

# Xuejian Chen

xchen79@central.uh.edu | 850-559-8960 | <https://www.linkedin.com/in/xuejian-chen-7220a572/> | Houston, TX

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## SUMMARY

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- PhD in Chemical Engineering with ~2 years of postdoc research experience
- Expertise in melt crystallization, phase separation, thermodynamic interaction in polyolefin and polydiene systems
- Proficiency in material characterization techniques, i.e., calorimetry, microscopy, spectroscopy, and scattering
- Prior internship experience in refineries and a petrochemical research institute
- Excellent writing and presentation skills

## EDUCATION

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**Florida State University**, Tallahassee, FL May 2018

*Doctor of Philosophy in Chemical Engineering*. Overall GPA: 3.917

Advisor: Rufina G. Alamo

- Dissertation: "Melt Structure and Crystallization of Random Ethylene Copolymers"

**Florida State University**, Tallahassee, FL Aug. 2014

*Master of Science in Chemical Engineering*. Overall GPA: 3.9

Advisor: Rufina G. Alamo

- Thesis: "Effect of Length of 1-Alkene on Melt Memory of Crystallization above the Equilibrium Melting Temperature of Random Ethylene Copolymers"

**China University of Petroleum**, Beijing, China June 2013

*Bachelor of Engineering in Chemical Engineering*. Overall GPA: 3.47

- Senior Design: "Design of a Grassroots Facility for the Production of 50,000 Metric Tons/Yr of Methyl Tertiary-Butyl Ether (MTBE)"

## WORK EXPERIENCE

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**University of Houston**, Houston, TX 2018-Present

*Postdoctoral Researcher*

Advisors: Ramanan Krishnamoorti, Megan Robertson

- Synthesized polydienes via anionic polymerization
- Saturated polydienes with hydrogen or deuterium in high pressure reactor
- Conducted hydrogen-deuterium exchange for polyolefins in high pressure reactor
- Designed, built, and programmed a Small Angle Light Scattering (SALS) instrument
- Investigated thermodynamic interactions in polydiene/polyolefin blend systems with SANS and SALS
- Provided quantitative guidance for thermoplastic elastomer design with structure-properties relationship identified

**Florida State University**, Tallahassee, FL 2013-2018

*Research Assistant*

- Designed and conducted experiments to investigate the effect of melt structure on crystallization and film properties
- Performed structure and property characterizations in both melt and crystalline state
- Developed comprehensive structure-property relationship in semi-crystalline polyethylene based copolymers
- Published papers in scientific journals

*Teaching Assistant*

- Courses assigned: Transport Phenomena, Mass & Energy Balance, ChemE Process Design, Unit Operations Lab
- Graded homework, quizzes, projects, and exams
- Held office hours and recitations
- Provided hands-on experiment instruction

**Petrochemical Research Institute (China National Petroleum Corporation)**, Beijing, China July 2013

*Research Internship*

- Analyzed the cause of short-term use cracks in PE pipes utilizing rheology
- Documented key findings in a presentation and technical report

## TECHNICAL SKILLS

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Instrument/Equipment:	SANS, SALS, DSC, Optical Microscope, FT-IR, NMR, GPC, Rheometer, Tensile Test Machine, TGA, GC, Rotovap, Glovebox
Experimental Skill:	Polymer Blending, Polydiene Saturation, Solvent/Non-solvent Fractionation, H-D Exchange, Density Measurement, Anionic Polymerization
Software:	Aspen Plus, AutoCAD, Igor Pro, Saxsgui, ImageJ, Photoshop, ChemDraw, VMD, MS Office
Programming:	Matlab, C, Labview

