", funded by the Innovation Agency.

PP2. PET II Project (Prime-IDEIA 70/00327), "PET II Project – Development of PET Technologies", funded by the Innovation Agency through the PRIME Programme.

PP3. QREN 1590 Project, "PET IIb Project – Development of PET multimodality technologies", funded by the Innovation Agency through QREN.

PP4. Project PIC/IC/83228/2007, "Breast Cancer Diagnosis – A new PET scanner developed in Portugal", funded by FCT.

PP5. Project PTDC/BBB-IMG/4909/2014, "Dual-ended Readout Innovative Method for Positron Emission Tomography", funded by FCT.

PP6. Project PTDC/MHC-PSC/3897/2014, "Distress and regional cerebral metabolism: a correlational study in patients with metastatic breast cancer", funded by FCT.

PP7. MEDPERSYST Project (POCI-01-0145-FEDER-016428) (COMPETE 2020 – axis 1).

Projet	Total Funding (€)
1. Projecto MEDPERSYST – POCI-01-0145-FEDER-016428 (P2020)	2 470 086
2. Projecto PTDC/BBB-IMG/4909/2014	147 228
3. Projecto PTDC/MHC-PSC/3897/2014	158 710
4. Projecto PTDC/BBB-IMG/3310/2012	150 532
5. Projecto PEst-OE/SAU/UI0645/2011-2012	126 646
6. Projecto PEst-OE/SAU/UI0645/2014	36 239
7. Projecto CERN/FP/116368/2010	12 000
8. Projecto PIC/IC/83228/2007	190 000
9. Projecto PET-IIb (Projecto QREN 1590)	1 023 663
10. Projecto PET II (Projecto PRIME-IDEIA 70/00327)	2 189 033
11. Projecto PET (POSI, DGDR-SIFEC/14/01/03/FDR/00134)	2 932 390
12. Marie Curie Project No: 301269 – BreastCancerDetect	151 426

B.1.5 Post-Doc Supervision

1. Mónica Vieira Martins – "Image reconstruction for PET with incorporation of anatomical information"
   Postdoctoral fellowship from FCT – SFRH/BPD/29165/2006
2. Sandra Raquel Ramos Tecelão – "Registration of Magnetic Resonance (MR) and Single-Photon Emission Computed Tomography (SPECT) images for diagnosis and assessment of cardiac pathologies"
   Postdoctoral fellowship from FCT – SFRH/BPD/27117/2006
3. Nuno Miguel de Pinto Lobo e Matela – "3D image reconstruction algorithms with planograms for tomography with planar systems in Nuclear Medicine"
   Postdoctoral fellowship from FCT – SFRH/BPD/29696/2006
4. Raquel Cruz da Conceição
   a. "A new multimodal imaging methodology for breast cancer: PEM-UWB"
   Postdoctoral fellowship from FCT – SFRH/BPD/79735/2011
   b. "BreastCancerDetect – Multimodal novel technique for breast cancer detection and classification combining PEM with UWB" – EU grant.
   Marie Curie Actions – Intra-European Fellowship (IEF) 2011: 301269
5. Susana Novais Santos – "Development and computational implementation of cerebral connectivity measures and evaluation of their predictive capacity, as well as assessment of connectivity tools"
   Postdoctoral fellowship from MEDPERSYST Project – POCI-01-0145-FEDER-016428
6. Joaquim Reis – "Recruitment of patients and application of self-assessment instruments for emotional states, and definition of cortisol measurement protocols"
   Postdoctoral fellowship from Project PTDC/MHC-PSC/3897/2014
7. Pedro Guimarães – "Development and computational implementation of cerebral connectivity measures and evaluation of their predictive capacity, as well as

assessment of connectivity tools"
Postdoctoral fellowship from MEDPERSYST Project – POCI-01-0145-FEDER-016428

B.2 Leadership

Translation to English:
Deputy Director of the Institute of Biophysics and Biomedical Engineering (IBEB) of the Faculty of Sciences of the University of Lisbon between 2011 and 2014, at which time I was elected to the position of Director, a role held until May 2018. During this period, we coordinated a team that, on average, consisted of approximately 15 integrated researchers, and was responsible for the preparation and submission of the unit's strategic projects to the FCT, which ensured IBEB achieved a rating of VERY GOOD.
In May 2018, he was appointed by the elected Director of FCUL to the position of Deputy Director of the same Faculty, a position he held until July 2025.

