

SAMUEL PEREZ

sperez@uach.mx

September 6, 2016

POSITIONS

Full Profesor, 2010-Present
Faculty of Chemical Sciences
Universidad Autónoma de Chihuahua
Chihuahua, México

EDUCATION

- | | | |
|------------|---|----------|
| PhD | Manchester University, Chemical Engineering
Dissertation: "Tools for the selection and HSE evaluation of solvents in the early stages of pharmaceutical process development" | May 2010 |
| BS | University of Chihuahua, Mexico, Chemical Engineering | May 2002 |

RESEARCH EXPERIENCE

Tools for the selection and HSE evaluation of solvents in the early stages of pharmaceutical process development, University of Manchester, United Kingdom 2004 to 2010

Advisor: Paul Sharratt

- Analysis of complex problems by system theory
- Process simulation
- Programming
- Process development

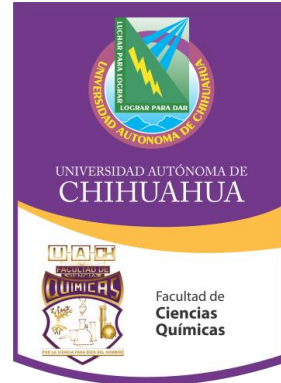
Lexmark, Cd. Juárez, Mexico 2008 to 2010

Process Engineer

- Improvement of coatings by electrostatic spraying
- Improvement of drying operations for coating

Facultad de Ciencias Químicas, circuito Universitario,
Campus Universitario # 2 , Chihuahua, Chih., C.P. 31125
Tels. (614) 236-60-00





- Improvement of coating formulation
- Control of quality parameters in clean room

TEACHING EXPERIENCE

University of Chihuahua, Mexico
Associate Professor, Chemical Engineering

Aug 2010 to Present

- Taught Name of Course, an undergraduate course averaging 50 students per semester, covering the following topics: Mass and energy balance, Chemical reactor design, Process Simulation, and unit operations.
- Taught Name of Course, a postgraduate course averaging 10 students per semester, covering the following topics: Processing aspects in food industry and research seminar.

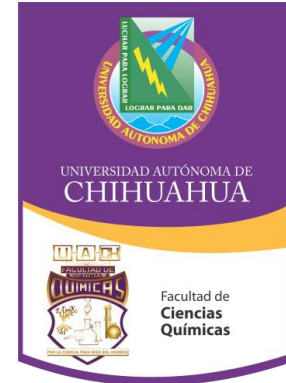
Masters Students Advised

Raul Orozco Mena, “Development of sustainable extraction processes for the production of added value from oat”. September 2013.

Cynthia Fontes Candia, “Development of nonthermal/pressure extraction process for the production of added value from oat” January 2016.

Bachelor Students Advised

- Sergio Medina, “Optimization of the extraction of polyphenols from peanut skin; enhancing solvent selection”, May 2011.
- Hector Trasviña, “Evaluation by experimentation and simulation of apple pomace vacuum drying process”, Sep 2013.
- Cynthia Fontes, Simulation of bioethanol extractive distillation process produced by corn waste”. December 2013.
- Pedro Vargas, “Research and simulation for the manufacture of pharmaceutical tables”, April 2014
- Ruben Canales “Research and simulation for the manufacture of pharmaceutical tables”, April 2014



- Yessica Escobedo, “Optimization of a coagulation/flocculation process from a wastewater stream coming from a waste treatment plant in Chihuahua. June 2014.
- Roxana Cano. “Optimization of a coagulation/flocculation process from a wastewater stream coming from a waste treatment plant in Chihuahua. June 2014.
- Isela Martinez, Exergetic analysis for vacuum and freeze drying in Apple pomace, 2015
- Alejandro Escudero. Simulation and design of an absorption process for the mitigation of CO₂ and SO₂ coming from combustion gas, Oct 2016
- Mario Vazquez. Evaluation of alkali/enzymatic treatment in the extraction of antioxidants and b-glucans from forage oat, Oct 2016

Manchester University, United Kingdom
Teaching Assistant, Department

May 2005 to Aug 2008

- Demonstrator in the laboratory of Chemical Engineering in operations such as mixing and filtration.
- Demonstrator in fluid dynamic operations.

SELECTED PUBLICATIONS

Books

Enrique Ortega-Rivas, Samuel B. Perez-Vega, and Ivan Salmeron. (2016). Impact of specific unit operations on food-borne microorganisms: curing, salting, extrusion, puffing, encapsulation, absorption, extraction, distillation, and crystallization. Quantitative Microbiology in Food Processing. Willey.

