

CURRICULUM VITAE
of
José Abrunheiro da Silva Cavaleiro
(Professor, University of Aveiro, Aveiro / Portugal)

Personal Details

Nationality: Portuguese

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Educational Qualifications

1961-1965: "Licenciatura" in Chemistry and Physics (University of Coimbra, 1965)

1970-1973: Ph. D. in Organic Chemistry (University of Liverpool, 1973)

1984: "Agregação" (Habilitation) in Chemistry (University of Aveiro).

Prizes

1973: Parke-Davis Prize for best research in Organic Chemistry in the Robert Robinson Laboratories, University of Liverpool, UK.

2004: "Ferreira da Silva" Prize, Portuguese Chemical Society, 16th April.

2004: "Estímulo à Excelência" Prize, Portuguese Ministry of Science and Technology, 25th November.

2005: Scientific Prize Celestino da Costa /Jean Perrin, Lisbon French Embassy /APDF.

Career Details

1965-1973: "Assistente" (Universities of Coimbra and Lourenço Marques)

1973-1979: "Professor Auxiliar" (Universities of Lourenço Marques and Aveiro)

1979-1986: "Professor Associado" (University of Aveiro)

1986→ : "Professor Catedrático" (University of Aveiro).

Teaching Duties

1965-1970: Several laboratory courses of Organic, Inorganic and Analytical Chemistry.

1973→ : Several theoretical courses of Organic Chemistry, Organic Synthesis, Spectroscopy in Organic Chemistry, Natural Products Chemistry, Organic Biocides.

1985→ : Several "Seminários" and "Projectos" of the final year of the "Licenciatura" in Chemistry.

1986-1991; 1996-1997; 1999-2000: "Seminário Científico-Pedagógico" of the "Licenciatura" in Teaching of Chemistry and Physics.

1986-1987, 1995-1996 and following courses: Theoretical courses (Wood Chemistry; Natural Products) to Master of Science degrees on "Science and Technology of Paper and Forest Products" and on "Natural Compounds and Food Stuffs".

For the M. Sc. Course on the "Chemistry of Natural Products" (2003-2004, 2005-2007): theoretical lectures of "Applications of Natural Compounds".

Particular Responsibilities:

Responsible for the organic chemistry research group in the University of Aveiro. Supervisor of University Assistants, Ph. D. and M. Sc. Postgraduate research students (being a member of the Aveiro University from its beginning he has devised scientific programmes for future staff members. Several organic chemistry group members have carried out their Ph D degrees under his supervision and are now working in several areas of organic chemistry).

In more recent years he has been the projects' coordinator of several postdoctoral fellows.

Head of the Department of Chemistry, University of Aveiro during 8 years. Coordinator of the Department of Chemistry Scientific Committee for two years. National representative for the Iberian-South American CYTED Program, net 4A, and European COST programmes (D₂ and D₁₂ actions).

Coordinator, since 1994, of the University of Aveiro Research Unit "Organic Chemistry, Natural Products and Food Stuffs", unit being funded by the Portuguese Science and Technology Foundation (FCT).

Member of several FCT assessment committees.

Partner of european projects working groups.

Coordinator or partner of national projects.

National representative in the IUPAC Commission on Physical Organic Chemistry (1992-1997).

Team leader of the proposal submitted to the former JNICT to purchase the first 300 MHz NMR spectrometer for the University of Aveiro. The proposal was approved in due time (contract JNICT 1M/1990) and the NMR service was set up since 1992 for several research groups in the country.

Member of the organising committees of the 6th and 14th Annual Meetings of the Portuguese Chemical Society (Aveiro, October, 1983 and April, 1994).

Chairman of the XIXth European Colloquium on Heterocyclic Chemistry (Aveiro, July, 2000).

Compulsory army service, 1974-1975.

Referee for the following publications: Journal of Organic Chemistry, Inorganic Chemistry, Journal of Porphyrins and Phthalocyanines, European Journal of Organic Chemistry, Journal of Molecular catalysis, Applied Catalysis, Journal of Catalysis, Natural Products Letters, Natural Product Research, Mendeleev Communications, Heterocyclic Communications, Journal of Heterocyclic Chemistry, Tetrahedron Letters, Journal of the American Chemical Society.

