Europass Curriculum Vitae

Personal information

First name(s) / Surname(s)	**Luís Amaral**
Address	*CeFEMA, Instituto Superior Técnico, Universidade de Lisboa, 1049–001 Lisbon, Portugal*
Mobile	+351 914622406
E-mail(s)	luis.m.amaral@tecnico.ulisboa.pt; luis.ma.amaral@gmail.com
Nationality	Portuguese
Date of birth	29/09/1978

Work experience

Dates	Since 2017
Occupation or position held	Editor of CeFEMA Newsletter
Name and address of organization	Center of Physics and Engineering of Advanced Materials (CeFEMA), Instituto Superior Técnico, University of Lisbon, Lisboa (Portugal)
Dates	Since 2015
Occupation or position held	Associate Editor
Name and address of organization	Ciência & Tecnologia dos Materiais, scientific journal of Portuguese Society of Materials (SPM) published by Elsevier
Dates	June 25th, 2014
Occupation or position held	Lecturer
Main activities and responsibilities	Theoretical and practical classes on “Energy conversion and storage: the role of nanotechnology”
Name and address of employer	Erasmus Intensive Program: Environmental Remediation and Energy production Technologies Instituto Politécnico de Portalegre, Escola Superior de Tecnologia e Gestão
Dates	Since June 2014
Occupation or position held	FCT Post-doctoral research grant (SFRH/BPD/97453/2013)
Main activities and responsibilities	Research on electrolytic hydrogen evolution in alkaline media using RTILs and Schiff bases
Name and address of employer	Materials Electrochemistry Group, Center of Physics and Engineering of Advanced Materials (CeFEMA), Instituto Superior Técnico, University of Lisbon, Lisboa (Portugal)
Dates	December 2012 - May 2014
Occupation or position held	Research grant
Main activities and responsibilities	Research on the project “Functional materials for electrolytic hydrogen production”
Name and address of employer	Materials Electrochemistry Group, Institute of Materials and Surfaces Science and Engineering (ICEMS), Instituto Superior Técnico, TU Lisbon, Lisboa (Portugal)

Dates	March 2012 - July 2012
Occupation or position held	Research grant
Main activities and responsibilities	Research on the project "Multiferroics and magnetoelectrics for spintronic: barriers and interfaces"
Name and address of employer	Department of Materials and Ceramic Engineering, CICECO – Centre for Research in Ceramics & Composite Materials, University of Aveiro, Aveiro (Portugal)
Dates	March 2008 - February 2012
Occupation or position held	FCT PhD grant
Main activities and responsibilities	Preparation and characterization of ceramic functional materials, bulk ceramics and films. Microstructural design and study of constrained sintering. Dielectric properties characterization. Elaboration of reports and scientific papers, oral and poster presentation of scientific results in national and international conferences, co-supervision of undergraduate students.
Name and address of employer	Department of Materials and Ceramic Engineering, CICECO – Centre for Research in Ceramics & Composite Materials, University of Aveiro, Aveiro (Portugal)
Dates	April 2010 and May 2011
Occupation or position held	Guest scientist
Main activities and responsibilities	Analysis of experimental results and writing of scientific papers
Name and address of employer	Technische Universitat Darmstadt, Darmstadt (Germany)
Dates	26 August 2009 - 26 November 2009
Occupation or position held	Guest scientist
Main activities and responsibilities	Research on constrained sintering of functional materials
Name and address of employer	Technische Universität Darmstadt, Darmstadt (Germany)
Dates	September 2005 - February 2008
Occupation or position held	Research grant (BIC)
Main activities and responsibilities	Preparation and characterization of ceramic functional materials, bulk ceramics and films.
Name and address of employer	Department of Materials and Ceramic Engineering, CICECO – Centre for Research in Ceramics & Composite Materials, University of Aveiro, Aveiro (Portugal)
Dates	September 2005 – December 2005
Occupation or position held	Internship
Main activities and responsibilities	Market study on the commercial viability of lead-free electroceramics
Name and address of employer	Rauschert Portuguesa, S.A. Lisbon (Portugal)
Type of business or sector	Technical ceramics industry
Dates	February 2004 - June 2004
Occupation or position held	Internship
Main activities and responsibilities	Quality management, corrosion tests in stainless steel.
Name and address of employer	Teka Portugal, S.A., Ílhavo (Portugal)
Type of business or sector	Metalomechanic industry

