CURRICULUM VITAE

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Research Interests: *Electrochemical (bio) sensors, nanotechnology, nanostructured materials, electroanalysis, flow analysis*

Languages: Romanian (native language), English, Portuguese, French, German

Education:

2000 – 2004	BSc in Chemistry, Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University, Cluj-Napoca, Romania
2004 – 2005	MSc in Chemistry, Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University, Cluj-Napoca, Romania
2006– 2011	PhD in Biochemistry, Faculty of Science and Technology, University of Coimbra, Coimbra, Portugal

Scientific Training

Workshop NovTech Meeting, "Novel Technology for Controlling Wine Productiom and Quality", 17-21 une 2005, Viseu, Portugal

Workshop NovTech Meeting, "Novel Technology for Controlling Wine Production and Quality", 10-17 October, Montalcino, Italy

Workshop NovTech Meeting, "Novel Technology for Controlling Wine Production and Quality", 23-24 March 2006, Ljubljana, Slovenia

Scientific visit at Department of Physics, “Transylvania” University of Brasov, 20-30 June, 2007, Brasov, Romania

Theses

BSc thesis: "Characterization of Electrodeposited Prussian Blue Films on Gold Electrodes", Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University, Cluj-Napoca, Romania

MSc thesis: "Glucose Oxidase Biosensors using Redox Mediator Modified Carbon Film Electrodes", Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University, Cluj-Napoca, Romania

PhD thesis: “Development of new modified electrodes for biosensors”, Faculty of Science and Technology, University of Coimbra, Coimbra, Portugal

Grants

Researcher with fellowship from “NovTech European Project” (HPRN-CT-2002-00186)

PhD fellowship SFRH / BD / 27864 / 2006 from “Fundação para a Ciência e a Tecnologia”

Postdoctoral fellowship SFRH / BPD / 72656 / 2010 from “Fundação para a Ciência e a Tecnologia”

Publications

1 - M.M. Barsan, C.M.A. Brett
Carbon Film modified electrodes for glucose determination in flow analysis
Talanta, 2007, 71, 1893-1900.

2 - M. Florescu, M.M. Barsan, R. Pauliukaite, C.M.A. Brett
Development and application of oxysilane sol-gel eletrochemical glucose biosensors based on cobalt hexacyanoferrate modified carbon film electrodes
Electroanalysis, 2007, 19, 220-226.

3 - R. Pauliukaite, M.E. Ghica, M.M. Barsan, C.M.A. Brett
Characterisation of poly (neutral red) modified carbon film electrodes; application as a redox mediator for biosensors
J. Solid State Electrochem., 2007, 11, 889-908.

4 - M.M. Barsan, C.M.A. Brett
An alcohol oxidase biosensor using PNR redox mediator at carbon film electrodes
Talanta, 2008, 74, 1505-1510.

5 - M.M. Barsan, E.M. Pinto, C.M.A. Brett
Electrosynthesis and electrochemical characterisation of phenazine polymers for application in biosensors
Electrochim. Acta, 2008, 53, 3973-3982.

6 - M.M. Barsan, E.M. Pinto, M. Florescu, C.M.A. Brett
Development and characterization of a new conducting carbon composite electrode
Anal. Chim. Acta, 2009, 635, 71-78.

7 - M.M. Barsan, C.M.A. Brett
A new modified conducting carbon composite electrode as sensor for ascorbate and biosensor for glucose
Bioelectrochemistry, 2009, 76, 135-140.

8 - R. Pauliukaite, M.E. Ghica, M.M. Barsan, C.M.A. Brett.
Phenazines and polyphenazines in electrochemical sensors and biosensors
Anal. Lett., 2010, 43, 1588-1608.

9 - E.M. Pinto, M.M. Barsan, C.M.A. Brett
Mechanism of formation and construction of self-assembled myoglobin/hyaluronic acid multilayer films: an electrochemical, QCM, impedance, and AFM study
J. Phys. Chem. B, 2010, 114, 15354–15361.

10 - M.M. Barsan, E.M. Pinto, C.M.A. Brett
Interaction between myoglobin and hyaluronic acid in layer-by-layer structures-An electrochemical study
Electrochim. Acta, 2010, 55, 6358-6366.

