

MANUEL JOSÉ TEIXEIRA CARRONDO

CURRICULUM VITAE

Brought up to date – January 2020

Biography: Born 31 March 1948, married, one son.

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Instituto de Tecnologia Química e Biológica (ITQB)
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ACADEMIC QUALIFICATIONS

Diploma Chemical Engineer, Universidade do Porto, 1971

M.Sc. (distinction) in Public Health Engineering, Imperial College of Science and Technology, University of London, 1976.

D.I.C., Imperial College of Science and Technology, University of London, 1976.

Ph.D., Imperial College of Science and Technology, University of London, 1979.

Agregado (Habilitation), Chemical and Biochemical Engineering, Universidade Nova de Lisboa, 1991.

PROFESSIONAL ACTIVITIES

Tuborg Brewery, Copenhagen, Denmark (May-October 1971) Solid-liquid separation studies (filtration and centrifugation).

Sacor Oil Refinery, Porto (October 1971-March 1972) corrosion and material studies of stainless and austenitic steels.

Faculty of Sciences, Universidade do Porto - October 1971-March 1972 - lecturing practical classes in General Organic Chemistry and Medicinal Chemistry.

Ministry for Public Works, Lisbon. Secretary to the Secretary of State for Public Works - April 1972 - November 1973.

Plano-Empresa de Projectos Mecânicos, Lda. Partner, consulting and design engineer from November 1973 - December 1985. Design of water and solid waste treatment plants in Portugal; also treatment of industrial wastewaters (agroindustries, textiles, glass and ceramics, painting and metal finishing). Designed the water treatment for the Lumiar Haemodialysis Unit, the largest in Europe (1979) for the

National Medical Care of Boston, U.S.A. and for the Lisbon Central Slaughterhouse. Process and Design Engineering for an oil and soap plant in São Tomé e Príncipe.

University of London - October 1975 to July 1979, holding a postgraduate Scholarship from Instituto Nacional de Investigação Científica, Lisbon. On top of his academic work, directed research and taught practical and theoretical classes to the M.Sc. Course in Public Health Engineering.

Faculty of Sciences and Technology, Universidade Nova de Lisboa from August 1979 onwards. Assistant Professor at the Department of Environmental Sciences. From September 1983, at the Biochemical Engineering Section directing the Biochemical Engineering Laboratory within the Chemistry Department. From February 1987, Associate Professor of Chemical and Biochemical Engineering. From October 1995, Professor of Chemical and Biochemical Engineering. Coordinator, Chemical Engineering section (1995-2007).

Supervised 34 concluded Ph.D. thesis; 3 ongoing

ITQB – Instituto de Tecnologia Química e Biológica Researcher (1987-...), Founder and Director Animal Cell Technology Laboratory (1990-2006). **Webpage:** www.itqb.unl.pt

IBET - Instituto de Biologia Experimental e Tecnológica from February 1989, Founder, President (to 1999), Chief Executive Officer (1999-2012), Director (2012-2015) and currently Vice-President (2015-...). **Webpage:** www.ibet.pt

Coordinated the specification, project design and construction teams for the ITQB research building (20000 m²) and the IBET fermentation, extraction and purification pilot plant (2400m²) (1989-1994)

Project Evaluator for Eur. Com. (3rd, 4th, 5th, 6th Framework Program, Horizon 2020), National and International Foundations and Granting Organizations

Oikos, Cooperação e Desenvolvimento (NGO) Non executive Director (1998-2005) **Webpage:** www.oikos.pt

GenIBET Biopharmaceuticals (2006-2008), Chief Scientific Officer, member of the Board (2009-...) **Webpage:** www.genibet.com

At **IBET** and **GenIBET** established **research collaborations** with Merck & Co., Bayer, Merck Pharma, Abbott (AbbVie), Boehringer Ingelheim, Novartis, Sanofi, Novo Nordisk and Lonza, amongst others.