Education and training

Dates	31 August 2013 - 14 September 2013
Title of qualification awarded	Erasmus Intensive Program: Environmental Remediation and Energy production Technologies

Principal subjects / occupational skills covered	Environmental protection and energy conversion technologies, with a strong incidence in electrochemistry and photocatalysis. Fundamental principles of electrochemistry and aspects of industrial electrochemistry, including electrochemical thermodynamics, kinetics, catalysis, and corrosion. Electrochemical energy conversion systems (fuel cells, batteries, photovoltaic cells) and environmental protection situations (sensors, photocatalysis, pollutants removal, bioelectrochemistry).
Institution	Instituto Politécnico de Portalegre, Escola Superior de Tecnologia e Gestão
Dates	March 2008 - February 2012
Title of qualification awarded	Doctoral Program on Materials Science and Engineering
Principal subjects / occupational skills covered	L. Amaral, "Microstructural design of titanate-based electroceramics", PhD thesis, supervision of Profª Ana Senos and Profª Paula Vilarinho.
Institution	University of Aveiro, Aveiro (Portugal)
Level in national or international classification	Approved
Dates	March 2010 - July 2010
Title of qualification awarded	COHITEC program
Principal subjects / occupational skills covered	Development of a Business Plan with real technologies of high growth potential
Institution	COTEC and Porto Business School, Porto (Portugal)
Dates	October 2004 - May 2007
Title of qualification awarded	Master in Materials Science and Engineering
Principal subjects / occupational skills covered	L. Amaral, "Sintering studies of nonstoichiometric strontium titanate ceramics", Master thesis. Supervision of Profª Paula Vilarinho and Profª Ana Senos.
Institution	University of Aveiro, Aveiro (Portugal)
Level in national or international classification	Approved
Dates	October 1996 - July 2004
Title of qualification awarded	Degree in Materials Engineering
Institution	University of Aveiro, Aveiro (Portugal)
Level in national or international classification	14

Personal skills and competences

Mother tongue(s) **Portuguese**

Other language(s)

Self-assessment	Understanding				Speaking				Writing	
European level (*)	Listening		Reading		Spoken interaction		Spoken production			
English	C2	Proficient user	C2	Proficient user	C1	Proficient user	C1	Proficient user	C2	Proficient user
French	B1	Independent user	B1	Independent user	A2	Basic User	A2	Basic User	A2	Basic User

(*) Common European Framework of Reference (CEF) level

Social skills and competences	Team spirit and adaptation skills to multicultural environments acquired through work in scientific context with professionals of different nationalities, cultures and organizations. Good communication, leadership and interpersonal relationship skills.
Organisational skills and competences	Good coordination, project management, prioritizing and deadline management skills. - Assistance to organization of international scientific conferences "Materiais 2005" and "COST 2009" in the University of Aveiro

Technical skills and competences	- Experience in using scientific equipment Scanning Electronic Microscopes (SEM) Hitachi S4100 e Hitachi SU-70 and X-Ray Difractometer (XRD) Philips X'pert
Computer skills and competences	Good skills in information and communication technologies (ICT): Microsoft Office, Outlook, Internet. Endnote, ImageJ, Photoshop, Origin, ZView.
Artistic skills and competences	Good writing skills, poetry and prose. Writing, reading, cinema, photography and sports as hobbies.
Driving licence(s)	A1, A, B, B1

Publications

[29] César A. C. Sequeira, David S. P. Cardoso, Marta Martins, Luís Amaral, "Novel Materials for Fuel Cells Operating on Liquid Fuels", AIMS Energy, 5(3): 458-481 (2017).

[28] L. Amaral, D.S.P. Cardoso, B. Šljukić, D.M.F. Santos, and C.A.C. Sequeira, "Room Temperature Ionic Liquids as Electrolyte Additives for the HER in Alkaline Media" Journal of the Electrochemical Society 164 (4) F427-F432 (2017).

