# BIBLIOGRAPHICAL SKETCH

Maria do Carmo da Silva Pereira, PhD
Associate Professor at University of Porto, Portugal

## Personal information:

**Date of birth:** 1969, **Gender:** Female, **Nationality:** Portuguese.
**Contacts:** Telephone: 00351225081590; e-mail: mcsp@fe.up.pt; institutional address: Department of Chemical Engineering, Faculty of Engineering of University of Porto, Rua Dr. Roberto Frias, s/n, 4200-465 Porto, Portugal
**Additional information:** Married. Two children.

## Concise Personal Background:

Chemical Engineer with visible research track, strong expertise and experimental background in: i) Nanobiotechnology and interfacial phenomena; ii) novel nano-engineered biomaterials for therapeutic applications; iii) Innovative surfaces, coatings and interfaces for the development of nanostructured sensors for detection of disease biomarkers; iv) Functional materials for antimicrobial action (v) environment (air quality and atmospheric pollution with emphasis on public and environmental health).

## Main Achievements:

- >230 publications in high ranked peer reviewed journals.
- Rapidly developing research publication profile: >7,750 citations, H-index=48.
- Supervised 4 career researchers and 10 postdocs, 18 PhD students, and > 50 master students
- One patent related with nanoformulations for drug encapsulation
- Co-founder of a Deep Tech **Startup** (BNanoTech)
- Awarded numerous awards and recognitions:
  - 2021, Prize Mantero Belard 2022, Santa Casa da Misericórdia de Lisboa, Portugal (Consortium with IMM).
  - 2020, Prize Maratona da Saúde for Cancer Research, Maratona da Saúde. Portugal.
  - 2017, Prize Mantero Belard 2017, Santa Casa da Misericórdia de Lisboa, Portugal (Consortium with IMM).
  - 2012-2022, 10 Scientific Recognition Awards, Faculty of Engineering, University of Porto, Portugal.
  - 2009-2010, 2 Scientific Incentive Award Faculty of Engineering, University of Porto, Portugal.

## Academic Appointments:

**1999-present: Associate Professor, Faculty of Engineering, University of Porto, Portugal:**

**2000-present: Researcher at LEPABE (Laboratory for Process Engineering, Environment, Biotechnology and Energy):** Senior researcher and Coordinator of the research group NANO4MED NANO4MED. My research group investigates the structure and dynamics of molecules, colloids and nanoparticles in biological and biomimetics systems. The design of a variety of supramolecular nanostructures and the physicochemical characterization of these nanosystems are the current research focus for application oriented in areas like complex systems and bionanotechnology.

## Education and training:

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| **PhD** | 1993-1998: **Doctoral degree in Chemical Engineering**, Faculty of Engineering, University of Porto, Portugal |
| | Title of PhD thesis: "Electrochemical Analysis and Histological Effects of Stainless Steel Corrosion Products in Blood Filtration Organs: An Experimental Study in Mice" |
| | 1996: **Traineeship:** Chemistry Department - Virginia Polytecnic Institute and State University, EUA. Supervisor: Prof. Mark R. Anderson |
| **MSc** | 1988-1993: **Graduation in Chemical Engineering**, Faculty of Engineering, University of Porto, Portugal |

## Awards and Scientific reputation:

2021, Prize Mantero Belard 2022, Santa Casa da Misericórdia de Lisboa, Portugal (Consortium with IMM).
2020, Prize Maratona da Saúde for Cancer Research, Maratona da Saúde.
2017, Prize Mantero Belard 2017, Santa Casa da Misericórdia de Lisboa, Portugal(Consortium with IMM).

## Recent Research Projects:

1. Engineered nano-based device for glioblastoma multiforme therapy (Nano4Glio), M-ERA.NET Call 2021, Coordinator, partners**:** i3S, SINTEF AS, University of Copenhagen (UCPH).
2. Nanoparticle-Enhanced Molecular Fluorescence-endoscopy for Detection of Early stage Colorectal Adenocarcinomas (NanoEFEct)**,** TRANSCAN/0001/2012 (ERA-NET).
3. Strengthening the Research Area of Delivery of Nucleic acid mimics (NAMS) into bacteria to fight the antibiotic crisis (DelNAM)**;** 810685 (H2020-WIDESPREAD-05-2017-Twinning).