B.3. Scientific Reviews

- Applied Radiation and Isotopes
https://www.journals.elsevier.com/applied-radiation-and-isotopes
- Computers in Biology and Medicine
https://www.journals.elsevier.com/computers-in-biology-and-medicine
- NIMA
https://www.sciencedirect.com/journal/nuclear-instruments-and-methods-in-physics-research-section-a-accelerators-spectrometers-detectors-and-associated-equipment
- Medical Physics
https://www.medphys.org
- Journal of Electromagnetic Waves and Applications
https://www.tandfonline.com/loi/tewa20
- European Journal of Medical Physics
https://www.physicamedica.com
- Journal of Instrumentation
https://iopscience.iop.org/journal/1748-0221
- IEEE Transaction on Radiation and Plasma Medical Sciences (IEEE)
https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=7433213

B.3.1 Evaluation duties

2007: Chilean Research Fund Council (FONDECYT)
2008 to 2014: University of Coimbra – (2008 and 2014)
2013: Portuguese Foundation for Science and Technology (FCT) - FCT Investigator.

2014: CancerCare Manitoba (Canada): "Early Stage Breast Tumor Detection using Solid State Microwave Imaging Sensors"
2016: InvESTeSL – High School for Health Technologies Research Call
2016 and 2017: Portuguese Foundation for Science and Technology (FCT) - FCT Ph.D. and Post-Doctoral grant calls.
2019 to 2022: Portuguese Foundation for Science and Technology (FCT) - FCT Ph.D. grant calls

2021-2022: Portuguese Foundation for Science and Technology (FCT): Evaluation of the final report of research projects.
2017-2019 – European Commission – COST proposals.
2023-2025 – European Commission - Horizon Europe (HORIZON) - Evaluation EISMEA / European Innovation Council and SMEs Executive Agency (Expert number: EX2002B072559)
2024: Portuguese Foundation for Science and Technology (FCT) - FCT Ph.D. grant calls
2025: European Commission: EURAMET Proposals

B.4 Inovation

B.4.1 Patents

1. PT National Patent nº103200 - SISTEMA DE TOMOGRAFIA POR EMISSÃO DE POSITRÕES (PET).
2. International Patent No WO 2006/049523 A3 – Tomomography by Emission of Positrons (PET) System.
3. US Patent No.US 7917192.

It should be noted that we are not the inventors in these the patents. They are mentioned here because the results underlying them arose from our active collaboration in the PET-Mammography projects (PET-Mammography Consortium, of which the Faculty of Sciences of the University of Lisbon was a member). These patents were later licensed by the Faculty of Sciences of the University of Lisbon (holder of part of them through the aforementioned Consortium) to the company PETsys – Medical PET Imaging Systems, S.A.

At this point, it is relevant to mention that the company PETsys Electronics S.A. is active in the international market, with clients across four continents (https://www.petsyselectronics.com/web/public/track), including CERN. This company is listed among the 25 most promising startups in the country (https://www.empreendedor.com/scaleup-portugal-as-25-principais-startups-portuguesas/), and has received seals of excellence from the European Commission (https://www.petsyselectronics.com/web/public/track).

B.4.2 Value creation

- Managing Partner of the company PIXELMISTÉRIO, Lda (Consultancy in Medical Physics) – since 2017.
- Founding Member of the company PETSys Medical PET Imaging Systems, S.A. and Member of the Board of Directors (Non-executive Member) – since 2008.
- Founding Member of the company PETsys Electronics and Senior Manager for Product Certification and Web Services, Medical PET Detectors, S.A. (https://www.petsyselectronics.com/web/) – since 2013.

Other Activities

C.1. Institutional Appointments

May 2018 – July 2025
Deputy Director of the Faculty of Sciences of the University of Lisbon **(FCUL)**
Responsible for institutional relations, image and communication, culture, and libraries.

