

# Nuno Niguel Malavado Moura

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**Nationality:** Portuguese

**Languages:** Portuguese (native speaker)

English (fluent)

Spanish (fluent)

## ACADEMIC QUALIFICATIONS

- Jan 2009 – Dec 2012: Ph.D. in Chemistry, Department of Chemistry, University of Aveiro, Portugal. Thesis entitled “Síntese e potenciais aplicações de novas porfirinas  $\beta$ -funcionalizadas”.
- Sep 2001 - Jul 2006: First University Degree in Chemistry by the University of Évora, Portugal, with final average of 14 (out of 20).

## PROFESSIONAL AND/OR SCIENTIFIC EXPERIENCE

April, 1<sup>st</sup> 2013 until now: Post-doc research fellow with the reference SFRH/BPD/84216/2012. Supervisors: Doctor Maria da Graça Pinho Morgado da Silva Neves, Doctor José Abrunheiro da Silva Cavaleiro and Doctor Carlos Lodeiro Espiño. Institution: QOPNA, University of Aveiro and BIOSCOPE, University NOVA of Lisbon. Research work plan: "Synthesis and applications of new emissive and nanostructured materials based on multifunctional porphyrin derivatives".

January 1<sup>st</sup>, 2009 to December 10<sup>th</sup>, 2012: PhD fellow (FCT-SFRH/BD/61648/2009). Supervisors: Doctor Maria da Graça Pinho Morgado da Silva Neves, and Doctor Maria do Amparo Ferreira Faustino. Institution: QOPNA, University of Aveiro. Research work plan: “Síntese e potenciais aplicações de novas porfirinas  $\beta$ -funcionalizadas”.

June 1<sup>st</sup>, 2007, to December 31<sup>st</sup>, 2018: Research fellow (BI). Supervisors: Doctor José Abrunheiro da Silva Cavaleiro. QOPNA, University of Aveiro. Research work plan: Synthesis of new beta functionalized porphyrins.

## SCIENTIFIC INTERESTS

Organic synthesis; Tetrapyrrolic macrocycles; Material chemistry; Supramolecular chemistry; Fluorescent probes; Photodynamic Therapy.

## PARTICIPATION IN FUNDED R&D PROJECTS

As Collaborator: EXPL/QEQ-QOR/0906/2013. "Development of new dyads for solar cells based on electron donor-acceptor-substituted porphyrinic macrocycles". Reference: EXPL/QEQ-QOR/0906/2013 (40.104,00 €). From 01-03-2014 to 28-02-2015.

## PUBLICATIONS

### Papers

1. "A Simple, Highly Regioselective, One-Pot Stereoselective Synthesis of Tertiary Alpha-Hydroxyesters: A Tandem Oxidation/Benzylic Ester Rearrangement"; C. S. Marques, N. M. M. Moura, A. J. Burke, *Tetrahedron Lett.* **2006**, 47, 6049-6052.
2. "Arylid-Box: A New Family of Chiral Bis-Oxazoline Ligands for Metal Mediated Catalytic Enantioselective Synthesis"; E. P. Carreiro, S. Chercheja, N. M. M. Moura, C. S.C. Gertrudes, A. J. Burke, *Inorg. Chem. Commun.* **2006**, 9, 823-826.
3. "The Catalytic Tandem Oxidation/Benzylic Ester Rearrangement (BER): Insights into Reaction Mechanism and Stereoselectivity"; A. J. Burke, O. R. Furtado, C. S. Marques, N. M. M. Moura, *Tetrahedron Lett.* **2007**, 48, 7957-7960.
4. "Cu(I) catalysed cyclopropanation of olefins: Stereoselectivity studies with Arylid-Box and Isbut-Box ligands"; A. J. Burke, E. P. Carreiro, S. Chercheja, N. M.M. Moura, J.P. Prates Ramalho, A. I. Rodrigues, C. I.M. dos Santos, *J. Organomet. Chem.* **2007**, 692, 22, 4863-4874.
5. "Clorinas em Terapia Fotodinâmica – Síntese e aplicações"; Mário J. F. Calvete, Ana. T. P. C. Gomes, Nuno M. M. Moura, *Rev. Virtual Quim.* 2009, 1 (2), 92-103.
6. "1,3-Dipolar cycloaddition of nitrile imines with meso-tetraarylporphyrins"; N. M. M. Moura, F. Giuntini, M. A. F. Faustino, M. G. P. M. S. Neves, A. C. Tomé, A. M. S. Silva, E. M. Rakib, A. Hannioui, S. Abouricha, J. A. S. Cavaleiro, *ARKIVOC* **2010**, (v), 24-33.
7. "Vilsmeier-Haack formylation of Cu(II) and Ni(II) porphyrin complexes under microwaves irradiation"; Nuno M. M. Moura, Maria A. F. Faustino, Maria G. P. M. S. Neves, Armando C. Duarte, José A.S. Cavaleiro, *J. Porphyrins Phthalocyanines* **2011**, 15, 652-658.
8. "Covalent and Noncovalent Immobilization of Arylid-BOX Ligands and Their Derivatives: Evaluation in the Catalytic Asymmetric Cyclopropanation of Styrenes"; Elisabete P. Carreiro, Nuno M. M. Moura, Anthony J. Burke, *Eur. J. Org. Chem.* 2012, 518-528.

