

CURRICULUM VITAE

Name: LUÍS António Ferreira Martins Dias CARLOS

Place and date of birth: Coimbra, 08-09-1964

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Academic Degrees:

- Agregação ('Habilitation') in Physics, University of Aveiro, 2004
- Ph.D. in Physics (Solid State Physics), University of Évora, 1995
- B.Sc. in Physics, University of Coimbra, 1987

Appointments and Academic Positions:

- University of Aveiro: 1996-present, Full Professor, since 01-06-2006. Vice-Director of institute "Centre for Research in Ceramics and Composite Materials", CICECO (<http://www.ciceco.ua.pt/>) since 2009. Correspondent member of the Lisbon Academy of Sciences (Physics).
- University of Évora: 1987-1996, Assistant and Assistant Professor.

Visiting Professor

- S. Paulo State University (UNESP), Araraquara, S.P. Brazil, 1999, 2012 and 2013
- University of Montpellier 2, France, 2008

Major Achievements

- Supervised 10 post-doctoral associates, 14 Ph.D. and 7 M.Sc. students (at present supervises 3 post-doctoral associates and 6 Ph.D.students). In the last five years 12 students from foreigner countries, e.g. Poland, Brazil, Austria, China, Spain, UK, have performed part of the Ph.D. work in Aveiro (medium term periods, 3-6 months)
- Co-author of 4 (2 international) patents, 312 papers and book chapters with *ca.* 7140 citations, Hirsch' index *h* of 45
- 40 plenary and invited lectures at conferences (total over 400 communications)
- Principal researcher of several projects financed by national sources and participant in other European (Joule, Brite-Euram, ECSC steel research program, Marie Curie, COST, NoE, FP7-PEOPLE-2012-ITN) and Brazilian (INCT-INAMI) projects
- Co-guest editor of a special issue of the Journal of Sol-Gel Science and Technology (2010)
- Listed at ISI Essential Science Indicators since 2007 (Materials Science and Chemistry)
- Regular reviewer of leading journals in Physics, Chemistry and Materials Science (e.g. *Phys. Rev. B*, *J. Phys. Chem.*, *Angew. Chem.*, *Chem. Comm.*, *J. Am. Chem. Soc.*, *Nature Mater.*, *Nature NanoTech.*, *Nature Comm.*, *Adv. Mater.*, *Adv. Func. Mater.*, *Chem. Mater.* and *J. Mater. Chem.*)
- Awarded the 'Prize for Scientific Excellence' by the Portuguese Science Foundation (2004).
- Awarded a 'Pesquisador Visitante Especial' grant by the CNPq, Science Without Borders Program, Brazil (2013).

Advisory Board Membership

- Associate Editor of the Journal of Luminescence (Elsevier) and Frontiers in Chemistry (Frontiers, open access journals of EPFL), 2013
- Editorial Advisory Board of the: Journal of Coordination Chemistry (Taylor Francis), Journal of Sol-Gel Science and Technology (Springer), Open Physical Chemistry Journal, Open Condensed Matter Physics Journal, Current Physical Chemistry (Bentham Science Publishers) and SRX Materials Science (Hindawi Publishing Corporation)
- Evaluation board member of Materials Science Projects of the Portuguese Science Foundation (2005-2009)
- Evaluation board member of Ramón y Cajal e Juan de la Cierva programmes (Materials Science), Agencia Nacional de Evaluación y Prospectiva, Spain, 2009
- Evaluation of bi-lateral cooperation projects, 2009, and PhD/post-doctoral research grants (Materials Science, 2011, 2012 and Nanoscience & Nanotechnology, 2013), Portuguese Science Foundation
- Evaluation of projects for the City University of Hong Kong, 2008; Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Brasil, 2008; IUPAC (Inorganic Chemistry Division), 2010; State Natural Science Award of the People's Republic of China, 2010; Agence Nationale de la Recherche ANR, France, 2010 and 2011; U.S. Department of

- Energy/Office of Basic Energy Sciences, 2013; National Science Centre, Poland, 2013; MIUR (Italian Ministry for Education, University and Research), 2013, Cariplo Foundation, Italy (2013).
- Evaluation board member of Materials Science Projects (academy projects, research fellow posts and postdoctoral projects), Research Council for Natural Sciences and Engineering, Academy of Finland, 2013.