SOCIETIES AND BOARDS

Ordem dos Engenheiros, Portugal, Member (awarded c2 level, 1984);

Association of Environmental Engineering Professors, Member, USA (1980-1996);

Society for Industrial Microbiology, Member, USA (1980-1998);

European Society for Animal Cell Technology – Honorary Member since 2005, Executive Committee Member, from May 1992 to June 2003, Chairman, from September 1997 to June 2001;

Portuguese Biotechnology Society, Member;

Science and Technology for Development Association (ACTD), Portugal, Founder and Member (Vice-President 1984-1989);

Academia de Engenharia (Portugal) - Founding Member (1995), Member of the board (1996-2001), representative to the EURO-CASE board (Paris) (1996-2001);

European Federation of Biotechnology (EFB), Member of the Board (2000-2008), President of the Steering Committee (1999-2001) of Medical Biotechnology Section;

Amgen Bioprocessing Center, Keck Graduate Institute, Claremont, California, Advisory Board Member (2005-2016);

CEVEC Pharmaceuticals, Cologne, Advisory Board Member (2007-2017);

Max - Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Advisory Board Member (2008-2014);

PBS Biotech, California, Advisory Board, (2009-...);

CNIC - Spanish National Center for Cardiovascular Research Carlos III, Spain, Scientific Advisory Board, (2011-2015);

Masthercell - Manufacturing Synergies for Therapeutic Cells, Belgium, Scientific Advisory Board, (2012-2016);

Alloksys - Life Sciences BV, Holland, Advisory Board, (2012-2016);

iNOVA4Health - Advancing Precision Medicine, Portugal, Unit Coordinator – (2015-...);

IBMT - Fraunhofer Institute for Biomedical Engineering, St. Ingbert, Germany, Advisory Board Member - (2016-...).

EDITORIAL BOARD (JOURNALS)

Journal Environmental Technology Letters, UK, Editorial Board Member (1980-1988);

Water Research, UK, Editorial Board Member (1984-1990);

Journal of Biotechnology, Associate Editor for Industrial Processes/New Products (2000 - 2018);

Biotechnology and Bioengineering, Editorial Board Member (2003 - ...);

Current Gene Therapy, Editorial Board Member (2004 - ...);

Biotechnology Letters, Editorial Board Member (2005 - ...);

Referee to **Journal of Molecular Medicine**, **Chemical Engineering Science**, **Enzyme Microbial Technology**, **Cytotechnology**, **Applied Microbial Biotechnology**, **Molecular Therapy**,...

CONFERENCE COMMITTEES

Water Industry 81 Conference, Brighton, UK, 15-19 June 1981 Technical Committee Member;

Phosphorus in the Environment Conference, Lisbon, Portugal, July 1985, Technical Committee Member;

Chempor 89 - Int'l Chemical Engineering Conference, Lisbon, 18-20 September 1989, Organizing Committee Member;

Chempor 93 - Int'l Chemical Engineering Conference, Porto, 4-6 April, 1993, Organizing Committee Member;

European Society for Animal Cell Technology, ESACT 14th Meeting Animal Cell Technology: From Vaccines to Genetic Medicine, Vilamoura, 20-24 May 1996, Meeting Chairman;

Cell Conference Engineering VII (2000), Engineering Foundation, N.Y., Aspen (USA), Scientific Committee Member;

11th International Biotechnology Symposium, October 2000, Berlin, Germany, Scientific Committee Member;

BioChE XIII Biochemical Engineering in the Era of Genomics, Systems Biology, Genetic Medicine & Nanotechnologies, July 19-23, 2003 Boulder, Colorado (USA), Scientific Committee Member;

12th International Biotechnology Symposium, October 2004, Santiago, Chile, Scientific Committee Member;

3rd Meeting Recombinant Proteins Production: A comparative view on host physiology, Tavira-Algarve (Portugal), 11-14 November 2004, Meeting Chairman;

Cell Conference Engineering X (2006), Eng. Conf. International, Whistler, Canada, Scientific Committee Member;

Vaccine Technology I (2006), Eng. Conf. International, Puerto Vallarta, Mexico, Scientific Committee Member;