9. ***“A new synthetic approach to benzoporphyrins and Kröhnke type porphyrin-2-ylpyridines”***; Nuno M. M. Moura, M. A. F. Faustino, M. G. P. M. S. Neves, Filipe A. A. Paz, A. M. S. Silva, A. C. Tomé, J. A. S. Cavaleiro, *Chem. Comm.* **2012**, 48, 6142-6144.
10. ***“Novel pyrazoline and pyrazole porphyrin derivatives: synthesis and photophysical properties”***; Nuno M. M. Moura, Maria. A. F. Faustino, Maria G. P. M. S. Neves, Augusto C. Tomé, E. M. Rakib, A. Hannioui, S. Mojhadi, Steffen Hackbarth, Beate Roder, Filipe A. A. Paz, Artur M. S. Silva, José A. S. Cavaleiro, *Tetrahedron* **2012**, 68, 8181-8193.
11. ***“Dynamics of porphyrin adsorption on highly oriented pyrolytic graphite monitored by scanning tunneling microscopy at liquid/solid interface”***; Q. Ferreira, A. Bragança, N. M. M. Moura; M. A. F. Faustino, L. Alcacer, J. Morgado, *Appl. Surf. Sci.* **2013**, 273, 220-225.
12. ***“Funcionalized porphyrins as fluorescent probes for metal cations: spectroscopy, MALDI-TOF spectrometry and doped-polymer studies”***; N. M. M. Moura, C. Nuñez, S. M. Santos, M. A. F. Faustino, J. A. S. Cavaleiro, M. G. P. M. S. Neves, J. L. Capelo, C. Lodeiro, *ChemPlusChem* **2013**, 78, 1230-1243.
13. ***“Synthesis, spectroscopy studies, and theoretical calculations of new fluorescent probes based on pyrazole containing porphyrins for Zn(II), Cd(II), and Hg(II) optical detection”***; Nuno M. M. Moura, Cristina Nuñez, Sérgio M. Santos, Maria. A. F. Faustino, José A. S. Cavaleiro, Maria G. P. M. S. Neves, José. L. Capelo, Carlos Lodeiro, *Inorg. Chem.* **2014**, 53, 6149-6158.
14. ***“Preparation and Ion Recognition Features of Porphyrin-chalcone Type Compounds as efficient Red-fluorescent Materials”***; N. M. M. Moura, C. Nuñez, M. A. F. Faustino, J. A. S. Cavaleiro, M. G. P. M. S. Neves, J. L. Capelo, C. Lodeiro, *J. Mater. Chem. C* **2014**, 2, 4772-4783.
15. ***“A new 3,5-bisporphyrinylpyridine derivative as a fluorescent ratiometric probe for zinc ions”***; Nuno M. M. Moura, Cristina Nuñez, Sérgio M. Santos, Maria. A. F. Faustino, José A. S. Cavaleiro, Filipe A. A. Paz, Maria G. P. M. S. Neves, José. L. Capelo, Carlos Lodeiro, *Chem. Eur. J.* **2014**, 20, 6684-6692.
16. ***“β-p-(Carboxyamino)phenyl)porphyrin Derivatives: New Dyes for TiO<sub>2</sub> Dye-Sensitized Solar Cells”***, A. M. V. M. Pereira, A. F. R. Cerqueira, N. M. M. Moura, B. A. Iglesias, M. A. F. Faustino, M. G. P. M. S. Neves, J. A. S. Cavaleiro, M. J. C. Lima, A. F. da Cunha, *J. Nanopart. Res.* **2014**, 16, 2647-2660.
17. ***“An insight into the gas-phase fragmentations of potential molecular sensors with porphyrin-chalcone structures”***, C. I. V. Ramos, N. M. M. Moura, S. M. F. Santos, M. A. F. Faustino, J. P. C. Tomé, F. M. L. Amado, M. G. P. M. S. Neves, *Int. J. Mass Spectrometry* **2015**, 392, 164-172.
18. ***“Metallomesogens with Luminescent Behaviour: Palladium Complexes Derived from Alkylamide Tetraarylporphyrins”***, N. M. M. Moura, C. Cuerva, J. A. S. Cavaleiro, R. F. Mendes, F. A. A. Paz, M. Cano, M. G. P. M. S. Neves, C. Lodeiro, *ChemPlusChem*, **2016**, 81, 262-273.
19. ***“Synthesis, characterization and biological evaluation of cationic porphyrin-terpyridine derivatives”***, N. M. M. Moura, C. Ramos, I. Linhares, S. M. Santos, M. A. F. Faustino, A. Almeida,