Editor of the *European Journal of Organic Chemistry* since January / 99.

Research Interests:

Synthesis of Porphyrins and related compounds; studies on the potential medicinal applications of such heterocycles (e.g., in photodynamic therapy of cancer cells, also as antibacterial and antifungal agents). Metalloporphyrins as oxidative catalysts.

Synthesis, isolation and structural characterization of natural compounds (mainly terpenoids and flavonoids). Catalytical oxidative transformations of natural compounds into other value-added products and assessment of the biocidal and antioxidant features of such compounds.

Member of the following scientific societies:

The Portuguese Chemical Society, The Royal Society of Chemistry, The American Chemical Society, The Phytochemical Society of Europe, The Chemical Society of Japan.

IUPAC Fellow since 1998.

Several hundred poster communications presented at national and international meetings.

Lectures given at several European Universities and at international meetings (Lubeck, London, Debrecen, Coimbra, Rome, Barcelona, Metz, Bremen, Rostock, Porto, Viena, Alexandria, La Coruña, Covilhã, Dijon, Bled, Prague, Lisbon, São Paulo/ Ribeirão Preto, Luxor, Paris, Doha, Irbid, Amman, Marrakech, Sharm El Sheikh, São Carlos, Rio de Janeiro/ Niterói).

PATENTS

“Synthesis and application of porphyrins in antiviral formulations”, J. A. S. Cavaleiro et al., Patent # 102572, Instituto da Propriedade Industrial, 2001

“Antifungal formulations containing porphyrins”, J. A. S. Cavaleiro et al., Patent # 102581, Instituto da Propriedade Industrial, 2001

PUBLICATIONS:

240 Publications in various branches of organic chemistry in major chemical journals and three chapters of books.

The recent ones (2006-2007) are shown below.

“Synthesis and photophysical studies of new porphyrin-phthalocyanine dyads with hindered rotation”, J. P. C. Tomé, A. M. V. M. Pereira, C. M. A. Alonso, M. G. P. M. S. Neves, A. C. Tomé, A. M. S. Silva, J. A. S. Cavaleiro, M. V. Martínez-Díaz, T. Torres, D. M. Guldi, G. M. A. Rahman and J. Ramey, *Eur. J. Org. Chem.*, 2006, 257-267

“Enhancement of the photodynamic activity of tri-cationic porphyrins towards proliferating keratinocytes by conjugation to poly-S-lysine”, J. N. Silva, J. Haigle, J. P. C. Tomé, M. G. P. M. S. Neves, A. C. Tomé, J.-C. Mazière, R. Santus, J. A. S. Cavaleiro, P. Filipe and P. Morlière, *Photochem. Photobiol. Sci.*, 2006, **5**, 126-133

“Synthesis and Diels-Alder reaction of a sapphyrin derivative”, J. P. C. Tomé, D-G. Cho, J. L. Sessler, M. G. P. M. S. Neves, A. C. Tomé, A. M. S. Silva and J. A. S. Cavaleiro, *Tetrahedron Lett.*, 2006, **47**, 3131-3134

“Metalloporphyrins as Catalysts in the Oxidation of Terpenes”, M. M. Q. Simões, M. G. P. M. S. Neves and J. A. S. Cavaleiro, *Jordan J. Chem.*, 2006, **1**, 1-14

“Diels-Alder Reactions of 2'-Hydroxychalcones with ortho-Benzoquinodimethane: A New Synthesis of 3-Aryl-2-naphthyl-Hydroxyphenyl Ketones, C. M. Brito, D. C. G. A. Pinto, A. M. S. Silva, A. M. G. Silva, A. C. Tomé and J. A. S. Cavaleiro, *Eur. J. Org. Chem.*, 2006, 2558-2569

“Synthesis and Antioxidant Activity of [60]Fullerene-BHT Conjugates”, R. F. Enes, A. C. Tomé, J. A. S. Cavaleiro, R. Amorati, M. G. Fumo, G. F. Pedulli and L. Valgimigli, *Chem. Eur. J.*, 2006, 12, 4646-4653