4th Meeting Recombinant Proteins Production: A comparative view on host physiology, Barcelona, Spain, 21-23 September 2006, Scientific Committee Member;

European Society for Animal Cell Technology, ESACT 21st Meeting, Dresden, June 2007, Scientific Committee Member;

BioChe XV, Biochemical Engineering XV, Quebec, Canada, July 2007, Scientific Committee Member;

Cell Culture Engineering XI, Queensland, Australia, April 2008, Scientific Committee Member;

Vaccine Technology II (2008), Albufeira, Portugal, Scientific Committee Member;

5th Meeting Recombinant Protein Production (2008), Sardinia, Italy, Scientific Committee Member;

13th International Biotechnology Symposium, October 2008 Dalian, China, Scientific Committee Member;

Cell Culture Engineering XII (2010), Banff, Canada, Scientific Committee Member;

6th Meeting Recombinant Protein Production (2010), Viena, Austria, Scientific Committee Member;

Vaccine Technology III (2010), Puerto Vallarta, Mexico, Scientific Committee Member;

Advanced Therapy Medicinal Products, PDA (2011), Helsinki, Finland, Planning Committee;

Vaccine Technology IV (2012), Albufeira, Portugal, Scientific Committee Member;

Advanced Therapy Medicinal Products, PDA (2012), Lisbon (Cascais), Portugal, Planning Committee;

Cell Culture Engineering XIII conference (2012), Scottsdale, USA, Scientific Committee Member;

Integrated Continuous Biomanufacturing III (2017), Cascais, Portugal, Scientific Committee Member;

Advanced Therapy Medicinal Products (2019), Vilnius, Planning Committee;

Microbial Engineering II (2020), Albufeira, Portugal, Organizing Committee Member;

ECI Advancing Manufacture of Cell and Gene Therapy Series, Steering Committee.

REPRESENTATIVE (GOVERNMENT, EUR. COM., ...)

Environmental Technology Group, DG XII, Com. Eur. Communities, Brussels, Belgium (1985-1988);

OECD Workshop on National Policies and Priorities on Biotechnology, Toronto, Canada, April, 1987;

European Foundation on Improvement of Working Conditions, Social Implications of Biotechnology Seminar, Dublin, Ireland, November 1987;

EEC ECLAIR/FLAIR committee of an advisory nature (1989-1992);

EEC CREST ad hoc working group on Agricultural and Agroindustrial Research (1990);

Conselho Nacional para a Ciência e Tecnologia, Portugal (May 1991-October 1994);

IUPAC, International Union of Pure and Applied Chemistry, Commission of Biotechnology (VI.2), National representative (1991-1998);

International Training Programme (ITP), Gesellschaft für Biotechnologische Forschung (GBF) (1992-2004), Advisory Board Member;

Life Sciences Group, Industrial R&D Advisory Committee, IRDAC (DGXII), 1995-1999, Member;

Head, High Level Representative at EUREKA Programme (1993-1996);

External Advisory Group for Key Action 3 - Cell Factory of 5th Framework Programme (DGXII, European Commission), 1998-2002, Member and vice-chairman;

Euro-CASE (European Council of Applied Sciences and Engineering), Paris, 1998-2001, Board Member;

Eurostars/EUREKA Program, from December 2008;

OECD - Portuguese representative to the Working Party on Biotechnology, Nanotechnology and Converging Technologies - (2014-2018);

GRANTS, AWARDS AND PRIZES (Conf. participations not included)

May-October 1971 Tuborg, Copenhagen - International Association for the Exchange of Students for Technical Experience (I.A.E.S.T.E.);

October 1975-July 1979 Imperial College, London - Instituto Nacional de Investigação Científica, Lisboa, Portugal;

May-August 1981 Research Associate, Carnegie Mellon University, Pittsburgh, USA - Fulbright Hays Programme and Department of Energy, USA;

December 1982 Humboldt Foundation, for one year;

June 1984 Course on "Management of R&D and Innovation led Technology", Sloan School of Management, M.I.T., Cambridge, MA, National Academy of Sciences, USA;

