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Curriculum Vitae

João Manuel da Costa e Araújo Pereira Coutinho

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Date of birth: June 3rd 1969

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Academic degrees

Agregação in Chemistry at the University of Aveiro, 2007

Ph.D. in Chemical Engineering at the Technical University of Denmark, 1996

Licenciatura in Chemical Engineering at the Department of Chemical Engineering, Faculty of Engineering of the University of Porto, Portugal, 1992

Present position

Full Professor at the Department of Chemistry of the University of Aveiro.

Vice-director of CICECO – Aveiro Institute of Materials.

Main scientific areas of research

Chemical Engineering – Biorefinery; Green Chemistry; Eco-solvents Development; Sustainable Processes Design

Biotechnology – Greener Processes for the Downstreaming of Biomacromolecules

1. Research

1.i. Scientific Publications

i.1 Books

Coutinho, J.A.P., 1995. Phase equilibria in petroleum fluids: multiphase regions and wax formation. Tese de doutoramento. Institut for Kemiteknik, DTU, Lyngby, Dinamarca. ISBN 87-90142-10-1.

i.2 Book Chapters

Coutinho, J.A.P., Pauly, J., Daridon, J.L., 2004. Modelling phase equilibria in systems with organic solid solutions In *Computer Aided Property Estimation for Process/Product Design* Ed. R. Gani, G. M. Kontogeorgis, Elsevier.

Coutinho, J.A.P., Gardas, R.L., 2009. Predictive Group Contribution Models for the Thermophysical Properties of Ionic Liquids. In *Ionic Liquids: From Knowledge to Application*, Ed. N.V. Plechkova, R.D. Rogers, K.R. Seddon, ACS Symp Series 1030, ACS.

Amaral PFF, Coelho MAZ, Marrucho IM, Coutinho JAP. 2010. Biosurfactants from yeasts: Characteristics, production and application. In *Biosurfactants*, Ed. R Sen, Advances in Experimental Medicine and Biology Vol 672: 236-249, Springer Verlag.

Freire, M.G., SWantos, L.M.N.B.F., Marrucho, I.M., Coutinho J.A.P., 2010. Predicting the thermodynamic behavior of water+ionic liquids systems using COSMO-RS. In *Molten Salts and Ionic Liquids: Never the Twain?*. Ed. M.G. Escard and K.R. Seddon. Wiley.

Silva, R.L., Coutinho, J.A.P., Marrucho, I.M., Fernandes, A.M., 2010. Mass spectrometry studies in ionic liquid aggregates. In *Molten Salts and Ionic Liquids: Never the Twain?*. Ed. M.G. Escard and K.R. Seddon. Wiley.

Gonçalves, C.M.B., Coutinho, J.A.P., Marrucho, I.M., 2010. Optical properties. In *Poly(lactic acid): Synthesis, structures, properties, processing and applications*. Ed R. Auras, L.T. Lim, S.E.M. Selke, H. Tsuji. Wiley.

Ventura, S.P.M., Coutinho, J.A.P., 2016. Lipase production and purification from fermentation broth using ionic liquids - Opportunities and Challenges. In *Ionic Liquids in Lipid Processing and Analysis*. Ed. X. Xu, Z. Guo, L.Z. Cheon. AOCS Press

Pereira, M.M., Coutinho, J.A.P., Freire, M.G., 2016. Ionic Liquids as Efficient Tools for the Purification of Biomolecules and Bioproducts from Natural Sources. In *Ionic*

Liquids in the Biorefinery Concept: Challenges and Perspectives. Ed. R. B. Lukasik. RSC.

Ventura, S.P.M., Coutinho, J.A.P., 2016. Towards the recovery and reuse of the ABS phase forming components. In *Ionic Liquid Based Aqueous Biphasic Systems*. Ed. M.G. Freire. Springer.

i.3 Articles

1. Coutinho J.A.P., Macedo, E.A., 1994. Infinite-dilution activity coefficients by comparative ebulliometry. Binary systems containing chloroform and diethylamine. *Fluid Phase Equilibria*, 95: 149-162.
2. Coutinho, J.A.P., Kontogeorgis, G.M., Stenby, E.H., 1994. Binary interaction parameters for nonpolar systems with cubic equations of state: a theoretical approach. 1. CO₂/hydrocarbons using SRK equation of state. *Fluid Phase Equilibria*, 102: 31-60.
3. Coutinho, J.A.P., Jørgensen, M., Stenby, E.H., 1995. Predictions of three-phase regions in CO₂/oil mixtures. *J. Petr. Sci. Eng.*, 12: 201-208.
4. Coutinho, J.A.P., Andersen, S.I., Stenby, E.H., 1995. Evaluation of activity coefficient models in prediction of alkane solid-liquid equilibria. *Fluid Phase Equilibria*, 103: 23-29.
5. Coutinho, J.A.P., Andersen, S.I., Stenby, E.H., 1996. Solid-liquid equilibria of n-alkanes using a modified Delta Lattice Parameter model. *Fluid Phase Equilibria*, 117: 138-145.
6. Coutinho, J.A.P., Knudsen, K., Andersen, S.I., Stenby, E.H., 1996. A local composition model for paraffinic solid solutions. *Chem. Eng. Sci.*, 51: 3273-3282.
7. Coutinho, J.A.P. and Stenby, E.H., 1996. Predictive local composition models for solid-liquid and solid-solid equilibrium in n-alkanes: Wilson equation for multicomponent systems. *I&EC Res.*, 35: 918-925.
8. Coutinho, J.A.P., Ruffier-Meray, V., 1997. Experimental measurements and thermodynamical modelling of paraffinic wax formation in undercooled solutions. *I&EC Res.* 36: 4977-4983.
9. Coutinho, J.A.P., Calange, S., Ruffier-Meray, V 1997. Measuring the amount of crystallised solution using DSC. *Can. J. Chem. Eng.* 75: 1075-1079.
10. Coutinho, J.A.P., Ruffier-Meray, 1998. A new technique for measuring SLE phase diagrams using calorimetry. *Fluid Phase Equilibria*, 148: 147-160.
11. Coutinho, J.A.P., 1998. Predictive UNIQUAC: A new model for the description of multiphase solid-liquid equilibria in complex hydrocarbon mixtures. *I&EC Res*, 37: 4870.