[27] J.A.S.B. Cardoso, D.S.P. Cardoso, L. Amaral, Ö. Metin, M. Sevim, T. Sener, C.A.C. Sequeira, D.M.F. Santos, "Reduced graphene oxide assembled Pd-based nanoalloys for hydrogen evolution reaction", International Journal of Hydrogen Energy, 42 3916-3925 (2017).

[26] L. Amaral, D.S.P. Cardoso, B. Šljukić, D.M.F. Santos, and C.A.C. Sequeira, "Effect of RTILs on the hydrogen evolution reaction in alkaline media", ECS Transactions, 72 (23) 23-29 (2016).

[25] César A.C. Sequeira, David S.P. Cardoso, Luís Amaral, Biljana Šljukić and Diogo M.F. Santos, "On the performance of commercially available corrosion-resistant nickel alloys: a review", Corrosion Reviews, Vol. 34, 4, 187 (2016).

[24] B. Šljukić, D.M.F. Santos, M. Vujković, L. Amaral, R.P. Rocha, C.A.C. Sequeira and J.L. Figueiredo, "Carbon–supported Mo2C electrocatalysts for hydrogen evolution in alkaline medium", ChemSusChem, 9, 1200, (2016).

[23] D. M. F. Santos, B. Šljukić, L. Amaral, J. Milikić, C. A. C. Sequeira, D. Macciò, and A. Saccone, "Nickel–Rare Earth Electrodes for Sodium Borohydride Electrooxidation", Journal of the Electrochemical Society, 190, 1050-1056 (2016)

[22] A.M.R Senos, L. Amaral, N.B. Selvaraj, M. Fernandes, C. Jamin, O. Guillon, I. Reaney, and P.M. Vilarinho, "Microstructure evaluation of titanate based layered perovskites: constrained vs. free sintering", Microscopy and Microanalysis 21 (S6) 92 (2015).

[21] B. Šljukić, M. Vujković, L. Amaral, D.M.F. Santos, R.P. Rocha, C.A.C. Sequeira*a* and J.L. Figueiredo, "Carbon–supported Mo_2C electrocatalysts for hydrogen evolution reaction", J. Mater. Chem. A 3, 15505-15512 (2015).

[20] C. Sequeira, E. Aghaie, D. Cardoso e L. Amaral, "Corrosão pelos depósitos salinos nos geradores de vapor", Corrosão e Protecção de Materiais, Vol. 34, 1, 22-25 (2015)

[19] D.S.P. Cardoso, L. Amaral, D.M.F. Santos, B. Sljukic, C.A.C. Sequeira, D. Maccio, A. Saccone, "Enhancement of hydrogen evolution in alkaline water electrolysis by using nickel-rare earth alloys", International Journal of Hydrogen Energy 40, 4295-4302 (2015)

[16 C. A. C. Sequeira and L. Amaral, "Bipolar Plates for PEMFC's", Journal of Fuel Cell Science and Technology 11, 044001-1 (2014).

[15] D. M. F. Santos, B. Šljukic, L. Amaral, D. Macciò, A. Saccone, and C. A. C. Sequeira, "Nickel and Nickel-Cerium Alloy Anodes for Direct Borohydride Fuel Cells", Journal of The Electrochemical Society 161 (5) F594-F599 (2014).

[14] D. M. F. Santos, L. Amaral, B. Šljukic, D. Macciò, A. Saccone, and C. A. C. Sequeira, "Electrocatalytic Activity of Nickel-Cerium Alloys for Hydrogen Evolution in Alkaline Water Electrolysis", Journal of The Electrochemical Society, 161 (4) F386-F390 (2014)

[13] César A. C. Sequeira, Luis Amaral, "Role of the Kirkendall Effect in Diffusion Processes in Solids", Transactions of Nonferrous Metals Society of China 24, 1-11 (2014).

[12] C. A. C. Sequeira, L. Amaral, "Strengthening mechanisms of materials for high temperature application", Corrosão e Protecção de Materiais, Vol. 32, Nº 3 (2013) 78-84

[11] D. M. F. Santos, L. Amaral, B. Sljukic, D. Macciò, A. Saccone, and C. A. C. Sequeira, "Nickel-Cerium Electrodes for Hydrogen Evolution in Alkaline Water Electrolysis", ECS Transactions 58 (2) 113-121 (2013).

