

CURRICULUM VITAE

Dr. Lienqueo, PhD in Chemical Engineering of University of Chile, works on the area of bioethanol production, especially in the evaluation of chemical pre-treatment of lignocellulosic material with ionic liquids (ILs) as a step previous to the hydrolysis of cellulose. Additionally, her research interests are in biorefinery processes and algal materials for bioethanol production.

FULL NAMES AND DATE OF BIRTH

María Elena Lienqueo Contreras
Birth date: 28.01.1967
Identification number: 10.243.748-9
Address: Beauchef 850, Santiago, 8370456, Chile.

Education and training

Chemical Engineering, 1992, University of Chile.
M.Sc. in Chemical Engineering, 1992, University of Chile
Ph. D in Chemical Engineering, 1999, University of Chile

DOCENTSHIPS

Associated Professor, University of Chile, Faculty of Physical and Mathematical Sciences

2006 - Present Associate Professor Department of Chemical and Biotechnology Engineering, Faculty of Physical and Mathematical Sciences, University of Chile.

2000 - 2006 Assistant Professor Department of Chemical and Biotechnology Engineering, Faculty of Physical and Mathematical Sciences, University of Chile.

SCIENTIFIC EXPERTICE

Biofuels production
Development of methods for protein isolation and purification.
Chromatographic processes modeling.
Use of artificial intelligence in bioprocesses

Currently professor of the following courses:

Metabolic engineering and Fermentation
Separation and Purification processes
Bioprocess technology practicum
Bioethics, legislation and validation
Process design workshop
Project workshop

RESEACH PROJECTS PARTICIPATION

2010-2011: Co-investigador , Conicyt VI-2010 065 "Support for international networking between Research Centers" Bioproducts Discovery & Development Centre (BDDC) University of Guelph-Biocomsa-U.de Chile.

2008-2011: Principal Investigator Fondecyt 1080143, Effects of hydrophobic polypeptide tag fusion on protein purification by hydrophobic interaction chromatography.

2008-2009 Principal Investigator Optimal treatment processes of lignocelluloses for bioethanol – consortium: OPBIO, CONICYT-AKA.

2008-2010:Co-Investigador Proyecto Domeyko_Energía. Optimization of the process for lignocellulose treatment toward the obtaining of bioethanol. Universidad of Chile.

2005-2008. Co-Investigator Fondef Project 1374 Investigation, development and production of commercial cryophilic proteases and lipases from krill and antarctic bacteria..

2003-2006 Principal Investigator Fondecyt Project 1030668 Study of the effect of surface hydrophobicity amino acidic distribution on protein chromatographic behavior.

2003-2005 Principal Investigator GRICES/CONICYT (2002-6-152)Design and prediction of protein purification by HIC: Study of Mutant lipases.

2002-2005. Co-Investigator Fondef Project 1031 Investigation, development and production of cryophilic proteases and lipases from marine sources.

2001-2003 Principal Investigator Fondecyt Project 1010702 "Optimization of the conditions of operation of chromatographies of hidrophobic interaction (HIC) to be used in protein purification".

1998-2000. Co-Investigator Fondef Project 97-1025 "Investigation and development of comercial cryophilic proteases and quitina like adsorbent of metals".

1998-2000. Collaborator Project. Project Molecular Biology for the synthesis of a new recombinant proteins. Presidential Chair in Sciences Dr. Juan Asenjo.

1995-1998. Co-Researcher Fondecyt Project 1950620 "Synthesis and Overproduction of A Recombinant Lytic Glucanase: Mathematical Modelling, Purification and Use".

1993-1994. Visiting Scientist in Biochemical Engineering Laboratory, University of Reading, England. Developing correlations to be implemented in an expert system of protein separation, under the supervision of the Dr. Juan Asenjo.

1992. Research Assistant, Project Foundation for the Transference of Technology CODELCO CT-S-6342 "Elimination of Molybdenum from Mine Effluents", Biochemical Engineering Laboratory, Department of Chemical Engineering, University of Chile.

1990–1991. Undergraduate research student, Project Fondecyt 1276-90 " Development of Bacterial Lixiviation Proceses for the Recovery of Copper and Gold from Minerals and Concentrated.", Department of Chemical Engineering, University of Chile.