As representative of FCUL:
2003–present:
Crystal Clear International Collaboration (http://crystalclear.web.cern.ch/crystalclear): FCUL representative and local Team Leader. Member of the Steering Committee of the collaboration (2003–present).
2004–2005:
Member of the Supervisory Board of the AUDAX initiative (http://audax.iscte-iul.pt).
2009–2012:
EIT-Health Initiative (https://eithealth.eu) – **FCUL** and ULisboa representative for the Education area (MOOCs and Blended Learning).
2018–2021:
Representative of the Faculty of Sciences of the University of Lisbon in the General Assemblies of the Ciência Viva do Lousal Association.
2021–present:
Member of the University Senate.
2022:
Representative of the University of Lisbon on the Medical Physics Council of the Central Administration of the Health System (ACSS).
2025:
Member of the Coordinating Council for Evaluation (CCA) of FCUL.

As national representative:
IAEA – EUROPEAN REGIONAL PROJECT RER0049
Enhancing the Capacities of Educational Institutions for the Sustainable Use of Nuclear Technologies
2022–2025

C.2. Scientific and/or academic roles and functions

2004–2006:
Co-coordination of the Bachelor's Degree in Engineering Physics at the Faculty of Sciences of the University of Lisbon.
Since 2007:
Member of the Coordinating Council of the Integrated Master in Biophysics and Biomedical Engineering, Faculty of Sciences of the University of Lisbon.
2010–2017:
Member of the Pedagogical Council of the Integrated Master in Biophysics and Biomedical Engineering, Faculty of Sciences of the University of Lisbon.
2011–2018:
Member of the Coordinating Council of the Department of Physics, Faculty of Sciences of the University of Lisbon (ex officio).

2008–2012:
Member of the FCUL Image Committee.
2014:
Founding member of the ULisboa Health Network.
2014–2018:
Member of the FCUL School Council responsible for revising the FCUL statutes.
2014–2017:
Founding member and member of the Coordinating Council of the ULisboa Mind-Brain College (https://colegiomente-cerebro.ulisboa.pt).
2015–2018:
Vice-President of the FCUL School Council.
2015:
Member of the Founding Commission of the ULisboa Physics College (Rectoral Order 11471/2015, Official Gazette, 2nd series, No. 200 – October 13, 2015).
2015–2017:
Deputy Coordinator for Education for ULisboa within the EIT-Health initiative.
2015–2021:
Member of the General Council of the FCUL Foundation.
2015 - 2023:
Member of the FCUL Scientific Council.

European COST Action TD1007 – Bimodal PET-MRI molecular imaging technologies and applications for in vivo monitoring of disease and biological processes
National representative and member of the Steering Committee (http://www.cost.esf.org/domainsactions/mpns/Actions/TD1007).
European COST Action TD1301 – Development of a European-based Collaborative Network to Accelerate Technological, Clinical and Commercialisation Progress in Medical Microwave Imaging
Member of the collaboration (http://www.cost.eu/domainsactions/bmbs/Actions/TD1301).
European COST Action TD1401 – Fast Advanced Scintillator Timing (FAST)
National representative and member of the Steering Committee (http://www.cost.eu/domainsactions/TDP/Actions/TD1401).
Leader of Working Group 5 – Applications.
European COST Action 22118 – RATIONALE
Member of the working group 4

Responsible for FCUL participation in the UNITE! initiative
https://www.unite-university.eu/
2023–present
Deputy Key Liaison Officer for the University of Lisbon in the UNITE! initiative
https://www.unite-university.eu/
2024–present

C.3 Academic Juries

C.3.1 Doctoral theses (as examiner/opponent)

1. Rita Almeida; "Analysis and Modeling of functional brain imaging data"; PhD in Biophysics – University of Lisbon (2002)
2. Pedro Custódio; "Contribution to the study of vestigial elements in fetal development: quantitative analysis using X-Ray techniques (EDXRF and TXRF)"; PhD in Biophysics – University of Lisbon (2005)

