L. ANTONIO ESTÉVEZ
(LUIS ANTONIO ESTÉVEZ DE VIDTS)

1. Personal Data

Affiliation: University of Puerto Rico, Mayagüez, Department of Chemical Engineering
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E-mail: antonio.estevez@upr.edu

2. Educational Background

Ph.D. in Engineering, Major in Chemical Engineering, University of California, Davis, 1983
M.Sc. in Petrochemical Processes, Central University of Venezuela, Caracas, 1977
Ingeniero Químico (B.S. in Chemical Engineering), University of Santiago (formerly Technical University of the State), Chile, 1975
Pharmaceutical Engineering Course, University of Puerto Rico/Université de Louvain (Belgium), 1992-1994

3. Professional Experience

University of Puerto Rico, Mayagüez Campus, Mayagüez, Puerto Rico:
- Professor, Department of Chemical Engineering, 1995-present
- Interim Dean of Administration, April-May 2013
- Associate Dean of Administration, August 2012-April 2013
- Associate Dean of Engineering for Administrative Affairs, 2008-2011
- Member of the Academic Senate, 2004-2007
- Associate Dean of Academic Affairs and Director of Graduate Studies, 2001-2003
- Associate Director of the Department of Chemical Engineering, 1991-1995
- Associate Professor, Department of Chemical Engineering, 1990-1995
- Visiting Professor, Department of Chemical Engineering, 1987-1990

Universitat Rovira i Virgili, Department of Chemical Engineering, Tarragona, Catalunya, Spain:
- Visiting Professor, March 2010

Mississippi State University, Dave C. Swalm School of Chemical Engineering, Starkville, MS:
- Visiting Professor, August 2007-July 2008 (Sabbatical leave)
- Visiting Professor, summer 2006, summer 2007, summer 2010, and January, April, and summer 2011

University of Antofagasta, Department of Chemical Engineering, Antofagasta, Chile:
- Visiting Professor, February 2003

Cornell University, School of Chemical Engineering, Ithaca, New York:
- Visiting Professor, May 1996-August 1997 (Sabbatical leave)
- Visiting Professor, summer 1995, summer 1998, summer 1999, and summer 2000

University of Puerto Rico, School of Pharmacy, Medical Sciences Campus, San Juan, PR:
- Associate Professor (Part-Time), 1990

Simón Bolívar University, Department of Thermodynamics and Transport Phenomena, Caracas:
- Associate Professor, 1984-1986
- Assistant Professor, 1976-1984

University of Santiago, Department of Chemical Engineering, Santiago, Chile:
- Instructor, 1973-1975

University of Chile, Department of Chemical Technology, Santiago, Chile:
- Instructor (Part-Time), 1975

4. Awards and Honors

Member, International Advisory Board (2022), 11th World Congress of Chemical Engineering, Buenos Aires, Argentina, August 2022.

Marquis Who's Who "*Albert Nelson Marquis Lifetime Achievement Award*," given for having had many esteemed years of professional accomplishments, while making lasting contributions to the awardee's field of endeavor." November 20, 2018.

Member, International Advisory Board (2017), 10th World Congress of Chemical Engineering, Barcelona, Spain, October 1-5, 2017.

Nominee for AIChE Director, the Board of Directors of American Institute of Chemical Engineers elects 4 Directors each year who serve a 3-year term (2016).

Pioneer of Diversity Award, awarded by the American Institute of Chemical Engineers' Minority Affairs Committee (2015). Award conferred in recognition of distinguished service to AIChE and MAC, and for the guidance in helping create a more inclusive Institute and profession. Award conferred on November 9, 2015 in Salt Lake City, UT.

Fellow, American Institute of Chemical Engineers (2013). First and only AIChE Fellow in Puerto Rico. Award conferred by the Board of Directors on September 19, 2013.

Eminent Engineer, Tau Beta Pi–The Engineering Honor Society, Puerto Rico Alpha Chapter (2011). This distinction is given to individuals who have achieved eminence in engineering on the basis of exemplary character.

Eminent Engineer, awarded by the American Institute of Chemical Engineers' Minority Affairs Committee (2011). Award conferred to a chemical engineer that: belongs to an underrepresented minority group; has served as mentor and role model to underrepresented minorities in engineering and other related areas in education or business environment; has outstanding technical accomplishments and distinguished service to the profession; and is well-respected and recognized within the engineering communities and underrepresented minorities engineering or science organizations. Award conferred on October 17, 2011 in Minneapolis, MN.

2007 Distinguished Alumnus, University of Santiago, Chile, (USACh), Department of Chemical Engineering, for "standing out with relevant contributions in the engineering field." (October 2007)

Listed in 60th Diamond Edition of *Who's Who in America*, edited by Marquis Who's Who LLC, New Providence, New Jersey. ISBN 0837969905 (2006)

Víctor Márquez Award given by the Interamerican Confederation of Chemical Engineering for exceptional achievements both in chemical engineering and in contribution to a member society of the Interamerican Confederation of Chemical Engineering. (September 2000)

Listed in *Who's Who among Hispanic Americans*, edited by Gale Research Inc., Detroit, Michigan. ISBN 081037451X (1990)

Fellowship from UNESCO-University of Concepción (Chile) to attend the *First Latin American Symposium on Fluid Properties and Phase Equilibrium for Chemical Process Design*," held in Concepción, Chile (2-6 March 1987).

Scholarship of the program BID-CONICET (Argentina) to attend the *International Course on Advances in Phase Equilibria for Chemical Process Design*, held at Universidad Nacional del Sur, Bahía Blanca, Argentina (29 July - 3 August 1984).

Scholarship from FONINVES (Venezuela) to pursue graduate studies leading to a Ph.D. in Engineering at the University of California, Davis (January 1980 -October 1983).

Certificate of Acknowledgment to Academic Excellence, awarded by Atlantic Richfield Co. (ARCO) to the best first-year, graduate students of the University of California, Davis, Department of Chemical Engineering (25 February 1981).

5. Book Chapter Authored

N. D. Ramírez-Beltrán, H. Rodríguez, and L. A. Estévez, *Drug Stability*, Chapter 7.2, pp. 583-639, in *Pharmaceutical Manufacturing Handbook: Regulations and Quality*, Edited by Shayne Cox Gad, Wiley-Interscience, Hoboken, NJ (2008). ISBN13: 978-0-470-25959-7