12. Coutinho, J.A.P., 1999. Predictive local composition models: NRTL and UNIQUAC and their application to model solid-liquid equilibrium of n-alkanes. *Fluid Phase Equilibria*, 158-160: 447-457.
13. Dauphin, C., Daridon, J.L., Coutinho, J.A.P., Baylere, P., Potin-Gautier, M., 1999. Wax content measurements in partially frozen paraffinic systems. *Fluid Phase Equilibria*, 161: 135-151.
14. Coutinho, J.A.P., Ruffier-Meray, V., 1999. The use of DSC in studies of wax deposition: measuring the solid formation and binary SLE phase diagrams. *Oil & Gas Sci. Tech.* 54: 641-648.
15. Pauly, J., Daridon, J.L., Coutinho, J.A.P., Lindeloff, N., Andersen, S.I., 2000. Prediction of solid – fluid phase diagrams of light gases - heavy paraffin systems up to 200 MPa using an equation of state - G^E model. *Fluid Phase Equilibria* 167: 145-159.
16. Coutinho, J.A.P., Xavier, A.M.R.B, 2000. A model for the micro/ultrafiltration cell deactivation in cell-recycle reactors. *J. Chem. Tech & Biotech* 75: 315-319.
17. Coutinho, J.A.P., Dauphin, C., Daridon, J.L, 2000. Measurements and modelling of wax formation in diesel fluids. *Fuel* 79: 607-616.
18. Coutinho, J.A.P., Vlamos, P.M., Kontogeorgis, G.M., 2000. General form of the cross energy parameter of equations of state. *I&EC Res.* 39: 3076-3082.
19. Coutinho, J.A.P., 2000. A Thermodynamic model for predicting wax formation in jet and diesel Fuels. *Energy and Fuels*, 14: 625-631.
20. Machado, J.J.B., Coutinho, J.A.P., Macedo, E.A., 2000. Solid-liquid equilibrium of α -lactose in ethanol/water. *Fluid Phase Equilibria*, 173: 121-134.
21. Queimada, A.J.N., Dauphin, C., Marrucho, I.M., Coutinho, J.A.P., 2001. Low temperature behaviour of refined products from DSC measurements and their thermodynamical modelling. *Thermochimica Acta*, 372: 93-101.
22. Mirante, F.I.C., Coutinho, J.A.P., 2001. Cloud point prediction of Fuels and Fuel blends. *Fluid Phase Equilibria*, 180: 247-255.
23. Pauly, J., Daridon, J.L., Coutinho, J.A.P., Montel, F. 2001. Solid – Liquid – Vapor Phase Boundary of a North Sea Waxy Crude: Measurement and Modeling. *Energy and Fuels* 15: 730-735.
24. Queimada, A.J., Marrucho, I.M., Coutinho, J.A.P., 2001. Surface Tension of Pure Heavy n-Alkanes: A Corresponding States Approach. *Fluid Phase Equilibria*, 183-184: 229-238.
25. Pauly, J., Daridon, J.L., Coutinho, J.A.P., 2001. Measurement and Prediction of Temperature and Pressure Effect on Wax Content in a Partially Frozen Paraffinic System. *Fluid Phase Equilibria*, 187-188: 71-82.
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27. Coutinho, J.A.P., Pauly, J., Daridon, J.L., 2001. A Thermodynamic Model To Predict Wax Formation In Petroleum Fluids. *Brazilian J. Chem. Eng.*, 18: 411-422.
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29. Rolo, L.I., Queimada, A.J., Caço, A.I., Marrucho, I.M., Coutinho, J.A.P., 2002. Surface Tension of Pure and Mixed n-heptane, n-decane and n-hexadecane. *J. Chem. Eng. Data*, 47: 1442-1445.
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31. Hammami, A., Ratulowski, J., Coutinho, J.A.P., 2003. Cloud Points: Can we measure or model them? *Petr. Sci. Tech*, 21: 345-358.
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36. Dias, A.M.A., Pàmies, J.C., Coutinho, J.A.P., Marrucho, I.M., Vega, L.F., 2004. SAFT Modeling of the Solubility of Gases in Perfluoroalkanes. *J. Phys Chem B* 108: 1450-1457.
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38. Seixo, J., Varela, M.H., Coutinho, J.A.P., Coelho, M.A.Z., 2004. Influence of C/N ratio on autotrophic biomass development in a sequencing batch reactor. *Biochemical Eng. J.* 21: 131-139.
39. Coutinho, J.A.P., Pessoa, F.L.P., 2004. Extending the extended UNIQUAC to proteins. *Fluid Phase Equilibria* 222-223: 127-133.
40. Queimada, A.J., Marrucho, I.M., Stenby E.H., Coutinho, J.A.P., 2004. Generalized Relation Between Surface Tension and Viscosity: a Study on Pure and Mixed n-alkanes. *Fluid Phase Equilibria* 222-223: 161-168.
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44. Amaral, P.F.F., Tavares, A.P.M., Xavier, A.B., Cammarota, M.C., Coutinho, J.A.P., Coelho, M.A.Z., 2004. Dye decolorization performed by *Trametes Versicolor*. *Environmental Technology* 25: 1313-1320.
45. Coelho, M.A.Z., Belo, I., Pinheiro, R., Amaral, A.L., Mota, M., Coutinho, J.A.P., Ferreira, E.C., 2004. Effect of hyperbaric stress on yeast morphology: study by automated image analysis. *Applied Microbiol Biotech* 66: 318-324.
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52. Freire, M.G., Dias, A., Coelho, M.A.Z., Coutinho, J.A.P., Marrucho, I.M., 2005 Enzymatic Method for Determining Oxygen Solubility in Perfluorocarbon Emulsions. *Fluid Phase Equilibria*, 231: 109-113.
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60. Coutinho, J.A.P., Belo, I., Ferreira, E.C., Coelho, M.A.Z., 2005. Assessment of yeast viability under hyperbaric conditions through a modeling approach. *J Chem Tech Biotech.* 80:872-877.
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- Lignins in Aqueous Solutions of Deep Eutectic Solvents. *Acs Sustainable Chemistry & Engineering* **2017**, 5 (5), 4056.
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i.4 Pos Graduation Supervisions

i.4.1 MSc

Amra Kikic – ‘Plastificação de uma resina fenólica para produção de abrasivos flexíveis’ M. Sc em Engenharia Química, Universidade de Aveiro – Universidade Técnica da Dinamarca. Dezembro de 2004.

Fátima Isabel Cordeiro Mirante – ‘Análise de ceras por métodos cromatográficos’ Mestrado em Química Analítica, Universidade de Aveiro. Setembro 2007.

Joana Cristina Alberto Lopes – ‘Previsão de pontos de turvação de biodiesel’ Mestrado em Engenharia Química, Universidade de Aveiro. Julho 2007.

Rui Manuel Cordeiro Ferreira – ‘Solubilidade de polímeros biodegradáveis em solventes verdes’ Mestrado em Engenharia Química, Universidade de Aveiro. Julho 2007.

Sónia Andreia do Espírito Santo Carvalho – ‘Equilíbrio líquido-líquido na produção

de biodiesel' Mestrado em Engenharia Química, Universidade de Aveiro. Julho 2007.

Sónia Patrícia Marques Ventura – ‘Medição de equilíbrios gás líquido a altas pressões’ Mestrado em Engenharia Química, Universidade de Aveiro. Julho 2007.

Fátima Rodrigues Varanda - ‘Medição do equilíbrio líquido-líquido em sistemas bifásicos fluorados’ Mestrado em Engenharia Química, Universidade de Aveiro. Dezembro 2007.

Luís Miguel Bordalo Filipe – ‘Evaluation of COSMO-RS for Henry constants and selectivity prediction’ Mestrado em Engenharia Química, Universidade de Aveiro. Dezembro 2007.

Pedro Jorge Marques Carvalho – ‘Measurements of Thermophysical properties of perfluorocarbons and ionic liquids’ Mestrado em Engenharia Química, Universidade de Aveiro. Janeiro 2008.

Vera Lúcia Henriques de Oliveira – ‘Modelling the aqueous solubility of PAHs with the CPA EOS’ Mestrado em Engenharia Química, Universidade de Aveiro. Julho 2008.

Marcia Patrícia Ferreira Gonçalves – ‘Determinação do número de octano por cromatografia gasosa’ Mestrado em Química Analítica, Universidade de Aveiro. Julho 2008.

Ana Sofia Mendes Marques Ameixoeiro – ‘Optimização do Tratamento Biológico Com o Sistema Bioamp Gt em Águas Residuais’ Mestrado em Engenharia Química, Julho 2008.

Maria João Madaíl Ferreira Marques – ‘Revestimentos Decorativos Cumprindo Cods 2010 Impostos No DI 181/06’ Mestrado em Engenharia Química, Julho 2008.

Catarina Maia Seco Seiça Neves – ‘Sistemas Aquosos Bifásicos com Líquidos Iónicos’ Mestrado em Química, Julho 2009.

Ana Rute Marques Ferreira – ‘Modelling the Carbon Dioxide Solubility with CPA EoS’ Mestrado em Engenharia Química, Julho 2009.

Mariana Mendes Gonçalves – ‘Study of New Phase Change Materials’ Mestrado em Química, Julho 2009.

Isabel Maria da Silva Santos – ‘Implementação da Análise de Metais em Biodieseis por ICP-OES’ Mestrado em Química, Julho 2009.

Sofia Isabel Esteves Miguel – ‘Measurement and Modelling of Phase equilibria in BioFuel Production’ Mestrado em Engenharia Química, Julho 2009.