August 1984 Courses on "Biotechnology: Principles and Processes" and "Fermentation Technology" M.I.T., Cambridge, MA, USA, National Academy of Sciences, USA;

March 1986 Deutscher Akademische Austauschdienst, FR Germany - visiting scholar at Prof. Karl Schugerl's Institute für Technische Chemie der Universität Hannover;

February-September 1988 Visiting Professor at Biotechnology Process Engineering Center, National Scientific Foundation, Mass. Inst. Technology (MIT), USA;

September-November 1988 Visiting Professor, Gesellschaft für Biotechnologische Forschung, G.B.F. Sabbatical Grant, Germany;

1988 Gold medal, Honorary Citizen, Oeiras Municipality;

2004 Excellence in Research Prize, Portuguese Ministry of Education;

2005 Honorary Member, Eur. Soc. Animal Cell Technology (ESACT);

2005 Scientific Prize of the PhDs French Association;

2007 Medal of Merit, ESACT;

January 2014 - ... Visiting Professor, COPPE, Univ. Federal do Rio de Janeiro, Brazil.

MAIN FIELDS OF RESEARCH AND PROJECT DESIGN

Biochemical Engineering of Anaerobic Fermentations (propionic, lactic, sulfate reducing, methanogenic). *Historic* High cell concentration bioreactors (CSTR recycled over UF membrane, adsorbed / immobilized cell, flocculent, fixed and fluidized bed reactors). *historic*

Downstream processing: liquid-liquid and membrane extraction, supercritical fluid extraction, flocculation, centrifugation and filtration. *historic*

Animal cell technology and its applications for human and animal health. Therapeutic and diagnostic recombinant proteins, including fusion proteins; virus like particles as vaccination agents and viruses as deliverables for gene therapy and DNA vaccination. Stem cells and cell therapies. Downstream extraction and purification of biopharmaceuticals. cGMP pilot plant scale-up and production/development of biopharmaceuticals.

Research Projects

Biochemical Engineering side of project "Bioconversion of solid and liquid Residues" sponsored by "Programme in Science and Technology Cooperation", Washington, U.S.A. (concluded June 1987) (Co-leader: Prof. A.V.Xavier);

Propionic acid production by a xylose utilizing *Propionibacterium* sponsored by JNICT, Lisboa, Portugal, Junta Nacional de Investigação Científica e Tecnológica, JNICT, (concluded, July 1988);

Lactic Acid Starter Cultures, sponsored by Fundação Luso Americana para o Desenvolvimento, Lisbon, Portugal (concluded, December 1989);

Use of Fedbatch Controlled Reactors for Vitamin B₁₂ Production, sponsored by the Volkswagenwerk Stiftung, Hannover, FRG, (co-Leader, Prof. K. Schugerl, University of Hannover), (concluded, July 1991);

Corresponsible for "Super critical Extraction of agroindustrial and fermentation products" JNICT, Lisbon, Portugal and Programme in Science and Technology Cooperation, Washington D.C. USA., (co-Leader Prof. M. Nunes da Ponte) (concluded, October 1991);

Automation of Fed Batch Reactors, JNICT, Portugal (concluded, July 1992);

Lactic Acid, sponsored by Gesellschaft fur Biotechnologische Forschung, GBF, Braunschweig, F.R.G. and NATO, Science for Stability Programme, Brussels, Belgium (co-Leader, Prof. J. Klein, GBF) (concluded, August 1992);

Biotechnology as a developmental tool for Agriculture and Forestry in Portugal, sponsored by SAST-MONITOR, EEC, (concluded, July 1992);

Transfer, Survival and spread of genetically engineered microorganisms in river sediments, soils and agriculture - BAP, DG XII, EEC (concluded, September 1992);

Immobilized Cell Production of Lactic Acid, JNICT, Portugal and NATO Science for Stability Programme (concluded, December 1992);

Optimisation des processus et des procedées de conversion des pollutions aqueuses azotées. Sponsored by STEP, DGXII, EEC. Co-responsible Prof. Fernando Santana, (concluded, October 1993);