11 - M.M. Barsan, E.M. Pinto, C.M.A. Brett
Methylene blue and neutral red electropolymerization on AuQCM and on modified AuQCM electrodes: an electrochemical and gravimetric study
Phys. Chem. Chem. Phys., 2011, 13, 5462-5471.

12 - M.M. Barsan, R. Carvalho, Y. Zhong, X. Sun, C.M.A. Brett
Carbon nanotube modified carbon cloth electrodes: Characterization and application as biosensors
Electrochim. Acta, 2012, 85, 203–209.

13 - S. Kakhki, M.M. Barsan, E. Shams, C.M.A. Brett
Development and characterization of poly(3,4-ethylenedioxythiophene)-coated poly(methylene blue)-modified carbon electrodes
Synthetic Met., 2012, 161, 2718-2726.

14 - A.M.A. Dias, A.R. Cortez, M.M. Barsan, J.B. Santos, H.C. de Sousa, C.M.A. Brett
Development of greener multi-responsive chitosan biomaterials doped with biocompatible ammonium ionic liquids
ACS Sustainable Chem. Eng., 2013, 1, 1480–1492.

15 - K.P. Prathish, M.M. Barsan, D. Geng, X. Sun, Xueliang, C.M.A. Brett
Chemically modified graphene and nitrogen-doped graphene: Electrochemical characterization and sensing applications
Electrochim. Acta, 2013, 114, 533-542.

16 - S. Kakhki, E. Shams, M.M. Barsan
Fabrication of carbon paste electrode containing a new inorganic-organic hybrid based on $[SiW_{12}O_{40}]^{(4-)}$ polyoxoanion and Nile blue and its electrocatalytic activity toward nitrite reduction..
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17 - S. Kakhki, E. Shams, M.M. Barsan
Electrocatalytic oxidation of cysteine at a Co-Salophen/n-(butyl)4SiW12O40 carbon paste electrode
Electroanalysis, 2013, 25, 2100-2108.

18 - V. Pifferi, M.M. Barsan, M.E. Ghica, L. Falciola, C.M.A. Brett
Synthesis, characterization and influence of poly(brilliant green) on the performance of different electrode architectures based on carbon nanotubes and poly(3,4-ethylenedioxythiophene)
Electrochim. Acta, 2013, 98, 199-207.

19 - S. Kakhki, M.M. Barsan, E. Shams, C.M.A. Brett
New redox and conducting polymer modified electrodes for cholesterol biosensing|
Anal. Methods, 2013, 5, 1199-1204.

20 - S. Kakhki, M.M. Barsan, E. Shams, C.M.A. Brett
New robust redox and conducting polymer modified electrodes for ascorbate sensing and glucose biosensing
Electroanalysis, 2013, 25, 77-84.

21 - M.M. Barsan, K.P. Prathish, X. Sun, C.M.A. Brett
Nitrogen doped graphene and its derivatives as sensors and efficient direct electron transfer platform for enzyme biosensors
Sensor. Actuat. B-Chem., 2014, 203, 579-587.

22 - M.M. Barsan, M. David, M. Florescu, L. Tugulea, C.M.A. Brett
A new self-assembled layer-by-layer glucose biosensor based on chitosan biopolymer entrapped enzyme with nitrogen doped graphene
Bioelectrochemistry, 2014, 99, 46-52.

23 - L.G. Arnaut, M.M. Pereira, J.M. Dąbrowski, E.F.F. Silva, F.A. Schaberle, A.R. Abreu, L.B. Rocha, M.M. Barsan, K. Urbańska, G. Stochel, C.M.A. Brett
Photodynamic therapy efficacy enhanced by dynamics: the role of charge transfer and photostability in the selection of photosensitizers
Chem. Eur. J., 2014, 20, 5346-5357.

24 - A.C. Torres, M.M. Barsan, C.M.A. Brett
Simple electrochemical sensor for caffeine based on carbon and Nafion-modified carbon electrodes
Food Chem., 2014, 149, 215-220.