Marise da Costa Pereira Afonso – ‘Enzymatic Biodiesel Production from Free Fatty

Acids' Mestrado em Química, Julho 2009.

Jeannette Pereira de Sousa Ferreira – ‘Extracção de Hemiceluloses com Líquidos Iónicos’ Mestrado em Engenharia Química, Julho 2009.

Claudia Leonor Santos Louros – ‘Extraction of Biomolecules with Aqueous Two Phase Systems’ Mestrado em Química, Julho 2009.

Marta Luísa Salsas Batista – ‘Development of a solubility parameter scale for ionic liquids’ Mestrado em Engenharia Química, Julho 2010.

Cristina Isabel Fernandes Ferreira – ‘CO₂/CH₄ separation with ionic liquids’ Julho Mestrado em Engenharia Química, 2010.

Ana Filipa Martins Cláudio da Silva – ‘Extraction of Phenolic Compounds with Aqueous Two Phase Systems’ Mestrado em Engenharia Química, Julho 2010.

Vanda Filipa Silva Fernandes – ‘Characterization of biodiesels produced from mixtures of vegetable oils’ Mestrado em Engenharia Química, Julho 2010.

Sérgio Rodrigues Barbedo – ‘Estudo do equilíbrio líquido-líquido de sistemas ternários de FAME/FAEE-álcool-glicerol’ Mestrado em Engenharia Química, Dezembro 2010

Anabel Tabaré de Oliveira – ‘Desulfurization of Fuels using ionic liquids’ Mestrado em Engenharia Química, Dezembro 2010

Ana Rita Ribeiro Teles – ‘Electrospinning of cellulose from ionic liquid solutions’ Mestrado em Engenharia Química, Dezembro 2010

Vitor Emanuel Moreira Ribeiro – ‘Simulação do processo de purificação de biodiesel’ Mestrado em Engenharia Química, Dezembro 2010

Rute Cristina Batista de Carvalho Duarte – ‘Materiais para Energia – Oportunidades em transferência de tecnologia’ Mestrado em Engenharia Química, Julho 2011

Helena Sofia Almeida Miranda – ‘Seleção de solventes para destilação extrativa de bioetanol’ Mestrado em Engenharia Química, Dezembro 2011

Ana Catarina Gil Martins – ‘Valorização de borra de café através da produção de biossurfactantes’ Mestrado em Biotecnologia, Dezembro 2011

Luís Manuel Cravo Pereira – ‘Nitrogen oxides reduction from post-combustion streams with Ionic Liquids’ Co-orientação Pedro Carvalho, Mestrado em Engenharia Química, Julho 2012

Carlos Filipe Conceição Marques - ‘Tratamento de efluentes contaminados com líquidos iónicos’ Co-orientação Mara Freire, Mestrado em Engenharia Química, Julho 2012

Helena Isabel Sousa Passos – ‘Caracterização de novos sistemas aquosos bifásicos para a purificação de biomoléculas’ Co-orientação Mara Freire, Mestrado em Engenharia Química, Julho 2012

Vânia Filipa Batista Martins – ‘Purificação de biogás usando líquidos iônicos como absorvente’ Mestrado em Engenharia Química, Julho 2012

Sara Patrícia de Oliveira Melo - ‘Aplicação de Biocatalisadores Imobilizados na Produção de Biodiesel’ Orientação Isabel Nunes (DAO), Mestrado em Química, Dezembro 2012.

Sandra Marina Reis do Couto Ferreira dos Santos - ‘Estudo comparativo entre os processos de refinação química e física de óleos vegetais’ Em colaboração com a Sovena, Mestrado em Química, Dezembro 2012.

Teresa Margarida Mendes Mourão – ‘Extração de compostos de valor acrescentado do condensado negro de cortiça’ Em colaboração com a Amorim & Irmãos. Mestrado em Biotecnologia, Dezembro 2012.

Ana Rita de Paiva Valente – ‘Desenvolvimento de espumas de Poliuretano com novo desempenho térmico’ Orientação Ana Barros. Em colaboração com a Euroespuma. Mestrado em Engenharia Química, Dezembro 2012.

Ana Mafalda Rodrigues Almeida – ‘Purificação de anticorpos usando sistemas aquosos bifásicos’ Mestrado em Bioquímica. Julho 2013.

Luisa Daniela Ferreira Santos – ‘Otimização da produção de ácidos gordos usando sistemas micelares’. Mestrado em Biotecnologia. Julho 2013.

Pedro Ricardo Ferreira da Silva – ‘Optimização da produção de scFv anti-LDL(-) por *Pichia pastoris*’. Orientação Adalberto Pessoa Jr. USP, Mestrado em Biotecnologia. Julho 2013.

Inês de Sousa Rocha – ‘Equilíbrio Líquido-Líquido de Sistemas Ternários FAEEs-Etanol-Glicerol’. Orientação António José Meirelles, UNICAMP, Mestrado em Biotecnologia. Julho 2013.

Marcos Cruz – ‘Modelação dos equilíbrios de fase na produção de biodiesel com a Soft-SAFT EoS’. Orientação Tito Trindade. Mestrado em Eng^a Química. Julho 2013.

Fábio Martins Silva – ‘Síntese de nanocristais de semicondutores em líquidos iônicos’. Mestrado em Eng^a Química. Dezembro 2013.

Neusa Patrícia Foios Gonçalves – ‘Estudo do armazenamento de CO₂ em aquíferos salinos’. Co-orientação Pedro Carvalho, Mestrado em Eng^a Química. Abril 2014.

Ricardo Santos – ‘Identificação e caracterização de misturas eutéticas de líquidos iônicos’. Mestrado em Eng^a Química. Abril 2014.

Catarina Ribeiro Saraiva – ‘ELV e coeficientes de atividade de sistemas anagua + líquidos iónicos’. Mestrado em Eng^a Química. Julho 2014.

Filipa Alexandra André Vicente – ‘Novos sistemas micelares de duas fases aquosos com líquidos iónicos’. Mestrado em Bioquímica. Julho 2014.

Maria Joao Valente Quental – ‘Aplicação de líquidos iónicos na concentração de marcadores tumorais’. Mestrado em Bioquímica. Julho 2014.

Cristofe Henrique Gonçalves Fonseca – ‘Medição experimental e modelação das propriedades termofísicas de glicóis’ Mestrado em Eng^a Química. Julho 2015.

João Paulo Duarte Calixto – ‘Concentração de biomarcadores tumorais utilizando sistemas aquosos bifásicos’ Mestrado em Bioquímica. Julho 2015.

Hugo André do Monte Dias Gomes – ‘Extração de cafeína de borras de café utilizando soluções aquosas de líquidos iónicos’. Mestrado em Eng^a Química. Julho 2015.

Susana Estela Faustino Malaquias Pereira – ‘Projeto de uma unidade de produção de ácido sulfanílico’. Mestrado em Eng^a Química. Setembro 2015.

i.4.2 PhD

Jean Marc Sansot – ‘Estudo da formação de depósitos parafínicos em fluidos petrolíferos a altas pressões’. Doutoramento em Física, Universidade de Aveiro – Université de Pau et des Pays de l’Adour, França. Iniciado em Outubro de 2000. Concluído em Dezembro 2003. Professor Físico-química, Liceu Ste. Marie Grand Lebrun, Bordéus, França.

António José do Nascimento Queimada – ‘Estudo e modelação da tensão superficial e gelificação de combustíveis pesados’. Doutoramento em Engenharia Química, Universidade de Aveiro. Iniciado em Maio de 2000. Concluído em Junho 2004. Consultor na Infochem-KBC, Inglaterra.

Ana Paula Mora Tavares – ‘Produção de lacase para potencial aplicação como oxidante na indústria papelreira’. Doutoramento em Engenharia Química, Universidade de Aveiro, Iniciado em Fevereiro de 2001. Concluído em Fevereiro de 2006. Investigadora no LSRE, FEUP. Menção honrosa prémio CUF 2007.

