



Sebastián Taco Vásquez

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|-------------------|---|-----------------------------------|
| Education: | Ph.D. in Chemical Engineering | Graduation Date: Dec. 2013 |
| | Texas A&M University | GPA: 4.0 /4.0 |
| | M.S. in Chemical Engineering | Graduation Date: Dec. 2009 |
| | Texas A&M University | GPA: 3.9 /4.0 |
| | B.S. in Chemical Engineering | Graduation Date: May 2007 |
| | Escuela Politécnica Nacional, Quito-Ecuador | GPA: 3.7 /4.0 |
| | San Gabriel High school | Graduation Date: July 2001 |
| | Bachiller en Fisicomatemático | GPA: 18 /20 |
| | Salamanca High school | Graduation Date: July 2001 |
| | Bachiller en Contabilidad | GPA: 18 /20 |

Computer skills: MATLAB, Aspen Plus, LINGO, FlexPDE, Office 365

Other skills: Spanish; French (20 %); strong communication/writing skills, problem solving skills, and managing research projects.

Leadership activities

Project Manager:

Undergraduate Research Program for International Students (6 months)

Fall 2008—Spring 2011

Training students to perform experiments in the lab, and supervising their research projects. Data obtained were published in their B.S. thesis.

Multiple projects:

- Catalytic Conversion of Acids to Ketones (2 students)
- Acid Springing step using Cyanex 923 (1 student)
- Ketone Hydrogenation in the MixAlco™ Process (1 student)

Project Manager: Undergraduate Summer Research Program (4 months)

Summer 2008—2012

Multiple projects:

- Catalytic Conversion of Acids to Ketones (1 students)
- Conversion of Isopropanol and Mixed Alcohols to Hydrocarbons Using HZSM-5 Catalyst in the MixAlco™ Process at high pressure (1 student)
- Conversion of Mixed Ketones to Hydrocarbons Using HZSM-5 Catalyst in the MixAlco™ Process at atmospheric pressure (1 student)
- Olefin dimerization using Beta (25) in a Batch Reactor (2 students)

Project Manager for the downstream step in the MixAlco™ process: (11 months)

2010

Pilot plant operations during an 11-month production campaign to produce 100 L of jet fuel to be tested by the U.S. military. This study was supported by DARPA (4 student workers).

Research experience

- *Books:*

1. Taco-Vasquez S, Holtzapple M. Transformation of Acetone and Isopropanol to Hydrocarbons. Berlin: LAP LAMBERT Academic Publishing. Berlin, 2012
2. Taco-Vasquez S, Holtzapple M. Oligomerization and Catalytic Ketonization in the Mixalco™ Process. Berlin: LAP LAMBERT Academic Publishing. Berlin, 2014

- *Publications:*

1. Taco-Vasquez S, Holtzapple M. Conversion of Isopropanol and Mixed-alcohols to Hydrocarbons Using HZSM-5 Catalyst in the MixAlco™ Process. 2013; DOI 10.1002/aic.14008
2. Taco-Vasquez S, Holtzapple M. Biomass conversion to hydrocarbon fuels using the MixAlco™ process Journal Oil & Gas Sciences and Technology. 2013; DOI: 10.2516/ogst/2012062



3. Taco-Vasquez S, Holtzapple M, Dunkleman J, Chaudhuri S, Bond A. Biomass conversion to hydrocarbon fuels using the MixAlco™ process at a pilot-plant scale. *Journal Biomass and Bioenergy*. 2014
 4. Taco-Vasquez, S. and Holtzapple, M.T. (2016), Conversion of isopropanol and mixed alcohols to hydrocarbons using HZSM-5 catalyst in the MixAlco™ process. Part 2: Studies at 5000 kPa (abs). *AIChE J.*, 62: 1707-1715.
- *Works in progress:*
 5. Sebastian Taco-Vasquez, Mark T. Holtzapple, Conversion of Acetone and Mixed Ketones to Hydrocarbons Using HZSM-5 Catalyst in the MixAlco™ Process.
 6. Sebastian Taco-Vasquez, Mark T. Holtzapple, Dimerization of 1-Hexene, 1-Octene, and 1-Decene Using Zeolite Beta (25) Catalyst
 7. Sebastian Taco-Vasquez, Mark T. Holtzapple, Isamara Sarabia, Andres Chico, Thermochemical analyses of a packed-bed reactor using finite elements with the software FlexPDE
 - *Patents:*
 1. M.T. Holtzapple, C.B. Granda, S. Taco-Vasquez, M.K. Ross, G. Luce, J.A. Spencer; R.L. Spencer, "Alternative paths to alcohols and hydrocarbons from biomass," U.S. Patent US 8,232,440 B2, Julio 31 2012
 2. M.T. Holtzapple, C.B. Granda, S. Taco-Vasquez, M.K. Ross, G. Luce, J.A. Spencer; R.L. Spencer, "Alternative paths to alcohols and hydrocarbons from biomass," U.S. Patent 8,519,206 B2, August 27, 2013

Teaching experience

- Head of the Chemical Engineering Department at "Escuela Politecnica Nacional" University **July 2019 -present**
- Principal Professor at "Escuela Politecnica Nacional" University in the Chemical engineering Department **February 2014-present**
- Teaching assistant for "Material Science and Unit Operations" (During my MSc and PhD)

Important courses attended:

- Southeastern Conference (SEC) Symposium, "Renewable Energy" at Georgia Tech University **February 9-13, 2013**
- "Intensive Program of Biorenewables" at Iowa State University (3 weeks) **May 25 -June 15, 2009**

Important presentations:

- "Shock Pretreatment of Lignocellulose", AIChE meeting in Minneapolis **October 16-21, 2011**

Awards:

- Fulbright Scholar **August 2007**
Brunner H. Barnes Scholarship Award **January 2008**

Extracurricular Activities:

- Taekwondo, Soccer, Judo, Running, Lifting weights and Cycling

Currently I am teaching courses of Thermodynamics and Petroleum Refining in the Chemical Engineering Department at "Escuela Politecnica Nacional".