SUPERVISION OF PRE AND POST-GRADUATED STUDENTS

1 PhD Theses,

3 MSc. Theses (3 in course)

24 Undergraduate Theses (4 in course)

OTHERS

Regular referee of scientific periodicals in biotechnology area.

Grants reviewer for FONDECYT and MECESUP (Chile)

PRIZES AND DISTINCTIONS

Universidad de Chile, Doctoral Fellowship, 1996

AGCI-Mideplan, Presidente de la República Scholarship, 1994

"Roberto Ovalle Aguirre" Prize Institute of Engineers, for the best thesis of 1993

PUBLICATIONS

25 publications in principal journals (ISI) with peer and 14 publications in the last 5 years (2005-2010)

1. R. Carmona, A. Garcia, O. Salazar, Lienqueo M.E. (2011) Liquid biofuels in Chile: The current status, *Energy*, **36** (4):2077-2084.
2. Lienqueo M.E., C. Shene, A. Quiroga, O. Salazar, J.C. Salgado, J.A. Asenjo. (2010) Experimental validation of mathematical model predictions for the selection of optimal polypeptide tags to assist the purification of recombinant proteins, *Separation Science and Technology* Volume 45, Issue 15, 2010, Pages 2153 – 2164.
3. R. Pezoa, V. Cortinez, S. Hyvärinen, M. Reunanen, J. Hemming, Lienqueo M.E., O. Salazar, R. Carmona, A. Garcia, D. Yu. Murzin, J.-P. Mikkola. (2010) The use of ionic liquids in the pretreatment of forest and agricultural residues for the production of bioethanol” *Cellulose Chem. Technol.*, **44** (4-6), 165-172
4. Carmona R, Lienqueo M.E., Salazar O, García A (2009). “Bioenergy II: Biological Pretreatment with Fungi as a Tool for Improvement of the Enzymatic Saccharification of *Eucalyptus globulus* Labill to Obtain Bioethanol” *International Journal of Chemical Reactor Engineering* **7** A77.
5. Mahn A, Lienqueo M.E., Salgado J.C. (2009) “Methods of calculating protein hydrophobicity and their application in developing correlations to predict hydrophobic interaction chromatography retention. *J Chromatogr A*. 1216 (10): 1838-1844.
6. Lienqueo M.E., J.C. Salgado, O. Giaverini and J.A. Asenjo (2009) “Computer aided design to select optimal polypeptide tags to assist the purification of recombinant proteins”. *Separation and Purification Technology* **65** : 86–94
7. Lienqueo M.E., C. Shene, and J.A. Asenjo (2008) “Optimization of Hydrophobic Interaction Chromatography using a Mathematical Model of Elution Curves of a Protein Mixture” *J Mol Recognit* ;**22**(2):110-120
8. Lienqueo M.E., Salazar O., Calado CRC., L.P. Fonseca, J.M.S. Cabral, (2008) “Influence of tryptophan tags on the purification of cutinase, secreted by recombinant *S. cerevisiae*, using cationic expanded bed adsorption and HIC” *Biotechnol Lett* **30**: 1353-1358.
9. Lienqueo M.E., Salazar O., Henriquez K., Calado CRC., L.P. Fonseca, J.M.S. Cabral, (2007) “Prediction of retention time of hydrophobic peptide tagged cutinases in HIC” *Journal Chromatography A* **1154**: 460-463.
10. Lienqueo M.E., A. Mahn, J.C. Salgado, J.A. Asenjo (2007) “Current insights on protein behaviour in hydrophobic interaction chromatography”, *Journal Chromatography B* **489**:53-68.
11. Mahn A, Lienqueo M.E., Asenjo J.A., (2007) “Optimal operation conditions for protein separation in hydrophobic interaction chromatography”, *Journal Chromatography. B* **849**:263-242.
12. Lienqueo M.E., A. Mahn, G. Navarro, J.C. Salgado, T. Perez-Acle, I. Rapaport, J.A. Asenjo (2006) “Novel approaches for predicting protein retention time in hydrophobic interaction chromatography”, *J Mol Recognit*. Jul-Aug; **19**(4):260-9.
13. Lienqueo M.E., Mahn A. (2005) “Predicting Protein Retention Time in Hydrophobic Interaction Chromatography”, *Chemical Engineering and Technology* **28**(11):1326-34.
14. Simeonidis E, Pinto J.M, Lienqueo M.E., Tsoka S, Papageorgiou LG. (2005) “MINLP Models for the Synthesis of Optimal Peptide Tags and Downstream Protein Processing” *Biotechnology Progress* **21**(3):875-884.
15. Mahn A, Lienqueo M.E., Asenjo J.A., (2004) “Effect of surface hydrophobicity distribution on retention of ribonucleases in hydrophobic interaction chromatography”; *Journal Chromatography. A* **1043**, pp. 47-55.
16. Lienqueo M.E., Mahn A.V., Vásquez L., Asenjo J.A (2003) “A methodology for predicting the separation of proteins by Hydrophobic Interaction Chromatography and its application to a cell extract, *Journal Chromatography A* **1009**:189-196.
17. Lienqueo M.E., Mahn, A.V., Asenjo, J.A. “Mathematical correlations for predicting protein retention time in Hydrophobic Interaction Chromatography”, *Journal Chromatography A* **978**: 71-79, 2002.
18. E. V. Alvarez, Lienqueo M. E., J. M. Pinto “Optimal Synthesis of Protein Purification Processes” *Biotechnology Progress* **17**:685-696, 2001.