Ana Maria Antunes Dias – ‘Solubilidade de gases em substitutos do sangue’. Doutoramento em Engenharia Química, Universidade de Aveiro. Iniciado em Maio de 2001. Concluído em Novembro 2005. Investigadora no DEQ, FCTUC.

Nuno Miguel Pedrosa – ‘Caracterização de novos materiais de embalagem com ênfase em polímeros biodegradáveis’. Doutoramento em Engenharia Química, Universidade de Aveiro. Iniciado em Outubro de 2002. Concluído em Fevereiro 2007. Consultor na Infochem-KBC, Inglaterra.

Mara Guadalupe Freire Martins – ‘Solubilidade e transferência de massa em sistemas orgânicos dispersos em fase aquosa’. Doutorado em Engenharia Química, Universidade de Aveiro – Universidade Federal do Rio de Janeiro, Brasil. Iniciado em Outubro de 2003. Concluído em Setembro 2007. Investigadora Coordenadora na UA.

Priscilla Filomena Fonseca Amaral – ‘Produção de lipase por *Yarrowia lipolytica* em biorreator multifásico’. Universidade Federal do Rio de Janeiro, Brasil. Concluído em Setembro 2007. Professor adjunto, DEB, UFRJ, Brasil.

Carla Maria Batista Gonçalves – ‘Propriedades de barreira de filmes poliméricos compósitos para aplicação na indústria de embalagem alimentar’. Doutorado em Engenharia Química, Universidade de Aveiro. Iniciado em Outubro de 2005. Concluído em Junho 2014. Diretora técnica, Enarpur.

Mariana Belo Oliveira – ‘Equilíbrio de Fases e Propriedades de Superfície para a Formulação e Produção de Biocombustíveis’. Universidade de Aveiro. Iniciado em Outubro 2006. Concluído em Outubro 2010. Estagiária de Pós doutoramento, UA. 2nd prize Excellence Award in Thermodynamics and Transport Properties 2011, European Federation of Chemical Engineering (EFCE)

Maria Jorge Pratas de Melo – ‘Biodiesel Fuel Formulation.’ Universidade de Aveiro. Iniciado em Junho 2007. Concluído em Julho de 2012. Diretora de laboratório, Egeol solventes.

Layla Alghandouri – ‘Wax formation and deposition in Libyan crudes’ Universidade de Aveiro. Suportado pelo Instituto Líbio do Petróleo. Iniciado em Setembro 2007. Concluído Janeiro 2017. Engenheira LPI, Líbia.

Sónia Patrícia Marques Ventura – ‘Lipase production by extractive fermentation using ionic liquids’. Iniciado em Outubro 2007. Concluído em Novembro 2011. Investigadora Auxiliar, UA.

Pedro Jorge Marques Carvalho – ‘Sweetning of natural gas using ionic liquids’ Iniciado em Abril de 2008. Concluído em Dezembro 2011. Estagiário de Pós doutoramento, UA.

Samuel Venâncio de Sousa Freitas – ‘Production of Biodiesel from Endogenous Resources of East Timor’. Iniciado em Outubro 2008. Concluído em Julho 2013. Assistente Técnico na Universidade Nacional de Timor Leste.

Jorge Fernando Brandão Pereira – ‘A Tale of Two Bioprocesses’ Suportado pela Partex. Iniciado em Outubro 2008. Concluído em Junho 2013. Professor na UNESP, Araraquara, Brasil.

Guilherme José Massimo – ‘Termodinâmica de Lipídios: Novas perspetivas em estudos de fases para aplicações em engenharia’. Doutorado em Eng^a de Alimentos pela UNICAMP, Brasil. Concluído em Abril 2014.

Ranyere Lucena de Souza – ‘Sistemas aquosos bifásicos formados por constituintes não convencionais para a purificação de enzimas lipolíticas’. Doutorado em Eng^a de Processos pela UNIT, Brasil. Concluído em Outubro 2014.

Ana Rute Marques Ferreira – ‘Extracção Mercaptanos de Correntes de “Jet Fuel” por Líquidos Iónicos’. Suportado pela GALP. Iniciado em Outubro 2009. Concluído em Maio 2014.

Catarina Maia Seco Seça Neves – ‘Evaluation of Environmental Impact and Treatment of Aqueous Effluents Contaminated with Ionic Liquids’. Iniciado em Outubro 2010. Concluído em Dezembro 2014.

Ana Filipa Martins Cláudio da Silva – ‘Extraction of added-value products from biomass using ionic liquids’ Iniciado em Abril 2011. Concluído em Dezembro 2014.

Marta Luísa Salsas Batista – ‘Ionic liquids as entrainers in extractive distillation of ethanol-water’. Iniciado em Abril 2011. Concluído em Maio 2015. SPI.

Tânia Sintra – ‘The Search for New Biocompatible Chemicals: The Synthesis and Properties of Non-aromatic Ionic Liquids’. Iniciado em Março 2013. Concluído em Maio 2017.

Mónia Andreia Rodrigues Martins – ‘Physical-Chemical Parameters of Terpenes and Terpenoids for Application in Environmental Impact Studies’. Iniciado em Março 2013. Concluído em Junho 2018.

Helena Isabel Sousa Passos – ‘IgY Technology: A Purification Platform using Ionic-Liquid-Based Aqueous Biphasic Systems’. Iniciado em Março 2013. Concluído em Junho 2018.

Matheus Mendonça Pereira – ‘Aplicação De Líquidos Iónicos para um Diagnóstico Precoce de Biomarcadores Tumoriais em Fluidos Humanos’. Iniciado em Julho 2013. Concluído em Novembro 2017.

André Manuel Moreira Palma – ‘Association Models Development for the Description of Multifunctional Molecules Behavior with the CPA EoS’. Iniciado em Novembro 2014. Concluído em Dezembro 2017. Suportado pela KBC.

Ana Francisca Silva - ‘Creating Technological Platforms for the Sustainable Recovery of Added-Value Active Pharmaceutical Ingredients from Pharmaceutical Wastes’. Iniciado em Fevereiro 2014.

Ana Maria Ferreira – ‘Purification of Monoclonal Antibodies using Ionic-Liquid-Based Aqueous Biphasic Systems’. Iniciado em Fevereiro 2014.

Sandra Bernardo – ‘Purification Strategies for Polyclonal Antibodies from Egg Yolk’. Iniciado em Março 2014.

Belinda Isabel Gomes Soares – ‘Development of Deep Eutectic Solvents for the fractionation of wood aiming at the development of novel pulping processes’. Iniciado em Janeiro de 2015.

Maria João Valente Quental – ‘Aplicação de líquidos iónicos na concentração de marcadores tumorais’. Iniciado em Março de 2015.

Filipa Alexandra André Vicente - ‘Development of Aqueous Micellar Two-phase Systems with Ionic Liquids for the Selective Extraction of R-phycoerythrin from Red Macroalgae’. Iniciado em Fevereiro 2015.

João Henrique Santos – ‘Purification of L-Asparaginase used in the Acute Lymphoblastic Leukemia Treatment by Applying Liquid-liquid Extraction Systems’. Iniciado em Fevereiro 2015.

Vanessa Ariana Vieira – ‘Using natural deep eutectic solvents for the extraction of bioactive compounds from plant material: valorizing walnut residues through the development of bio-based semisolid formulas for topical use’. Iniciado em Novembro de 2015.

Emanuel de Almeida Crespo – ‘Development of Transferable Molecular Models for Enhanced Oil Recovery with soft-SAFT Equation of State’ Iniciado em Setembro de 2017.

i.4.3 Post Doctoral Fellows

Maria Alice Zarur Coelho – ‘Desenvolvimento de modelos celulares estruturados a partir de informação obtida por análise de imagem’ Universidade de Aveiro – Universidade do Minho. Outubro 2001 a Outubro de 2002. Professor Associado, DEB, UFRJ, Brasil.

Jun Gao – ‘Medição de solubilidade de gases em polímeros a altas pressões’ Universidade de Aveiro. Agosto 2002 a Fevereiro 2003.