Integration of Bioreaction and Extraction for Optimized Production of Monoclonal Antibodies, sponsored by JNICT, Portugal (concluded, December 1993);

Improved Techniques for Establishing a High Expression Production System for Recombinant Proteins from Animal Cells, sponsored by BRIDGE, DGXII, EEC (concluded, April 1994);

Metabolism and Growth Developments for the use of Lactic Acid Bacteria in Wine Production, sponsored by BRIDGE, DGXII, EEC. Co-leader: Prof. M. Helena D. Santos (concluded, October 1994);

Bioprocess Design and Development project: including the construction of a fermentation and downstream processing pilot plant, with the financial support of the Portuguese Ministry for Industry (PEDIP) and the Bundes Ministerium fur Forschung und Technologie (BMFT) conducted with the Gesellschaft fur Biotechnologische Forschung (concluded, November 1994);

Selective Separation of Organic Acids by carrier mediated membrane transport, sponsored by JNICT, STRIDE A (January 1993 - December 1995);

Optimization of Cephalosporin C Production Process, sponsored by JNICT, STRIDE D (March 1993 - December 1995);

Development of virus-like particle (VLP) candidate vaccines for human immunodeficiency virus (HIV) produced by baculo multigene expression vector, sponsored by VALUE Programme, DGXIII, EC (March 1994 - February 1997);

Integrated Biotechnological Processing, sponsored by JNICT, EUREKA Programme (September 1994 - August 1996);

Integration of defined chromosomal and physiological strategies for regulated production of pharmaceutical proteins, sponsored by Biotechnology Programme, DGXII, EC (November 1994 - December 1996);

Development of anti-HIV vaccine by Baculovirus expression system, sponsored by JNICT, EUREKA Programme (January 1995 - December 1996);

Mass production of Endothelial cells for the production of a veterinary vaccine, sponsored by VALUE Programme, DGXIII-EC (February 1995 - August 1996);

Controlled growth and production in mammalian cell culture, sponsored by BIOTECH II Programme, DGXII-EC (January 1996 - December 1998), *Project Coordinator*;¹

Production of antibody-cytokine fusion protein for tumor therapy, sponsored by BIOTECH II Programme, DGXII-EC (September 1996 - August 1999);

Baculovirus for VLP's production, sponsored by BIOTECH II Programme, DGXII-EC (September 1998-September 2000), *Project Coordinator*;

Integrated process for achieving high titers of retroviruses for gene therapy, sponsored by BIOTECH II Programme, DGXII-EC (October 1998-October 2000);

Production of complexes of ligand binding domains and agonists, funded by Schering AG, Berlin (March 1998-March 2000), *Co-Leader Prof. Maria Arménia Carrondo*;

Methodology & Design Criteria for Soil and Water Resource Management and Policy Formulation in Peri-Urban Farming Systems in Southern Africa, sponsored by INCO-DG XII (October 1997 - September 2001), *Project Coordinator*;

Development of Immunological Products for Portugal, sponsored by Veterinary company and Portuguese Min. Economy (October 1996 - September 2000);

¹ In Eur. Com. sponsored projects different teams and workpackages leaders have a project Coordinator, responsible for the whole project.

Inactivated Heartwater Vaccine, DG VIII, Eur. Com. (March 1999- October 2002);

Bionose detection for Animal Cells Biofermentation, DG XII, Eur. Com. (February 2000 – January 2003);

Control of rinderpest (RP) and peste des petits ruminants (RPR) infections: development of oral vaccine, role of wildlife in the maintenance of these diseases, DG XII, Eur. Com. (March 2000 – February 2003);

Production, field application and evaluation of inactivated *Cowdria ruminantium* vaccine to protect livestock against heartwater in different African farming systems, DG XVI, Eur. Com. (2001-2003);

Integrated strategy for efficient therapeutic retrovirus production based on modular cell lines, Insertagene, DG Res., Eur. Com. (2002-2005), *Project Coordinator*;

Novel strategies for a safe rotavirus vaccine, DG Res., Eur. Com. (2002-2006);