3. Andreia Trindade; “Design and evaluation of a positron emission tomograph for breast cancer imaging”; PhD in Technological Physics Engineering – Technical University of Lisbon (2007)
4. Tânia de Almeida; “Study of the distribution of trace elements in healthy human tissues and carcinoma by X-ray spectrometry”; PhD in Biophysics – University of Lisbon (2008)
5. Ana Fernandes; “Prognostic modeling of breast cancer patients – a benchmark of predictive models with external validation”; PhD in Electrical and Computer Engineering – Digital and Perceptual Systems – Nova University of Lisbon (2010)
6. Carlos Cardoso; “Molecular Medicine Technology in Oncology: Evaluation of PET-mammography”; PhD in Biomedical Engineering – Portuguese Catholic University (2011)
7. Luís Guilherme Arneiro Mendes; “Positron Emission Tomography: Image reconstruction based on multiscale and resolution methods”; PhD in Health Sciences – Biomedical Sciences – Faculty of Medicine, University of Coimbra (2013)
8. Jorge Miguel Couceiro de Sousa; “Simulation study of a wide axial field-of-view positron emission tomography system based on resistive plate chamber detectors”; PhD in Technological Physics – University of Coimbra (2014)
9. Lara Caramate; “Development of a Computed Tomography system based on single-photon counting using MPGDs”; PhD in Physics Engineering – University of Aveiro (2015)
10. Carine Kronland-Martinet; “Développement de la tomographie intra-vitale au K-edge avec la camera à pixels hybrides XPAD”; PhD in Instrumentation – University of Aix-Marseille (2015)
11. Hugo Tito Cordeiro; “Recognition of voice pathologies using speech processing techniques”; PhD in Electrical and Computer Engineering – Nova University of Lisbon (2016)
12. Pedro Manuel Mendes Correia; “Positron Emission Tomography Systems for Small Animals”; PhD in Physics Engineering – University of Aveiro (2018)
13. Ali Abdollahi Gharbali; “Sleep Stage Classification: A Deep Learning Approach”; PhD in Electrical and Computer Engineering – Nova University of Lisbon (2018)
14. Maria João Furtado Raminhas Carapinha; “Public health impact of iodine-131 therapy in thyroid diseases: Dosimetric evaluation of exposure to iodine-131 in family members and caregivers of patients undergoing thyroid therapy”; PhD in Public Health – Specialty in Environmental and Occupational Health – National School of Public Health, Nova University of Lisbon (2019)
15. Leonardo Pedro Donas-Boto Vilhena Martins; “Image Processing and Simulation Toolboxes of Microscopy Images of Bacterial Cells”; PhD in Electrical and Computer Engineering – Computational and Perceptual Systems – Nova University of Lisbon (2020)

C.3.2. Doctoral theses (as jury member)

1. Sónia Gonçalves; “The Bioelectric Inverse Problem: Fundamental Aspects and Clinical Applications”; PhD thesis in Biophysics – University of Lisbon (2002)
2. César Alves; “Assessment of Radiological Risks in Positron Emission Tomography”; PhD thesis in Physics (Specialty Nuclear Physics) – University of Lisbon (2005)
3. Joana Moreira; “Mathematical Modelling of interacting cell populations: Germinal centre dynamics and spatio-temporal pattern formation in the zebrafish, *Danio rerio*”; PhD thesis in Biophysics – University of Lisbon (2007)
4. Andreia Trindade; “Design and evaluation of a positron emission tomograph for breast cancer imaging”; PhD thesis in Technological Physics Engineering – Technical University of Lisbon (2007)

5. Rui Pinto; “New approaches to biomedical signal analysis: Time-frequency analysis and Hilbert-Huang transform”; PhD in Biomedical Engineering and Biophysics – University of Lisbon (2010)
6. Pedro Carvalho; “Tomography Algorithms for Real-Time Control in ISTTOK”; PhD in Technological Physics Engineering – Technical University of Lisbon (2010)
7. Ana Fernandes; “Prognostic modeling of breast cancer patients – a benchmark of predictive models with external validation”; PhD thesis in Electrical and Computer Engineering – Digital and Perceptual Systems – Nova University of Lisbon (2010)
8. Carlos Cardoso; “Molecular Medicine Technology in Oncology: Evaluation of PET-mammography”; PhD thesis in Biomedical Engineering – Portuguese Catholic University (2011)
9. Miguel Couceiro; “Simulation study of a wide axial field of view positron emission tomography system based on resistive plate chamber detectors”; PhD in Physics – Faculty of Sciences and Technology – University of Coimbra (2013)
10. Paulo Martins; “Imaging techniques in RPC-PET”; PhD in Physics – University of Coimbra (2014)
11. Tahereh Sadat Niknejad; “Development of new high-performance Positron Emission Mammography based on silicon photomultipliers and optimized detector geometry”; PhD in Technological Physics Engineering – IST – University of Lisbon (2019)
12. Fabiana de Meneses Monteiro; “Performance evaluation of the EasyPET-3D system; NEMA NU4-2008 standards and animal model” – PhD in Physics Engineering – University of Aveiro (2024)