25 - M.M. Barsan; C.M.A. Brett
Graphene and carbon nanotube nanomaterials in layer-by-layer structured electrochemical enzymatic biosensors: A review
Stud. Univ. Babes Bolyai Chem., 2015, 60, 31-52.

26 - M. David, M.M. Barsan, M. Florescu, L. Tugulea, C.M.A. Brett
Acidic and basic Functionalized carbon nanomaterials as electrical bridges in enzyme loaded chitosan/poly(styrene sulfonate) self-assembled layer-by-layer glucose biosensors
Electroanalysis, 2015, 27, 2139-2149.

27 - A.R. Freitas, M. Silva, L.M. Ramos, L.L.G. Justino, S.M. Fonseca, M.M. Barsan, C.M.A. Brett, M.R. Silva, H.D. Burrows
Synthesis, structure, and spectral and electrochemical properties of chromium(III)tris-(8-hydroxyquinolinate)
Dalton Trans., 2015, 44, 11491-11503.

28 - M.M. Barsan, M.E. Ghica, C.M.A. Brett
Electrochemical sensors and biosensors based on redox polymer/carbon nanotube modified electrodes: A review
Anal. Chim. Acta, 2015, 881, 1-23.

29 - M.M. Barsan, C.T. Toledo, C.M.A. Brett
New electrode architectures based on poly(methylene green) and functionalized carbon nanotubes: Characterization and application to detection of acetaminophen and pyridoxine
J. Electroanal. Chem., 2015, 736, 8-15.

30 - M. Braik, M.M. Barsan, C. Dridi, M. Ben Ali, C.M.A. Brett
Highly sensitive amperometric enzyme biosensor for detection of superoxide based on conducting polymer/CNT modified electrodes and superoxide dismutase
Sens. Actuat. B-Chem., 2016, 236, 574-582.

31 - M.M. Barsan; C.M.A. Brett
Recent advances in layer-by-layer strategies for biosensors incorporating metal nanoparticles
TrAC-Trends Anal. Chem., 2016, 79, 286-296.

32 - A.M.A. Dias, S. Marceneiro, H.D. Johansen, C.M.A. Brett, H.C. de Sousa
Phosphonium ionic liquids as greener electrolytes for poly(vinyl chloride)-based ionic conducting polymers
RCS Adv., 2016, 6, 88979-88990.

33 - M.M. Barsan, V. Pifferi, L. Falciola, C.M.A. Brett
New CNT/poly(brilliant green) and CNT/poly(3,4-ethylenedioxythiophene) based electrochemical enzyme biosensors.
Anal. Chim. Acta, 2016, 927, 35-45.

34 - C.R. Peveraria, D.N. David-Parra, M.M. Barsan; M.F.S. Teixeira
Mechanistic study of the formation of multiblock π-conjugated metallopolymer
Polyhedron, 2016, 117, 415–421.

35 - M.F.S. Teixeira, M.M. Barsan, C.M.A. Brett
Molecular engineering of a pi-conjugated polymer film of the azo dye Bismarck Brown Y
RCS Advances, 2016, 6, 101318-101322.

36 - D. Chan, M.M. Barsan, Y.I. Korpan, C.M.A. Brett
L-lactate selective impedimetric bienzymatic biosensor based on lactate dehydrogenase and pyruvate oxidase
Electrochim. Acta, 2017, 231, 209-215.

37 - O. Hosu, M.M. Barsan, C. Cristea, R. Sandulescu, C.M.A. Brett
Nanostructured electropolymerized poly(methylene blue) films from deep eutectic solvents. Optimization and characterization.
Electrochim. Acta, 2017, 232, 285-295.

Chapters in Books

1. Portable biosensing of food toxicants and environmental pollutants
Chapter: Electrochemical biosensors
Barsan, Madalina M; Ghica, M Emilia; Brett, Christopher M A
2014 / CRC Press-Taylor & Francis Group.

2. Sensing in electroanalysis
Chapter: Development and characterization of layer-by-layer biosensors based on PEI(+)/GOx(-) layers using label-free methods
David, Melinda; Florescu, Monica; Barsan, Madalina M; Brett, Christopher M A
2014 / University Press Centre, Pardubice, Czech Republic.