Amir S. Kazemi

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Summary

- Advanced knowledge of drinking water and wastewater treatment processes and analysis gained from completing courses.
- 7 years of hands on laboratory experience in the field of water and wastewater treatment and analysis.
- Advanced computer skills (Microsoft Office, R Studio, PIPE-FLO, Solidworks and Matlab).
- Excellent time-management skills: ability to multitask efficiently developed through handling multiple tasks and projects simultaneously
- Excellent technical writing skills gained from preparing several papers, proposals and analytical reports.
- Strong communication and public speaking skills gained from meetings, conferences, seminars, and tutoring
- Proficient in analyzing, interpreting, summarizing, and documentation of data.
- Strong mechanical aptitude and investigative skills gained from conducting research and developing different products/processes.
- Strong leadership and interpersonal skills gained from managing various industrial environments projects.
- Experienced in preparing, updating and following standard operating procedures (SOPs) and other experimentation documents. Familiar with quality control procedures.
- Completed safety training courses (e.g. WHIMS, HAZOP, HACCP and First Aid CPR/AED).

Education

• McMaster University, Doctor of Philosophy in Chemical Engineering
September 2014-July 2018, GPA: 3.9/4.0
Thesis: *Development of high-throughput membrane filtration techniques for environmental & biological applications*

• McMaster University, Master of Applied Science in Chemical Engineering
January 2013-August 2014, GPA: 4.0/4.0
Thesis: *Development of stirred well filtration as a high-throughput technique for downstream bioprocessing*

• Amirkabir University of Technology (Iran), Bachelor of Applied Science in Chemical Engineering
September 2008- August 2012, GPA: 16.15/20 (Last 2 years: 17.96/20)
Thesis: *Biological treatment of real dyeing wastewater under anaerobic/aerobic condition using aerobic granules*

Professional Experience

Research Assistant, McMaster University, Hamilton, ON, Canada **(January 2013-August 2018)**.

- Tasked with development of novel strategies for high-throughput testing of membrane separation processes:
  - ✓ Collaborated with different industrial partners such as SUEZ Water Technologies & Solutions, Pall Corporation and MilliporeSigma on testing different membrane products.
  - ✓ Designed testing procedures (using DOE) to optimize different wastewater treatment and biological separations.
  - ✓ Optimized multiple biomolecules separation processes by designing a novel flat-sheet membrane module.
  - ✓ Optimized multiple bioseparation and wastewater treatment processes by a novel hollow-fiber module.
  - ✓ Implemented different statistical techniques to analyze the results and as a result, reduced cost at least over 50 times and maximized speed by nearly 10 times in different processes.
  - ✓ Prepared/presented technical reports, Scientific Research and Experimental Development (SR&ED) reports and papers for the management team, clients, external companies (such as Aveitas, Anaergia, Mantech, and Hatch)
  - ✓ Development and testing of a bench/pilot-scale membrane filtration system for treating industrial effluents to meet regulations set by municipalities.
  - ✓ Performed different biological assays (e.g. protein and DNA assays) as well as standard water and wastewater treatment analyses such as TOC, chromatography (e.g. SEC and IC), TS, DO, ICP, colorimetric measurements (e.g. COD, TN, phosphorus, residual chlorine), turbidity, conductivity, fluorescence spectroscopy, alkalinity and pH.

Lab Executive Manager and Specialized Lab Instrument Technician, McMaster University, Hamilton, ON, Canada **(January 2013-August 2018)**.

- In charge of different lab instruments including multi-mode plate reader, multichannel microfluidic flow control system, and total organic carbon analyzer.
  - ✓ Successfully trained students on lab instruments and collaborated with companies on instrument maintenance.

- ✓ Prepared and updated manuals and standard operating procedures (SOP) and provided training and consultation for other researchers and companies to use various analytical instruments.
- ✓ Managed the separation lab with the responsibilities of waste disposal, training, safety inspection, contacting suppliers for purchasing the required materials and equipment.
- ✓ Installed and provided training for lab equipment such as centrifuge, pH probe, conductivity meter, digester, and spectrophotometer.

Teaching Assistant, McMaster University, Hamilton, ON, Canada **(January 2013-June 2018)**.