Almeida-Trasviña Medina-Gonzales Ortega-Rivas, Perez-Vega. (2015). Feasibility Study for the Production of Added Value Compounds from Apple Waste: A Simulation Case, Advances in Science, Biotechnology and Safety of Foods, Editors: Santos García, García Galindo y Nevárez-Moorillón, Ameca, Vol. 1, Pags. 378,



Medina-González, Almeida-Trasviña, I. Salmerón-Ochoa, D. Morales-Corral, S.B. Pérez-Vega. (2015) Scale-Up and Sustainability Evaluation in the Solvent Extraction of Peanut Skin Antioxidants, *Advances in Science, Biotechnology and Safety of Foods*. Editors: Santos García, Hugo Sergio García Galindo, Guadalupe Virginia, Asociación Mexicana de Ciencia, Vol. 1, 378.

Ortega-Rivas Enrique, Pérez-Vega Samuel, Salmerón-Ochoa Ivan. (2012). Physical properties characterisation of food processing materials. *Food Science and Food Biotechnology Essentials: A Contemporary Perspective*. Editors: Guadalupe Virginia Nevárez Moorillón, Enrique Ortega-Rivas, AMECA, Vol. 1. 350.

Journal Publications

Salmerón, I., Loeza-Serrano, S., Pérez-Vega, S., & Pandiella, S. S. (2015). Headspace gas chromatography (HS-GC) analysis of imperative flavor compounds in Lactobacilli-fermented barley and malt substrates. *Food Science and Biotechnology*, 24(4), 1363-1371.

F. Almeida-Trasviña, S. Medina-González, E Ortega-Rivas. I. Salmeron, S. Perez-Vega. (2014). Vacuum Drying Optimization and Simulation as a Preservation Method of Antioxidants in Apple Pomace, *Journal of Food Process Engineering* 37 (6), 575-587.

A. Herrera-Ponce, G Nevárez-Morillón, E Ortega-Rivas, S Pérez-Vega. (2014). Fermentation adaptability of three probiotic Lactobacillus strains to oat, germinated oat and malted oat substrates, *Letters in applied microbiology* 59 (4), 449-456.

S. Perez-Vega, A Nieva-De La Hidalga, PN Sharratt. (2014). Tools for an enhanced solvent properties screening in the early stages of pharmaceutical process development. *Journal of Loss Prevention in the Process Industries* 29, 300-312.

R. Orozco-Mena, I Salmerón-Ochoa, E Ortega-Rivas, S Perez-Vega. (2014). Development of a Sustainable Process for the Solid-Liquid Extraction of Antioxidants from Oat Sustainability, 6 (3), 1504-1520.

S. Perez-Vega, E Ortega-Rivas, I Salmeron-Ochoa, PN Sharratt. (2013). A system view of solvent selection in the pharmaceutical industry: towards a sustainable choice. *Environment, development and sustainability* 15 (1), 1-21, 5.



S. Perez-Vega, I Salmeron-Ochoa, A Nieva-de la Hidalga, PN Sharratt. (2011). Analytical hierarchy processes (AHP) for the selection of solvents in early stages of pharmaceutical process development. *Process Safety and Environmental Protection* 89 (4), 261-267.

E. Ortega-Rivas, S.B. Perez-Vega. (2011). Solid-liquid separations in the food industry: operating aspects and relevant applications. *Journal of Food and Nutrition Research* (Slovak Republic).

FUNDED PROJECTS – SCIENCE AND TECHNOLOGY

Perez Samuel, Salmeron Ivan, Ortega Enrique, Chavez David, Paul Sharratt., Solvents Evaluation for the extraction of added value from oat. CONACYT, CB-2011-01-168977, 2011.

Perez Samuel, Salmeron Ivan, Ortega Enrique. (2011). Development of sustainable process for the extraction of antioxidants coming from apple in industrial scale. CONACYT, FOMIX-CHIH-2011-C03-168988.

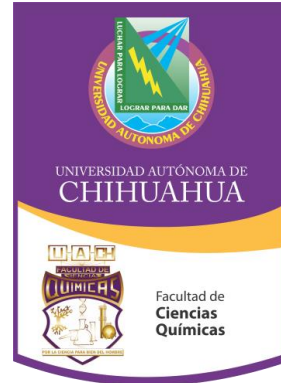
Perez Samuel, Salmeron Ivan, Ortega Enrique. Development of a sustainable solid liquid for the extraction of antioxidants from peanut skin; improving solvent selection. PROMEP UACH-PTC-232, 2011.

