

CURRICULUM VITAE



PERSONAL DETAILS

Name	Catarina Gonçalves
Address	Rua Portela Nova, 15 4760-722, Ribeirão Portugal
Date of birth	12 th November 1981
Place of birth	Paris, France
Telephone	+351 916232450
E-mail	cgoncalves@deb.uminho.pt catgoncinha@gmail.com
Nationality	Portuguese
Institutional Address	University of Minho Department of Biological Engineering Campus de Gualtar 4710-057 Braga Portugal
MOTHER LANGUAGE	PORTUGUESE
OTHER LANGUAGES	
Writing	ENGLISH Very Good
Speaking	Very Good
Reading	Very Good
Writing	FRANCÊS Good
Speaking	Excelent
Reading	Excelent

ACADEMIC QUALIFICATIONS

1999-2004
Superior Institute of Engineering of Porto (ISEP)
Graduate Degree in Chemical Engineering
16 /20 values

2006 – 2010
University of Minho
Biological Engineering Department
PhD degree in Biomedical Engineering

**PROFESSIONAL
EXPERIENCE**

1st July 2003 – 31th December 2003

Indinor, S.A – Chemical Industry
Traineeship (PRODEP programme)
Creation of a Quality Manual and implementation of Technical Procedures.

1st November 2004 – 31th October 2005

University of Minho, Centre for Biological Engineering, Institute for Biotechnology and Bioengineering
Research (FCT grant)
Project POCTI/QUI/44368/2002: Cellulose: surface modification, interaction with binding domains and enzymatic modification.

1st January 2006 – 30th April 2010

University of Minho, Centre for Biological Engineering, Institute for Biotechnology and Bioengineering
PhD Research (FCT grant)
Development of self-assembled dextrin nanogels

1st May 2010 – 31th October 2010

University of Minho, Centre for Biological Engineering, Institute for Biotechnology and Bioengineering
Research
Kacelle (European project)

15th September 2011 – 15th March 2012

University of Minho
Invited Professor, Laboratory of Chemical Technology, 3rd year of MSc in Biological Engineering.
The subject includes instrumental analysis methods and biodiesel production, through transesterification reaction, and characterization.

6th March 2014 – 5th September 2014

University of Minho
Invited Professor, Introduction to Process Engineering, 1st year of MSc in Biological Engineering.
The subject includes units and dimensions, composition of mixtures, material balances (with or without chemical reaction) and liquid-vapor equilibrium.

16th February 2015 – 15th August 2015

University of Minho
Invited Professor, Physical Chemistry, 2nd year of MSc in Biological Engineering.
The subject includes real gas (fugacity, the virial expansion, van der Waals equation, principle of corresponding states), equilibrium calculations: ideal and non-ideal systems.

1st November 2010 - 30th Juin 2017

University of Minho, Centre for Biological Engineering, Institute for Biotechnology and Bioengineering
Post-doc Research (FCT grant) in Materials Science and Biotechnology and Assistant Director of the laboratory
Development of new formulations for drug delivery: nanomagnetogels.

1st July 2017 - Actuality

International Iberian Nanotechnology Laboratory
Research Fellow in the Food Processing Group, Department of Life Sciences
Cell culture models (Caco-2 and HT29-MTX) for the *in vitro* study of oral absorption of bioactive molecules. *In vitro* cytotoxicity tests, such as cell viability, membrane integrity and ROS generation.

SECONDMENTS

April 2017

Ocupharm

In-Vivo characterization of efficacy and safety of hyaluronic-acid nanogels as drug delivery systems for ocular applications using New Zealand rabbits. Melatonin, a lipophilic molecule that reduces intraocular pressure, was incorporated into chemically- modified hyaluronic acid nanogels.

ORAL PRESENTATIONS

ISMIP 5 (5th International Symposium on Mixing in Industrial Processes), Seville, Spain, June 2004, "A New Implementation of the Ultrasonic Measurement of the Dispersed Phase Hold-Up Fraction in Liquid-Liquid Dispersions", Gonçalves, C., Ribeiro, M.M.M., Regueiras, P. F., Guimarães M.M.L., Cruz Pinto, J.J.C.

Jornadas de Engenharia Biológica, Minho University, Braga, October 2006, "Desenvolvimento de Nanopartículas para aplicação em libertação controlada de fármacos"

3rd European Science Foundation, Summer School in Nanomedicine, Lutherstadt Wittenberg, Germany, June 2011, "Development of Self- Assembled Dextrin Nanogels".

3rd Meeting of Institute for Biotechnology and Bioengineering (IBB), Lisbon, March 2012, "Self- Assembled Nanogels for Biomedical Applications".