19. Salazar O., Molitor J., **Lienqueo M.E.**, Asenjo J.A "Overproduction, purification and characterization of b-1.3-glucanase type II in E.coli" Protein Expression and Purification, 23: 219-225, 2001.
20. E. V. Alvarez, **Lienqueo M. E.**, J. M. Pinto "Optimal Synthesis of Multistep Protein Purification Processes" Latin American Applied Research 31:373-381, 2001.
21. **Lienqueo M. E.** Juan A. Asenjo "Use of expert systems for the synthesis of downstream protein processes" Computers & Chemical Engineering ,24: 2339 – 2350, 2000.
22. **Lienqueo M.E.**, J.C. Salgado, J.A. Asenjo "An Expert System for selection of protein purification processes: Experimental Validation", J.Chem.Technol Biotechnol, 74: 293-299, 1999.
23. **Lienqueo,M.E.**, Leser, E.W., Asenjo, J.A "An Expert System for the Selection and Synthesis of Multistep Protein Separation Processes" Comp. Chem. Eng., 20: S 189- 194, 1996.
24. Leser, E.W., **Lienqueo,M.E.**, Asenjo, J.A "Implementation in an Expert System of Selection Rationale for Purification Processes for Recombinant Proteins.", Ann. N.Y.Acad of Sci., 782: 441-455, 1996.
25. Herrera,L., Hernadez,J., **Lienqueo,M.E.**, Bravo,L. y Searle,J.P." Adherencia de D. desulfuricans a superficies sólidas", Anales de Microbiología, 1: 37 – 40,1993.