6. Publications

1. R. A. Carreño-Chávez, L. A. Estévez, "Numerical Solution of the Free-Convection, Boundary-Layer Equations involving Supercritical Fluids with Variable Thermal Expansivity," *Intern. J. Heat & Mass Transfer* (in preparation)
2. S. A. Sajadiana, L. A. Estévez, M. Askarizadehd, B. Honarvard, "Experimental Solubility of Nilotinib Hydrochloride in Supercritical Carbon Dioxide and Models Comparison," *J. Molecular Liq.*, submitted (2021). **DOI**: ---
3. L. A. Estévez, F. J. Colpas, E. A. Müller, "A Simple Thermodynamic Model for the Solubility of Thermolabile Solids in Supercritical Fluids," *Chem. Eng. Sci.*, **232**, 116268 (2021). **DOI**: 10.1016/j.ces.2020.116268
4. A. L. Ramos Figueroa, R. A. Carreño-Chávez, L. A. Estévez, "Thermal Expansivity of Near- and Supercritical Fluids: Equation-of-State Models and Calculations for Carbon Dioxide and C1 to C4 Normal Alkanes," *J. Chem. Eng. Data*, **64**, 2126-2133 (2019). **DOI**: 10.1021/acs.jced.8b01069
5. E. Vyhmeister, H. Valdés-González, L. Reyes-Bozo, R. Rodríguez-Maecker, A. Muscat, L. A. Estévez, D. Suleiman, "In-Situ FTIR Kinetic Study in the Silylation of Low-k Films with Hexamethyldisilazane Dissolved in Supercritical CO_2," *Chem. Eng. Commun.*, **203**, 908-916 (2016). **DOI**: 10.1080/00986445.2015.1124098
6. E. Vyhmeister, L. Reyes-Bozo, R. Rodríguez-Maecker, A. Muscat, D. Suleiman, L. A. Estévez, "Study of low-k film functionalization and pore sealing using chlorosilanes dissolved in supercritical carbon dioxide," *Chem. Eng. Commun.*, **203**, 880-889 (2016). **DOI**: 10.1080/00986445.2015.1116068
7. E. D. Revellame; W. E. Holmes; R. Hernandez; W. T. French; A. Forks; T. Ashe; L. A. Estévez, "Experimental measurement and prediction of (liquid + liquid + liquid) equilibrium for the system (n-hexadecane + water + triacetin)," *J. Chem. Thermodyn.*, **95**, 105-110 (2016). **DOI**: 10.1016/j.jct.2015.11.011
8. E. Vyhmeister, L. Reyes-Bozo, H. Valdés-González, J. L. Salazar, A. Muscat, L. A. Estévez, D. Suleiman, "In-Situ FTIR experimental results in the silylation of low-k films with hexamethyl-disilazane dissolved in supercritical carbon dioxide," *J. Supercritical Fluids*, **90**, 134-143, (2014). **DOI**: 10.1016/j.supflu.2014.01.019
9. E. D. Revellame; W. E. Holmes; R. Hernandez; W. T. French; L. Lerma; A. Forks; T. Ashe; L. A. Estévez, "Experimental Measurement and Modeling of Type 3 Ternary System containing Decane + Water + Triacetin," *J. Chem. Thermodyn.*, **67**, 21-27 (2013). **DOI**: 10.1016/j.jct.2013.07.009
10. E. Vyhmeister, H. Valdés-González, A. J. Muscat, D. Suleiman, L. A. Estévez, "Surface Modification of Porous Silicon-Based Films Using Dichlorosilanes Dissolved in Supercritical Carbon Dioxide," *Ind. Eng. Chem. Res.*, **52**, 4762-4771 (2013). **DOI**: 10.1021/ie302686e

11. A. H. Mondala, R. Hernandez, W. T. French, L. A. Estévez, M. Meckes, M. Trillo, J. Hall, "Preozonation of primary-treated municipal wastewater for reuse in biofuel feedstock generation," *Environmental Progress & Sustainable Energy*, **30**(4), 666-674 (2011). **DOI**: 10.1002/ep.10514
12. D. Sparks, L. A. Estévez, R. Hernández, J. McEwen, T. French, "Solubility of Small-Chain Carboxylic Acids in Supercritical Carbon Dioxide," *J. Chem. Eng. Data*, **55**, 4922-4927 (2010). **DOI**: 10.1021/je100504h
13. D. Sparks, L. A. Estévez, R. Hernández, "Supercritical-Fluid-Assisted Oxidation of Oleic Acid with Ozone and Potassium Permanganate," *Green Chemistry*, **11**(7), 986-993 (2009). **DOI**: 10.1039/b816515g
14. N. D. Ramírez-Beltrán, H. Rodríguez-Vallés, L. A. Estévez, and H. Duarte, "A Neural Network Approach to Estimate Activity Coefficients in Binary Systems," *Canad. J. Chem. Eng.*, **87**(5), 748-760 (2009). **DOI**: 10.1002/cjce.20212
15. E. Vyhmeister, A. Muscat, D. Suleiman, L. A. Estévez, "High-Pressure Phase Equilibria for Chlorosilane + Carbon Dioxide Mixtures," *Fluid Phase Equil.*, **270**(1-2), 121-128 (2008). **DOI**: 10.1016/j.fluid.2008.06.017
16. D. Sparks, R. Hernández, L. A. Estévez, "Evaluation of Density-Based Models for the Solubility of Solids in Supercritical Carbon Dioxide and Formulation of a New Model," *Chem. Eng. Sci.*, **63**(17), 4292-4301 (2008). **DOI**: 10.1016/j.ces.2008.05.031
17. D. Sparks, L. A. Estévez, R. Hernández, K. Barlow, T. French, "Solubility of Nonanoic (Pelargonic) Acid in Supercritical Carbon Dioxide," *J. Chem. Eng. Data*, **53**(2), 407–410 (2008). **DOI**: 10.1021/je700465u
18. D. Sparks, R. Hernández, L. A. Estévez, N. Meyer, T. French, "Solubility of Azelaic Acid in Supercritical Carbon Dioxide," *J. Chem. Eng. Data*, **52**(4), 1246-1249 (2007). **DOI**: 10.1021/je600572z
19. D. Suleiman, L. A. Estévez, J. C. Pulido, J. E. García, and C. Mojica, "The Solubility of Anti-Inflammatory, Anti-Cancer, and Anti-HIV Drugs in Supercritical Carbon Dioxide," *J. Chem. Eng. Data*, **50**(4), 1234-1241 (2005). **DOI**: 10.1021/je049551l
20. J. R. Maury-Evertsz, L. A. Estévez, G. E. López, "Effect of Branching and Confinement on Star-Branched Polymeric Systems," *J. Chem. Physics*, **121**(17), 8652-8657 (2004). **DOI**: 10.1063/1.1793150
21. E. Jara-Morante, D. Suleiman, and L. A. Estévez, "Solubilities of Imipramine HCl in Supercritical Carbon Dioxide," *Ind. Eng. Chem. Res.*, **42***,* 1821-1823 (2003). **DOI**: 10.1021/ie0109105
22. J. R. Maury-Evertsz, L. A. Estévez, G. E. López, "Equilibrium Properties of Confined Single-Chain Homopolymers," *J. Chem. Physics*, **119**(18), 9925-9932 (2003). **DOI**: 10.1063/1.1616531
23. C. González, K. Bentil, F. D. Boudinot, A. Carlozzi, L. A. Estévez, R. Y. Johnson, J. A. Koropchak, L. B. Martin, C. Mitchell-Kernan, L. Olion, S. Ortega, G. Smith, F. Talamantes, V. Vidoli, D. W. Stewart, C. B. Lynch, *Achieving an Inclusive Graduate Community*, Inclusiveness Series, Volume 1, Council of Graduate Schools, Washington, DC (2003)
24. C. González, K. Bentil, F. D. Boudinot, A. Carlozzi, L. A. Estévez, R. Y. Johnson, J. A. Koropchak, L. B. Martin, C. Mitchell-Kernan, L. Olion, S. Ortega, G. Smith, F. Talamantes, V. Vidoli, D. W. Stewart, C. B. Lynch, *Recruiting for Success*, Inclusiveness Series, Volume 2, Council of Graduate Schools, Washington, DC (2003)
25. C. González, K. Bentil, F. D. Boudinot, A. Carlozzi, L. A. Estévez, R. Y. Johnson, J. A. Koropchak, L. B. Martin, C. Mitchell-Kernan, L. Olion, S. Ortega, G. Smith, F. Talamantes, V. Vidoli, D. W.