## Selected Publications:


1. M.J. Ramalho, I.D. Torres, J.A. Loureiro, J. Lima, **M.C. Pereira**. Transferrin-conjugated PLGA nanoparticles for co-delivery of temozolomide and bortezomib to glioblastoma cells. ACS Applied Nano Materials, 6 (15), 14191-14203, 2023, doi: 10.1021/acsanm.3c02122
2. P. Carneiro, J.A. Loureiro, C. Delerue-Matos, S. Morais, M.C. Pereira. Nanostructured label–free electrochemical immunosensor for detection of a Parkinson's disease biomarker. Talanta, 252, 2022, doi: 10.1016/j.talanta. 2022.123838

3. S. Andrade, M.J. Ramalho, J.A. Loureiro, **M.C. Pereira**. Transferrin-functionalized liposomes loaded with vitamin VB12 for Alzheimer's disease therapy. International Journal of Pharmaceutics 626, 122167, 2022.
4. S. Andrade, J.A. Loureiro, **M.C. Pereira**. Transferrin-Functionalized Liposomes for the delivery of Gallic Acid: A Therapeutic Approach for Alzheimer's Disease. Pharmaceutics, 14(10),2163, 2022.
5. S. Andrade, D. Nunes, M. Dabur, M.J. Ramalho, **M.C. Pereira,** J.A. Loureiro. Therapeutic Potential of Natural Compounds in Neurodegenerative Diseases: Insights from Clinical Trials. Pharmaceutics. 15(1), 212, 2023.
6. J.A. Loureiro, **M.C. Pereira**. PLGA based drug carrier and pharmaceutical applications: The most recent advances. Pharmaceutics (2020) 12(9), 903, 1-5.
7. A. Pereira, M.J. Ramalho, R. Silva, (...), **M.C. Pereira**, J.A. Loureiro. Vine Cane Compounds to Prevent Skin Cells Aging through Solid Lipid Nanoparticles. Pharmaceutics (2022) 14(2), 240.
8. C. Gonçalves, M.J. Ramalho, R. Silva, (...), **M.C. Pereira**, J.A. Loureiro. Lipid nanoparticles containing mixtures of antioxidants to improve skin care and cancer prevention. Pharmaceutics (2021) 13(12), 2042
9. T. Pinto, A. Martins, L. Pastrana, **M.C. Pereira**, M.A. Cerqueira. *Oleogel-based systems for the delivery of bioactive compounds in foods*. Gels (2021) 7, 86.
10. S. Andrade, M.J. Ramalho, J.A. Loureiro, **M.C. Pereira**. Liposomes as Biomembrane Models: Biophysical Techniques for Drug-Membrane Interaction Studies. Journal of Molecular Liquids (2021) 334, 116141.
11. J.A. Loureiro, M.J. Ramalho, **M.C. Pereira**. Immuno-nanocarriers for brain delivery: limitations from in vitro to preclinical and clinical studies. Nanomedicine (2020) 15(6) 543-545.
12. J. Fonseca-Gomes, J.A. Loureiro, S.R. Tanqueiro, F.M. Mouro, P. Ruivo, T. Carvalho, A.M. Sebastião, M.J. Diógenes, **M.C. Pereira**. *In vivo* bio-distribution and toxicity evaluation of polymeric and lipid-based nanoparticles: A potential approach for chronic diseases treatment. International Journal of Nanomedicine (2020) 15, 8609.
13. M.J. Ramalho, J.A. Loureiro, M.N.A. Coelho, **M.C. Pereira**. Factorial design as a tool for the optimization of plga nanoparticles for the co-delivery of temozolomide and o6-benzylguanine. Pharmaceutics (2019) 11(8), 401.
14. M.J. Ramalho, E. Sevin, F. Gosselet, J. Lima, M.A.N. Coelho, J.A. Loureiro, **M.C. Pereira**. Receptor-mediated PLGA nanoparticles for glioblastoma multiforme treatment. International Journal of Pharmaceutics, 545 (2018) 84–92.
15. S.C. Coelho, D.P. Reis, **M.C. Pereira**, M.A.N. Coelho. Gold nanoparticles for targeting varlitinib to human pancreatic cancer cells. Pharmaceutics, 10 (3) (2018) 91.
16. J.A. Loureiro, B. Gomes, G. Fricker, M.A.N. Coelho, S. Rocha, **M.C. Pereira**. Cellular uptake of PLGA nanoparticles targeted with anti-amyloid and anti-transferrin receptor antibodies for Alzheimer's disease treatment. Colloids and Surfaces B: Biointerfaces. 145, 8-13, 2016.
17. S.C. Coelho, G.M. Almeida, F. Santos-Silva, **M.C. Pereira**, M.A.N. Coelho. Enhancing the efficiency of bortezomib conjugated to pegylated gold nanoparticles: an in vitro study on human pancreatic cancer cells and adenocarcinoma human lung alveolar basal epithelial cells. Expert Opinion on Drug Delivery. 13(8), 1075-1081, 2016.
18. J.A. Loureiro, B. Gomes, G. Fricker, I. Cardoso, C.A. Ribeiro, C. Gaiteiro, M.A.N. Coelho, **M.C. Pereira**, S. Rocha. Dual ligand immunoliposomes for drug delivery to the brain. Colloids and Surfaces B: Biointerfaces, 134, 213-219 (2015).
19. S.C. Coelho, M. Rangel, **M.C. Pereira**, M.A.N. Coelho, G. Ivanova. Structural Characterization of Functionalized Gold Nanoparticles for Drug Delivery in Cancer Therapy: a NMR Based Approach. Physical Chemistry Chemical Physics 2015, DOI: 10.1039/C5CP02717A, 17 (29), 18971-18979, 2015.