[10] D. M. F. Santos, B. Sljukic, L. Amaral, D. Macciò, A. Saccone, and C. A. C. Sequeira, "Nickel-Cerium Alloys for Borohydride Oxidation", ECS Transactions 58 (1) 1893-1901 (2013)

[9] Luís Amaral, M. Fernandes, I. M. Reaney, M. P. Harmer, A. M. R. Senos, P. M. Vilarinho, "Grain Growth Anomaly and Dielectric Response in Ti-rich Strontium Titanate Ceramics", Journal of Physical Chemistry C 117 (47) (2013) 24787-24795.

[8] César A. C. Sequeira, Diogo M. F. Santos, Biljana Šljukić, Luis Amaral, "Physics of Electrolytic Gas Evolution", Brazilian Journal of Physics 43,199 (2013).

[7] Luis Amaral, Christine Jamin, Ana Senos, Paula Vilarinho, Olivier Guillon, "Constrained sintering of $BaLa_4Ti_4O_{15}$ thick films: Pore and grain anisotropy", Journal of the European Ceramic Society 33 (10) 1801 (2013).

[6] A. E. Souza, G. T. A. Santos, B. C. Barra, W. D. Macedo Jr., S. R. Teixeira, Cássio M. Santos, A.M.O.R. Senos, L. Amaral, E. Longo, "Photoluminescence of $SrTiO_3$: Influence of particle size and morphology", Crystal Growth & Design 12 (11) 5671 (2012).

[5] Luis Amaral, Christine Jamin, Ana Senos, Paula Vilarinho, Olivier Guillon, "Effect of the substrate on the constrained sintering of $BaLa_4Ti_4O_{15}$ thick films", Journal of the American Ceramic Society 95 (12) 3781 (2012).

[4] L. Amaral; A.M.R. Senos; C. Jamin; O. Guillon, P.M. Vilarinho, "Stress Assisted Grain Growth and Dielectric Properties of $BaLa_4Ti_4O_{15}$ Thick Films", Proceedings CICMT 2012 (2012).

[3] L. Amaral, M. Fernandes, A. M. R. Senos, P. M. Vilarinho and M. P. Harmer, "Grain Growth Anomaly in Ti-rich Strontium Titanate as Revealed by Electron Microscopy", Microscopy and Microanalysis 18 (S5) 123 (2012).

[2] L. Amaral, A. M. R. Senos, P. M. Vilarinho, "Sintering kinetic studies in nonstoichiometric strontium titanate ceramics", Materials Research Bulletin 44, 263 (2009).

[1] L. Amaral, A. M. R. Senos, P. M. Vilarinho, "Nonstoichiometry effects in $SrTiO_3$ assessed by Transmission Electron Microscopy", Microscopy and Microanalysis, 14 (S3) 5 (2008).

Book Chapters

[1] "Developments in secondary batteries", César A.C. Sequeira, Biljana Šljukic, Milica Vujkovic, Ivana Stojkovic Simatovic, Luis Amaral and Diogo M.F. Santos - FUEL CELLS AND BATTERIES of the Series ENERGY, SCIENCE & TECHNOLOGY (12 VOLS.), in Vol. 10 , Ed. J.N. Govil, Studium Press LLC, USA, 2015

Oral Communications (Selected)

[20] L. Amaral, D. S. P. Cardoso, B. Šljukić, D. M. F. Santos, C. A. C. Sequeira, "Electrochemistry of Hydrogen Evolution in RTILs Mixtures", MATERIAIS 2017, XVIII Congresso da Sociedade Portuguesa de Materiais and VIII International Symposium on Materials, Aveiro, Portugal, 9 – 12 April 2017.

[19] L. Amaral, D.S.P. Cardoso, B. Šljukić, D.M.F. Santos, and C.A.C. Sequeira, "Room Temperature Ionic Liquids as Electrolyte Additives for Hydrogen Evolution" CeFEMA Worshop 2016, IST, Lisboa, 12th of December of 2016.

[17] L. Amaral, B. Šljukić, D.M.F. Santos, A. Stojanović, R.P. Rocha, C.A.C. Sequeira and J.L. Figueiredo, "Carbon-supported Mo_2C electrocatalysts for hydrogen evolution reaction", Physical Chemistry 2014, 22-26 September 2014, Belgrade, Serbia.