## PUBLICATIONS

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1. **X. Chen**; J. Qiu; C. R. López-Barrón; B. J. Rohde; M. L. Robertson; R. Krishnamoorti “Thermodynamic Interactions in Blends of Poly(ethyl ethylene-co-ethylene) and 1,4-Polyisoprene” (In preparation, 2020).
2. **X. Chen**; C. López-Barrón; Y. Zeng; R. G. Alamo “Concentration Fluctuations in the Early Stages of LLPS and Partial Dissolution of Melt Memory in Broadly Distributed Ethylene Copolymers” *Polymer* 2018, 148, 181.
3. **X. Chen**; C. Qu; R. G. Alamo “Effect of Annealing Time and Molecular Weight on Melt Memory of Random Ethylene 1-Butene Copolymers” *Polym. Int.* 2018, 68, 248.
4. **X. Chen**; G. D. Wignall; L. He; C. López-Barrón; R. G. Alamo “Evidence of Liquid-Liquid Phase Separation in Broadly Distributed Random Ethylene Copolymers via SANS” *Macromolecules* 2017, 50, 4406.
5. W. Hu; V. B. F. Mathot; R. G. Alamo; H. Gao; **X. Chen** “Crystallization of Statistical Copolymers” *Adv. Polym. Sci.* 2016, 276, 1.
6. **X. Chen**; A. Mamun; R. G. Alamo “Effect of Level of Crystallinity on Melt Memory Above the Equilibrium Melting Temperature in a Random Ethylene 1-Butene Copolymer” *Macromol. Chem. Phys.* 2015, 216, 1220.
7. M. Ren; **X. Chen**; Y. Sang; R. G. Alamo “Effect of Heterogeneous Short Chain Branching Distribution on Acceleration or Retardation of the Rate of Crystallization from Melts of Ethylene Copolymers Synthesized with Ziegler-Natta Catalysts” *Macromol. Symp.* 2015, 356, 131.
8. A. Mamun; **X. Chen**; R. G. Alamo “Interplay between a Strong Memory Effect of Crystallization and Liquid-Liquid Phase Separation in Melts of Broadly Distributed Ethylene 1-Alkene Copolymers” *Macromolecules* 2014, 47, 7958.

## PRESENTATIONS (SELECTED)

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1. **X. Chen**; J. Qiu; C. R. López-Barrón; B. J. Rohde; M. L. Robertson; R. Krishnamoorti “Thermodynamic Interactions in Blends of Poly(ethyl ethylene-co-ethylene) and 1,4-Polyisoprene” *Advances in Polyolefins* 2019. Rohnert Park, CA, USA. 09/22/2019.
2. **X. Chen**; C. López-Barrón; R. G. Alamo “Effect of Branching Distribution on Liquid-Liquid Phase Separation in Broad Ethylene Copolymers” 7<sup>th</sup> International Conference on Polyolefin Characterization. Houston, TX, USA. 10/21/2018.
3. **X. Chen**; G. D. Wignall; L. He; R. G. Alamo “Evidence of LLPS in Melts of Broadly Distributed Ethylene Copolymers via Deuterium Labeling and Effect on Self-Nucleation and Crystallization” 2017 APS March Meeting. New Orleans, LA, USA. 03/16/2017
4. **X. Chen**; R. G. Alamo “Effect of Melt Annealing on Self-Nucleation of Random Ethylene 1-Alkene Copolymers” 2016 ICTAC Conference. Orlando, FL, USA. 08/16/2016.

## LEADERSHIP

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- **President**, Fujian Fellow Provincials, China University of Petroleum 2011-2012
- **Class President**, Chemical Engineering. China University of Petroleum 2011-2012
- **Vice President of Events**, Association of Chemical Enthusiasts, China University of Petroleum 2010-2011

## HONORS

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- Best Poster Award. *Advances in Polyolefins* 2019, Rohnert Park, CA 2019
- NATAS Student Travel Award. ICTAC Conference, Orlando, FL 2016
- Third Prize in BASF Cup Principles of Chemical Engineering Contest. Beijing, China 2012
- Second-class Team Award of Social Practice. China University of Petroleum 2011
- Honorary Title of “Merit Student”, “Advanced Individual in Social Practice”, & “Advanced Individual in Technological Innovation”. China University of Petroleum 2010-2012
- Second-class Scholarship & Third-class Scholarship. China University of Petroleum 2010-2011