Lucas M. Dos Santos
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HIGHLIGHTS

- Experience in polymer synthesis and characterization
- International exposure having performed research and presented lectures in Canada, Germany and Brazil
- Various academic and research awards
- Languages: Native Spanish, proficient in English, basic Portuguese.

EDUCATION

PhD, Polymer Science. **The University of Akron,** Akron, OH. *Expected in Summer 2008.*
Dissertation: "Synthesis of Novel Arborescent Model Polymer Structures by Living Carbocationic Polymerization for Systematic Structure-Property Relationship Studies"
Advisor: Dr. Judit E. Puskas.

BS, Chemical Engineer. *GPA:* **9.23/10** *Graduated first in class of more than 100 students (2003)*
Universidad Nacional del Litoral. (U.N.L.), Santa Fe, Argentina.

EXPERIENCE

Dept. of Polymer Science. The University of Akron. LANXESS scholarship. *(2003-present)*

- **Research.**
  - Improved initiator synthesis yield to a level acceptable for industrial production (80% yield).
  - Performed cationic polymerization synthesis (mainly hyperbranched polyisobutylene and polyisobutylene based copolymers) using glovebox techniques and monitoring monomer and polymer concentrations by in-situ Fourier Transform Infrared (FTIR) Spectroscopy.
  - Performed polymer characterization involving several techniques: Size Exclusion Chromatography (SEC), Nuclear Magnetic Resonance (NMR), Differential Scanning Calorimetry (DSC), tensile and fatigue testing equipment
  - Expertise in Size Exclusion Chromatography (SEC), having commissioned and maintained a SEC system for three years. Independently developed innovative tools for branching studies.
  - Successful pilot plant synthesis of block copolymers.
  - Fatigue experiments conducted at the Universität Bayreuth, in Germany.
- **Courses:** "Light Scattering University", Wyatt headquarters. Santa Barbara, CA. 10/2005.
- **Teaching experience: Lab assistant in graduate course:** "Condensation polymerization" and "Emulsion Polymerization" (2003-present). **Upward Bound Math and Science Program:** Instructor during three summers (2004-2006) in a program for high school students.

ExxonMobil. Junior Engineer Internship. Argentina *(1/2002 – 4/2002)*

- Area: Refining & Supply. Division: Operations Support. Proposed solutions to commentaries in the Chemical Treatment Unit's safety report (HAZOP). Studied the oil preheaters and adjusted its simulation to develop a cleaning program for the heat exchangers

Institute for Catalysis and Petrochemistry. Research Scholarship. Argentina (*9/2000 – 11/2001)*

- Prepared, characterized and tested performance of basic solid catalysts for application in aldol condensation reactions. 3 publications and 2 presentations at meetings

Chemical Reactions Engineering Department (U.N.L.). Research Assistantship. Argentina (*3/1999 – 9/1999)*

- "Linear alcohol coupling on mixed oxides promoted with copper." 2 publications and 1 presentation at a meeting.

AWARDS

Outstanding Student Research Award 2007, Graduate School, The University of Akron, Akron, OH, 2007.
Best Graduate Poster, Conference on Undergraduate and Graduate Student Research (CUGSR), The University of Akron, Akron, OH, 2006.
National Award CONACA-IPA 2003 for "Innovative Activity in Catalytic Processes in Petrochemical Industry", Comite Nacional de Catalisis and Instituto Petroquimico Argentino, Argentina, 2003.
"Gold medal" for graduating with the highest GPA in Chemical Engineering, Universidad Nacional del Litoral, Argentina, 2003.

PUBLICATIONS

1. **Self-condensing vinyl polymerization of 4-(2-methoxy-isopropyl) styrene. Dos Santos, L. M.**; Puskas, J. E. *Polym. Prepr.* **2008**, *49* (1), 87-88.
2. **Novel thermoplastic rubbers based on functionalized arborescent (dendritic) polyisobutylene.** Puskas, J. E; **Dos Santos, L. M.**; Kaszas, G.; Kulbaba, K. *Polym. Prepr.* **2008**, *49* (1), 70-71.
3. **Analysis of the architecture of polyisobutylenes by multidetection SEC and selective chemical link destruction. Dos Santos, L. M.**; Foreman, E.; Sen, M. Y.; Puskas, J. E. *Polym. Prepr.* **2007**, *48* (1), 350-351.
4. **Synthesis and SEC characterization of polyisobutylenes from the 4-(1, 2-oxirane-isopropyl)-styrene inimer.** Foreman, E.; **Dos Santos, L. M.**; Puskas, J. E. *Polym. Prepr.* **2007**, *48* (1), 516-517.
5. **Effect of architecture on the properties of polyisobutylene-based TPE materials.** Puskas, J. E.; **Dos Santos, L. M.**; Sen, M. Y.; Kaszas, G. *Rubber Chemistry and Technology* **2007**, *80(4)*, 661-671.
6. **Real-time FTIR monitoring of the self-condensing vinyl homo- and copolymerization of 4-methoxyisopropyl-styrene with isobutylene.** Puskas, J. E.; **Dos Santos, L. M.**; Kulbaba, K. *Proceedings of the World Polymer Congress, 41st International Symposium on Macromolecules* July 16-21, **2006.**
7. **Innovation in material science: the chameleon block copolymer.** Puskas, J. E.; **Dos Santos, L. M.**; Kaszas, G. *J. Polym. Sci., Part A: Polym. Chem.* **2006,** *44* (21), 6494-6497.
8. **In-situ monitoring of inimer-type carbocationic polymerization of isobutylene. Dos Santos, L. M.**; Puskas, J. E.; Kulbaba, K. *Polym. Prepr.* **2006,** *47* (1), 164-165.
9. Five technical reports presented to LANXESS Inc.

SELECTED PRESENTATIONS

- "IUPAC International Symposium on Ionic Polymerization"; Kloster Banz, Germany; September 2nd - 7th, 2007; lecture.
- "IUPAC World Polymer Congress – 41° International Symposium on Macromolecules"; Rio de Janeiro, Brazil; July 16th - 21st, 2006; lecture.
- ACS 2006 Spring National Meeting; Atlanta, GA; March 26th - 30th, 2006; poster presentation.
- Fall 170th ACS Rubber Division Technical Meeting; Cincinnati, OH; October 10th – 12th, 2006; lecture and poster presentation.
- Fall 168th ACS Rubber Division Technical Meeting; Pittsburgh, PA; November 1st – 3rd, 2005; poster presentation.

AFFILIATIONS

- American Chemical Society (2005 – present)
- Rubber Division of the American Chemical Society (2005 – present)
- ACS Polymer Chemistry Technical Division (2005 – present)