E-MRS 2013 FALL MEETING, symposium G, Warsaw University of Technology, 16th-20th September 2013, "Superparamagnetic iron oxide nanoparticles stabilized by dextrin nanogel: New nanomagnetogel as contrast agent for Magnetic Resonance Imaging", Gama, M., Gonçalves, C., Lalatonne, Y., Melro, M., Badino, G., Ferreira, M., Motte, L., Geraldes, C., Martins, J.A..

NanoPT 2014 International Conference, Porto, 12th-14th February 2014, "New dextrin nanomagnetogels: production, characterization and in vivo performance as dual modality imaging bioprobe", Gonçalves, C., Antunes, I.F., Lalatonne, Y., Ferreira, M.F.M., Geraldes, C.F.G.C., Motte, L., Martins, J.A., de Vries, E.F.J., Gama, F.M.

E-MRS 2014 SPRING MEETING, symposium F, Lille, France, 26th-30th May 2014, "Dextrin nanomagnetogels: *in vivo* performance as dual modality imaging bioprobe", Gonçalves, C., Antunes, I. F., Lalatonne, Y., Ferreira, M.F.M., Geraldes, C.F.G.C., Motte, L., Martins, J.A., de Vries, E. F. J., Gama, F.M.

Doctoral Program in Chemical and Biological Engineering, Advanced Topics in Chemical and Biological Engineering II, 22th May 2015, University of Minho, Biological Engineering Department, "Development of nanomagnetogels for Biomedical Applications", Gonçalves, C.

Post-graduated course "Nanoparticles and the immune system: risks and therapeutic opportunities. Second Edition", 25 May-5 Jun 2015, University of Minho, Biology Department, "Adjuvant effect of polymeric nanogels (mannan or dextrin) on the immune response to ovalbumin", Gonçalves, C., Ferreira, S., Correia, A., Gama, F.M., Vilanova, M.

POSTER PRESENTATIONS

ISEC 2005 (International Solvent Extraction Conference), China, September 2005, "Non-Invasive Dispersed Phase Hold-Up Measurements in Liquid-Liquid Dispersions: Propagation Delay Time - Hold-Up - Temperature Correlations", Ribeiro, M.M.M., Gonçalves, C., Regueiras, P.F., Guimarães, M.M.L., Cruz Pinto, J.J.C.

COLAOB (4^o Congresso Latino-Americano de Órgãos Artificiais e Biomateriais), Caxambu-Brazil, August 2006, "Self-assembled hydrogel Nanoparticles made of Dextrin", Gonçalves, C., Martins, J. A., Gama, F.M.

ESB 2006 (20th European Conference on Biomaterials), Nantes, France, September 2006, "Self-assembled Nanoparticles of Dextrin substituted with hexadecanethiol", Gonçalves, C., Martins, J.A., Gama, F.M.

Nanotech 2007, Santa Clara, EUA, June 2007, "Amphiphilic dextrin substituted with hexadecanethiol", Gonçalves, C., Martins, J. A., Gama, F.M.

FBPS 2007 (7th International Symposium on Frontiers in Biomedical Polymers), Ghent, Belgium, June 2007, "Characterization of the self-assembly process of hydrophobically modified dextrin", Gonçalves, C., Gama, F.M.

4th International Conference on Bioengineering and Nanotechnology, Dublin, July 2008, "Nanogels made of dextrin", Gonçalves, C., Martins, J. A., Gama, F.M.

DDS 2008 (6th International Workshop on Drug Delivery Systems for Nanomedicine), Liblice Castle, Czech Republic, October 2008, "Studies on the Curcumin delivery using Dextrin Nanoparticles", Gonçalves, C., Gama, F.M.

Meeting on Nanotechnology, Liposomes and Health, Itaparica–Salvador, Brazil, April 2009, "Self-assembled nanoparticles made of dextrin: production, characterization and biocompatibility", Gama, F.M., Gonçalves, C.

Medical Physics and Biomedical Engineering-WC2009, Munich, Germany, September 2009, "Studies on the interaction of self-assembled dextrin nanoparticles with murine macrophages and blood clearance", Gonçalves, C., Torrado, E., Martins, T., Pereira, P., Gama, F.M.

3rd Vaccine Congress, Singapore, October 2009, "Self-assembled nanoparticles made of dextrin and mannan: production, characterization and potential applications", Gama, F.M., Ferreira, S., Gonçalves, C.

ESB-UB Conference in Biomedicine, Nanomedicine: Reality Now and Soon, Sant Feliu de Guixols, Spain, October 2010, "Studies on dextrin nanogel as drug delivery system", Gonçalves, C., Ferreira, M., Prata, I., Martins, J.A., Gama, F.M.

