

# Andreia Teixeira

CEBB, Chemin des Sohettes - Route de Bazancourt  
51110 Pomacle, France  
☎ +33 (0)3 26 36 43 69  
✉ andreia.teixeira@agroparistech.fr

Research Scientist & Lecturer  
Head of Process Engineering Department

DOB: April, 19<sup>th</sup> 1981 (Barreiro, Portugal)

## Research Topics

- Valorization of lignocellulosic biomass using white biotechnologies and green chemistry
- Recovery of bioactive compounds from by-products of agro-food industries
- Reactions optimization by design of experiments (DoE)
- Development of membrane processes for reaction products isolation, solvents recycling and valuable components recovery from waste and secondary streams - laboratory and pilot scale

## Present & previous positions

Oct. 2013 - Present **Research Scientist & Lecturer**, *Chaire Agro-Biotechnologies Industrielles (ABI)* - *AgroParisTech*, Reims, France.

Valorization of lignocellulosic biomass using white biotechnologies and green chemistry

2009-2013 **PhD Student**, *REQUIMTE/CQFB, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa*, Caparica, Portugal.

*Valorisation of Vegetable Oil Deodorizer Distillate by Enzymatic Reaction and Membrane Processing*

- Development and optimisation of analytical methods for characterization of food by-products such as GC (*Gas Chromatography*), titration and spectrophotometric methods
- Optimisation of enzymatic reactions in organic mediums
- Fractionation of reaction products and removal of phytopharmaceuticals by membrane processing (Ultrafiltration and Nanofiltration)

Supervisors Prof. João Crespo and Doctor José L. C. Santos

2011-2013 **Collaborator**, *IBET - Instituto de Biologia Experimental e Tecnológica*, Oeiras, Portugal.  
*Olive Oil + Global: Integration of factors of competitiveness in the olive oil production*

- Guidance/Support of laboratory and pilot studies of a patented membrane-based process (US2008179246; EP1910257) for recovery of hydroxytyrosol (known as a powerful natural antioxidant) from olive bagasses

Supervisor Prof. João Crespo

2012-2013 **Collaborator**, *IBET - Instituto de Biologia Experimental e Tecnológica*, Oeiras, Portugal.  
*Nutracork Project*

- Guidance/Support of laboratory and pilot studies to develop and optimise a membrane-based process for recovery of antioxidants from cork by-products

Supervisor Prof. João Crespo

2007-2008 **Research Grant**, IBET - Instituto de Biologia Experimental e Tecnológica, Oeiras, Portugal.

*OPTIMOILS: Valorisation of healthy lipidic micro-nutrients by optimising food processing of edible oils and fats (FP6-2005-FOOD 36318)*

In collaboration with several scientific and industrial partners, this European project aimed at optimise the edible oil processing by the recovery of healthy lipidic micro-nutrients, using green processes.

Supervisor Prof. João Crespo

2006 **Research Grant**, IBET - Instituto de Biologia Experimental e Tecnológica, Oeiras, Portugal.

*RECICLAR Project: Application of cork wastewater in tanning industry*

This project was a result of a collaboration with national industrial partners and it aimed at produce extract rich in tannins and polyphenols from cork wastewaters using nanofiltration and reverse osmosis, and apply these extracts in the tanning industry. Project awarded as Innovator and Sustainable by IAPMEI on 24.06.2007

Supervisor Prof. João Crespo

## Education

2009-2013 **PhD in Chemical and Biochemical Engineering (4 years programme)**, REQUIMTE/CQFB, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Caparica, Portugal.

1999-2005 **Graduation in Chemical Engineering (5 years programme)**, Universidade Técnica de Lisboa, Instituto Superior Técnico, Lisbon, Portugal.

## Undergraduate and (post-)graduate students supervision

- 2 Ph.D. thesis
- 3 M.Sc. students in Chemistry

## Professional and scholarly associations

From 2011 **EMS**, European Membrane Society.

