Nasrin Attari

Email: nasrin.attari.1@ens.etsmtl.ca | **Phone:** +1(438)928-7577 | **Address:** 8106B- 425 Rue de la Montagne, Montréal, QC, H3C0J9

SUMMARY

A Ph.D. candidate with a demonstrated history of working in the academia , skilled in life cycle assessment, design of experiments, optimization, and membrane synthesis methods; and passionate utilization of Aspen HYSYS, Aspen Plus, Ansys Fluent, and Matlab; with strong knowledge of Chemical Engineering processes, and polymer science. A research professional focused in Environmental Science and Engineering from École de Technologie Supérieure (Université du Québec) with good knowledge of experimental characterization techniques (e.g. tensile test, XRD, SEM and AFM).

EDUCATION

Doctor of Philosophy in Environmental Engineering, *École de Technologie Supérieure-Université du Québec*, Montréal, Canada, GPA :A+ (4.15/4.3) **2017- Present**

- *Thesis:* **Development of an innovative nanocomposite polymer membrane and water treatment process in order to separate micro/nano-plastics from drinking water,** this project is a study of optimization of the electrospun polymeric nanofiber membranes to remove micro/nano-plastic particles from drinking water. Additionally, the environmental impacts of whole process of synthesis and treatment and also the plastic concentrate waste will be interpreted using Life Cycle Assessment technique.
- *Selected Courses:* Life Cycle-Based Environmental Footprint

Master of Science in Chemical Engineering - Process Engineering, *Sahand University of Technology*, Tabriz, Iran, GPA: A **2010- 2012**

- *Thesis Title*: Optimizing the fabrication of the polysulfone hollow-fiber membranes via NIPS (Non-Solvent Induced Phase Separation) method used in microfiltration processes
- *Selected Courses*: Advanced Environment Engineering, Process Modeling & Simulation, Advanced Optimization

Bachelor of Science in Chemical Engineering, *Amirkabir University of Technology (Tehran Polytechnic)*, Tehran, Iran, Technical GPA: A **2005- 2009**

- *Final Project*: Modeling of a gas sweetening unit using Aspen HYSIS

PROFESSIONAL EXPERIENCE

University Lecturer, *Payame Noor University,* Tabriz, Iran **2014 – 2017**

- Instructed courses and supervised a number of undergraduate final projects in Chemical Engineering Department
- Worked as scientific and technical editor for Payame Noor Journal of Chemical Engineering.

Researcher, *East Azerbaijan Water & Wastewater Company*, Tabriz, Iran **2013-2014**

- Prepared polysulfone/clay mixed-matrix membranes optimized for arsenic removal from drinking water.
- Evaluated the structural and performance characteristics of prepared membranes.
- Proposed a procedure for arsenic removal from drinking water that got accepted.

Research Assistant, *Sahand University of Technology*, Tabriz, Iran **2010-2013**

- Optimized the fabrication of the polysulfone hollow-fiber membranes via Non-Solvent Induced Phase Separation (NIPS) method for microfiltration processes.

- Investigated structural characteristics of the fabricated membranes using Scanning Electron Microscope (SEM) imaging, mechanical strength test, pure water permeability test, and mean pore size test.
- Evaluated the performance of fabricated membranes for collagen protein rejection.
- Implemented Design of Experiments (DOE) by Minitab software (response surface design) to determine the factor settings that optimize results for membrane fabrication.

PUBLICATIONS

- **N. Attari**, R. Yegani, Y. Jafarzadeh, "Investigation of the Effects of Bore Fluid Composition and Coagulation Bath Temperature on the Structure and Performance of Polysulfone Hollow-fiber Membranes in Collagen Separation", Iranian Journal of Polymer Science and Technology, No. 29, Issue 6, Feb 2017
- **N. Attari**, R. Yegani, "Characteristic Study and Fouling Mitigation in Polysulfune Hollow-fiber Membranes for Protein Rejection", Ontario's Water Conference & Trade Show, Niagara Falls, Canada, May 7-10, 2017
- **N. Attari**, R. Yegani, "Effect of Various Types of Porosity on Mechanical Strength and Pure Water Permeability of Polysulfone Hollow-fiber Membranes", International Porous & Powder Materials Conference, çeşme-Izmir, Turkey, September 3-6, 2013
- **N. Attari**, R. Yegani, "Improvement of Antifouling Characteristic, Pure Water Permeation and Mechanical Strength of Polysulfone Hollow-fibre Membranes to be Used in Microfiltration Process", IWA Membrane Technology Conference (IWA-MTC 2013) Toronto, Canada, August 25-29, 2013

HONORS & AWARDS

- Bourse Interne, a merit-based scholarship from École de Technologie Supérieure, Montréal, Canada, 2019
- Ranked among top 3% in the nationwide universities entrance exam to graduate studies with more than 10'000 participants, 2010
- Ranked among top 3% in the nationwide universities entrance exam to undergraduate studies with more than 500'000 participants, 2005

SELECTED COURSE PROJECTS AND SEMINARS

- Projects:
  - Title: Assessment of Water Footprint and Carbon Footprint of production and consuming a pair of jeans In India and Canada/Quebec
    Course: Life Cycle-Based Environmental Footprint, McGill University
  - *Title*: Calculation of Viral Coefficients Using Lennard-Jones Molecular Potential Function by MATLAB
    Course: Advanced Thermodynamics, Sahand University of Technology
- Seminar Presentations:
  - Title: Planetary Boundaries and Environmental Sustainability
    Course: Life Cycle-Based Environmental Footprint
  - *Title*: Heavy Metal Removal from Wastewater by Ion Flotation
    Course: Advanced Environmental Engineering
  - *Title*: Differential Evolution (DE) Strategies for Optimal Design of Chemical Processes
    Course: Advanced Optimization

LABORATORY EQUIPMENT SKILLS

- Electrospinning apparatus
- AFM Eviroscope

- SEM, SEM-S3600-N Hitachi
- Ultrasonic Disperser
- Non solvent Induced Phase Separation (NIPS) and Thermally Induced Phase Separation (TIPS) apparatuses
- Universal Testing Machine, STM-5, to test mechanical properties of the membranes
- Differential Scanning Calorimeter (DSC), Shimadzu DSC-60
- Contact angle measurement, Thwing-Albert Instrument Co PGX
- Spectrophotometry, Cecil BioQuest CE 2501

TECHNICAL SKILLS

- Programming Languages — MATLAB, Pascal
- Chemical Engineering Software — COMSOL Multiphysics, Aspen HYSYS, Aspen Plus, Ansys Fluent
- General Software — Microsoft Office (Word, Excel, PowerPoint)
- Design of Experiments (DOE) — Minitab, MATLAB

LANGUAGE

- English (Professional Skills), French (Intermediate), Turkish, Azerbijani, Persian

EXTRACURRICULAR ACTIVITIES

- Music & Dance (Soprano member of choir group at École de Technology Supérieure, playing traditional Azerbaijani instrument, Tar, singing & Azerbaijani dance)
- Hiking & Mountain Climbing (climbed Savalan, the third highest mountain in Iran)
- Menu Planning (international and traditional Food) (website)