SCIENTIFIC PUBLICATIONS

Ribeiro, M.M.M., **Gonçalves, C.**, Regueiras, P. F., Guimarães M.M.L., Cruz Pinto, J.J.C. "Measurements of toluene-water dispersions hold-up using a non-invasive ultrasonic technique", *Chemical Engineering Journal*, **2006**, 118, 47-54.

Carvalho, J.M.F., **Gonçalves, C.**, Gama, F.M. "Production and Characterization of a New Based Dextrin Hydrogel", *European Polymer Journal*, **2007**, 43, 3050-3059.

Gonçalves, C., Martins, J.A., Gama, F.M. "Self-assembled Nanoparticles of dextrin substituted with hexadecanethiol", *Biomacromolecules*, **2007**, 8 (2) 392-398.

Bai, G., **Gonçalves, C.**, Gama, F.M., Bastos, M. "Self-aggregation of hydrophobically modified dextrin and their interaction with surfactant", *Thermochimica Acta*, **2008**, 467, 54-62.

Garcia, H., Barros A.S., **Gonçalves, C.**, Gama, F.M., Gil A.M. "Characterization of dextrin hydrogels by FTIR spectroscopy and solid state NMR spectroscopy", *European Polymer Journal*, **2008**, 44, 2318-2329.

Gonçalves, C., Gama, F.M. "Characterization of the self-assembly process of hydrophobically modified dextrin", *European Polymer Journal*, **2008**, 44, 3529-3534.

Gonçalves, C., Torrado, E., Martins, T., Pereira, P., Pedrosa, J., Gama, F.M. "Dextrin nanoparticles: studies on the interaction with murine macrophages and blood clearance", *Colloids and Surfaces B: Biointerfaces*, **2010**, 75, 483-489.

Gonçalves, C., Pereira, P., Gama, F.M. "Self-assembled hydrogel nanoparticles for drug delivery applications", *Materials*, **2010**, 3(2), 1420-1460.

Gonçalves, C., Ferreira, M.F.M., Santos, A.C., Prata, M.I. M., Galdes, C.F.G.C., Martins, J.A., Gama, F.M. "Studies on the biodistribution of dextrin nanoparticles", *Nanotechnology*, **2010**, 21, 295103.

Carvalho, V., Castanheira, P., Faria, T., **Gonçalves, C.**, Madureira, P., Faro, C., Domingues, L., Brito, R., Vilanova, M., Gama, M. "Biological activity of heterologous murine interleukin-10

and preliminary studies on the use of a dextrin nanogel as a delivery system”, *International Journal of Pharmaceutics*, **2010**, 400, 234-242.

Gonçalves, C., Pereira, P., Schellenberg, P., Coutinho, P.J.G., Gama, F.M. “Self-Assembled dextrin nanogel as curcumin delivery system”, *Journal of Biomaterials and Nanobiotechnology*, **2012**, 3, 178-184.

Gonçalves, C., Lalatonne, Y., Melro, L., Badino, G., Ferreira, M.F.M., David, L., Geraldes, C.F.G.C., Motte, L., Martins, J.A., Gama, F.M. “New dextrin nanomagnetogel as contrast agent for Magnetic Resonance Imaging”, *J. Mater. Chem. B*, **2013**, 1, 5853-5864.

Pedrosa, S. S., **Gonçalves, C.**, David, L., Gama, M. “A Novel Crosslinked Hyaluronic Acid Nanogel for Drug Delivery”, *Macromolecular Bioscience*, **2014**, 14, 1556-1568.

Gonçalves, C., Silva, J.P., Antunes, I.F., Ferreira, M.F.M., Martins, J.A., Geraldes, C.F.G.C., Lalatonne, Y., Motte, L., de Vries, E.F.J., Gama, F.M. “Dextrin-Based Nanomagnetogel: In Vivo Biodistribution and Stability”, *Bioconjugate Chemistry*, **2015**, 26(4), 699-706.

Gonçalves, C., Ferreira, S., Correia, A., Lopes, C., Fleming, C., Rocha, E., Vilanova, M., Gama, F.M. “Potential of mannan or dextrin nanogels as vaccine carrier/adjuvant systems”, *Journal of Bioactive and Compatible Polymers*, **2016**, DOI:10.1177/0883911516631354.

BOOK CHAPTERS

Gonçalves, C., Moreira, S. M., Carvalho, V., Silva, D. M., Gama, M. “Dextrin.” In *Encyclopedia of Biomedical Polymers and Polymer Biomaterials*, 1st Ed.; Mishra, M., Ed.; Taylor & Francis: New York, 2015; Vol. 4, 2634-2649. DOI: 10.1081/E-EBPP-120050698.

THESIS

“Development of self-assembled dextrin nanogels”, Doctoral Programme Biomedical Engineering, May 2010.