From 2013 **CMF**, Club Français des Membranes.

## Awards and Honors

1996-2001 **Merit Scholarship**, Fundação Calouste Gulbenkian, Portugal.

## Scientific production

*Summary:*

- 1 patents
- 7 publications in peer-reviewed journals (plus 3 publications in preparation or to be submitted), 1 proceedings
- 9 oral communications & 7 posters

## Patents

1. Chemo-enzymatic transformation of levoglucosenone into valuable chemical intermediates, *Allais, \* F. et al.*, submitted in 2<sup>nd</sup> May 2014.

## Publications in peer-reviewed journals

- [1] A. L. Flourat, A. A. M. Peru, A. R. S. Teixeira, F. Brunissen, and F. Allais. Chemo-enzymatic synthesis of key intermediates (s)-[gamma]-hydroxymethyl-[small alpha],[small beta]-butenolide and (s)-[gamma]-hydroxymethyl-[gamma]-butyrolactone via lipase-mediated baeyer-villiger oxidation of levoglucosenone. *Green Chem.*, 17:404–412, 2015.
- [2] A.R.S. Teixeira, J.L.C. Santos, and J.G. Crespo. Solvent resistant dnanofiltration for production of steryl esters enriched extracts. *Separation and Purification Technology*, 135(0):243 – 251, 2014.
- [3] A.R.S. Teixeira, J.L.C. Santos, and J.G. Crespo. Assessment of solvent resistant nanofiltration membranes for valorization of deodorizer distillates. *Journal of Membrane Science*, 470(0):138 – 147, 2014.
- [4] A. R. S. Teixeira, J. L. C. Santos, and J. G. Crespo. Production of steryl esters using alternative sources of sterols and free fatty acids: Modeling and guidelines. *Industrial & Engineering Chemistry Research*, 53(26):10534–10539, 2014.
- [5] A. R. S. Teixeira, J. L. C. Santos, and J. G. Crespo. Lipase-catalyzed consecutive batch reaction for production of steryl esters from vegetable oil deodorizer distillates. *Industrial & Engineering Chemistry Research*, 51(15):5443–5455, 2012.
- [6] A. R. S. Teixeira, J. L. C. Santos, and J. G. Crespo. Production of steryl esters from vegetable oil deodorizer distillates by enzymatic esterification. *Industrial & Engineering Chemistry Research*, 50(5):2865–2875, 2011.
- [7] A. R. S. Teixeira, J. L. C. Santos, and J. G. Crespo. Sustainable membrane-based process for valorisation of cork boiling wastewaters. *Separation and Purification Technology*, 66(1):35 – 44, 2009.

## Proceedings/preprints

1. A.R.S. Teixeira; J.L.C. Santos; J.G. Crespo, Solvent Resistant Nanofiltration Based-Process for Production of Steryl Esters Enriched Extracts, *Procedia Engineering*, 44(0):310, 2012.

## Oral communications

- 2016 **Renewable Macrobisphenols from bio-based polyols and lignocellulosic-derived ferulic acid: production and membrane-based purification**, 12<sup>th</sup> International Conference on Renewable Resources and Biorefineries, 30<sup>th</sup> May - 1<sup>st</sup> June, Ghent (Belgium).
- 2015 **Separation and purification of bio-based macrobisphenols through a SRNF membrane cascade approach**, OSN2015, 17<sup>th</sup> - 19<sup>th</sup> November, Antwerp (Belgium).
- 2015 **Génie des procédés: Transformation de la biomasse**, Journée Technique IAR, 9<sup>th</sup> Juin, Paris(France).