[16] D.M.F. Santos, B. Šljukić, L. Amaral, C.A.C. Sequeira, D. Macciò, and A. Saccone, "Investigation of nickel-rare earth electrodes for sodium borohydride electrooxidation", 226th Meeting of the Electrochemical Society, 5-9 October 2014, Cancun, Mexico.

[15] Paula M. Vilarinho, Luis Amaral, Manuela Fernandes, Ana M. R. Senos, M. P. Harmer, "Retrograde Solubility: The Reason for the Grain Growth Anomaly in Ti-rich Strontium Titanate", 2012 MRS Fall Meeting, November 2012, Boston, Massachusetts, EUA
[14] Ana M.R. Senos, Luís Amaral, Manuela Fernandes, Paula M. Vilarinho, Martin P. Harmer, Animesh Kundu, Interface transitions and retrograde solubility in Ti-rich strontium titanate, (Invited talk), Workshop on Interfaces, October 2012, Bear Creek Mountain Resort, USA.

[13] Ana M.R. Senos, Luís Amaral, Paula M. Vilarinho, Christine Jamin, Olivier Guillon, "Texturization of BaO-Ln_2O_3-TiO_2 Thick Films: The Role of Constrained Sintering", MS&T'12, October 2012, Pittsburgh, Pennsylvania, EUA
[12] Ana M.R. Senos, Luís Amaral, Christine Jamin, Olivier Guillon, Paula M. Vilarinho, Stress Assisted Grain Growth and Dielectric Properties of $BaLa_4Ti_4O_{15}$ Thick Films., CICMT 2012 - IMAPS/ACerS International Conference and Exhibition on Ceramic Interconnect & Ceramic Microsystems Technologies, April 2012, Erfurt, Germany.

[11] Luis Amaral, Manuela Fernandes, Ana M. R. Senos, Paula M. Vilarinho, "Grain growth anomaly in Ti-rich strontium titanate as revealed by electron microscopy", Microscopy at the Frontiers of Science, October 2011, Aveiro, Portugal

[10] Luís Amaral, Ana M.R. Senos, Paula M. Vilarinho, Christine Jamin, Olivier Guillon, "Microstructural anisotropy in $BaLa_4Ti_4O_{15}$ EPD thick films sintered on Pt-foil substrates", Materiais 2011, April 2011, Guimarães, Portugal

[9] Ana M.R. Senos, Luís Amaral, Paula M. Vilarinho, Christine Jamin, Olivier Guillon, "Constrained sintering of $BaLa_4Ti_4O_{15}$ thick films", MS&T'10, October 2010, Houston, Texas, EUA

[8] Luís Amaral, Ana M.R. Senos, Paula M. Vilarinho, Christine Jamin, Olivier Guillon, "Constrained sintering and dielectric properties of $BaLa_4Ti_4O_{15}$ EPD thick films on Pt-foil substrates", Electroceramics XII, June 2010, Trondheim, Norway

[7] Luis Amaral, Paula M. Vilarinho, Ana M. R. Senos, "Electrophoretic deposition of strontium titanate thick films: the role of suspension and processing parameters", Materiais 2009, April 2009, Lisbon, Portugal

[6] L. Amaral, P. M. Vilarinho, A. M. R. Senos, "Relations between stoichiometry and dielectric response in strontium titanate ceramics", COST 539 Workshop, February 2009, Madrid, Spain

[5] A. M. R. Senos, L. Amaral, P. M. Vilarinho, A. Tkach, I. M. Reaney, "Grain Boundary Structure and Dielectric Properties of Nonstoichiometric Strontium Titanate Ceramics", Sintering 2008, November 2008, California, EUA

[4] L. Amaral, A. M. R. Senos, P. M. Vilarinho, "Grain boundary structures in nonstoichiometric $SrTiO_3$ ceramics studied by electron microscopy and impedance spectroscopy", INCOMAM'08, October 2008, Porto, Portugal

[3] P. M. Vilarinho, L. Amaral, A. M. R. Senos, "Impedance spectroscopy of nonstoichiometric strontium titanate ceramics", Electroceramics XI, September 2008, Manchester, UK