Stewart, C. B. Lynch, *Ensuring Success*, Inclusiveness Series, Volume 3, Council of Graduate Schools, Washington, DC (2003)

26. L. A. Estévez, E. Jara-Morante, and D. Suleiman, "Solubilities of Imipramine HCl in Supercritical Carbon Dioxide," Proceedings of the *Fifth International Symposium on Supercritical Fluids*, Atlanta, GA, April 8-12, 2000
27. C. L. McCallum and L. A. Estévez, "Introducing Process-Design Elements in the Unit Operations Lab," *Chemical Engineering Education*, **33**(1; Winter), 66-70, (1999)
28. C. M. Mojica, J. E. García, L. A. Estévez, and D. Suleiman, "An Apparatus to Measure the Solubility of Pharmaceutical Drugs in Supercritical Fluids,"Preprints of *Topical Conference on Separation Science and Technologies* (©AIChE), W. S. W. Ho and R. G. Luo, Editors, pp. 508-513 (Part I), 1997 AIChE Annual Meeting, Los Angeles, CA, (1997)
29. C. M. Rinaldi, L. A. Estévez, David Nicholson, Michael Maddox and Keith E. Gubbins, "Monte Carlo Simulations of Adsorption of Nitrogen/Methane Mixtures in Zeolites," *Preprints of the Fifth World Congress of Chemical Engineering*, Vol. III, pp. 885-890 (1996). (©AIChE)
30. Á. C. Caballero, L. N. Hernández, and L. A. Estévez, "Calculation of Interaction Parameters for Binary Solid-SCF Equilibria using several EOS and Mixing Rules," *J. Supercrit. Fluid*, **5**(4), 283-295 (1992). **DOI**: 10.1016/0896-8446(92)90020-K
31. L. Z. Pino, R. B. Solari, S. Siquier, L. A. Estévez, M. M. Yépez, and A. E. Sáez, "Effect of Operating Conditions on Gas Holdup in Slurry Bubble Columns with a Foaming Liquid," *Chem. Eng. Commun.* **117**, 367-382 (1992). **DOI**: 10.1080/00986449208936076
32. Á. C. Caballero and L. A. Estévez, Errata: Comments on "A Comparative Study of Mixing Rules in the Prediction of Solid-Vapor Equilibria," *Ind. Eng. Chem. Res.*, **31**(9), 2256 (1992). **DOI**: 10.1021/ie00009a025
33. C. Velázquez and L. A. Estévez, "Stripping of Trihalomethanes from Drinking Water in a Bubble-Column Aerator," *AIChE Journal*, **38**(2), 211-218 (1992). **DOI**: 10.1002/aic.690380206
34. L. A. Estévez, L. Z. Pino, I. Cavicchioli, and A. E. Sáez, "Effect of Surfactant Concentration on Gas Holdup in a Bubble Column with an Organic Liquid," *Chem. Eng. Commun.*, **105**, 231-239 (1991). **DOI**: 10.1080/00986449108911528
35. Á. C. Caballero and L. A. Estévez, Comments on "A Comparative Study of Mixing Rules in the Prediction of Solid-Vapor Equilibria," *Ind. Eng. Chem. Res.*, **30**(3), 601-605 (1991). **DOI**: 10.1021/ie00051a026
36. E. A. Müller and L. A. Estévez, "Mixing Expansivities and Grashof Numbers in Supercritical Fluids using Cubic Equations-of-State," *J. Supercrit. Fluids*, **3**(3), 136-142 (1990). **DOI**: 10.1016/0896-8446(90)90038-N
37. E. A. Müller, C. Olivera-Fuentes and L. A. Estévez, "General Expressions for Multicomponent Fugacity Coefficients and Residual Properties from Cubic Equations of State," *Lat. Am. Appl. Res.*, **19**, 99-109 (1989)
38. E. A. Müller, A. Cavero and L. A. Estévez, "Improving Flow Patterns in a Distillation Tray by Modifying Downcomer Apron Shape," *Chem. Eng. Commun.*, **74**, 195-208 (1988). **DOI**: 10.1080/00986448808940459
39. O. Rivas, G. A. Bresolin, L. A. Estévez, X. Santamaría and Iván Cavicchioli, "Effect of Gas Distribution on the Fluid Dynamics of Three-Phase Bubble Columns," *Rev. Téc. INTEVEP*, **7**(2), 97-102 (1987)
40. L. A. Estévez and J.M. Smith, "Pseudosteady State Approximation for Fluid-Solid Reaction and for Extraction in Cylindrical Geometry," *AIChE Journal*, **31**(7), 1220-1222 (1985). **DOI**: 10.1002/aic.690310721

41. Ralf Ludwig, L. A. Estévez and J. M. Smith, "The Differential Reactor Approximation under Dynamic Conditions," *Chem. Eng. Sci.*, **40**(5), 759-767 (1985).
DOI: 10.1016/0009-2509(85)85029-6
42. L. A. Estévez, "Rates of Supercritical Extraction of Kerogen from Colorado Shale," Ph.D. Dissertation, University of California, Davis (1983)

7. Professional Activities

(a) Offices held/Committee service in professional organizations:

Secretary General of the Interamerican Confederation of Chemical Engineering, 2002-2005, 2005-2006, 2006-2008, 2008-2009, 2009-2011, 2011-2012, 2012-2014, 2014-2016, 2016-2018, 2018-2021.

Representative of the Interamerican Confederation of Chemical Engineering before the World Chemical Engineering Council (http://www.chemengworld.org/Council+Members.html) or WCEC, 2005-present

Member of AIChE's CEOC, Career and Education Operating Council, 2004-2007

Member of AIChE's SIOC, Societal Impact Operating Council, 2001-2004.

Member of the Minorities in Graduate Education Committee of the Council of Graduate Schools, 2002-2003.

Past-President of the Interamerican Confederation of Chemical Engineering for 1998-2000.

President of the Interamerican Confederation of Chemical Engineering for 1996-1998.

Vice-President of the Interamerican Confederation of Chemical Engineering for 1995-1996.

Member of the Board of Directors of the Puerto Rico Local Section of the AIChE (Section No. 117) for 1991-1996.

Member of the Board of Directors and Auditor of the Puerto Rico Local Section of the AIChE (Section No. 117) for 1990-1991.

Member of the *Colegio de Ingenieros y Agrimensores de Puerto Rico* (CIAPR), PE Lic. 10740 (1989- ca. 1999)

(b) Grant proposal reviewer for:

CONICYT, Chile.

CONICIT, Venezuela.

(c) Publications, Editorial/Reviewing Service positions (alphabetical order):

Acta Científica Venezolana; *AIChE Journal*; *Canadian Journal of Chemical Engineering*; *Fluid Phase Equilibria*; Green Chemistry; *Environmental Progress and Sustainable Energy*; *Fuel*; *Fuel Processing Technology*; *Industrial and Engineering Chemistry Research*, *Información Tecnológica*, *Journal of Chemical and Engineering Data*; *Journal of Supercritical Fluids*; *Latin American Applied Research*; and *Revista Técnica INTEVEP* (Venezuela).

Invited Editor, *Osmangazi University Faculty of Engineering and Architecture* journal, Eskişehir, Turkey.