- 2015 **Lipase-catalyzed Baeyer-Villiger Oxidation of Levoglucosenone (LGO) into (S)- $\gamma$ -Hydroxymethyl- $\alpha$ - $\beta$ -Butenolide (HBO): Optimization BY RSM**, *ISGC2015*, 3<sup>rd</sup> - 7<sup>th</sup> May, La Rochelle (France).
- 2015 **Separation and purification of bio-based macrobisphenols through a SRNF membrane cascade approach**, *OSN2015*, 17<sup>th</sup> - 19<sup>th</sup> November, Antwerp (Belgium).
- 2012 **Solvent resistant nanofiltration based-process for production of steryl esters enriched extracts**, *Euromembrane 2012*, 23<sup>rd</sup>-27<sup>th</sup> September, London (UK).
- 2010 **Recovery of bioactive compounds from vegetable oil deodorizer distillates**, *VII Congresso Íbero-Americano em Ciências e Tecnologia de Membrana - CITEM2010*, 11<sup>th</sup>-14<sup>th</sup> April, Sintra (Portugal).
- 2008 **Recovery of healthy micronutrients using membrane processing of by-product from vegetable oil production**, *Network Young Membrains - NYM10*, 18<sup>th</sup>-19<sup>th</sup> September, Berlin (Germany).
- 2007 **Recovery of high added-value natural extracts from agro-industrial residues by membrane processing**, *VI Congresso Íbero-Americano em Ciências e Tecnologia de Membrana - CITEM2007*, 8<sup>th</sup>-11<sup>th</sup> July, Campina Grande (Brazil).  
Presented by J. Crespo

### Posters

- 2016 **Designing processes towards Eco-conception and innovation**, *Eco-design of Agro-Bio-Industry Processes*, 5<sup>th</sup>-6<sup>th</sup> February, Paris (France).
- 2013 **Production d'extraits riches en esters de stérols à partir du distillat de désodorisation**, *Mempro V - Intégration des membranes dans les procédés*, 9<sup>th</sup>-11<sup>th</sup> April, Toulouse (France).
- 2011 **Enzymatic production of steryl esters from vegetable oil deodorizer distillates and their recovery by solvent resistant nanofiltration**, *International Congress on Membranes and Membrane Processes - ICOM2011*, 23<sup>rd</sup>-29<sup>th</sup> July, Amsterdam (Netherlands).
- 2009 **Valorisation of a by-product from vegetable oil production by enzymatic reaction and membrane processing**, *Euromembrane 2009*, 6<sup>th</sup>-10<sup>th</sup> September, Montpellier (France).
- 2008 **Assessment of a zero discharge membrane-based process for valorisation of cork processing wastewaters**, *Engineering With Membranes - EWM2008*, 25<sup>th</sup>-28<sup>th</sup> May, Vale do Lobo (Portugal).
- Recovery of bioactive micronutrients by membrane processing of by-product streams from vegetable oil production**, *Engineering With Membranes - EWM2008*, 25<sup>th</sup>-28<sup>th</sup> May, Vale do Lobo (Portugal).
- Recovery of bioactive micronutrients by membrane processing from agro-food industries**, *XXV<sup>th</sup> EMS Summer School*, 7<sup>th</sup>-11<sup>th</sup> September, Leuven (Belgium).

### Technical Workshops & Courses

- Sept. 2013 **Experimentation fro Improvement - DoE (with distinction)**, *Mc Master University's online*, Hamilton (Canada), 2 months.
- 2012 **Functional Food and Beverages - Challenges and opportunities for agro-food industry**, *IBET*, 31<sup>th</sup> May, Oeiras (Portugal).

- 2011 **Determination of Water Content by Karl Fisher/Hydranal**, *Sigma Aldrich/MTbrandão*, 18<sup>th</sup> October, Lisbon (Portugal).
- 2007 **Pipettes & Calibration and Pipetting**, *VWR*, 19<sup>th</sup> September, Lisbon (Portugal).

## Languages

Portuguese	<b>Fluent</b>	<i>Native Language</i>
English	<b>Advanced</b>	<i>C1 Level</i>
French	<b>Intermediate</b>	<i>B1 Level</i>
Spanish	<b>Intermediate</b>	<i>B1 Level</i>