Marian Lehocky – ‘Study and characterization of polymer@ silica nanoparticle interfaces’ Universidade de Aveiro. Setembro 2004 a Agosto 2005. Investigador no CSP, Tomas Bata University, Zlín, República Checa.

Juan José Espada – ‘Caracterização de ceras de crudes do Mediterrâneo e Atlântico Sul’ Universidade de Aveiro. Abril de 2006 a Junho de 2006. Professor, Universidad Rey Juan Carlos, Madrid, Espanha.

António José do Nascimento Queimada – ‘Propriedades de superfície e equilíbrios de fase em sistemas água-hidrocarbonetos’ Universidade de Aveiro. Julho 2004 a Agosto 2006. Consultor na Infochem-KBC, Inglaterra.

Ramesh L. Gardas – ‘Octanol water partition coefficients of ionic liquids’ Universidade de Aveiro. Janeiro 2006 a Maio 2007. Professor, IIT, Madras, Índia.

Bernd Schroder – ‘Vapor Liquid Equilibria and Energetics of Ionic Liquid Systems’. Setembro de 2007 a Agosto de 2013.

Luciana Isabel Nabais Tomé – ‘Aminoacid-ionic liquid interactions in aqueous solutions and their impact on the extraction of proteins and their stability in ionic liquids’. Fevereiro de 2008 a Setembro de 2014.

Kalpeshkumar B. Sidhpuria – ‘Production and Application of Supported Ionic Liquid Nanoparticles (SILnP)’. Fevereiro 2009 a Outubro 2011. Senior R&D manager, Reliance Industries. Ltd, India.

Álvaro Silva Lima – ‘Lipase Production by Bacillus sp. ITP-001 on Multiphase Systems and Purification of Enzyme in Aqueous Two-phase Systems using Ionic Liquids’. Setembro 2009 a Março 2010. Professor na UNIT, Aracajú, Brasil.

Mara Guadalupe Freire Martins – ‘Development and Characterization of New Aqueous Two-Phase Systems’. (Colaboração com ITQB) Setembro 2011 a Junho 2013. Investigadora na UA

Shahla Shahriari – ‘Extraction and Purification of Model Drugs Using Polymer-Based and Ionic Liquid -Based Aqueous Two-Phase Systems’. Agosto 2011 a Julho 2012. Professor, Shahr-e-Qods Branch, Islamic Azad University, Teerão, Irão.

Pedro Jorge Marques Carvalho – ‘Sweetening of Natural Gas using liquid membranes of Ionic Liquids’. Iniciado em Janeiro 2012.

Mariana Belo Oliveira – ‘Modelling the Phase Behavior in Mixtures of Multifunctional Molecules’. Iniciado em Janeiro 2012.

Sónia Patrícia Marques Ventura – ‘(Eco)toxicological Hazard Assessment and Wastewater Treatment Profiles as Contributions for the Design of Sustainable Ionic Liquids’ Janeiro 2012 a Setembro 2014.

Mohamed Taha – ‘Biomimetic CO₂ Sequestration Using Carbonic Anhydrase, Amine-Based Buffers, and Ionic Liquids’ Janeiro 2012 a Dezembro 2014.

Arijit Bhattacharjee – ‘Characterization of the interactions between ionic liquids and molecular solvents’. Janeiro 2012 a Dezembro 2014.

Imran Khan – ‘Selection of ionic liquids as entrainers for the extractive distillation of water-alcohols’ Janeiro 2012 a Dezembro 2015.

Kiki Adi Kurnia – ‘Characterization of ILs and their applications’ Janeiro de 2013 a Abril de 2015.

Ana Marta dos Santos Mendes Gonçalves – ‘How anthropogenic and natural stressors could influence the food quality in an estuarine trophic chain’ (Colaboração com Dep Biologia UA e FCTUC) Março 2013 a Junho 2016.

Paulo Jorge Machado Teixeira de Moraes - ‘Avaliação Ecotoxicológica e Tratamento de Efluentes Líquidos Contaminados com Líquidos Iónicos’ Março 2014 a Fevereiro 2015

Flávia Aparecida Vieira – ‘Extraction and purification of value added compounds from algae using green solvents’. Agosto 2014 a Julho 2017.

Catarina Maia Seco Seiza Neves – ‘Novel PEG-IL ABS and their unique behavior’ Iniciado em Janeiro 2015.

Pedro Madeira – ‘Cost-effective Kit for the Extraction and Preservation of RNA using Ionic Liquids’. Iniciado em Janeiro 2016.

Nicolas Schaeffer – ‘Battery Recycling – Achieving Rare Earth Separation ’. Iniciado em Fevereiro 2017.

Pablo Navarro Tejedor – ‘Removal of aromatics from hydrocarbons products by ionic liquid-based extractive distillation’ Iniciado em Junho 2017.

Tânia Sintra – ‘Development of novel processes to extract and purify phycobiliproteins from red macroalgae ’. Iniciado em Julho 2017.

Mónia Andreia Rodrigues Martins – ‘Physical-Chemical of novel DES systems ’. Iniciado em Setembro 2017.

Helena Isabel Sousa Passos – ‘Battery Recycling – Achieving Rare Earth Separation’. Iniciado em Setembro 2017.

1.ii. Funded projects

ii.1 Coordinator

1999-2001 Projeto Praxis/C/EQU/12010/1998 ‘Estudo e modelação da gelificação e tensão superficial de combustíveis pesados’. 11,000,000\$00.

1999-2002 Projeto 301/B4, cooperação Luso-Francesa ICCTI/Embaixada de França ‘Caracterização e modelação de depósitos parafínicos em fluidos petrolíferos’. Com o Departamento de Física da Université de Pau et des Pays de l’Adour.

2000 Acordo Cultural Luso-Dinamarquês ‘Measurements and modelling of Heavy hydrocarbon mixture properties’. Com o Departamento de Engenharia Química da Universidade Técnica da Dinamarca.

2000-2003 Convénio ICCTI/CAPES ‘Desenvolvimento integrado de processos: produção, separação e purificação de biopolímeros’. Com o Departamento de Engenharia Bioquímica da Universidade Federal do Rio de Janeiro.

2000-2002 Cooperação científica Luso-Dinamarquesa ICCTI/DRA. ‘Modelação da tensão superficial em misturas assimétricas’. Com o Departamento de Engenharia Química da Universidade Técnica da Dinamarca.

2003-2004 Acção integrada Luso-Espanhola E-68/03 ‘Descrição de tensões interfaciais óleo/água com a teoria do gradiente’. Com o Departamento de Engenharia Química da Universitat Rovira i Virgili, Tarragona e o ICMA, Barcelona.

2004-2006 Projeto POCTI/EQU/44427/2002 ‘Arejamento de reactores biológicos multifásicos’. €30,000.

2003-2006 Projeto 720/B4 cooperação Luso-Francesa GRICES/Embaixada de França ‘Deposição de ceras parafínicas em oleodutos’. Com o Departamento de Física da Université de Pau et des Pays de l’Adour.

2005-2008 Projeto POCTI/CTM/60288/2004 ‘Desenvolvimento de um PCM compósito para armazenamento de energia e isolamento térmico’. €71,162.

2005-2008 Projeto POCTI/EQU/58152/2004 ‘Seleção de líquidos iónicos para separação de gases’. €63,000.

2006-2008 Convénio GRICES/CAPES ‘Equilíbrio de fases em sistemas de ácidos gordos’, com a Faculdade de Engenharia Química e Faculdade de Engenharia de Alimentos da UNICAMP

2009-2010 Acção Integrada Luso-Espanhola CRUP ‘Prediction of wax precipitation in flow assurance: Identification of limitations of current models and their improvement’ com a Universidad Rey Juan Carlos, Madrid.

2009-2011 Projeto interno CICECO ‘Identificação de líquidos iónicos para extracção de compostos sulfurados de correntes de “Jet Fuel”’. €15,000.