National and international conferences

Internacional

1. T. Niklitschek , O. Salazar, R. Carmona, A. Garcia and **Lienqueo ME** Comparison of SHF and SSF processes from forest residues pretreated with ionic liquid to obtain bioethanol. UK-Brazil-(Chile) Frontiers of Science, Itatiba, Sao Paulo, August 27th-30th, 2010.
2. O. Salazar, I. Gajardo, A. Salinas, M. Vega, **Lienqueo ME**, R. Carmona and A.García Heterologous expression and characterization of novel cellulases from white rot fungi 14th International Biotechnology Symposium and Exhibition. Biotechnology for the Sustainability of Human Society, 14th-18th September 2010, Rimini, Italy.
3. **M. Lienqueo**, R. Pezoa, V. Cortínez, S. Hyvärinen, T. Niklitschek, O.Salazar, R. Carmona, A García, D. Yu. Murzin, J.-P. Mikkola Use of ionic liquids for the production of second generation bioethanol ICERE 2 2010. International Conference and Fair on Education, Research & Employment in the Renewable Energy Sector. Santiago, Chile, 11th-12th November 2010:
4. R. Pezoa ,S. Hyvärinen, M. Reunanen, J. Hemming , **Lienqueo M.E.** , D. Murzin, J.-P. Mikkola The use of ionic liquids in the pretreatment of agricultural residues for the production of bioethanol. 2nd Nordic Wood Biorefinery Conference, 2-4 de Septiembre 2009, Helsinki, Finlandia.
5. V.Cortinez ,S. Hyvärinen, M. Reunanen, J. Hemming, **Lienqueo M.E.**, D. Murzin, J.-P. Mikkola, Evaluation of ionic liquid mediated pretreatment for the enzymatic hydrolysis of forest residues to obtain bioethanol.2nd Nordic Wood Biorefinery Conference, 2-4 de Septiembre 2009, Helsinki, Finlandia.
6. **Lienqueo M.E.**, J.A. Asenjo Identification of criteria for selection of optimal hydrophobic tails for protein purification by HIC. Affinity 2009, Reykjavik, Islandia, July 12-16, 2009.
7. **Lienqueo M.E.**, C.Shene ,O.Salazar,J.C. Salgado, J.A. Asenjo . Experimental validation of mathematical model predictions for the selection of optimal polypeptide tags to assist the purification of recombinant proteins. International Conference on Biopartitioning and Purification (BPP2009) Londres, Inglaterra, Junio 2009.
8. R. Carmona, **Lienqueo M.E.**, O. Salazar, A.García Biological pretreatment with fungi as a tool for improvement of the enzymatic saccharification of eucalyptus globulus labill to obtain bioethanol International Congress Bioenergy - II: "Fuels and Chemicals from Renewable Resources" in Rio Janeiro March 2009.
9. **Lienqueo M.E.**, Pezoa R., Cortínez V., Salazar O. Evaluation of pretreatment with ionic liquids for enzymatic hydrolysis of lignocellulosic materials to obtain bioethanol. International Congress Bioenergy - II: "Fuels and Chemicals from Renewable Resources" in Rio Janeiro March 2009.
10. O. Salazar, R.Marin, **Lienqueo M.E.** Cold active cellulase for bioethanol production from lignocellulosics under a simultaneous saccharification and fermentation (ssf) process International Congress Bioenergy - II: "Fuels and Chemicals from Renewable Resources" in Rio Janeiro March 2009.

