Reza Farasat, Ph.D. (Curriculum Vitae)

Contact Information:

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- **Current position:** Assistant Teaching Professor of Chemistry at Drexel University

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Education:

- **Postdoctoral Fellow,** The Center for Polymer Reaction Monitoring and Characterization (PolyRMC), Tulane University, New Orleans (2015-2016)
- **Ph.D., Chemistry**, University of Alabama at Birmingham, 2015
- **M.Sc., Chemistry**, University of Alabama at Birmingham, 2014
- **M.Sc., Applied Chemistry**, Azad University of Tabriz, 2005
- **B.Sc., Chemistry**, Urmia University, 2001

Teaching Experience:

- Assistant Teaching Professor, Department of Chemistry, Drexel University (September 2020- Present)

  Responsibilities:

- Coordinator of physical chemistry labs in chemistry department

Lectures:

- Polymer Chemistry courses: the courses are taught for both undergraduate & graduate students in three terms during the year. Polymer Chemistry I (CHEM465/CHEM561) in Fall, Polymer Chemistry II (CHEM466/CHEM562) in Winter and Polymer Chemistry III (CHEM467/CHEM563) in Spring.

- CHEM253: Thermodynamics & Kinetics
- CHEM356-A: Physical Chemistry lab lecture for non-majors
- CHEM357-A: Physical Chemistry I lab lecture for chemistry majors
- CHEM358-A: Physical Chemistry II lab lecture for chemistry majors

Laboratories, tutoring and recitations:

- Physical chemistry labs for majors & non-majors (CHEM356 & CHEM357)
- General Chemistry lab (CHEM102)
- General Chemistry tutoring
- General Chemistry recitations

Services in Drexel University: Serves on the chemistry department awards committee

- Adjunct Faculty at Trenholm State College
- Science Faculty at the Montgomery Academy (2018-2020)
- Taught 2 years at the University of Alabama at Birmingham (2010-2011 & 2013-2014)

Research Experience:

- Research Collaborator at Center for Nanobiotechnology and Life Science Research, Alabama State University (2019-2020)

Focused on synthesis and characterization of nanocomposites of carbon nanofiber (CNF). The goal was to incorporate an appropriate substance into nanofiber to improve electrical properties.

- Provided consulting services for universities, national lab, and companies on their (polymer) research projects (2016-2017)

Worked on method development, creating applications, and providing consultation for various type of the polymers by Multi-detector (Refractive Index/ UV, Light Scattering and Viscometer) Gel Permeation Chromatography (GPC)

- Postdoctoral Fellow at Center for Polymer Reaction Monitoring and Characterization (PolyRMC) of Tulane University, New Orleans (2015-2016)

Research focused on studying polymers using methodologies such as Automatic Continuous Online Monitoring of Polymerization (ACOMP), Automatic Continuous Mixing (ACM) and Multi-detector Size Exclusion Chromatography (SEC).

- PhD, University of Alabama at Birmingham (2010-2015)

Prepared nanoparticles of selected materials (including polymer) by confining them to the nanopores and studied their phase transitions to examine how dimensional reduction of the materials to nanometer size affects their thermal and kinetic properties. The results obtained can be used as a means for controlling the practically important physical properties of solids as well as chemical reactivity and drug delivery application.

- Masters, Azad University of Tabriz (2002-2005)

Synthesized functionalized polymers of polyacrylonitrile and applied them to prepare metal complexes of group IIB elements in various pH levels. Then measured the amounts of metals absorbed by each polymer. The goal was to identify the capability of environmental-friendly polymers to absorb toxic heavy metals.

Selected publications, professional reports, and research projects:

1- **Farasat, R.**, Study of the effects of sample preparation on the degradation of polyolefins, **2017**.
2- **Farasat, R.**, Reed, W., Drenesky, M., Study of p-phenylene ether (PPE) polymerization by ACM (Automatic Continuous Mixing) Technique, **2016**.
3- **Farasat, R.**, Vyazovkin, S., Solid-Solid transitions in nanopores: Attempt to separate the size and surface effects, *J. Phys. Chem. C*, **2015**, 119, 9627-9636.
4- **Farasat, R.**, Vyazovkin, S., Coil-to-globule transition of poly(N-isopropylacrylamide) in aqueous solution: Kinetics in bulk and nanopores, *Macromolecular Chemistry and Physics*, **2014**, 215, 2112-2118.
5- **Farasat, R.**, Yancey, B., Vyazovkin, S., High temperature solid−solid transition in ammonium chloride confined to nanopores, *J. Phys. Chem. C*, **2013**, 117 (26), 13713–13721.
6- **Farasat, R.**, Yancey, B., Vyazovkin, S., Loading salts from solutions into nanopores: Model and its test, *Chemical Physics Letters* 558, **2013**, 72–76.
7- **Farasat, R.**, Arsalani, N., Preparation and study of metal complexes of IIB group with functionalized polyacrylonitrile, *12th Seminar of Organic Chemistry*, March **2006** (conference paper).