- Courses: Bio-reaction engineering, Introduction to fluid mechanics, and Measurements lab.
  - ✓ Successfully supervised undergraduate laboratory sessions, tutorial classes and office hours.
  - ✓ Graded students' assignments, lab reports, tests and exams with detailed comments.
  - ✓ Prepared detailed solutions for assignments and tests and invigilated mid-term exams.

Research Assistant, Food Process Engineering and Biotechnology Research Center, Tehran, Iran **(May 2011-December 2012)**.

- Tasked with optimization of biological treatment of textile wastewater.
  - ✓ Achieved over 70% color and COD removal using a novel treatment approach.
  - ✓ In charge of running a sequencing batch bioreactor on a daily basis for combined anaerobic-aerobic wastewater treatment process.
  - ✓ Performed microbiological, physical and chemical wastewater analysis such as protein assays, EPS quantification, MLSS, MLVSS, COD and TOC.
  - ✓ Assisted in drafting a manuscript published in Chemical Engineering Journal.

Research and Development Engineering Intern, Fouman Chimie Corporation, Tehran, Iran **(June 2011- September 2011)**.

- Tasked with conducting research on lubricants and bio-lubricants production process and their environmental effects.
  - ✓ Collected useful information for marketing and environmental departments.
  - ✓ Collaborated with suppliers to minimize the environmental impacts of the lubricants as well as safe disposal.

Selected Publications (Google Scholar Profile: bit.ly/2GtCRTI)

- Microscale Parallel-structured, Cross-flow Filtration System for Evaluation and Optimization of the Filtration Performance of Hollow-fiber Membranes, published in **Sep. Purif. Technol.,** 2019.
- Microscale filtration via a multi-modal microfluidic flow control system, published in **Sep. Sci. Technol.,** 2018.
- Elucidation of filtration performance of hollow-fiber membranes via high-throughput screening platform, published in **J. Membr. Sci.,** 2017.
- The Development of Aerobic Granules from Conventional Activated Sludge under Anaerobic-Aerobic Cycles and Their Adaptation for Treatment of Dyeing Wastewater, published in **Chem. Eng. J.**, 2017.
- Optimization of bio-molecule separation by combining microscale filtration and design-of-experiment methods, published in **Biotechnol. Bioeng.**, 2016.
- Stirred well filtration (SWF) - A high-throughput technique for downstream bio-processing, published in **J. Membr. Sci.,** 2014.

Memberships, Certificates and Extracurricular Activities

- Mitacs Foundations of Project Management I/II Certificates, (**2018).**
- Introduction to HACCP and HAZOP certificates (TÜV Rheinland Academy), Tehran, Iran, (**2011)**.
- Standard First Aid CPR/AED Level C Certificate, Canadian Red Cross, (**2017).**
- Graduate Management Consulting Association (GMCA) mini-MBA Certificate, (**2016)**.
- Student member of American Chemical Society (ACS) – Biochemical Technology (BIOT) Division, American Institute of Chemical Engineers (AIChE) and Ontario Society of Professional Engineers (OSPE).
- McMaster University Intramurals, Table Tennis, PlayComp2 Winner: (**2014)**, PlayComp1 Third Place: (**2017)**.
- McMaster University Organization of Latin American Students (OLAS), Student Member, (**2015)**.

Awards, Honors and Scholarships

- International Excellence Award, McMaster University, Hamilton, ON **(2015-16; 2016-17; 2017-18)**.
- Engineering Graduate Society (EGS) Travel Award, McMaster University, Hamilton, ON **(2017-18).**
- Division of Biochemical Technology of American Chemical Society (ACS BIOT) travel subsidy for American Chemical Society (ACS) 251st National Meeting, San Diego, CA **(2016)**.
- Presented at multiple conferences including ACS, CSChE and AIChE Meetings **(2014-2017)**.
- Passed PhD comprehensive examination with *distinction*, McMaster University, Hamilton, ON **(2015)**.
- Graduate scholarship and tuition bursary, McMaster University, Hamilton, ON, Canada **(2013-2018)**.
- Dean's Honor List (Cum laude), Amirkabir University of Technology, Tehran, Iran **(2010-12)**.

Computer Knowledge

• Microsoft Office • R • PIPE-FLO • Matlab • Aspen HYSYS • LIMS

Languages

• English: Full professional proficiency • Spanish: Beginner proficiency • Persian: Native proficiency

Hobbies

- Sports (Table Tennis, Soccer, and Squash), geography (interested in learning about different cities, countries, climates and cultures), watching documentaries and cooking.