11. A.García, S.Hyvärinen, R.Carmona, **Lienqueo M.E.**, O. Salazar. Enfoque cromatográfico aplicado al pretratamiento biológico de lignocelulosas con miras a la obtención de bioetanol II Latin American Congress Biorefinery, Materials and Energy, Concepción, Chile, 4-6 mayo, 2009.
12. C. Fritz, A. García, O. Salazar, **Lienqueo M.E.**, R. Silva, R Carmona Estudio del efecto del pretratamiento con hongos de pudrición blanca (hpb) sobre madera de lenga (nothofagus pumilio (poep. et endl.) krasser) en el rendimiento de azúcares para producir bioetanol II Latin American Congress Biorefinery, Materials and Energy, Concepción, Chile, 4-6 may, 2009.
13. V. Cortinez, R. Pezoa, O. Salazar, A. García, R. Carmona, **Lienqueo M.E.** Uso de líquidos iónicos en el pretratamiento de materiales lignocelulósicos para la producción de bioetanol de segunda generación II Latin American Congress Biorefinery, Materials and Energy, Concepción, Chile, 4-6 may, 2009.
14. A. Guerrero, **Lienqueo M.E.**, O. Salazar Identification of cellulase enzymes for bioethanol production from lignocellulosic biomass II Latin American Congress Biorefinery, Materials and Energy, Concepción, Chile, 4-6 may, 2009.
15. A. García, R. Carmona, **Lienqueo M.E.**, O Salazar Current situation of bioethanol and biodiesel in Chile 5th Dubrovnik conference on sustainable development of energy water and environment systems, Dubrovnik, Croacia, Octubre 2009.
16. A. Salinas, A. Guerrero, I. Gajardo; M. Vega; **Lienqueo M.E.**; R. Carmona; A. Garcia; R. Silva, O. Salazar Identification and cloning of novel cellulase genes from white rot fungi. 14º European Congress on Biotechnology; Symbiosis: Science Industry and Society, September 13-16 Barcelona, España.
17. O. Salazar, M. Robinson, C. Quilodran, C. Montecinos, **Lienqueo M.E.** Hydrophobic Tags for Protein Purification by HIC: Quantitative Criteria for Selection 14º European Congress on Biotechnology; Symbiosis: Science Industry and Society, September 13-16 Barcelona, España.
18. A.García, S. Hyvärinen, J. Hemming, R. Carmona, **Lienqueo M.E.**, O Salazar, D Murzin and J-P Mikkola. Chromatographic focus applied to the biological pretreatment of lignoceluloses in order to obtain bioethanol.Polysaccharides as a source of advanced materials, September 21-24,2009 Turku, Finland.
19. R.Carmona, C.Fritz, A. García, O. Salazar, **Lienqueo M.E.** Effect of the pretreatment of Nothofagus pumilio wood with white rot fungi on reducing sugars yields in order to produce bioethanol Polysaccharides as a source of advanced materials, September 21-24,2009 Turku, Finland.
20. Acevedo F., Rubilar O., Tortilla G., **Lienqueo M.E** and Diez M.C. Purification and partial characterization of manganese peroxidase from the white rot fungi Anthracophyllum discolor. 3rd international conference. Enzymes in the environment: activity, ecology, applications. 15 – 19 July 2007, Viterbo, Italia.
21. Carmona R., R. Silva, C. Vicuña, F. Villaseñor, **Lienqueo M.E.** y O. Salazar. 2007. Efficiency of enzymatic saccharification of wood of Eucaliptus globulus labil, pre-treated with white rot fungus in order to obtain bioethanol Actas III Congreso Iberoamericano de Productos Forestales Madereros y no Madereros. ISSN: 1851-0973, 3 al 5 de Julio, Buenos Aires. Argentina.
22. **Lienqueo M.E.**, C. Shene, and J.A. Asenjo “Mathematical Modeling of Elution Curves for a Protein Mixture in Hydrophobic Interaction Chromatography” 17th Affinity Chromatography Meeting, Affinity 2007, New York, USA, 8-12 July 2007.
23. A. Mahn, **Lienqueo M.E.**, G. Zapata-torres, G. Navarro, J.A. Asenjo. Retention time prediction in hydrophobic interaction chromatography based on a protein’s surface hydrophobicity. International conference on biopartitioning and purification. Lisboa, portugal, Junio 2007.
24. **Lienqueo M.E.**, J.C. Salgado, O. Giaverini and J.A. Asenjo. How to select optimal polypeptide tags to assist the purification of recombinant proteins. International Conference on Biopartitioning and Purification. Lisboa, Portugal, junio 2007
25. Mahn A, **Lienqueo ME** (2005) “Use of automated docking for predicting chromatographic behaviour of proteins in HIC” 12th European Congress on Biotechnology- ECB12, Copenhagen, Dinamarca, 21-24 Agosto 2005. Presentación Oral
26. **Lienqueo M.E.**, A. Mahn , J.C. Salgado , I. Rapaport , J.A. Asenjo (2005) “Predicting protein retention time in hydrophobic interaction chromatography” 16th Affinity Chromatography Meeting, Affinity 2005, Uppsala, Suecia, 14-19 Agosto 2005.
27. **Lienqueo M.E.**, Budini S, Cortes H.I. , Salazar O.(2004) “Selection of optimal mutation for protein purification by Hydrophobic Interaction Chromatography” 12th International Biotechnology Symposium and Exhibition, Santiago, Chile, 12-17 Octubre de 2004.