Integrated Project for Cell Programming by Nanoscaled Devices, Cellprom, DG Res, Eur. Com (2004-2008), *Co-Leader Dr. Paula Alves*;

Theravect, Fundação para a Ciência e Tecnologia, 010.6/A003/2005 (2005-2007);

Development of Marker Vaccines, Companion Diagnostic Tests and Improvement of Epidemiological Knowledge to Facilitate Control of Rinderpest and Peste des Petits Ruminants Viruses”, DG Eur. Com (2005-2007)

Genética Estequiometria e cinética do empacotamento múltiplo de proteínas de partícula idêntica a Rotavirus, Fundação para a Ciência e Tecnologia, POCI/BIO/55975/2004 (2005-2008), *Co-Leader Dr. Paula Alves*;

Cell Cryothera, Fundação para a Ciência e Tecnologia, 010.6/A006/2005 (2005-2008);

Epidemiology and New Generation Vaccines for Ehrlichia and Anaplasma Infections of Ruminants, DG Res, Eur. Com. (2005-2009), *Co-Leader Dr. Paula Alves*;

VITROCELLOMICS - Reducing Animal Experimentation in Preclinical Predictive Drug Testing by Human Hepatic *In Vitro* Models Derived from Embryonic Stem Cells, DG Res, Eur. Com. (2006-2009), *Co-Leader Dr. Paula Alves*;

CLINIGENE - European Network for the Advancement of Clinical Gene Transfer and Therapy, Eur. Com. (2006-2011), *Co-Leader Dr. Paula Alves*;

BACULOGENES - Use of Baculovirus as a Vector for Gene Therapy, DG Res, Eur. Com (2007-2010), *Co-leader Dr. Paula Alves*;

Global HIV Vaccine Criorepository, IBMT+Bill & Melinda Gates Foundation (2009-2011), *Co-leader Dr. Paula Alves*;

BRAINCAV - Nonhuman adenovirus vectors for gene transfer to the brain, Eur. Com. (2009-2012), *Co-Leader Dr. Paula Alves*;

HYPERLAB - High Yield and Performance Stem Cell Lab, Eur-Com. (2009-2012) *Co-leader Dr. Paula Alves*;

Hepatitis C retroviral like particles, Fundação para a Ciência e Tecnologia, PTDC/EBB-BIO/102649/2008 (2010-2013);

BACULOME - Metabolic modeling in vaccine production, Fundação para a Ciência e Tecnologia, EBI/103359/2008 (2010-2013);

CARE-MI - Cardio Repair European Multidisciplinary Initiative, DG Res, Eur-Com. (2010-2014), *Co-leader Dr. Paula Alves*;

COMPLEX-INC - New Technologies and Production Tools for Complex Protein Biologics, DG Res, Eur-Com. (2011-2015), *Co-leader Dr. Paula Alves*;

SADEL - Development and production of new, high-affinity protein scaffolds for therapeutic use, DG Res, Eur-Com. (2012-2016);

BRAINVECTORS - From Brain Gene Transfer Towards Gene Therapy: Pharmacological Assessment of AAV, CAV and LVV, DG Res, Eur-Com. (2012-2016);

DIVINE - Sustainable downstream processing of vaccines through incorporation of nanobiotechnologies: novel affinity ligands and biomimetic membranes, H2020-LEIT-BIO-2014-1-635770, Eur-Com. (2015-2020).

PUBLICATIONS

Refereed Journals:

