Dr. ANA INÉS TORRES RIPPA

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EDUCATION

Postdoctoral Training, Chemical Engineering 2014
Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A.

Ph.D., Chemical Engineering 2013
University of Minnesota- Twin Cities, Minneapolis, Minnesota, U.S.A.

Chemical Engineer 2005
Universidad de la República Oriental del Uruguay, Montevideo, Uruguay

Bachelor in Chemistry 2003
Universidad de la República Oriental del Uruguay, Montevideo, Uruguay

EXPERIENCE

Assistant Professor To start 2015
Department of Chemical Engineering
Universidad de la República, Montevideo, Uruguay

Consultant
Massachusetts Institute of Technology 2015-Present

Postdoctoral Research Associate 2013-2014
Department of Chemical Engineering
Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A.
Advisor: Prof. G. Stephanopoulos
Project: Biorefinery-Integrated Sustainable Processes for Biomass Conversion to Biomaterials, Biofuels and Fertilizer. Flagship project Masdar Institute (U.A.E.)-MIT.

Graduate Research Assistant 2007 - 2013
Department of Chemical Engineering and Materials Science
University of Minnesota, Minneapolis, Minnesota
Advisors: Profs. P. Daoutidis and M. Tsapatsis
Thesis: Biomass to chemicals: design and optimization of processes for the production of 5-Hydroxymethylfurfural (HMF).

Research and Development Engineer 2005 - 2006
Fanacif S.A. (Affinia Group Inc.), Montevideo, Uruguay

Technical Assistant 2004
American Chemical i.c.s.a, Montevideo, Uruguay

Research Assistant 2003 - 2005
School of Chemistry, Department of Food Science and Technology
Universidad de la República Oriental del Uruguay, Montevideo, Uruguay
Advisor: Prof. I. Jachmanián

Teaching Assistant 2001 - 2003
School of Chemistry, Department of Physical Chemistry
Universidad de la República Oriental del Uruguay, Montevideo, Uruguay

AWARDS

- **Doctoral Dissertation Fellowship** 2011 - 2012
  University of Minnesota, Minneapolis, Minnesota.
- **Student Poster Award** 2013
  Gordon Research Conference (Nanoporous Materials & Their Applications).

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Reviewer for American Institute of Chemical Engineers Journal Energy 2013 - Present
- Reviewer for RSC's Journal Energy & Environmental Science 2011 - Present
- Member of the American Institute of Chemical Engineers 2008 - Present

PUBLICATIONS

1. **Torres, A. I.**, Stephanopoulos, G., "Framework for the design and optimization of production networks". In preparation.
2. Bonk, F., Chaturvedi, T., **Torres, A. I.**, Schmidt, J. E., Thomsen, M. H., Stephanopoulos, G., "Exploring opportunities for the production of chemicals from municipal solid wastes within the framework of a biorefinery", *Proceedings of ESCAPE 25*, 25th European Symposium on Computer-Aided Process Engineering Copenhagen, Denmark, 2015. Accepted.
3. **Torres, A. I.**, Chaturvedi, T., Al-Husseini, Z., Cybulska, I., Thomsen, M. H., Schmidt, J. E., Stephanopoulos, G. "A novel approach for the identification of economic opportunities Framework for the design and optimization of biorefinery networks", *Proceedings of ESCAPE 25*, 25th European Symposium on Computer-Aided Process Engineering Copenhagen, Denmark, 2015. Accepted.
4. Al-Wahedi, Y., **Torres, A. I.**, Al-Hashimi, S., Dowling, N., Daoutidis, P., Tsapatsis, M., "Economic assessment of temperature swing adsorption systems as Claus tail gas clean up units" *Chem. Eng. Sci.*, 2014. In press.
5. Rajabbeigi, N.*, **Torres, A. I.***, Lew, C. M., Elyassi, B., Ren, L., Wang, Z., Cho, H. J., Fan, W., Daoutidis, P., Tsapatsis, M. "On the kinetics of the isomerization of glucose to fructose using Sn-Beta ", *Chem. Eng. Sci.*, 116, 235-242, 2014.

6. Daoutidis, P., Kelloway, A., Marvin, W. A., Rangarajan, S., **Torres, A. I.**, " Process systems engineering for biorefineries: new research vistas ", *Curr. Op. Chem. Eng.*, 2(5), 442-447, 2013.

7. Daoutidis, P., Marvin, W. A., Rangarajan, S., **Torres, A. I.**, " Engineering Biomass Conversion Processes: A Systems Perspective ", *AIChE J.*, 59(1), 3-18, 2013. (Cover article)

8. **Torres, A. I.**, Tsapatsis, M., Daoutidis, P., "Biomass to chemicals: Design of an extractive-reaction process for the production of 5-hydroxymethylfurfural", *Comput. Chem. Eng.*, 42, 130-137, 2012.