Professional Work Experience:

- **Chemistry Lab Manager**, at Gibraltar Laboratories **(**2017- 2018)

As a manager in a FDA approved lab that functions under GMP/GLP conditions, led a group of scientists (including PhD level scientists) working on raw materials and finished products for the pharmaceutical industry. Directed method development, validation, and creating/reviewing SOPs. (Techniques: HPLC, GC, ICP-MS, AA, FT-IR, UV-Vis)

- **Analytical Chemist**, at Petroleum Company (Oil Refinery) (2008- 2010)

Responsibilities: worked on research and development projects; performed non-routine tests; collaborated with the quality control lab; trained new employees and internship students

- **Chemist** (2003- 2005) and **Senior Chemist** (2005- 2008), at Jam Petrochemical Company

Company produces essential polymers such as HDPE, LDPE, PP and butadiene rubber. Conducted (and later led) tests/method developments to determine the crucial parameters of the produced polymers for their applications.

Primary responsibilities: budgeted and order required materials for the lab; supervised a team in the lab including chemists, senior technicians, and technicians; performed non-routine tests; regularly attended trainings and workshops to remain updated on test methods; trained chemists and techniques to work in accordance with ASTM.

Presentations:

- Poster Presentation at PITTCON Conference: Determination of molar mass averages and polydispersity of polypropylene random copolymers using high temperature GPC system (Chicago, IL, March 2017)
- Webinar presentation about applying advanced multi-detection principle for SEC analysis (December 2016)
- Poster presentation at Eastern Analytical Symposium: Reproducible size exclusion chromatographic analysis of composite polymers (Somerset, NJ, November 2016)
- Oral presentation at Csaba Symposium: Fundamentals of triple detection in both ambient and high temperature GPC analysis (Yale University, CT, October 2016)
- Oral presentation at the North American Thermal Analysis Society's Conference: Kinetics of the coil-to-globule transition in bulk and nanoconfined aqueous solutions of poly(N-isopropylacrylamide) (Santa Fe, NM, September 2014).
- Poster presentation at 248th American Chemical Society National Meeting & Exposition: The Turnbull-Fisher Model as applied to the kinetics of solid-solid phase transitions (San Francisco, CA, August 2014).
- Poster presentation at the American Physical Society's Meeting: High temperature solid- solid transition in ammonium chloride confined to nanopores (Denver, CO, March 2014)
- Oral and poster presentation at the North American Thermal Analysis Society's conference: Developing and testing a model for loading salts from solutions into nanopores (Bowling Green, KY, August 2013).

- Poster presentation at 12th Seminar of Organic Chemistry: Preparation and study of metal complexes of IIB group with functionalized polyacrylonitrile (March 2006)

Awards, Honors and Certifications:

a) Academic:

- Obtained online teaching certification (2020)
- Received American Chemical Society Funding for development of a research course (2018)
- Achieved Tulane University Polymer Center certification for Multi Detector Gel Permeation Chromatography (GPC) workshop (2015)
- Awarded as Outstanding Graduate Student by American Chemical Society (ACS) (2015)
- Awarded Travel Grant for American Physics Society Conference (2014)
- Earned College Teaching Certification from the Center for the Integration of Research, Teaching, and Learning (CIRTL) (2013)

b) Selected Industrial Certifications:

- Workshop by Lurgi and BASF Chemical Company as a Senior Chemist, Germany (June 2008)
- Workshop by Mettler Toledo Company on Thermal Analyzers (DSC-TGA-DMA), Representative from Switzerland (November 2005 and November 2007)
- Workshop on ISO/IEC 17025.It includes sessions such as:
  - Basic & Documentation of Laboratory Quality Management System in Accordance With ISO/IEC 17025, (July, 2007)
  - Estimation of Measurement Uncertainty in Testing & Calibration Laboratories (August, 2007)
  - Internal & External Quality Control in Testing & Calibration Laboratories (August and September, 2007)
  - Principles of Calibration (September, 2007)
- Workshop by Exclusive Representative of Mettler Toledo Company on Titrator, Moisture Analyzer & Disperser (July, 2007)

- Workshop by Eco Chemie Company (Netherlands) on Potensio-Galvano Apparatus made for Study of Electrochemistry, Corrosion and Determination of Heavy Metals (April 2007)

- Workshop by Metrohm Company's Representative on Ion Chromatography instrument (April 2007)

- Workshop by Gulf Scientific Corporation on Varian Atomic Absorption instruments (Flame & Graphite Tube) including principles, operation, and maintenance (May 2006)