(d) Consulting experience:

For Warner Lambert Inc., Vega Baja, Puerto Rico, Fajardo, Puerto Rico, and Parke-Davis, Holland, Michigan, August 1993-1995

For Upjohn Manufacturing Company, Barceloneta, Puerto Rico, Summer 1993

For MS&D Química, Barceloneta, Puerto Rico, Summer 1992

For SK&F (Smith, Kline, and French), Cidra, Puerto Rico, and Guayama, Puerto Rico, several projects during 1988-1991

For INTEVEP S.A., Caracas. Venezuela, January 1984-December 1986

8. Research Proposals Submitted

1. "EPSCoR RII Track-2 FEC: Urban Food Water Energy Consortium," to NSF. February 2015. $20,000,000. Co-PI. $5,999,983. Co-PI.
2. "Center for Resilient Advanced Food Technologies," Preproposal to NSF. December 2014. $23,873,782. Co-PI.
3. "Northeast ADVANCE: Amplifying the Voices of Underrepresented Minority Women in the STEM Faculty through Virtual Multi-Campus Mentoring," to NSF. September 2014. $749,268. Co-PI.
4. "Northeast ADVANCE: Amplifying the Voices of Underrepresented Minority Women in the STEM Faculty through Virtual Multi-Campus Mentoring," to NSF through University of Massachusetts, Amherst. September 2014. $76,000. Subaward PI.
5. "Research Network for the Sustainable Biotransformation of Waste Carbon into Chemical Building Blocks for Environmental and Energy Applications," Preproposal to NSF. February 2012. $10,000,000. Co-PI.
6. "Growth of Microalgae in Continuous Bubble-Column Reactors for Biodiesel Production," to NSF. March 2009. $223,000. PI.
7. "Biodiesel Production with Supercritical Methanol from Non-Edible Feedstocks," to NSF. March 2009. $230,000. PI.
8. "Wastewater as a Sustainable Source of Oil to Produce Biofuels," to NSF. March 2009. $574,656. Co-PI.
9. "Wastewater Treatment Facilities: Sustainable Sources of Oil for Producing Biofuels," to NSF. March 2008. $465,459. Co-PI.
10. "Wastewater Treatment Facilities: Sustainable Sources of Oil for Producing Biofuels," to NSF. September 2007. $350,000. Co-PI.
11. "Conversion of Wastewater Treatment Facilities into Sustainable Sources of Biocrude for Producing Fuels," to EPA. August 2007. $1,500,000. Co-PI
12. "IGERT: Integrating Climate Change, Societal Impacts, Planning, Habitat Restoration, and Coastal Engineering on Changing Coastlines of Tropical Islands," to NSF. April 2007. $2,800,000. Co-PI.
13. "IGERT: Integrating Climate Change, Societal Impacts, Planning, Habitat Restoration, and Coastal Engineering on Changing Coastlines of Tropical Islands," to NSF. March 2006. $2,800,000. Co-PI.
14. "Liquid Mixing in Bubble Columns and its Relation to the Rheology of the Liquid Phase: Experiments and Modeling," to NSF. October 2005. $109,516. PI, no co-PI.
15. "Supercritical Fluid Anti-Solvent Processing and Impregnation of Pharmaceutical Drugs in Bio-Polymer Films," to NSF. February 2005. $260,033. co-PI.
16. "Axial Dispersion in Bubble Columns and its Relation to the Rheology of the Liquid Phase: Experiments and Modeling," to NSF. February 2005. $106,433. PI, no co-PI.
17. "Northeast Alliance for Graduate Education and the Professoriate – NEAGEP," Sub-Award to NSF through University of Massachusetts. July 2004. $249,974. PI. Approved
18. "AGEP: Bridging the STEM from Texas to Puerto Rico," to NSF (by University of North Texas). July 2004. $1,921,724. Co-PI.
19. "Measuring and Modeling the Axial Dispersion Coefficient in a Bubble Column with a Non-Newtonian Liquid Phase," to NSF. March 2004. $94,520. PI, no co-PI.

20. "A New Partnership between the ERC and the University of Puerto Rico Addressing Issues of Interest to both the Semiconductor and Pharmaceutical Industries," Sub-Award to NSF through University of Arizona, June 2004, $120,646. PI. Approved.
21. "The Central New York to Puerto Rico-Mayaguez (CNY-PR) Alliance for Graduate Education," Sub-Award to NSF through Syracuse University, January 2004, $500,000. PI. Approved.
22. "University of Puerto Rico System Proposal for Phase II of the UPR Alliance for Graduate Education and the Professoriate," to NSF. August 2003. $2,500,000. Approved.
23. "Stability Prediction for Pharmaceutical Formulations," Pre-Proposal to INDUNIV, San Juan, PR, April 2000. ~$70,000. Co-PI.
24. "Solid Solubilities in Supercritical Fluids for Pharmacological Applications" to NSF (CGI), Arlington, VA, December 1998. $45,693. PI. Approved.
25. "Use of Spent Beer or Spent-Beer Solids from Fermentation Plants as Fish Feed," Pre-Proposal to INDUNIV, San Juan, PR, April 1998. $255,932 including grantee's share.
26. "Molecular Simulation of the Sorption and Swelling Phenomena for Polymer-Supercritical Fluid Systems," to MRSEC-NSF, University of Massachusetts, Amherst, MA, January 1998. $124,814. Approved.
27. "Separation of Gases using Zeolites: Simulation and Experiments," to College of Engineering, Cornell University, Ithaca, NY, December 1997. $800. Co-PI. (PI: Keith E. Gubbins.) Approved.
28. "Research Experiences for Undergraduates in Chemical Engineering," to NSF, Arlington, VA, September 1997. $316,135. PI. (Co-PI: T. Michael Duncan; submitted on behalf of Cornell University.)
29. "Adsorption Isotherms on Clinoptilolite: Simulation and Experiments," to College of Engineering, Cornell University, Ithaca, NY, June 1997. $1,600. Co-PI. (PI: Keith E. Gubbins.) Approved.
30. "Adsorption Isotherms on Clinoptilolite: Experiments," to College of Engineering, Cornell University, Ithaca, NY, April 1997. $4,300. PI. (Co-PI: Keith E. Gubbins.) Approved.
31. "Adsorption Isotherms on Clinoptilolite: Computer Simulations," to College of Engineering, Cornell University, Ithaca, NY, April 1997. $4,300. PI. (Co-PI: Keith E. Gubbins.) Approved.
32. "Separation of Gases using Zeolites: Simulation and Experiments," to College of Engineering, Cornell University, Ithaca, NY, December 1996. $1,765. PI. (Co-PI: Keith E. Gubbins.) Approved.
33. "Solid Solubilities in Supercritical Fluids for Pharmacological Applications" to NSF, Arlington, VA, February 1996. $111,492. Co-PI. (PI: David Suleiman.) Approved.
34. "Removal of Volatile Organic Compounds from Water by Aeration," to INDUNIV, San Juan, PR, May 1995. $40,000. PI; no Co-PI.
35. "Manufacturing Engineering Option for Chemical Engineering," to The Procter and Gamble Fund, Cincinnati, OH, January 1995. $150,000. Co-PI. (PI: Lueny Morell.) Approved.
36. "ARI: Renovation of Research Facilities at the College of Engineering, University of Puerto Rico, Mayagüez," to NSF, Washington, DC, April 5, 1994. $300,000. Co-PI. Approved.
37. "RIMI: Establishment of a Transport Phenomena Research Facility at the University of Puerto Rico-Mayagüez – Removal of Volatile-Organic-Compounds from Water Using Bubble Columns," to NSF, Washington, DC, November 1992. $500,000. Co-PI.
38. "Removal of Volatile Organic Chemicals from Water by Aeration," to INDUNIV, San Juan, PR, May 1992. $51,721. PI; no Co-PI.
39. "Measurements of Diffusion Coefficients of Solids in Supercritical Fluids in a Microgravity Environment," to NASA, Washington, DC, December 1991. $228,281.

40. "A Combined Strategy for the Reduction of THM Concentrations in Drinking Waters of Puerto Rico," to INDUNIV, San Juan, PR, May 1989. $60,000. PI; one Co-PI. Approved.
41. "Selectivities in the Dissolution of High-Molecular-Weight Solids in Supercritical Fluids," to NSF, Washington, DC, November 1988. $152,054. PI; no Co-PI. Approved.
42. "A Combined Strategy for the Reduction of THM Concentrations in Drinking Waters of Puerto Rico," to USEPA, Washington, August 1988. $201,314.
43. "Use of Bubble Columns to Remove Trihalomethanes from Water," to the University-Industry Research Center, San Juan, PR, 5 December 1987.
44. "Supercritical Extraction of Oil Fractions with Light Hydrocarbons," to CONICIT, Venezuela, project S1-1668 (July 1985 - June 1988). PI; no Co-PI. Approved.
45. "Fluidodynamics of Three-Phase Bubble-Column Reactors," to INTEVEP, Venezuela (January 1984 - December 1986). PI; one Co-PI. Approved.
46. "Fluidodynamics and Improvement of Efficiency of Industrial-Scale, Distillation Sieve Trays," to the Dean of Research of the Simón Bolívar University (January 1985 - December 1986). PI; no Co-PI. Approved.
47. "Desorption of Gases from Viscous Liquids," to INTEVEP, Venezuela (March 1986 - October 1987). PI; one Co-PI. Approved.