2010-2012 Acordo Índia-Portugal FCT-DST ‘Synthesis, characterization and catalytic applications of ionic liquids supported on nano-crystalline metal oxides’ com Central Salt & Marine Chemicals Research Institute, Gujarat, India

2010-2013 Projeto PTDC/EQU-FTT/102166/2008 ‘Sweetening of natural gas using ionic liquids’. €78,000.

2012-2015 Projeto PTDC/AAC-AMB/119172/2010 ‘[ILTOX] Ecotoxicological evaluation and treatment of ionic liquid contaminated effluents’. €122,560.

2012-2015 Projeto PTDC/QUI-QUI/121520/2010 ‘Líquidos Iónicos e a Génese de Sistemas Aquosos Bifásicos: Equilíbrio entre Interações de van der Waals e Electrostáticas’. Total €133,000. UA €63,500.

2013-2016 COST Action CM1206 ‘EXIL – Exchange on Ionic Liquids’.

2016-2019 Projeto ERA-MIN BatRe ARES ‘Battery Recycling – Achieving Rare Earth Separation (Selective rare earth recycling from intermetallic compounds of NiMH batteries)’. Total €533,000. UA €74,285.

2016-2019 Projeto FAPESP/19793/2014 ‘Optimization and Scale-up of Novel Ionic-Liquid-based Purification Processes for Recombinant Green Fluorescent Protein produced by Escherichia coli’. UA €138,336.

2017-2019 Projeto SAICTPAC/0040/2015 ‘Multi-purpose strategies for broadband agro-forest and fisheries by-products valorisation: a step forward for a truly integrated biorefinery’

ii.2 Participant

1999–2002 Projeto POCTI/EQU/33493/99 ‘Corkpol - polióis líquidos e poliuretanos a partir de resíduos agro-florestais sólidos (pó de cortiça).

1999–2002 Projeto POCTI/EQU/35435/99 ‘Solubilidade de gases em substitutos do sangue’ Coordenado por Isabel Marrucho Ferreira

1999–2002 Projeto POCTI/AGR/38404/99 ‘QUITOPACK: Desenvolvimento de filmes e revestimentos edíveis e biodegradáveis obtidos a partir de resíduos de crustáceos e moluscos marinhos

2002–2005 Projeto POCTI/EQU/43356/2001 ‘Permeabilidade de aromas em materiais de embalagem’. Coordenado por Isabel Marrucho Ferreira. €109,875.

2002–2005 Projeto POCTI/QUI/43144/2001 ‘Pressões de vapor de compostos orgânicos sólidos e líquidos - determinação experimental e desenvolvimento de métodos de estimativa. Com o Departamento de Química da Faculdade de Ciências da Universidade do Porto. € 64,000.

2003–2004 Acção integrada Luso-Espanhola E-51/02 ‘Estudo de hidrofluoroéteres como substitutos de CFC’s e HFC’s’. Com o Departamento de Física da Universidade de Vigo.

2003-2004 Bolsa jovem cientista FAPERJ ‘Uso de Perfluorocarbonetos no Desenvolvimento de Bioprocessos’. Com o Departamento de Eng. Bioquímica da Universidade Federal do Rio de Janeiro, Brasil.

2003-2006 Convénio GRICES/CAPES ‘Uso de perfluorocarbonetos na aeração de culturas de *Yarrowia lypolitica* para desenvolvimento de bioprocessos e produção de lipase’. Com o Departamento de Engenharia Bioquímica da Universidade Federal do Rio de Janeiro.

2003-2006 Projeto POCTI/EQU/46124/2002 ‘Improving the yield of *Eucalyptus globulus* kraft pulp production: Strategies, mechanisms and impact on pulp economics’. Coordenado por Carlos Pascoal Neto. €30,000.

2003-2006 Projeto POCTI/EQU/48489/2002 ‘Study of pulp and paper industry effluent cleaning by lignolitic cultures of *Trametes versicolor*’. Coordenado por Ana M.B.R. Xavier. €30,000.

2003-2006 Projeto ‘Materials Network for the Atlantic Arch’, Programa Interreg. Coordenado por João Rocha e João Labrincha. €521,110.

2005-2008 Projeto POCI/EQU/58239/2004 ‘Propriedades de Superfície e Equilíbrio de Fases de Sistemas Água + Óleo’. Coordenado por António José Nascimento Queimada. €45,000.

2003-2007 Projeto MVSEIS European Science Foundation ‘Tectonic control, deep crustal structure and fluid escape pathways in the Gulf of Cadiz Mud Volcano Field’. Coordenado por Luís Menezes Pinheiro.

2007-2010 Projeto PTDC/EQU-FTT/65252/2006 ‘Equilíbrio Líquido Vapor de Líquidos Iónicos Puros e suas Misturas como Solventes Orgânicos’. Coordenado por Isabel M. Ferreira. €129,090.

2007-2010 Projeto PTDC/ENR /68224/2006 ‘Comportamento térmico de edifícios em Portugal usando materiais de mudança de fase’ Coordenado por António Samagaio. €100,000.

2009-2011 Projeto PTDC/QUI/72903/2006 ‘Determinação de Parâmetros Básicos para o Desenvolvimento de Modelos Fundamentais em Sistemas de Sais Líquidos’ Coordenado por Isabel M. Ferreira. €99,788.

2010-2013 Projeto PTDC/AAC-AMB/101050/2008 ‘Produção de biopolímeros como uma nova abordagem no tratamento de efluentes – POLIBIO’ Coordenado por Isabel Capela. €152,976.

2010-2012 Projeto ‘ENERMAT New materials for energy’ Programa Interreg IV. Coordenado por João Rocha. €498,710.

2012-2015 Projeto PTDC/AAC-AMB/121161/2010 ‘Terpenos e Terpenoides: Propriedades Físico-Químicas para a Previsão do Destino de Compostos Biogénicos Orgânicos Voláteis no Ambiente’ Coordenado por Bernd Schroder. €111,168.

2013-2014 Cooperação Bilateral FCT-Tunísia ‘Integração de métodos geofísicos,

geoquímicos e microbiológicos para prospeção de hidrocarbonetos em bacias sedimentares de Portugal e Tunísia. Coordenado por Luís Meneses Pinheiro. €4,000.

2013-2018 ERC Starting Grant 337753 ‘IgY Technology: A Purification Platform using Ionic-Liquid-Based Aqueous Biphasic Systems’. Coordenado por Mara Freire. €1,300,000

2014-2015 Projeto EXPL/QEQ-PRS/0224/2013 ‘Development of a sustainable technology for the extraction and purification of chlorophylls from biomass’. Coordenado por Imran Khan. €50,000

2016-2019 Projeto PTDC/AGR-TEC/1191/2014 ‘DEEPBIOREFINERY – Natural deep eutetic solvents: A platform to boost *Eucalyptus globulus* and *Quercus suber* cork integrated biorefineries.’ Coordenado por Armando Silvestre. €186,354.

2016-2019 Projeto PTDC/ATP-EAM/5331/2014 ‘ToxMix – Toxicity of mixtures of alternative solvents with industrial potential. Coordenado por Fernando Gonçalves.

1.iii. Scientific Activity

iii.1 Prizes

Programa Gulbenkian de Estímulo à Investigação na área de Química e Ambiente, 1998.

Prémio Científico APDF 2003, melhor colaboração Luso-Francesa em 2002-2003

ISI Web of Knowledge – 14 Highly cited papers (last 10 years)

ISI Highly cited researcher em Química

<http://ip-science.thomsonreuters.com/hcr/chemistry.xlsx>

Prémio Prof. Almiro e Castro 2014.

iii.2 Editor

2003-2008 - Editor associado do Brazilian Journal of Chemical Engineering

2010 – Editor convidado do Journal of Chemical and Engineering data ‘Special Section on the 2009 Iberian Meeting on Ionic Liquids (IMIL)’ Vol 55 (2).

2013 – Editor convidado do International Journal of Molecular Sciences para um número especial sobre "Characterization and Application of Ionic Liquid-Based Aqueous Biphasic Systems".