Perez Samuel, Salmeron Ivan, Ortega Enrique. Development of a prototype for the manufacture of pharmaceutical tablets. CONACYT, PROINOVA, PEI. No. 178835, 2012

Perez Samuel, Salmeron Ivan, Ortega Enrique. Research and development of a pilot plant for the production of dried beef using extrusion technology. CONACYT, PROINOVA, PEI. No. 196258, 2013

Salmerón Ochoa, I. Perez Samuel, Ortega Enrique. “Effect of the hypoglycemic effect of different extractions of *Rhus virens* Lindh (Lambrisco) with characterization of volatile and non volatile components”, PRODEP, UACH-PTC-240, 2011.

Salmerón Ochoa, I. Perez Samuel, Ortega Enrique., “Study of cheese whey as platform for the development of a biorefinery.”, FOMIX, CHIH-2012-C03-169179, 2012.



Salmerón Ochoa, I. Perez Samuel, Ortega Enrique., “Enhancement of research capacities for the research of biosynthesis of aromatic compounds and flavour”, Infraestructura, INFRA-2012-01-188331, 2012.

Salmerón Ochoa, I. Perez Samuel, Ortega Enrique “Development of nutritional and energetic gels; implementation of a technology based in tube flexible packaging. PROINNOVA-2013-198814, 2013.

Salmerón Ochoa, I. Perez Samuel, Ortega Enrique, “R&D for the implementation of a pilot plant for dried instant food with high nutritional value“ PROINNOVA-2014-211075, 2014.

Salmerón Ochoa, I. Perez Samuel, Ortega Enrique., Identification, characterization and determination of the rol of acid lactic yeast and bacteria in Chihuahua sotol fermentation., CONACYT Investigación Científica Básica, 2016.

Salmerón Ochoa, I. Perez Samuel, Ortega Enrique, Consolidation research for the development of sustainable bioprocesses in added value from agroindustrial waste. INFRAESTRUCTURA, INFRA-2016-01-00268372, 2016.

PROFESSIONAL TRAINING

Seminar or Workshop

Workshop, “Scale up of Bioreactor for the production of pharmaceuticals and food: towards Quality by design”, Monterrey, PIIT. Mexico, 2016.

PROFESSIONAL AFFILIATIONS

Member of the National System of Researchers (SNI)
Level 1

PROFESSIONAL SERVICE

Symposium Co-Organizer

Name of Conference, Symposium, Year

Peer-Reviewed Articles for:

Facultad de Ciencias Químicas, circuito Universitario,
Campus Universitario # 2 , Chihuahua, Chih., C.P. 31125
Tels. (614) 236-60-00



- Process Safety and Environmental Protection
- Organic Process Research and Development
- Journal of Processing and Preservation
- Industrial Crops and Production

LANGUAGES

Spanish: Native Language

English: Trinity College Certificate, Grade: 11

AVAILABLE THESIS PROJECTS

For bachelor students

Development of a bioprocess for the separation of added value from oat: Development of experiments aimed to get processing information that can be used for the simulation of a process aimed to separate added value from oat.

Evaluation of a bioprocess for the generation of added value in apple pomace: Development of added value in apple pomace by different experimentation bioprocessing paths. Evaluate the feasibility of each path considering scale up aspects.

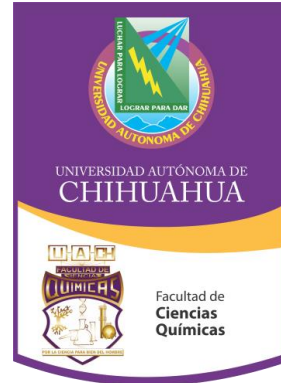
Development of a conceptual design of an oat biorefinery: Develop a conceptual biorefinery design plant in Aspen Plus simulator. Estimate cost, energetic and exergetic efficiency in the process.

For master in Food Processing

Optimization of the extraction of oils from oat by supercritical fluids methodology: Optimization of variables such a pressure and temperature, as well as quantification of oils by gas Chromatography coupled to Mass Analysis.

Development of added value fiber from oat: Develop a treatment for the evaluation and production of oat fiber that can be used as a replacement from conventional flours. Evaluation texture, digestive and non-digestive fiber, and phytochemicals such as antioxidants.

Optimization of the extraction of added value compounds from plants of the region by different extraction methodologies: Evaluate the extraction of added value from plants of



the region, this by evaluating different extraction methodologies such as supercritical fluids, extraction with pressure, and conventional methods by enhancing solvent selection.