9. Theses and Dissertations Directed

1. E. Vyhmeister: "Surface Modification of Nanoporous Films using Supercritical Carbon Dioxide," PhD Dissertation, University of Puerto Rico, May 2008
2. M. García: "Modeling the Phase Equilibrium of Systems Involving Solids, Supercritical Fluids, and Co-Solvents" ME Thesis, University of Puerto Rico, December 2006
3. M. G. Gómez: "Measurement and Correlation of the Axial Dispersion Coefficient in a Bubble Column with a Non-Newtonian Liquid Phase," PhD Dissertation, University of Puerto Rico, May 2006
4. Z. Escobar: "A New Mixing Rule in the Modeling of the Solubility of Solids in Supercritical Fluids," MS Thesis, University of Puerto Rico, May 2006
5. R. Carreño: "Natural-Convection Heat Transfer in Supercritical Fluids," MS Thesis, University of Puerto Rico, May 2004
6. J. Maury: "Molecular Simulation of the Sorption and Swelling Phenomena for Polymer-Supercritical Fluid Systems," MS Thesis, University of Puerto Rico, May 2003.
7. E. Jara: "*Solubilidad de Imipramine HCl en Dióxido de Carbono Supercrítico*," MS Thesis, University of Puerto Rico, December 1999.
8. L. Monroig: "Sensitivity of Correlations of Solubilities of Solids in Supercritical Fluids with Respect to the Critical Properties and Solid Vapor Pressure," MS Thesis, University of Puerto Rico, December 1999.
9. G. Castro: "Capacity Optimization of Bulk-Drug Chemical Synthesis Plants," ME Thesis, University of Puerto Rico, May 1998.
10. C. Mojica: "Solubility of Solids in Supercritical Carbon Dioxide - Experimental Study," MS Thesis, University of Puerto Rico, May 1997. (Co-advised with Prof. D. Suleiman.)
11. D. Morales: "Experimental Study of the Axial Dispersion Coefficient and Gas Holdup in Bubble Columns with non-Newtonian Liquids," MS Thesis, University of Puerto Rico, discontinued in 1997.
12. F. Ortega: "A 2-D Model for Distillation Tray Efficiencies," MS Thesis, University of Puerto Rico, May 1996.

13. A. Ogando: "Experimental Measurements of Diffusion Coefficients of Liquids in Supercritical Fluids," MS Thesis, University of Puerto Rico, May 1996.
14. F. Colpas: "A Cubic Equation-of-State Correlation for the Solubility of Solids in Supercritical Fluids," MS Thesis, University of Puerto Rico, December 1994.
15. R. Cayuela: "Foam Formation in a Two-Phase Bubble Columns - Experimental Study," MS Thesis, University of Puerto Rico, December 1992.
16. C. Velázquez: "Experimental Study of the Desorption of Trihalomethanes from Water in Bubble Columns," MS Thesis, University of Puerto Rico, May 1991.
17. W. E. Pinares: "Simulation of a Three-Phase Bubble-Column Reaction for the HDS Process," MS Thesis, University of Puerto Rico, September 1989.
18. E. A. Müller: "Prediction of Vapor-Liquid Equilibria with Cubic Equations of State," MSc Thesis co-advised, Simón Bolívar University, May 1987.
19. G. F. Arreaza: "Model for Efficiency of Distillation Plates with Two-Dimensional Liquid Flow Field," MSc Thesis, Simón Bolívar University, November 1986.

10. Invited Lectures

Invited to give seminars in the following Universities:

1. Mississippi State University, Mississippi State, MS, March 2019
2. Mississippi State University, Mississippi State, MS, March 2016
3. National University of Colombia, Bogotá Campus, November 2014
4. University of Cartagena, Cartagena, Colombia, September 2011
5. Universitat Rovira i Virgili, Tarragona, Catalunya, Spain, March 2010
6. Ohio University, Athens, OH, May 2008
7. University of Kentucky, Paducah, KY, April 2008
8. University of Alabama, Tuscaloosa, AL, April 2008
9. Tennessee Technological University, Cookeville, TN, January 2008
10. Mississippi State University, Mississippi State, MS, November 2007
11. Pontificia Universidad Católica de Chile, Santiago, Chile, May 2005
12. Universidad Católica de Valparaíso, Valparaíso, Chile, May 2005
13. Universidad Católica de Valparaíso, Valparaíso, Chile, March 2002
14. Universidad Técnica Federico Santa María, Valparaíso, Chile, March 2002
15. Universidad de Santiago de Chile, March 2002
16. Universidad Nacional de Trujillo, Trujillo, Perú, March 2002
17. Pontificia Universidad Católica de Lima, Lima, Perú, March 2002
18. Universidad Nacional Mayor de San Marcos, Lima, Perú, March 2002
19. Universidad Nacional de Ingeniería, Lima, Perú, March 2002
20. University of Kentucky, Lexington, KY, April 2000
21. Simón Bolívar University, Caracas, Venezuela, June, 1998
22. Metropolitan University, Caracas, Venezuela, June, 1998
23. University of Santiago, Santiago, Chile, October 1997
24. Ryerson Polytechnic University, Toronto, Canada, March 1997
25. Cornell University (Group Seminar), Ithaca, New York, October 1996
26. National Polytechnic Institute, Mexico City, Mexico, October 1994
27. University of South Florida, Tampa, Florida, October 1992
28. University of Arizona, Tucson Arizona, June 1992

29. Central University of Venezuela, Caracas, Venezuela, September 1991
30. National University of the South, Bahía Blanca, Argentina, September 1991
31. University of Santiago, Santiago, Chile, September 1991
32. University of Puerto Rico, Medical Sciences Campus, Río Piedras, Puerto Rico, January 1990
33. Simón Bolívar University, Caracas, Venezuela, October, 1989
34. Central University of Venezuela, Caracas, Venezuela, October, 1989
35. University of Oriente, Puerto La Cruz, Venezuela, March 1986