2017 – Guest editor of a Special issue on Fluid Phase Equilibria on Deep Eutectic Solvents

iii.3 International Guest conferences

Coutinho, J.A.P., Oliveira, N.S., Barros, A., Daridon, J.L., Marrucho, I.M., Gas solubility in natural and biodegradable polymers for food packaging. Thermodynamics Polish-French Days, Novembro 2003, Varsóvia, Polónia.

Coutinho, J.A.P., Gardas, R.L., Developing predictive models for the thermophysical properties and equilibrium behavior of ionic liquids: A first step towards the reverse design of ionic liquids. 236th American Chemical Society National Meeting, 17 a 21 de Agosto de 2008, Filadélfia, EUA.

Coutinho, J.A.P. Ion Specific Effects in the water and imidazolium-based ionic liquids mutual solubilities. XVII Congresso Brasileiro de Engenharia Química – COBEQ, 14 a 17 de Setembro de 2008, Recife, Brasil.

Coutinho, J.A.P., Freire, M.G., Marrucho, I.M., Santos, L.M.N.B.F., Rebelo, L.P.N., Shah, J., Maggin, E.J. On the molecular basis of the salting in of ionic liquids (and other molecules) in aqueous solution. 17th Symposium on Thermophysical Properties, 21 a 26 de Junho de 2009, Boulder, Co, EUA.

Neves, C.M.N., Freire, M.G., Coutinho, J.A.P., Oliveira, N.M.C. Separation of ethanol from water using phosphonium-based ionic liquids. 240th American Chemical Society National Meeting, 22 a 26 de Agosto de 2010, Boston, EUA.

Coutinho, J.A.P., Playing Around with ionic Liquids and Aqueous Two Phase Systems. COIL-4, 15 a 18 de Junho de 2011, Arlington, Va, EUA.

Coutinho, J.A.P., Why are we interested in ionic liquids and what are we learning from them? Thermodynamics 2011, 1 a 3 de Setembro de 2011, Atenas, Grécia.

Coutinho, J.A.P., Using Ionic Liquids Aqueous Two Phase Systems for the Extraction and Purification of Biomolecules. CBTermo 2011, 22 a 25 de Novembro de 2011, Salvador, Bahia, Brasil.

Coutinho J.A.P., Trend Shifting: The influence of ionic liquids nanostructure on their thermophysical properties and phase equilibria. Workshop Thermodynamics of Ionic Liquids, 14-16 de Março 2012, Bremen, Alemanha.

Coutinho J.A.P., Trend Shifting: The influence of ionic liquids nanostructure on their thermophysical properties and phase equilibria. Equifase 2012, 8-12 Outubro 2012, Puerto Varas, Chile.

Coutinho, J.A.P., Modelling wax formation with Predictive UNIQUAC: From petroleum and fuels to biofuels. JEEP 2013, 19-21 de Março de 2013. Nancy, França.

Coutinho, J.A.P., Characterization and application of ionic liquid based aqueous biphasic systems, 11^o Encontro Nacional de Química Física, 9-10 de Maio de 2013. Porto, Portugal.

Coutinho J.A.P., Measuring and modeling biodiesel properties with CPA and SAFT EoS, II Workshop Bioproducts and Biofuels, 13-14 de Março de 2014, UNICAMP, Brasil.

Coutinho J.A.P., The impact of nanostructure and isomerism on the melting points, vapor pressures, and other thermophysical properties of ionic liquids. Workshop in Ionic Liquids: Melting temperatures and other properties and applications. 20 e 21 de Marco de 2014. Universidad de La Serena, Chile.

Coutinho J.A.P., Oliveira, M.B., The use of SAFT-EoS: A personal perspective from an outsider. SAFT meeting 2014, 22-24 de Abril 2014, Tróia, Portugal.

Coutinho, J.A.P., Ionic liquids aqueous biphasic systems: After a decade of studies which perspectives? EXIL Workshop, 24-26 Abril 2014, Estrasburgo, França

Coutinho, J.A.P., Aqueous Biphasic Systems for the purification of Biomolecules, ILSEPT-2, Ionic Liquids in Separation and Purification Technology, 29 de Junho a 2 de Julho de 2014, Toronto, Canadá.

Coutinho, J.A.P., Ionic liquid based separation processes: New directions. Gordon Research Conference on Ionic Liquids, 17-22 de Agosto de 2014. Newry, Maine, EUA.

Coutinho, J.A.P., pH-reversible ionic liquids based aqueous biphasic systems. 4th APCIL, 28 de Setembro a 1 de Outubro de 2014. Sydney, Austrália.

Coutinho, J.A.P., The effect of the alkyl chain length on the behavior of ionic liquids. Workshop ‘Synthetic aspects on materials synthesis near room temperature’, 18-20 de Fevereiro de 2015, Rostock, Alemanha.

Coutinho J.A.P., Extractions, separations and purifications with aqueous solutions of ionic liquids. Qafco-Texas A/M conference 2015, 3 de Março de 2015, Doha, Qatar.

Courinho J.A.P., Aqueous solutions of ionic liquids in the extraction and purification of compounds from biomass and their recyclability. ACel Seminar, 5 de Junho de 2015, Helsínquia, Finlândia.

iii.4 Scientific committee of conferences

Comissão científica do 2nd International Conference on Petroleum and Gas Phase Behaviour and Fouling, Copenhaga, Dinamarca, 27 a 31 de Agosto, 2000

Comissão científica do Symposium SAFT 03: 15 years of SAFT Equation, Barcelona, Espanha, 12 de Dezembro de 2003

Comissão científica do 2nd Enpromer Mercosur Congress on Chemical Engineering, Costa Verde, Rio de Janeiro, Brasil, 14 a 18 de Agosto de 2005

Comissão científica do 8th International Conference on Petroleum Phase Behavior and Fouling, Pau, França, 14 a 17 de Junho de 2007

Comissão científica do CHEMPOR 2008, Universidade do Minho, Braga 4 a 6 de Setembro de 2008.

Comissão científica do 4th Congress in Ionic Liquids – COIL 4, Washington, EUA, 15 a 18 de Junho de 2011.

Comissão científica do 2nd Iberian Meeting on Ionic Liquids, Santiago de Compostela, Espanha, 21 a 23 de Julho de 2011

Comissão científica do CHEMPOR 2011, Universidade Nova de Lisboa, Lisboa, 5 a 7 de Setembro de 2011.

Comissão científica do ICCT 2012, International Conference on Chemical Thermodynamics, Búzios, Brasil, 5 a 10 de Agosto de 2012. Organizador da sessão em Líquidos Iónicos.

Comissão científica do APCIL'12, Asian Pacific Conference on Ionic Liquids and Green Processes, Beijing, China ,17 a 19 de Setembro de 2012.

Comissão nacional do COIL-5, 5th Congress on Ionic Liquids, Vilamoura, Portugal 21 a 25 de Abril de 2013.

Comissão científica do MicroBiotec'13, Universidade de Aveiro, 6 a 8 de Dezembro de 2013.

Comissão internacional do ILSEPT-2, Ionic Liquids in Separation and Purification Technology, Toronto, Canadá, 29 de Junho a 2 de Julho de 2014.

Comissão científica do CHEMPOR 2014, FEUP, Porto, 10 a 12 de Setembro de 2014.

International Advisory Board do COIL 6, Jeju, Coreia do Sul, 16 a 20 de Junho de 2015.

Comissão Científica do XLI JEEP Journee d'Etude des Equilibres entre Phases, Coimbra, Portugal, 25 a 27 de Março de 2015

Comissão de acolhimento do 2nd EuCheMS Congress on Green and Sustainable Chemistry, Lisboa, Portugal, 4 a 7 de Outubro de 2015

2. Knowledge transfer

2.1. Patents

Coutinho, J.A.P., Daridon, J.L., 2003. Método de previsão da formação de depósitos parafínicos em petróleos brutos durante a extracção transporte e armazenamento. Patente portuguesa PT 102681

Rocha, J., Coutinho, J.A.P., Valente, A., Silva, F.A., Lin, Z., 2005. Utilização de um metilfosfonato de alumínio microporoso cristalino para purificação do cloreto de vinílo. Patente portuguesa PT 102906

Coutinho, J.A.P., Neto, C.P., 2007. Compósitos de lenhocelulósicos e materiais de mudança de fase para isolamento térmico e armazenamento de energia. Patente portuguesa PT103458.