9. Daoutidis, P., Marvin, W. A., Rangarajan, S., **Torres, A. I.**, "Process Engineering of Biorefineries: Recent Results and New Research Vistas", *Proceedings FOCAPO 2012 / CPC VIII*, Foundations of Computer-Aided Process Operations - Chemical Process Control Engineering Conferences, Savannah, GA, 2012.

10. Jogwar, S. S., **Torres, A. I.**, Daoutidis, P., "Networks with Large Solvent Recycle: Dynamics, Hierarchical Control and a Biorefinery Application", *AIChE J.*, 58(6), 1764-1777, 2012.

11. **Torres, A. I.**, Daoutidis, P., Tsapatsis, M., " Continuous Production of 5-Hydroxymethylfurfural from Fructose: a Design Case Study", *Energy Environ. Sci.*, 3(10), 1560-1572, 2010.

12. Margenat, L., **Torres, A.** , Moyna, P., Heinzen, H., Gonzalez, G., Jachmanian, I., "Lanoline Purification by Selective Extraction of Pesticides Using Supercritical CO_2", *J. Supercrit. Fluid*, 45(2), 177-180, 2008.

13. Jachmanian, I., Margenat, L.,**Torres, A.** , Grompone, M., "Selectivity of Supercritical CO_2 in the Fractionation of Hake Liver Oil Ethyl Esters", *J. Am. Oil Chem. Soc.*, 84(6), 597-601, 2007.

14. Jachmanian, I., Margenat, L.,**Torres, A.** , Grompone, M., "Estabilidad Oxidativa y Contenido de Tocoferoles en el Aceite de Canola Extrado con CO_2 Supercrtico", *Grasas y Aceites (Spain)*, 57(2), 155-159, 2006.

PRESENTATIONS

1. "A Novel Approach for the Identification of Economic Opportunities within the Framework of a Biorefinery", A. I. Torres, T. Chaturvedi, I. Cybulska, C. Fang, M.H. Thomsen, J. E. Schmidt, G. Stephanopoulos, 25th European Symposium on Computer-Aided Process Engineering, Copenhagen, Denmark, May 31-June 4, 2015. Accepted.

2. "Exploring opportunities for the production of chemicals form municipal solid wastes within the framework of a biorefinery", F. Bonk, T. Chaturvedi, A. I. Torres, J. E. Schmidt, G. Stephanopoulos, 25th European Symposium on Computer-Aided Process Engineering, Copenhagen, Denmark, May 31-June 4, 2015. Accepted.

3. "Framework for the design and optimization of biorefinery networks", A. I. Torres, T. Chaturvedi, Z. Al-Husseini, I. Cybulska, M.H. Thomsen, J. E. Schmidt, G. Stephanopoulos, American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 16-21, 2014. Oral.

4. "On the kinetics of the Sn-beta catalyzed isomerization of glucose into fructose ", N. Rajabbeigi * , A. I. Torres* , B. Elyassi, C. M. Lew, L. Ren, Z. Wang, W. Fan, P. Daoutidis and M. Tsapatsis , Gordon Research Conference (Nanoporous Materials & Their Applications), Holderness, NH, August 11-16, 2013. Poster.

5. "Design and optimization of processes for the production of 5-hydroxymethylfurfural ", A. I. Torres, P. Daoutidis and M. Tsapatsis, Catalysis Center for Energy Innovation Spring Symposium, Newark, DE, April 29-30, 2012. Poster.

6. "Biomass to Chemicals: Design of an Extractive Reaction Process for the Production of 5-Hydroxymethylfurfural", A. I. Torres, M. Tsapatsis and P. Daoutidis, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 16-21, 2011. Oral.

7. "Hierarchical Control of Networks Featuring Large Solvent Recycle", S. S. Jogwar, A. I. Torres and P. Daoutidis, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 16-21, 2011. Oral.

8. "Biomass to Chemicals: Design of an Extractive Reaction Process for the Production of 5-Hydroxymethylfurfural", A. I. Torres, P. Daoutidis and M. Tsapatsis, 21st European Symposium on Computer-Aided Process Engineering, Chalkidiki, Greece, May 29 - June 1, 2011. Oral.

9. "Design and Optimization of a Process for the Production of 5-Hydroxymethylfurfural from Biomass", A. I. Torres, M. Tsapatsis and P. Daoutidis, American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 8-13, 2009. Oral.