11. Conference Presentations

1. L. A. Estévez, "A Journey through the Applications of Supercritical Fluids," Invited (stand-alone) Lecture organized Latin American Association of Chemical Engineering Students, ALEIQ. Organized by ALEIQ's Peruvian Branch, January 27, 2021.
2. F. Colpas Castillo, E. A. Müller, and L. A. Estévez "A Simple EOS Model for the Solubility of Thermolabile Solids in Supercritical Fluids," 1st Iberoamerican Congress of Chemical Engineering and 3rd International Congress of Chemical Engineering, Santander, Spain, June 19-21, 2019.
3. A. L. Ramos Figueroa, L. A. Estévez "Grashof numbers and mixing expansivities in supercritical-fluid applications based on the Peng-Robinson EoS," 1st Iberoamerican Congress of Chemical Engineering and 3rd International Congress of Chemical Engineering, Santander, Spain, June 19-21, 2019.
4. L. A. Estévez, R. Hernandez, W. T. French, and A. T. Oyedeji "Biodiesel production from *Rhodotorula glutinis* and activated sewage sludge using supercritical methanol," XXIX Interamerican Congress of Chemical Engineering and 68th Canadian Congress of Chemical Engineering, Toronto, Canada, October 28-31, 2018.
5. F. García, L. A. Estévez, E. G. Contreras, L. Sepúlveda "Valorización de residuos hortícolas provenientes de centros de abasto y ferias libres," XXIX Interamerican Congress of Chemical Engineering and 68th Canadian Congress of Chemical Engineering, Toronto, Canada, October 28-31, 2018.
6. L. A. Estévez, "An untapped sustainable energy source: biodiesel from sewage sludge," **Invited Lecture**, SCEJ 82nd Annual Meeting, Tokyo, Japan, March 6-8, 2017.
7. L. A. Estévez, R. Hernandez, W. T. French, and A. T. Oyedeji "Biodiesel production from *Rhodotorula glutinis* and activated sewage sludge using supercritical methanol," **Invited Lecture**, SCEJ 82nd Annual Meeting, Tokyo, Japan, March 6-8, 2017.
8. L. A. Estévez, R. Hernandez, and W. T. French, "Biofuels from sludge: A new approach to biodiesel," **Invited Plenary Lecture**, XXVII Interamerican Congress of Chemical Engineering, Cartagena. Colombia, October 6-8, 2014.
9. L. A. Estévez, R. Hernandez, and W. T. French, "Biofuels from sludge: Green Chemistry, biorefineries, and novel extractions," **Invited Plenary Lecture**, 11th National Congress of Chemical Engineering, Eskişehir, Turkey, September 2-5, 2014.
10. L. A. Estévez, "Chem-E-Car Competition at the 10th World Congress of Chemical Engineering," **Invited Plenary Talk**, 11th National Congress of Chemical Engineering, Eskişehir, Turkey, September 2-5, 2014.
11. E. Revellame, W. Holmes, R. Hernandez, L. A. Estévez, and W. T. French, "Experimental Measurement and Modeling of Type 3 Ternary System Containing n-Decane + Water + Triacetin," 2013 AIChE Annual Meeting, San Francisco, CA, November 3-8, 2013.
12. E. Revellame, W. Holmes, R. Hernandez, L. A. Estévez, and W. T. French, "Application of High Voltage for the Destabilization of Water-in-Oil Emulsion for the Extraction of Lipids from

Microorganisms without Removal of Water," 2012 AIChE Annual Meeting, Pittsburgh, PA, October 28-November 2, 2012.

13. E. Revellame, W. Holmes, L. Lerma, R. Hernandez, L. A. Estevez, and W. T. French, "High Voltage Electrostatic Destabilization of Water-Oil Emulsion for the Extraction of Lipids in Wastewater Bacteria for Biofuel Production," 103rd AOCS Annual Meeting and Expo, Long Beach, CA, April 29-May 2, 2012.
14. W. Holmes, E. Revellame, L. Lerma, L. A. Estevez, R. Hernandez, W. T. French, "Development of a Laboratory Scale Electrostatic Coalescer Unit for Separation of Water-oil Emulsions for Biofuel Production," 103rd AOCS Annual Meeting and Expo, Long Beach, CA, April 29-May 2, 2012.
15. L. A. Estévez, **Invited speaker**, Resources and Green Technology Symposium, 6th Sino-US Joint Conference on Chemical Engineering, Beijing, China, November 7-10, 2011.
16. L. A. Estévez, L. Lerma-Caicedo, R. Hernandez, E. Vargas, and W. E. Holmes, "Phase Diagram for Ternary Systems of Interest in Biodiesel Production," XXV Interamerican Congress of Chemical Engineering, Santiago, Chile, November 14-17, 2011.
17. L. Lerma-Caicedo, R. Hernandez, T. French, L. A. Estévez, "Electrostatic Destabilization of Water-in-Oil Microemulsions–Application to the Extraction of Phospholipids from Sludge in Wastewater Treatment," 2011 AIChE Annual Meeting, Minneapolis, MN, October 16-21, 2011.
18. E. Dada, T. Mensah, D. K. Rollins Sr., L. A. Estévez, O. Shelton, and J. Harrison "Lessons Learned from and Economic Impacts of the Fukushima, Japan Disaster," Panel Discussion, 2011 AIChE Annual Meeting, Minneapolis, MN, October 16-21, 2011.
19. E. Dada, T. Mensah, D. K. Rollins, L. A. Estévez, O. Shelton, and J. Harrison "The STEM Education and Its Impacts on Pipeline for Underrepresented Minorities," Panel Discussion, 2011 AIChE Annual Meeting, Minneapolis, MN, October 16 21, 2011.
20. L. A. Estévez, **Invited Speaker**, IX OCU International Seminar, (organized by OCU, the Office of International Cooperation, based in Spain), Cartagena, Colombia, September 12-16, 2011.
21. L. Lerma-Caicedo, L. A. Estévez, R. Hernandez, T. French, W. Holmes "Phase Diagram of Two Ternary Systems Water + Triacetin + Alkane by a Novel Experimental Technique," 2010 AIChE Annual Meeting, Salt Lake City, UT, November 7-12, 2010.
22. L. A. Estévez, "The Many Faces of Supercritical Fluids," VI Congreso Argentino de Ingeniería Química, Mar del Plata, Argentina, September 26-29, 2010. **Keynote Lecture.**
23. D. L. Sparks, L. A. Estévez, R. Hernandez, T. French "Processing of Unsaturated Fatty Acids in Supercritical Carbon Dioxide," 2009 AIChE Annual Meeting, Nashville, TN, November 8-13, 2009.
24. D. Sparks, R. Hernandez, L. A. Estévez, and T. French, "Small-Chain Fatty Acid Solubility in Supercritical Carbon Dioxide," 100th AOCS Annual Meeting and Expo, Orlando, FL, May 3-6, 2009.
25. D. Sparks, R. Hernandez, L. A. Estévez, W. E. Holmes, and T. French, "Solubility of Small-Chain Fatty Acids In Supercritical Carbon Dioxide," Paper No. 515b, 2008 AIChE Annual Meeting, Philadelphia, PA, November 16-22, 2008.
26. T. M. Manzano and L. A. Estévez, "New Method to Estimate the Sublimation Pressure for Solids," Paper No. 58j, 2008 AIChE Annual Meeting, Philadelphia, PA, November 16-22, 2008.
27. D. L. Sparks, L. A. Estévez, R. Hernandez, T. French "Oxidation of lipids in a supercritical-fluid medium," paper No. 1218, 18th International Congress of Chemical and Process Engineering, Prague, Czech Republic, August 24-28, 2008.
28. A. Mondala, R. Hernandez, T. French, L. A. Estévez, J. Hall, "Pre-Ozonation of Primary Municipal Wastewater Effluent for the Cultivation of Oleaginous Microorganisms," 99th AOCS Annual Meeting and Expo, Seattle, WA, May 18-21, 2008.