MEMBER OF THE JURY

Member of the jury, and principal examiner, in the doctoral thesis proposal of the student Paula Pereira, entitled “Nanoparticulate systems for siRNA delivery: testing galectin-3 as a new target for cancer therapy”, University of Minho, 4th of January of 2011.

Member of the jury as principal examiner, in the master thesis of the student Cidália Manuela Martins Vitorino, entitled “Nanotecnologia na indústria farmacêutica”, University of Minho and Bial, November 2011.

Member of the jury in the doctoral thesis of the student Sílvia Alexandra Rodrigues Mendes Ferreira entitled “Development of multifunctional mannan nanogel”, University of Minho, 16th of July of 2012.

Member of the jury as principal examiner, in the master thesis (Bioengineering) of the student Maria Alexandra Barroso Azevedo, entitled “Development of nanostructures for encapsulation of vitamins”, University of Minho, December 2013.

Member of the jury as principal examiner, in the master thesis (Biological Engineering) of the student Sara Cristina da Costa Oliveira, entitled “Utilização de extratos vegetais para obtenção de cores diversas em substratos têxteis naturais”, University of Minho, December 2014.

Member of the jury in the doctoral thesis (Biomedical Engineering) of the student Paula Alexandra Cunha Pereira entitled “Chitosan nanogels”, University of Minho, 18th of December of 2014.

Member of the jury in the doctoral thesis (Biological and Chemical Engineering) of the student Sara da Mota Martins Gonçalves, entitled “Bacterial cellulose as a novel substrate for retinal pigment epithelium cells transplantation in age-related macular degeneration”, University of Minho, 8th of May of 2015.

Member of the jury as principal examiner, in the master thesis (Biomedical Engineering) of the student Susana Amorim Lopes, entitled “A biodegradable PLGA – coating releasing DNase I to prevent bacterial adhesion and biofilm formation”, University of Minho, September 2015.

Member of the jury as principal examiner, in the master thesis (Biological Engineering) of the student Ana Margarida Paulo da Costa, entitled “Release Study of adsorbed compounds using pH-responsive polymers”, University of Minho, November 2015.

Member of the jury as principal examiner, in the master thesis (Biomedical Engineering) of the student Ana Luísa da Silva Carmo, entitled “Flow Cytometry Analyses of Calcification Propensity”, University of Minho and RWTH Aachen, October 2015.

Member of the jury as principal examiner, in the master thesis (Biological Engineering) of the student Arlete Maria Lima Marques, entitled “Antimicrobial assessment of phages entrapped in bio-based structures”, University of Minho, October 2016.

Substitute member of the jury in the PhD thesis on Agricultural and Food Science and Technology of Alejandra Acevedo Fani, entitled “Nanostructured emulsions and nanolaminates: an approach toward food protection and delivery of active ingredients”, Department of Food Technology, University of Lleida, Spain, November 2016.

SUPERVISION

Supervisor of the **Master thesis** of the student Liliana Sofia da Silva Ferreira Pinto Melro, on Micro/Nano Technologies entitled “Development of nanomagnetogels for biomedical applications”, University of Minho, October 2011.

Co-supervisor of the Master thesis of the **Erasmus** student Giorgio Pano Badino , “Dextrin nanomagnetogel as contrast agent for Magnetic Resonance Imaging”, Biological Engineering Department, University of Minho, July 2012.

Supervisor of the **Master thesis** of the student Óscar José Maciel Barros, on Bioengineering entitled “Development of Hyaluronic Acid-Doxorubicin Nanogels”, University of Minho, October 2016.

PROJECT PARTICIPATION

Grant Holder:

POCTI/QUI/44368/2002: “Cellulose: surface modification, interaction with binding domains and enzymatic modification”.

KACELLE (FP7EN/239379): “Demonstrating Industrial Scale Second Generation Bioethanol Production”.

Team Member:

Bioadesivos (PTDC/BIO/67160/2006): “Sistemas de libertação controlada de IL10”.

REBONE (ENMED/002/2012): “Hidrogéis híbridos nanoestruturados; hidrogéis multifuncionais injetáveis para regeneração óssea”.

ACADEMIC AWARDS

Merit Award in the academic year 2001/2002, Polytechnic Institute of Porto (IPP).

Merit Award in the academic year 2002/2003, Polytechnic Institute of Porto (IPP).

COURSES AND SEMINARS

Protein structure and Dynamics”, Course hold at University of Aveiro, 6-9 June 2005.

“Tamanho e Forma de Partículas – Teoria e Aplicações”, Seminar hold at Paralab, Porto, September 2006.

“Animal Cell Culture”, Course hold at the Life and Health Sciences Research Institute (ICVS), University of Minho, Braga, 2007.

“Ciências em Animais de Laboratório - categoria B”, Course hold at University of Porto, 2-13 May 2011.