“Efficient Microwave-Assisted Synthesis of Tetrahydroindazoles and their Oxidation to Indazoles”, V. L. M. Silva, A. M. S. Silva, D. C. G. A. Pinto and J. A. S. Cavaleiro, *Synlett*, 2006, 1369-1373

“Manganese(III) porphyrins as catalysts for the oxidation of aromatic substrates: An insight into the reaction mechanism and the role of the cocatalyst”, P. Tagliatesta, D. Giovannetti, A. Leoni, M. G. P. M. S. Neves and J. A. S. Cavaleiro, *J. Mol. Catalysis A: Chemical*, 2006, **252**, 96-102

“Epoxidation reactions with hydrogen peroxide activated by a novel heterogeneous metalloporphyrin catalyst”, S. L. H. Rebelo, A. R. Gonçalves, M. M. Pereira, M. M. Q. Simões, M. G. P. M. S. Neves and J. A. S. Cavaleiro, *J. Mol. Catalysis A: Chemical*, 2006, **256**, 321-323

“[1,2,3]Triazolo[4,5-b]porphyrins: New building blocks for porphyrinic materials”, P. S. S. Lacerda, A. M. G. Silva, A. C. Tomé, M. G. P. M. S. Neves, A. M. S. Silva, J. A. S. Cavaleiro, A. L. Llamas-Saiz, *Angew. Chem. Int. Ed.*, 2006, **45**, 5487-5491

“First phthalocyanine- β -cyclodextrin dyads”, A. O. Ribeiro, J. P. C. Tomé, M. G. P. M. S. Neves, A. C. Tomé, J. A. S. Cavaleiro, O. A. Serra and T. Torres, *Tetrahedron Lett.*, 2006, **47**, 6129-6132

“Porphyrins in 1,3-Dipolar Cycloaddition Reactions. Synthesis of New Porphyrin-Chlorin and Porphyrin-Tetraazachlorin Dyads”, A. M. G. Silva, P. S. S. Lacerda, A. C. Tomé, M. G. P. M. S. Neves, A. M. S. Silva, J. A. S. Cavaleiro, E. A. Makarova and E. Lukyanets, *J. Org. Chem.*, 2006, **71**, 8352-8356

“ β,β' -Corrole Dimers”, J. F. B. Barata, A. M. G. Silva, M. G. P. M. S. Neves, A. C. Tomé, A. M. S. Silva and J. A. S. Cavaleiro, *Tetrahedron Lett.*, 2006, **47**, 8171-8174

“Characterization of cationic glycoporphyrins by electrospray tandem mass spectrometry”, E. M. P. Silva, V. V. Serra, A. O. Ribeiro, J. P. C. Tomé, P. Domingues, M. A. F. Faustino, M. G. P. M. S. Neves, A. C. Tomé, J. A. S. Cavaleiro, A. J. F. Correia, Y. Iamamoto and M. R. M. Domingues, *Rapid Commun. Mass Spectrom.*, 2006, **20**, 3605-3611

“Efficient Consecutive Alkylation-Knoevenagel Functionalizations in Formyl Aza-Heterocycles Using Supported Organic Bases”, A. Coelho, A. El-Maatougui, E. Raviña, J. A. S. Cavaleiro and A. M. S. Silva, *Synlett*, 2006, 3324-3328

“[1,2,3,4-Tetrakis(α/β -D-galactopyranose-6-yl)phthalocyaninato]zinc(II): a water-soluble phthalocyanine”, A. O. Ribeiro, J. P. C. Tomé, M. G. P. M. S. Neves, A. C. Tomé, J. A. S. Cavaleiro, Y. Iamamoto and T. Torres, *Tetrahedron Lett.*, 2006, **47**, 9177-9180

“Reaction of 2-Amino-5,10,15,20-Tetraphenylporphyrinatonicel(II) with α,β -Unsaturated Acyl Chlorides: Synthesis of 2-pyridone-fused Porphyrin Derivatives” C. M. A. Alonso, M. G. P. M. S. Neves, A. C. Tomé, A. M. S. Silva and J. A. S. Cavaleiro, *J. Mex. Chem. Soc.*, 2006, **50**, 100-105