29. D. Sparks, R. Hernandez, L. A. Estévez, E. Alley, and T. French, "Utilization of a Supercritical Fluid Medium for the Generation of Renewable Chemicals from Oleic Acid," 99th AOCS Annual Meeting and Expo, Seattle, WA, May 18-21, 2008.
30. L. A. Estévez, "Green Chemistry and Supercritical Fluids," Plenary lecture at the 2nd Biotechnology Congress, San Juan, PR, April 18, 2008
31. E. Vyhmeister, D. Suleiman, L. A. Estévez, and A. J. Muscat, "In-Situ FTIR Analysis of Porous low-*k* Film Repair," Paper No. 562a, 2007 AIChE Annual Meeting, Salt Lake City, UT, November 4-9, 2007.
32. D. L. Sparks, R. Hernandez, L. A. Estévez, T. French, and E. Alley, "Synthesis of Renewable Chemicals From Oleic Acid," Paper No. 199d, 2007 AIChE Annual Meeting, Salt Lake City, UT, November 4-9, 2007.
33. E. Vyhmeister, D. Suleiman, A. J. Muscat, and L. A. Estévez, "Solubility and Binary Phase Equilibria of Chlorosilanes in Supercritical Carbon Dioxide," Paper No. 449c, 2007 AIChE Annual Meeting, Salt Lake City, UT, November 4-9, 2007.
34. A. Mondala, R. Hernandez, T. French, L. A. Estévez, J. Hall, M. Trillo, "Ozone Disinfection and Biodegradability Enhancement of Primary Wastewater Effluent," Paper No. 63a, 2007 AIChE Annual Meeting, Salt Lake City, UT, November 4-9, 2007.
35. E. Vyhmeister, D. Suleiman, L. A. Estévez, and A. J. Muscat, "Study of low-*k* Film Repair and Pore Sealing Using Chlorosilanes Dissolved in Supercritical Carbon Dioxide," Paper No. 446g, 2007 AIChE Annual Meeting, Salt Lake City, UT, November 4-9, 2007.
36. D. L. Sparks, R. Hernandez, L. A. Estévez, K. Barlow, and T. French, "Solubility of Pelargonic Acid in Supercritical Carbon Dioxide," 1st Annual Mississippi State University Biofuels Conference, Mississippi State, MS, August 27, 2007.
37. N. D. Ramírez-Beltrán, H. Rodríguez Vallés, and L. A. Estévez, "Use of Neural Networks to Estimate Activity Coefficients," Paper No. AA156, 8o Congreso Interamericano de Computación Aplicada a la Industria de Procesos, CAIP 2007, Asunción, Paraguay, July 1-5, 2007.
38. D. Sparks, L. A. Estévez, R. Hernandez, T. French, H. Toghiani, R. Toghiani, E. Alley, and M. Zappi, "Kinetics of Oleic Acid Oxidation in a Supercritical Fluid," 98th AOCS Annual Meeting and Expo, Quebec City, Quebec, Canada, May 13-16, 2007.
39. L. A. Estévez and Z. O. Escobar, "A New Mixing Rule to Model the Solubility of Solids in Supercritical Fluids," Paper No. 80e, AIChE Spring Meeting, April 22-27, 2007.
40. L. A. Estévez, H. Rodríguez-Vallés, and N. D. Ramírez-Beltrán, "Estimation of Activity Coefficients in Binary Systems Using Neural Networks," Paper No. 37a, AIChE Spring Meeting, April 22-27, 2007.
41. D. L. Sparks, L.A. Estévez, N. Meyer, and R. Hernández, "Solubility of Azelaic Acid in Supercritical Carbon Dioxide," Paper SC-185, I Iberoamerican Conference on Supercritical Fluids, PROSCIBA 2007, Foz do Iguaçu, Brazil, April 10-13, 2007.
42. D. L. Sparks, L. A. Estévez, N. Meyer, and R. Hernandez, "Solubility of Oleic Acid Oxidation Products in Supercritical Carbon Dioxide," Mississippi Academy of Sciences 71st Annual Meeting, Mississippi State, MS, February 21-23, 2007.
43. D. Sparks, L. A. Estévez, R. Hernandez, T. French, H. Toghiani, R. K. Toghiani, E. Alley, and M. Zappi, 2006, "Supercritical Fluid Oxidation of Oleic Acid," 2006 AIChE Annual Meeting, San Francisco, CA, November 12-17, 2006.
44. Y. Maldonado, T. Manzano, L. Monroig, and L. A. Estévez, "A New Model for the Solubility of Solids in Supercritical Fluids," Session No. 104, 2006 AIChE Annual Meeting, San Francisco, CA, November 12-17, 2006.

45. Y. K. Lugo, S. I. Montañez, and L. A. Estévez, "Experiments and Modeling on Lyophilization of Fruits," Session No. 100, 2006 AIChE Annual Meeting, San Francisco, CA, November 12-17, 2006.
46. D. Ortiz, R. Sánchez, A. Ogando, and L. A. Estevez, "Difussion Coefficients of Bromobenzenes in Supercritical Carbon Dioxide," Session No. 96, 2006 AIChE Annual Meeting, San Francisco, CA, November 12-17, 2006.
47. L. A. Estévez and M. G. Gómez, "Liquid Mixing and Hydrodynamic Parameters in Bubble Columns with a Non-Newtonian Liquid Phase," Paper 840, XXII Interamerican Congress of Chemical Engineering, Buenos Aires, Argentina, October 1-4, 2006.
48. H. Rodríguez-Vallés, N. D. Ramírez-Beltrán, and L. A. Estévez, "A Neural Network Approach to Estimate Activity Coefficients in Binary Systems," Paper 523, XXII Interamerican Congress of Chemical Engineering, Buenos Aires, Argentina, October 1-4, 2006.
49. M. G. Gómez and L. A. Estévez, "Mathematical Models to Describe the Stripping of Volatile Components from Water by Aeration in Bubble Columns," Paper 85109, 7th. World Congress of Chemical Engineering, Glasgow, Scotland, July 10-14, 2005.
50. L. Castillo, M. Arocha, L. A. Estévez, J. Ramirez-Vick, G. Lee-Glauser, M. Glauser, T. Apple, Z. Warhaft, R. Vásquez, and D. Freund, "New Trends in Engineering Education: The CNY-PR AGEP." Session T1A. Proc. 6th. International Conference on Information-Technology-Based Higher Education and Training, Santo Domingo, Dominican Republic, July 7-9, 2005.
51. M. G. Gómez and L. A. Estévez, "Models for Stripping Volatile Solutes from Water in Bubble-Column Aerators," Paper TDM-077, LATCyM 2005, Caracas, Venezuela, April 13-15, 2005.
52. L. A. Estévez and M. G. Gómez, "Models for the Removal of Volatile Components from Water by Aeration in Bubble Columns," Paper 198i, 2004 AIChE Annual Meeting, Austin, TX, November 7-12, 2004.
53. L. A. Estévez and R. Carreño, "Natural-Convection Heat Transfer in Supercritical Fluids," Paper 198d, 2004 AIChE Annual Meeting, Austin, TX, November 7-12, 2004.
54. J. R. Maury-Evertsz, L. A. Estévez, and G. E. López, "Molecular Simulation of the Thermodynamic Behavior of Confined Polymers," Paper 565f, 2003 AIChE Annual Meeting, San Francisco, CA, November 16-21, 2003.
55. L. A. Estévez, G. Gutiérrez, and R. Carreño, "Free-Convection Heat Transfer in Supercritical Fluids," Paper 219ax, 2003 AIChE Annual Meeting, San Francisco, CA, November 16-21, 2003.
56. N. Velásquez, E. Jara-Morante, D. Suleiman, and L. A. Estévez, "Solubilities of Naproxen in Supercritical Carbon Dioxide," Paper 172a, 2001 AIChE Annual Meeting, Reno, NV, November 4-9, 2001.
57. L. A. Estévez, "An equation for the mean driving force in reverse osmosis," Proceedings of the 9th Latin American Congress in Heat and Mass Transfer, Paper No. 119, pp 562-564, San Juan, PR, October 20-22, 2002.
58. L. A. Estévez, "Synthesis of Supercritical-Fluid Separations in Biotechnology," Paper 95e, 2001 AIChE Spring Meeting, Houston, TX, April 22-26, 2001.
59. M. Purcell, Y. Díaz, J. Maury and L. A. Estévez "Monte Carlo Simulation of the Adsorption of Argon on Graphite," Session 164, 2000 AIChE Annual Meeting, Los Angeles, CA, November 12-17, 2000.
60. E. Jara-Morante, N. Velásquez, C. Acosta, D. Suleiman, and L. A. Estévez, "Solubility of Ibuprofen in Supercritical Carbon Dioxide," session 164, 2000 AIChE Annual Meeting, Los Angeles, CA, November 12-17, 2000.