28. J.A.Asenjo, B.A. Andrews, **Lienqueo M.E.**, (2004) "Is there a rational method to purify proteins?: From Expert systems to proteomics" 12th International Biotechnology Symposium and Exhibition, Santiago, Chile, 12-17 Octubre de 2004. Presentación Oral.
29. **Lienqueo M.E.**, J.M.S. Cabral, C.R.C. Calado, A.Mahn, K.Henríquez, O. Salazar (2004) "Effect of Peptide Tags on Protein Retention in Hydrophobic Interaction Chromatography", 5 European Symposium on Biochemical Engineering Science, ESBES-5, Stuttgart, Alemania, 8-11 de Septiembre de 2004.
30. A.Mahn, **Lienqueo M.E.**, J. A.Asenjo (2003) "Effect of Surface Hydrophobicity Distribution on Protein Retention in Hydrophobic Interaction Chromatography", 23rd International Symposium & Exhibit on the Separation of Proteins, Peptides & Polynucleotides, Delray Beach, Florida, Estados Unidos, 9-12 Noviembre 2003. Presentación Oral
31. **Lienqueo M.E.**, A. Olivera, A. Mahn, J.A. Asenjo (2003) "Validation of correlation for predicting protein retention time in HIC: Case of protein with unknown 3D structure", 11th European Congress on Biotechnology, Basilea, Suiza, 24-29 Agosto 2003.
32. **Lienqueo M.E.**, Mahn A. V. and Asenjo J.A (2002) "Optimal operational conditions for protein purification using Hydrophobic Interaction Chromatography", 22nd International Symposium on the Separation of Proteins, Peptides and Polynucleotides, Heidelberg, Germany, 10 - 13 November 2002, Presentación Oral.
33. Mahn, A.V., **Lienqueo, M.E.**, and Asenjo, J.A. (2002) Prediction of Protein Retention Time in Hydrophobic Interaction Chromatography: Validation of Mathematical Correlations European Symposium on Biochemical Engineering Science ESBES-4 - Life: Science and Technology, Delf, Holanda, 28-31 Agosto 2002.
34. **Lienqueo M.E.**, Mahn A.V. and Asenjo J.A. (2001) "Mathematical correlations for predicting protein retention time in hydrophobic interaction chromatography, 21st International symposium on the separation of proteins, Peptides and Polynucleotides, Orlando, 11-14 Noviembre 2001.
35. **Lienqueo, M.E.**, Mahn, A.V. and Asenjo J.A. (2001) "Evaluation of the hydrophobicity of proteins for predicting retention time in hydrophobic interaction chromatography" Biochemical Engineering XII, Sonoma, USA, 10-15 Junio, 2001
36. J.Molitor, B.Ribbeck, O.Salazar, **Lienqueo M.E.**, B.Andrews, J.A. Asenjo (2000) "High density cell culture for optimizing recombinant glucanase synthesis in E.coli" 11th International Biotechnology Symposium and Exhibition, Berlin, 3-8 September 2000.
37. **Lienqueo M.E.**, J.A. Asenjo (1999) "Use of Expert System for the synthesis of downstream protein processes" II AN American _Workshop on Process Systems Engineering, Santa Fe, Argentina, September 2-3, 1999. Participación como "Invited Lecture" en la sesión " AI and Optimization Supporting Tools".
38. J. M. Pinto, E.V. Alvarez, **Lienqueo M.E.** (1999) "Optimal synthesis of multistep protein purification processes" II Congresso de Engenharia de Processos do MERCOSUL, 30 de Agosto a 02 de Septiembre, Florianópolis - Santa Catarina - Brasil, 1999.
39. **Lienqueo M.E.**, J.C. Salgado, and J.A. Asenjo "Design of an Expert System for selection of protein purification processes: comparison between different selection criteria" 7 th International Conference on Computer Applications in Biotechnology, 31 Mayo- 4 Junio, Osaka, Japón, pp 321-326, 1998.
40. **Lienqueo M.E.**, J.C. Salgado, E.W.Leser, J.A. Asenjo (1997) "An Expert System for the selection of multistep protein purification processes : Criteria for Purification" Biochemical Engineering X, 18-23 Mayo, Kananaskis, Canada, pp PI 21, 1997.
41. J.A.Asenjo, F.Vazquez, C. Garrido, **M.E.Lienqueo**, B.A.Andrews (1996) "Development of an Expert System: Use of physico-Chemical properties of proteins for the selection of purification processes" Recovery of biological Product VIII, 20-25 Octubre, Tucson, Arizona, pp P5, 1996.
42. J.A.Asenjo, F.Vazquez, C. Garrido, **M.E.Lienqueo**, B.A.Andrews (1996) "Use of physico-Chemical properties of proteins for the selection of purification processes" 10th International Biotechnology symposium, 20-30 Agosto, Sydney, Australia, pp 138, 1996

National

1. C. Fritz, R. Carmona, **Lienqueo ME**, O. Salazar and A. García. Yield of enzymatically fermentable reducing sugars from Eucalyptus globulus and Nothofagus pumilio residues, treated with white rot fungi and diluted acid 5th Chilean Congress of Forest Sciences, Temuco, Chile, October 27th-29th, 2010.
2. V. Cortinez, S. Hyvärinen, M. Reunanen, J. Hemming, D. Yu. Murzin, J.-P. Mikkola, **Lienqueo M.E.** Pretreatment with ionic liquids of Lenga (*Nothofagus pumilio*) and Eucalyptus (*Eucalyptus nitens*) residues for production of second generation bioethanol. XVII Congreso de Ingeniería