“Beta-Imino-*meso*-Tetraphenylporphyrin Derivatives: Reactivity Towards Ethyl Diazoacetate”, C. M. A. Alonso, M. G. P. M. S. Neves, A. C. Tomé, A. M. S. Silva and J. A. S. Cavaleiro, *Jordan J. Chem.*, 2006, **1**, 95-107

“Study by liquid secondary ion and electrospray mass spectrometry of synthesized and formed-in-source metallocorroles”, J. F. B. Barata, C. M. Barros, M. G. O. Santana Marques, M. G. P. M. S. Neves, M. A. F. Faustino, A. c. Tomé, A. J. Ferrer Correia and J. A. S. Cavaleiro, *J. Mass Spectrom.*, 2007, **42**, 225-232

“Reaction of chromone-3-carbaldehyde with α -amino acids -- syntheses of 3- and 4-(2-hydroxybenzoyl)pyrroles”, A. G. P. R. Figueiredo, A. C. Tomé, A. M. S. Silva and J. A. S. Cavaleiro, *Tetrahedron*, 2007, **63**, 910-917

“Sandwich-type tungstophosphates in the catalytical oxidation of cycloalkanes with hydrogen peroxide”, I. C. M. S. Santos, J. A. F. Gamelas, M. S. S. Balula, M. M. Q. Simões, M. G. P. M. S. Neves, J. A. S. Cavaleiro and A. M. V. Cavaleiro, *J. Mol. Catalysis A: Chemical*, 2007, **262**, 41-47

“Synthesis of Novel N-Linked Porphyrin-Phthalocyanine Dyads”, A. R. M. Soares, M. V. Martínez-Díaz, A. Bruckner, A. M. V. M. Pereira, J. P. C. Tomé, C. M. A. Alonso, M. A. F. Faustino, M. G. P. M. S. Neves, A. C. Tomé, A. M. S. Silva, J. A. S. Cavaleiro, T. Torres and D. M. Guldi, *Org. Lett.*, 2007, **9**, 1557-1560

“Novel (*E*)- and (*Z*)-3(5)-(2-hydroxyphenyl)-4-styrylpyrazoles from (*E*)- and (*Z*)-3-styrylchromones: the unexpected case of (*E*)-3(5)-(2-hydroxyphenyl)-4-(4-nitrostyryl)pyrazoles”, V. L. M. Silva, A. M. S. Silva, D. C. G. A. Pinto, J. A. S. Cavaleiro and J. Elguero, *Tetrahedron Lett.*, 2007, **48**, 3859-3862

“Synthesis of neutral and cationic tripyridylporphyrin-D-galactose conjugates and the photoinactivation of HSV-1”, J. P. C. Tomé, E. M. P. Silva, A. M. V. M. Pereira, C. M. A. Alonso, M. A. F. Faustino, M. G. P. M. S. Neves, A. C. Tomé, J. A. S. Cavaleiro, S. A. P. Tavares, R. R. Duarte, M. F. Caeiro and M. L. Valdeira, *Bioorg. Med. Chem.*, 2007, **15**, 4705-4713

“An Easy Synthetic Approach to Pyridoporphyrins by Domino Reactions”, C. M. A. Alonso, V. I. V. Serra, M. G. P. M. S. Neves, A. C. Tomé, A. M. S. Silva, F. A. A. Paz and J. A. S. Cavaleiro, *Org. Lett.*, 2007, **9**, 2305-2308

“Photoinactivation of Bacteria in wastewater by Porphyrins – Two new methods for the rapid monitorization of the process”, C. M. Carvalho, A. T. Gomes, S. C. Fernandes, A. C. Prata, M. A. Almeida, M. A. Cunha, J. P. Tomé, M. A. F. Faustino, M. G. Neves, A. C. Tomé, J. A. S. Cavaleiro, Z. Lin, J. P. Rainho and J. Rocha, *J. Photochem. Photobiol. B: Biol.*, 2007, in press