61. L. A. Estévez, D. Suleiman, and L. Monroig-Adames "Adjusting Solute Critical Properties and Vapor Pressure to Correlate Solubilities of Heavy Molecules in Supercritical Fluids," Paper 131e, 2000 AIChE Spring Meeting, Atlanta, GA, March 5-9, 2000.
62. L. A. Estévez, E. Jara-Morante, and D. Suleiman, "Solubilities of Imipramine HCl in Supercritical Carbon Dioxide," Fifth International Symposium on Supercritical Fluids, Atlanta, GA, April 8-12, 2000.
63. L. Monroig-Adames, D. Suleiman, and L. A. Estévez, "Adjusting Solute Critical Properties and Vapor Pressure to Correlate Solubilities of Heavy Molecules in Supercritical Fluids," Paper 131e, AIChE Spring National Meeting, Atlanta, GA, March 5-9, 2000.
64. E. Jara-Morante, D. Suleiman, and L. A. Estévez, "Experimental Solubilities of Imipramine HCl in Supercritical Carbon Dioxide," 1999 AIChE Annual Meeting, Dallas, TX, October 30-November 5, 1999.
65. L. A. Estévez, "Fundamentals and Applications of Extraction with Supercritical Fluids to Biotechnology," (Invited Lecture) *IV Congreso Latinoamericano de Estudiantes de Ingeniería Química*, Mérida, Venezuela, June 1-6, 1998.
66. L. A. Estévez, C. M. Mojica, J. E. García, and D. Suleiman, "An Apparatus to Measure the Solubility of Pharmaceutical Drugs in Supercritical Fluids,"Paper S18, Fifth Meeting on Supercritical Fluids, Nice, France, March 23-25, 1998.
67. L. A. Estévez, and D. Suleiman, "Measurement of Solubilities of Pharmaceutical Drugs in Supercritical CO_2," Papers No. 39s and 112c, 1997 AIChE Annual Meeting, Los Angeles, CA, November 16-21, 1997.
68. L. A. Estévez, C. Olivera-Fuentes, and E. A. Müller, "Use of the Peng-Robinson Equation of State in Phase Equilibria and in Natural Convection in Supercritical Fluids," Paper 065, 47th CSChE Conference, Edmonton, Alberta, Canada, October 5-8, 1997.
69. C. L. McCallum and L. A. Estévez, "Introducing Process-Design Elements in the Unit Operations Lab," *COPIMERA '97*, Santiago, Chile, September 28-October 2, 1997.
70. L. A. Estévez, "Fundamentals and Applications of Extraction with Supercritical Fluids to Biotechnology," (Invited Lecture) *Quinto Simposio Internacional de Ingeniería Química*, Santo Domingo, Dominican Republic, July 10-13, 1997.
71. L. A. Estévez, A. Ogando, and G. Colón, "Diffusion Coefficient of Benzene and Bromobenzenes in Supercritical Carbon Dioxide," Paper No. 159j, 1996 AIChE Annual Meeting, Chicago, IL, November 10-15, 1996.
72. C. M. Mojica, J. F. Pérez-Castillo, Jorge I. López, L. A. Estévez, and D. Suleiman-Rosado, "An Apparatus to Measure Solubility of Pharmaceutical Drugs in Supercritical Fluids," Paper No. 30-2d, 1996 AIChE Annual Meeting, Chicago, IL, November 10-15, 1996.
73. L. A. Estévez, A. Ogando, and G. Colón, "Measurement of Diffusion Coefficients of Bromobenzenes in Supercritical Carbon Dioxide by the Taylor-Dispersion Method," 46th CSChE Conference, Kingston, Ontario, Canada, September 29-October 2, 1996.
74. C. M. Rinaldi, L. A. Estévez, David Nicholson, Michael Maddox and Keith E. Gubbins, "Monte Carlo Simulations of Adsorption of Nitrogen/Methane Mixtures in Zeolites," Paper No. 81k, Fifth World Congress of Chemical Engineering, San Diego, CA, July 14-17, 1996.
75. L. A. Estévez, "Fundamentals and Applications of Extraction with Supercritical Fluids to Biotechnology," (Invited Lecture) *Primer Congreso Salvadoreño de Ingeniería Química y Líderes de la Industria*, San Salvador, El Salvador, November 15-17, 1995.
76. L. A. Estévez, A. Ogando, and G. Colón, "Measurement of Diffusion Coefficient of Bromo-benzenes in Supercritical Carbon Dioxide," Paper No. 72j, 1995 AIChE Annual Meeting, Miami Beach, FL, November 12-17, 1995.

77. L. A. Estévez, A. Ogando, and G. Colón, "Diffusion Coefficient of Aromatic Liquids in Supercritical Fluids," XVI Inter American Congress of Chemical Engineering, Cartagena, Colombia, September 20-23, 1995.
78. L. A. Estévez, and F. A. Ortega, "An Improved Model for Efficiencies in Distillation Sieve Trays," Paper No. xxb, 1995 AIChE National Spring Meeting, Houston, TX, March 19-23, 1995.
79. A. A. Alverio, A. Ogando, G. Colón, and L. A. Estévez, "Measurement of Diffusion Coefficients of Liquids in Supercritical Carbon Dioxide," Paper No. 170-1i, 1994 AIChE Annual Meeting, San Francisco, CA, November 13-18, 1994.
80. F. J. Colpas, E. A. Müller, and L. A. Estévez, "A New Method to Compute Solubilities of High-Molecular-Weight Solids in Supercritical Fluids," Paper No. 170-1j, 1994 AIChE Annual Meeting, San Francisco, CA, November 13-18, 1994.
81. F. A. Ortega, and L. A. Estévez, "A Model for Efficiencies in Distillation Sieve Trays," Paper No. 170-2i, 1994 AIChE Annual Meeting, San Francisco, CA, November 13-18, 1994.
82. C. Mojica-Mojica, and L. A. Estévez, "Stripping Aromatic VOCs from Water in Bubble Columns," Paper No. 170-9w, 1994 AIChE Annual Meeting, San Francisco, CA, November 13-18, 1994.
83. L. A. Estévez, "Fundamentals and Applications of Extraction with Supercritical Fluids to Biotechnology," (Invited Lecture) I International Congress of Biochemical Engineering, México City, México, October 24-27, 1994
84. L. A. Estévez, A. Ogando, and G. Colón "An Improved Taylor-Dispersion Method for the Measurement of Diffusion Coefficients in Supercritical Fluids," Third International Symposium on Supercritical Fluid, Strasbourg, France, October 17-19, 1994
85. L. A. Estévez, F. J. Colpas, and E. A. Müller "A Simplified Redlich/Kwong EOS Correlation for Solubility of High-Molecular-Weight Solids in Supercritical Fluids," Third International Symposium on Supercritical Fluid, Strasbourg, France, October 17-19, 1994
86. L. A. Estévez, F. J. Colpas, and E. A. Müller "A Simplified Cubic-Equation-of-State Correlation for Solubility of Solids in Supercritical Fluids," Paper No. 74f, 1994 Spring AIChE Meeting, Atlanta, (April 17-21, 1994).
87. A. Ogando, H. J. Irizarry, J. J. Cartagena, and L. A. Estévez "Solubility of Antibiotics in Supercritical Fluids," paper No. 213c16, 1993 AIChE Annual Meeting, St. Louis, (November 7-12, 1993)
88. L. A. Estévez and R. Cayuela, "Measurement of Foam-Formation and Foam-Destruction Kinetics in Two-Phase Systems," paper No. 99s, 1992 AIChE Annual Meeting, Miami Beach, (November 1-6, 1992)
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12. Languages

Spanish, English, French, and Portuguese

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