[2] A. M. R. Senos, L. Amaral, P. M. Vilarinho, "Grain growth in free and constrained strontium titanate ceramics", "ReX & GG III", 2007, South Korea

[1] L. Amaral, A. Tkach, A. M. R. Senos, P. M. Vilarinho, "Sintering studies of nonstoichiometric strontium titanate ceramics", "Electroceramics X" 2006, Toledo, Spain

Posters (Selected)

[9] L. Amaral, D.S.P. Cardoso, B. Šljukić, D.M.F. Santos, and C.A.C. Sequeira, "Effect of RTILs on the hydrogen evolution reaction in alkaline media", 229th Meeting of The Electrochemical Society, Symposium "Hydrogen and oxygen evolution catalysis for water electrolysis 2" , San Diego Convention Center, San Diego (CA), USA, May 29-June 2, 2016.

[8] L. Amaral, D.S.P. Cardoso, B. Šljukić, D.M.F. Santos, and C.A.C. Sequeira, "Effect of RTILs on the hydrogen evolution reaction in alkaline media", 229th Meeting of The Electrochemical Society,

Symposium “Hydrogen and oxygen evolution catalysis for water electrolysis 2” (poster #I03-1450), San Diego Convention Center, San Diego (CA), USA, May 29-June 2, 2016.

[7] Manuela Fernandes, Luís Amaral, Ana M.R. Senos, Paula M. Vilarinho, Martin P. Harmer, Detailed scanning electron microscopy studies of nonstoichiometric strontium titanate ceramics, XLVI Congress of the Portuguese Society for Microscopy 2012, September 2012, Lisbon, Portugal.

[6] Paulo E. P. M. Filho, Agda E. Souza, Gleyson T. A. Santos, Silvio R. Teixeira, Luís Amaral, Ana M. R. Senos, Elson Longo, “Characterization of Strontium Titanate Synthesized by Microwave-Assisted Hydrothermal Method”, X SBPMat, September 2011, Gramado – RS, Brasil

[5] Ana M.R. Senos, Luís Amaral, Paula M. Vilarinho, Christine Jamin, Olivier Guillon, “Pore and grain anisotropy in $BaLa_4Ti_4O_{15}$ and $Ba_{4.5}Nd_9Ti_{18}O_{54}$ EPD thick films sintered on platinum”, Sintering 2011, August 2011, Jeju Island, South Korea

[4] A. M. R. Senos, L. Amaral, P. M. Vilarinho, “Constrained sintering and microstructure development of strontium titanate thick films”, Sintering 2008, November 2008, California, EUA

[3] L. Amaral, A. M. R. Senos, P. M. Vilarinho, “Effect of nonstoichiometry on the structure of strontium titanate”, V CICECO Meeting, 2008, University of Aveiro, Portugal

[2] L. Amaral, A. Tkach, A. M. R. Senos, P. M. Vilarinho, “Nonstoichiometry effect in the sintering kinetics of strontium titanate ceramics”, IV CICECO Meeting, 2007, University of Aveiro, Portugal

[1] L. Amaral, A. M. R. Senos, P. M. Vilarinho, “Grain growth studies in nonstoichiometric strontium titanate ceramics”, “Materiais 2007”, Porto 2007, Portugal

Other scientific activities

Reviewer for several international science journals
Member of the jury of IST Masters students Eurico Moutinho and Raísa Oliveira (2015)
Orientation of students in the discipline “Projecto de Materiais” (University of Aveiro, 2010 and 2011) and of Erasmus+ student Justyna Minkiewicz (IST, 2016)
Member of the Editorial Board of INGENIUS, a scientific publication of the *Universidad Politécnica Salesiana* of Ecuador

Prizes and Awards

4th place in I2P Europe (Idea to Product Competition) with the project ThinFilmTec, June 2011, RWTH Aachen, Germany

2nd place in I2P Portugal (Idea to Product Competition) with the project ThinFilmTec, COTEC, Fevereiro 2011, Portugal (prize: 10.000€)

1st place in Empreende+, cathegory “Empreendedorismo de Base Tecnológica” with the project ThinFilmTec, UATEC, January 2011, University of Aveiro, Portugal (prize: 5.000€)
Merit scholarship in European Mater in Materials Science, 2005 and 2006, University of Aveiro, Portugal