C.3.3 Participation in Selection and Recruitment Juries

1. Jury for the Competitive Procedure to Fill a Middle Management Position, 2nd Level; Head of the Physical-Chemistry Laboratory Division of the Food and Economic Safety Authority (ASAE) (2009).
2. Jury for the Specialist Title Award Competition – Scientific Area of Nuclear Medicine – Polytechnic Institute of Lisbon (2012) – Maria João Carapinha.
3. Jury for the Specialist Title Award Competition – Scientific Area of Nuclear Medicine – Polytechnic Institute of Lisbon (2014) – Isabel Conde.
4. Jury for the Competitive Procedure to Fill a 3rd Level Middle Management Position – Instituto Superior Técnico (2019) – OE201810/0264 – Coordinator of the Technical and Logistics Support Unit of the CTN.
5. Jury for the Competitive Procedure to Fill a 3rd Level Middle Management Position – Instituto Superior Técnico (2019) – OE201810/0270 – Coordinator of the Radiation Protection and Radioactive Waste Unit of the CTN.
6. Jury for the Competitive Procedure to Fill a 3rd Level Middle Management Position – Instituto Superior Técnico (2019) – OE201810/0265 – Coordinator of the Radio-sterilization Unit of the CTN.
7. Jury for Competitive Procedure ref. 2103000414 for the acquisition of Clipping Services – Faculty of Sciences, University of Lisbon (2021).
8. Jury for the Competitive Procedure to Fill a 3rd Level Middle Management Position – Faculty of Sciences, University of Lisbon (2021) – Psychopedagogical Support Office of the Faculty of Sciences, University of Lisbon.
9. Jury for the evaluation of the trial period of Senior Technician Sofia Gomes Melvill de Araújo, Technology Transfer Support Office of the R&D Directorate, Faculty of Sciences, University of Lisbon (2021).
10. Member of the Institutional CEEC Recruitment Juries of the Faculty of Sciences, University of Lisbon – Science Communication Area (2022).
11. Chair of the Jury for the common competitive procedure to recruit a senior technician, under a public employment contract for an indefinite period, for the Science

Communication Office of the Faculty of Sciences, University of Lisbon (2023) – OE202301/0394.

12. Alternate Member of the Coordinating Evaluation Council for the performance evaluation of research career staff at FCUL for the 2023-2024 biennium – Order D/4/2023 of the Director of the Faculty of Sciences, University of Lisbon.
13. Chair of the Public Tender Jury for Marketing, Communication, and Image Services for FCUL – March 2023.

C.3.4 Jury for Other Public Examinations

1. Public exams for admission as Adjunct Professor at the School of Health Technologies of Lisbon (2001) – Fátima Monsanto.
2. Public exams for admission as Adjunct Professor at the School of Health Technologies of Lisbon (2001) – Lina Vieira.
3. Reviewer for Opinion Report for Hiring as First Three-Year Assistant at the School of Health Technologies of Lisbon (2002) – Manuela Filipe.
4. Public exams to obtain the title of specialist – School of Health Technologies of Lisbon – Isabel Conde.
5. Public exams to obtain the title of specialist – School of Health Technologies of Lisbon – Amadeu Martins.
6. Public exams to obtain the title of specialist – School of Health Technologies of Lisbon – Ana Geão.
7. Reviewer of substantiated and detailed opinion on the activities carried out in the 2015-2020 period by Dr. Rui Manuel Dias Cortesão dos Santos Bernardes, for the consolidation of his permanent public employment contract as Assistant Professor at the Faculty of Medicine, University of Coimbra (2020).

C.4 Other Roles

- Portuguese Society of Nuclear Medicine – Deputy Secretary from April 2003 to April 2004.
- Member of the Scientific Council of the Institute for Nuclear Sciences Applied to Health (ICNAS), University of Coimbra (2015-2018).
- Chair of the General Assembly Board of the Portuguese Association of Medical Physicists (2021-2024) – founding member.