2.2 Technical publications

João A.P. Coutinho, 2006. Materiais de mudança de fase para isolamento térmico e armazenamento de energia. Engenharia Química 2, 4-6

João A.P. Coutinho, 2006. Comunicação de Riscos. Do monóxido de hidrogénio ao REACH: às voltas com o Princípio da Precaução. Engenharia Química 3, 4-7

João A.P. Coutinho, 2006. Da optimização para a inovação: Uma mudança de paradigma na Indústria Química. Engenharia Química 4, 4-7

João A.P. Coutinho, 2007. Canivetes suíços. Engenharia Química 5, 4-5

João A.P. Coutinho, 2007. Para além do Petróleo. Engenharia Química 6, 4-5

João A. P. Coutinho, Beryl Edmonds, Tony Moorwood, Richard Szczepanski, and Xiaohong Zhang, 2002. Reliable Wax Predictions for Flow Assurance. SPE 78324

E. J. Gudiña, L. R. Rodrigues, J. A. Teixeira, J. F. Pereira, J. A. Coutinho and L. P. Soares, 2012. Biosurfactant Producing Microorganisms and its Application to Enhance Oil Recovery at Lab Scale. SPE 154598

E. J. Gudiña, L. R. Rodrigues, J. A. Teixeira, J. F. Pereira, J. A. Coutinho, L. P. Soares and M. T. Ribeiro, 2012. Microbial Enhanced Oil Recovery by *Bacillus subtilis* Strains under Simulated Reservoir Conditions. SPE 161458

2.3 Consulting and industrial projects

1999 Bayer (Alemanha) – ‘Desenvolvimento de programa para previsão do Equilíbrio

Líquido-Vapor em soluções poliméricas

2001 Institut Français du Pétrole (França) – ‘Formação de depósitos parafínicos em jazigos petrolíferos a altas pressões’

2001-2002 Infochem (Reino Unido) – ‘Implementação de um módulo de ceras no simulador Multiflash’

2001-2002 Indasa (Portugal) – ‘Remoção de um solvente de um efluente gasoso’

2002-2003 Oilphase-DBR, Schlumberger (Canadá) ‘Implementation of wax precipitation model on PVTPro’

2002-2003 Asphalteam (Dinamarca) – ‘Previsão da formação de depósitos em petróleos do mar do Norte’

2004 Indasa (Portugal) – ‘Flexibilização de uma resina fenólica usada em abrasivos flexíveis’

2004 Repsol (Espanha) – ‘Caracterização de ceras e previsão da formação de depósitos num petróleo do Mediterrâneo’

2004-2005 Petrobrás (Brasil) – ‘Caracterização de petróleos das bacias brasileiras’

2005 Repsol (Espanha) – ‘Previsão da formação de depósitos parafínicos num petróleo da Repsol’

2005 Gesqua (Portugal) – ‘Dispersão de compostos orgânicos voláteis tóxicos numa linha de engarrafamento de gases’

2005 Imperial Oil (Canadá) – ‘Desenvolvimento de programa para previsão de depósitos parafínicos em combustíveis’

2006-2008 Repsol (Espanha) – Criação de rede de investigação em garantia de escoamento (Com Infochem, UK, Universidade de Pau, França, Universidade Rey Juan Carlos, Espanha)

2007 Haldor Topsoe (Dinamarca) – ‘Caracterização por RMN de óleos para produção de lubrificantes e correlação do seu índice de viscosidade com a composição química’

2009-2015 Partex (Portugal) – ‘Microbial Enhanced Oil Recovery’ (Em colaboração com a Universidade do Minho)

2010-2013 QREN 11551 - ‘Biorefinaria integrada na indústria da pasta e papel (BIIPP)’. Promotor: Raiz. PI UA – João Coutinho + Armando Silvestre

2012-2013 QREN Vale I&DT (01/SI/2011), - ‘Fresh Foam’. Promotor: Europuma. PI UA – Ana Barros

2013-2014 Prio (Portugal) - ‘Desenvolvimento de biolubrificantes baseados em óleos vegetais’

2014-2015 Galp (Brasil) - ‘Estudo da caracterização de um petróleo bruto e do seu comportamento PVT’

2015 S. C. Johnson (EUA) – ‘Estudos de formulação de detergentes usando líquidos iónicos’

2.4 Organization of conferences and workshops

Organização do 17th European Symposium in Applied Thermodynamics, Vilamoura, 13 a 16 de Maio de 1999

Organização do CHEMPOR’ 2001 8ª Conferência Internacional de Engenharia Química, Aveiro, 12 a 14 de Setembro de 2001

Organização do 11th International Symposium on Solubility Phenomena, Aveiro, 21 a 28 de Julho de 2004

Organização do Workshop em Poliuretanos: Aspectos fundamentais e processos de Fabrico, Aveiro, 30 de Setembro de 2005

Organização do Workshop Revestimentos: Rumo ao futuro, Aveiro, 30 de Setembro de 2005

Organização do 2nd Repsol meeting on Flow Assurance, Aveiro, 10 de Novembro de 2006

Organização do 9º Encontro Nacional de Química Física, Aveiro, 15 e 16 de Junho de 2009

Organização do 1st Iberian Meeting on Ionic Liquids, Aveiro, 15 e 16 de Junho de 2009

Organização do VIII CICECO meeting, Aveiro, 17 e 18 de Março de 2011.

Organização do EXIL Workshop Liquid Liquid Extraction with Ionic Liquids, 24-26 Abril 2014, Estrasburgo, França

Organização do 20th European Conference in Thermophysical Properties, Porto, Portugal, 31 de Agosto a 4 Setembro 2014.

2.5 Industrial seminars

‘Predictive Wilson: A model for the non-ideality of organic solid phases’ Institut Français du Pétrole, Rueil-Malmaison, França, Outubro 1995

‘The effect of desulphuration on the wax formation on diesels’ Instituto Mexicano do Petroleo, Mexico, Novembro 1999

‘WAXTracker, a program for the prediction of wax formation in crudes’, Calsep, Lyngby, Dinamarca, Agosto 2000

‘The use of solid phase activity coefficient models for the prediction of wax formation in crudes’, Infochem, Londres, December 2000

‘WAXTracker: A tool for flow assurance processes’ Oilphase, Houston, Abril 2001

‘Comportamento de produtos petrolíferos a baixas temperaturas e a acção dos aditivos’. Petrogal, Refinaria de Matosinhos, Julho 2002

‘Medição e modelação da formação de ceras parafínicas em crudes a altas pressões’ CENPES, Petrobras, Rio de Janeiro, Brasil, Abril 2004

‘Materiais de mudança de fase para isolamento térmico e armazenamento de energia’ Workshop ‘Energia na casa do Futuro’, Aveiro, Janeiro 2006

‘Funny things down there: Odd features of waxes in crudes’ Haldor Topsoe, Lyngby, Dinamarca, Junho 2007.

‘Minimizing interactions: A heterodox strategy of designing ionic liquids for gas sweetning’. Matgas, Barcelona, Setembro 2011

‘Waxes: From petroleum and fuels to biofuels. The low temperature behavior of biodiesel’ Infineum, Abingdon, Oxfordshire, Inglaterra. Janeiro 2012

‘From flow assurance to MEOR: E&P Research at Aveiro’ Petroleum Institute, Abu Dhabi, EAU, Abril 2012

‘Thermal behavior of FAMES and alkanes’ Infineum Biodiesel Crystallisation Meeting, Diamond, RALS, Oxfordshire, Inglaterra. Abril 2013