Research Interest

- Light emission of organic-inorganic hybrids, silicates, nanocrystals and metal organic frameworks
- Self-assembly and emergence of complexity in organic/inorganic hybrids
- Applications of organic-inorganic hybrids in solid-state lighting and integrated optics
- Crystal-field, local coordination and energy transfer in lanthanide-based compounds
- Luminescent, magnetic and luminescent/magnetic nanoparticles as new probes for multimodal imaging

Ten Selected Publications

(full record available in <http://sweet.ua.pt/lcarlos/publications/publications.html>):

“Full Colour Phosphors From Eu(III)-Based Organosilicates”, L. D. Carlos, Y. Messaddeq, H. F. Brito, R. A. Sá Ferreira, V. de Zea Bermudez, S. J. L. Ribeiro, *Adv. Mater.* **12**, 594–598 (2000)

“White-Light Emission of Amine-Functionalized Organic/Inorganic Hybrids: Emitting Centers and Recombination Mechanisms”, L. D. Carlos, R. A. Sá Ferreira, R. N. Pereira, M. Assunção, V. de Zea Bermudez, *J. Phys. Chem. B* **108**, 14924–14932 (2004)

“Nanoscopic Photoluminescence Memory as a Fingerprint of Complexity in Self-Assembled Alkylene/Siloxane Hybrids”, L. D. Carlos, V. de Zea Bermudez, V. S. Amaral, S. C. Nunes, N. J. O. Silva, R. A. Sá Ferreira, J. Rocha, C. V. Santilli, D. Ostrovskii, *Adv. Mater.* **19** 341–348 (2007)

“Metal-Organic Nanoporous Structures with Simultaneous Anisotropic Photoluminescence and Magnetic Properties, and their use as Sensors”, B. V. Harbuzaru, A. Corma, F. Rey, P. Atienzar, J. L. Jordá, H. Garcia, D. Ananias, L. D. Carlos, J. Rocha, *Angew. Chem. Int. Ed.* **47**, 1080–1083 (2008)

“Lanthanide-Containing Light-Emitting Organic-Inorganic Hybrids: A Bet on the Future”, L. D. Carlos, R. A. S. Ferreira, V. de Zea Bermudez, S. J. L. Ribeiro, *Adv. Mater.* **21**, 509–534 (2009)

“Molecule-Like Eu³⁺-Dimers Embedded in a Extended System Exhibit Unique Photoluminescence Properties”, D. Ananias, M. Kostova, F. A. Almeida Paz, A. N. C. Neto, R. T. De Moura Jr., O. L. Malta, L. D. Carlos, J. Rocha, *J. Am. Chem. Soc.* **131**, 8620–8626 (2009)

“A Luminescent Molecular Thermometer for Long-Term Absolute Temperature Measurements at the Nanoscale”, C. D. S. Brites, P. P. Lima, N. J. O. Silva, A. Millán, V. S. Amaral, F. Palacio, L. D. Carlos, *Adv. Mater.* **22**, 4499–4504 (2010)

“Multifunctional Luminescent Lanthanides-Based Metal-Organic Frameworks”, J. Rocha, L. D. Carlos, F. A. Almeida Paz, D. Ananias, *Chem. Soc. Rev.* **40**, 926–940 (2011)

“Thermometry at the Nanoscale”, C. D. S. Brites, P. P. Lima, N. J. O. Silva, A. Millán, V. S. Amaral, F. Palacio, L. D. Carlos, *Nanoscale* **4**, 4799–4829 (2012)

“All-In-One Optical Heater-Thermometer Nanoplatfom Operative From 300 to 2000 K Based on Er³⁺ Emission and Blackbody Radiation”, M. L. Debasu, D. Ananias, I. Pastoriza-Santos, L. M. Liz-Marzan, J. Rocha, L. D. Carlos, *Adv. Mater.* **25**, 4868–4874 (2013), DOI: 10.1002/adma.201300892