J. A. S. Cavaleiro, F. M. L. Amado, C. Lodeiro, M. G. P. M. S. Neves, *RSC Advances*, **2016**, *6*, 110674-110685.

20. **“Control of *Listeria innocua* biofilms by biocompatible photodynamic antifouling chitosan based materials”**, K. A. D. F. Castro, N. M. M. Moura, A. Fernandes, M. A. F. Faustino, M. M. Q. Simões, J. A. S. Cavaleiro, S. Nakagaki, A. Almeida, Â. Cunha, A. J. D. Silvestre, C. S. R. Freire, R. J. B. Pinto, M. G. P. M. S. Neves, *Dyes Pigments*, **2017**, *137*, 265-276.

### **Proceedings**

1. **“Pyrazolochlorin derivatives: synthesis and photophysical properties”**, N. M. M. Moura, Maria A. F. Faustino, Maria G. P. M. S. Neves, Augusto C. Tomé, E. M. Rakib, A. Hannioui, S. Mojahidi, Artur M. S. Silva, B. Roder, José A. S. Cavaleiro, *Drugs of the Future* 2009, *34* (Suppl. A), pp. 202. (p-ISSN: 0377-8282).
2. **“Chemical sensors based on porphyrins for detecting pollutant toxic ions”**, N. M. M. Moura, C. Nuñez, M. A. F. Faustino, C. Lodeiro, M. G. P. M. S. Neves, PTIM2015, in Book of Abstracts of the 1st International Conference on Pollutant Toxic Ions and Molecules, 2015, K7, pp. 41-42.
3. **“New Pd-Based Materials Derived from Alkylamide Tetraarylporphyrins with Liquid Crystal and Luminescent Behaviours”**, N. M. M. Moura, C. Cuerva, J. A. S. Cavaleiro, R. F. Mendes, F. A. A. Paz, M. Cano, M. G. P. M. S. Neves, C. Lodeiro, IC3TC, in Book of Abstracts of the 1st International Caparica Christmas Conference on Translational Chemistry, 2015, P26, pp 204.

### **Other communications**

Author and co-author of 11 oral communications and 25 poster communications in national and international conferences.