- [1] **Carrondo MJT, Perry R, Lester JN** (1979) "Comparison of a rapid flameless atomic absorption procedure for the analysis of the metallic content of sewages and sewage effluents with flame atomic absorption methods" *Science of Total Environmental* **12**: 1-12.
- [2] **Carrondo MJT, Perry R, Lester JN** (1979) "Comparison of electrothermal atomic absorption spectrometry of the metal content of sewage sludge with flame atomic absorption spectrometry in conjunction with different pretreatment methods" *Analytica Chimica Acta* **106**: 309-317.
- [3] **Carrondo MJT, Lester JN, Perry R** (1979) "The analysis of aluminium, calcium, iron and magnesium in sewage sludge by a rapid flameless atomic absorption method" *Talanta* **26**: 929-933.
- [4] **Carrondo MJT, Lester JN, Perry R** (1979) "The analysis of aluminium, calcium, iron and magnesium in sewages and sewage effluent by a rapid flameless atomic absorption method" *The Analyst* **104**: 831-836.
- [5] **Carrondo MJT, Perry R, Lester JN** (1979) "The influence of conditioning agents on the determination of the metallic content of sewage sludge by flameless atomic absorption spectrophotometry" *The Analyst* **104**: 937-943.
- [6] **Carrondo MJT, Lester JN, Perry R** (1979) "Flameless atomic absorption analysis of the total aluminium content (including zeolite type A) of water and waste water samples" *Analytica Chimica Acta* **111**: 291-225.
- [7] **Carrondo MJT, Perry R, Lester JN** (1980) "Behaviour of zeolite type A in the activated sludge process I. Influence on treatment parameters" *Journal Water Pollution Control Federation* **52**: 2796-2806.
- [8] **Carrondo MJT, Perry R, Lester JN** (1981) "Behaviour of zeolite type A in the activated sludge process II. Influence on heavy metal removals" *Journal Water Pollution Control Federation* **53**: 344-351.
- [9] **Obeng LA, Carrondo MJT, Perry R, Lester JN** (1981) "The influence of Zeolite type A on metal concentration in water and waste water", *Journal of the American Oil Chemists Society* **58**: 81-85.
- [10] **Carrondo MJT, Perry R, Lester JN** (1981) "Sedimentation of Zeolite type A in Water and Wastewater" *Canadian Journal of Civil Engineering* **8**: 206-217.
- [11] **Carrondo MJT, Lester JN, Perry R** (1983) "Sedimentation of Zeolite type A in Water and Waste Water" *Effluent and Water Treatment Journal* **23**: 271-280.
- [12] **Carrondo MJT, Silva JMC, Figueira MII, Ganho RMB, Oliveira JFS** (1983) "Anaerobic Filter Treatment of Molasses Fermentation Wastewater", *Water Science and Technology* **15**: 117-126.
- [13] **Campbell JR, Luthy RG, Carrondo MJT** (1983) "Measurement and Prediction of Distribution Coefficients for Wastewater Aromatic Solutes", *Environmental Science & Technology* **17**: 582-590.