- Química, Viña del Mar, 25-28 Octubre 2009.
3. R. Pezoa, S. Hyvärinen, M. Reunanen, J. Hemming, D. Yu. Murzin, J.-P. Mikkola, **Lienqueo M.E.**, Use of ionic liquids in the pretreatment of agronomic residues for production of second generation of bioethanol XVII Congreso de Ingeniería Química, Viña del Mar, 25-28 Octubre 2009.
 4. **Lienqueo M.E.**, Salazar O., Henríquez K., Calado C.R.C., Cabral J.M.S. "Efecto de extremos polipéptidos hidrofóbicos en la purificación de cutinasas por cromatografía de interacción hidrofóbica" XVI Congreso Chileno de Ingeniería Química, 1 -4 de noviembre 2005, Pucón, Chile.
 5. **Lienqueo M.E.**, Henríquez K., Salazar O., Calado C.R.C., Cabral J.M.S. "Predicción de los tiempos de retención de cutinasas con extremos polipéptidos en cromatografía de interacción hidrofóbica" XVI Congreso Chileno de Ingeniería Química, 1 -4 de noviembre 2005, Pucón, Chile.
 6. **Lienqueo, M.E.**, Mahn, A.V., Asenjo, J.A. y Vásquez L "Optimización de las condiciones de operación de Cromatografía de Interacción Hidrofóbica para purificación de proteínas" XV Congreso Chileno de Ingeniería Química, 22 - 25 Octubre 2002, Punta Arenas, Chile
 7. **Lienqueo M.E.** y J.A. Asenjo "Criterios de Selección de Secuencias Óptimas de Purificación de Proteínas", IV Congreso Nacional de Biotecnología", 30 de Septiembre-3 de Octubre, Talca, Chile, pp 113, 1998 .
 8. J.C. Salgado, **Lienqueo M.E.** y J.A. Asenjo "Un sistema experto para el diseño de procesos de Recuperación y Purificación de Proteínas: Uso de Interfaces gráficas inteligentes", IV Congreso Nacional de Biotecnología", 30 de Septiembre-3 de Octubre, Talca, Chile, pp 111, 1998.
 9. M. Zuccolo, **Lienqueo M.E.**, B.A. Andrews y J.A. Asenjo "Purificación, Caracterización y Utilización de b-1,3,glucanasa de *Bacillus Subtilis ToC46(pPFF1)*", XX Reunión Anual de la Sociedad de Bioquímica y Biología Molecular, 24-26 Septiembre 1997, Valdivia, Chile, pp54, 1997.
 10. **Lienqueo M.E.**, J.C. Salgado J.A. Asenjo. "Uso de las propiedades fisicoquímicas de las proteínas para el diseño de procesos de purificación cromatográfica" XII Congreso Chileno de Ingeniería Química, Universidad Federico Santa María, Viña del Mar, Octubre, pp 353-358, 1996. Presentación Oral.
 11. J.C. Salgado, **Lienqueo M.E.** , J.A. Asenjo "Diseño de un sistema experto para la selección y obtención de secuencias óptimas de operaciones unitarias en la industria de procesos. XII Congreso Chileno de Ingeniería Química, Universidad Federico Santa María, Viña del Mar, Octubre 1996, pp 637-642, 1996.
 12. Herrera, L., **Lienqueo M.E.**, Bravo, L. y Searle, J.P. (1992) "Adherencia de D. desulfuricans a superficies sólidas ". Actas del XV Congreso Chileno de Microbiología. Valdivia. Octubre 1992, pp 57
 13. **Lienqueo M.E.**, Casas, J. y Badilla, R. "Cinética de Lixiviación de un Concentrado sulfurado de cobre con Cloruro Férrico". X Congreso Chileno de Ingeniería Química. Santiago. Septiembre, 1992.

María Elena Lienqueo

Associated Professor

Phone (office): +56-29784709

(Movil): + 971 26991

e-mail: mlienque@ing.uchile.cl