- [14] Carrondo MJT, Reboredo F, Ganho RMB, Oliveira JFS (1984) "Heavy metal analysis of sediments using a rapid electrothermal atomic absorption procedure" *Talanta* **31**: 561-564.
- [15] Carrondo MJT, Crespo JPSG, Moura MJ (1988) "Production of propionic acid using a xylose utilising *Propionibacterium*" *Applied Biochemistry and Biotechnology* **17**:295-312.
- [16] Reis MAM, Gonçalves LMD, Carrondo MJT (1988) "Sulfate removal in acidogenic phase anaerobic digestion" *Environmental Technology Letters* **9**: 775-784.
- [17] Reis MAM, Gonçalves LMD, Carrondo MJT (1988) "Sulfate reduction in acidogenic phase anaerobic digestion" *Water Science and Technology* **20**:11/12, 345-351.
- [18] Barreto MTO, Melo EP, Carrondo MJT (1988) "Starter culture production in fluidized bed reactor with a flocculent strain of *L. plantarum*" *Biotechnology Letters* **11**:337- 342
- [19] Bartolomeu F, Chambino T, Carrondo MJT (1989) "Applicability of Filtration Tests for Extreme Industrial Sludges" *Filtration and Separation* **26** July-Aug: 288-291.
- [20] Matos HA, Azevedo EJSG, Simões PC, Carrondo MJT, Nunes Da Ponte M (1989) "Phase Equilibria of Natural Flavours and Supercritical Solvents" *Fluid Phase Equilibria* **52**:357-364.
- [21] Reis MAM, Lemos PC, Almeida JS, Carrondo MJT (1990) "Influence of produced acetic acid on growth of sulfate reducing bacteria" *Biotechnology Letters* **12**: 145-148.
- [22] Crespo JPSG, Moura MJ, Carrondo MJT (1990) "Some engineering parameters for the propionic fermentation coupled with ultrafiltration" *Applied Biochemistry and Biotechnology* **24**: 613-625
- [23] Crespo JPSG, Almeida JS, Moura MJ, Carrondo MJT (1990) "Modelling of immobilized cell reactor for propionic acid fermentation" *Biotechnology and Bioengineering* **36**: 705-716.
- [24] Barreto MTO, Melo EP, Almeida JS, Moreira JL, Carrondo MJT (1991) "High Cell Density Reactors for the Production of *Lactobacillus Plantarum*" *Journal of Industrial Microbiology* **7**: 63-70.
- [25] Gonçalves LMD, Xavier AMRB, Almeida JS, Carrondo MJT (1991) "Concomitant Substrate and Product Inhibition Kinetics in Lactic Acid Production" *Enzyme and Microbial Technology* **13**: 314-319.
- [26] Barreto MTO, Melo EP, Almeida JS, Xavier AMRB, Carrondo MJT (1991) "A kinetic method for calculating the viability of lactic starter culture" *Applied Microbiology and Biotechnology* **34**: 648-652.
- [27] Reis MAM, Lemos PC, Martins MJ, Costa PC, Gonçalves LMD, Carrondo MJT (1991) "Influence of sulfate and operational parameters on volatile fatty acids concentration profile in acidogenic phase" *Bioprocess Engineering* **6**: 145-151.
- [28] Crespo JPSG, Moura MJ, Almeida JS, Carrondo MJT (1991) "UF membrane cell recycle for continuous culture of *Propionibacterium*" *Journal of Membrane Science* **61**: 303-314.
- [29] Xavier AMRB, Gonçalves LMD, Sobreiro ACCJ, Carrondo MJT (1991) "Extraction coupled high cell density Bioreactor for lactic acid production in Reuss M *et al* (Ed.) "Biochemical Engineering" Gustav Fischer, Stuttgart, pp:2 50-253.
- [30] Reis MAM, Lemos PC, Almeida JS, Carrondo MJT (1991) "Evidence for the intrinsic toxicity of H₂S to sulphate- reducing bacteria" *Applied Microbiology and Biotechnology* **36**: 145-147.
- [31] Crespo JPSG, Xavier AMRB, Barreto MTO, Gonçalves LMD, Almeida JS, Carrondo MJT (1992) "Tangential flow filtration for continous cell recycle culture of acidogenic bacteria" *Chemical Engineering Science* **47** No.1: 205-214.
- [32] Reis MAM, Lemos PC, Almeida JS, Carrondo MJT (1992) "Effect of hydrogen sulfide on growth of sulfate reducing bacteria" *Biotechnology and Bioengineering* **40**: 593-600.

- [33] **Gonçalves LMD, Barreto MTO, Xavier AMRB, Carrondo MJT, Klein J** (1992) "Inert Supports for Lactic Acid Fermentation - a Technological Assessment" *Applied Microbiology and Biotechnology* **38**: 305-311.
- [34] **Partidário PJ, Carrondo MJT** (1993) "Mass transfer and reaction of Trimethylamine in a three phase biological reactor" *Journal of Chemical Technology and Biotechnology* **57**: 299-307.
- [35] **Barreto Crespo MT, Carrondo MJT** (1994) "Influence of operational parameters in the flocculation and production of *Lactobacillus plantarum*" *Journal of Industrial Microbiology* **13**: 63-69.
- [36] **Racher AJ, Moreira JL, Alves PM, Wirth M, Weidle UH, Hauser H, Carrondo MJT, Griffiths JB** (1994) "Expression of recombinant antibody and secreted alkaline phosphatase in mammalian cells Influence of cell line and culture system upon kinetics" *Applied Microbiology and Biotechnology* **40**: 851-856.
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