



Education

- **The University of Western Ontario, London, ON, Canada** (2016)
Ph.D. Degree, Department of Chemical and Biochemical Engineering
Thesis: “Microwave and ultrasound assisted zeolitization of coal fly ash”

- **The University of Florida, Gainesville, FL, USA** (2007)
M.E. Degree, Department of Chemical Engineering
Specialization: “Process Dynamics and Controls”

- **The University of Florida, Gainesville, FL, USA** (2005)
B.Sc. Degree, Department of Agricultural and Biological Engineering
Specialization: “Biological Engineering”
Graduated Cum Laude

Research Interests

- Process design, development, and optimization
- Chemical reaction engineering
- Microwave and ultrasound synthesis
- Novel reaction design
- Process simulation with Aspen Plus, Aspen Hysys
- Green engineering

Work Experience

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|---|--------------------------------------|------------|
| • Research Center in Process Engineering (CRIP),
Polytechnique Montreal, Montreal, QC, Canada | Postdoc | 2017- |
| • Zeolitic & Nano Materials Laboratory (ZNML),
Western University, London, ON, Canada | Research
Assistant | 20012-2016 |
| • Hewlett Packard, TX, USA | Quality
Control
Associate | 2011-2012 |
| • Howard Johnson Hotel, FL, USA | Front Desk
Manager
and Auditor | 2009-2012 |

Research Background

- Collaborated with a multinational company DawnYX Technology to design and fabricate a pilot scale microwave crystallization system.

- Researched and developed PFD and P&ID for pilot scale CSTR microwave reactor system capable of handling 1 ton of heterogeneous reaction mixture a day
- Managed fabrication and procurement project worth \$100,000 from an international manufacturing company
- Worked closely with ESAFE and QPS to meet CSA standards for pilot scale reactor system commissioning
- Wrote and defined Standard Operating Procedures for industrial equipment and optimized process them using Six Sigma techniques
- Partnered with Newalta to design a novel reaction mechanism for microwave and ultrasound assisted crystallization
- Discovered and implemented a novel technique for elimination of water waste from zeolitization of Coal Fly Ash
- Crystallized active pharmaceuticals ingredients to produce different co-crystals
- Modified and improved separation process for a 24 bubble tray distillation column
- Applied proportional integral derivative controller to control the desired purity of products
- Cultivated and analyzed insulin producing cells and tested their viability after refrigeration
- Contributed in research and production of an artificial pancreas through running assays, PCR, western blots etc.
- Tested synthetic viable materials for possible bodily implantation

Teaching Experience

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|---|--------------------|------------|
| • High School Math and Science , Nancy Campbell Academy, Stratford, ON, Canada | Instructor | 2016-2017 |
| • Process Dynamics and Control , Western University, London, ON, Canada | Teaching Assistant | 2012- 2016 |
| • Staged Operations , Western University, London, ON, Canada | Teaching Assistant | 2012-2016 |

Book Chapter

- Behin, J., Bukhari, S.S., and Kazemian, H., Rohani, S. (2017) Inductive manufacturing methods for rapid conversion of coal fly ash to zeolites. In J. Parker (Ed.), Fly Ash: Properties, Analysis and Performance (pp.1-34). New York, USA: Nova Science Publishers, Inc.

Journal Publications

- Bukhari, S.S. and Rohani, S. (2017) Continuous Flow Synthesis of Zeolite-A from Coal Fly Ash Utilizing Microwave Irradiation with Recycled Liquid Stream. American Journal of Environmental Sciences. In Press.

- Attari, M., Bukhari, S.S., Kazemian, H., Rohani, S. (2016) A Low-Cost Adsorbent From Coal Fly Ash for Mercury Removal from Industrial Wastewater. *Journal of Environmental Chemical Engineering*. 5:391-399.
- Bukhari, S.S., Kazemian, H., and Rohani, S. (2016) Effect of ultrasound energy on the zeolitization of chemical extracts from fused coal fly ash. *Ultrasonics Sonochemistry*. 28:47-53.
- Behin, J., Bukhari, S.S., Kazemian, H., and Rohani, S. (2016) Developing a zero liquid discharge process for zeolitization of coal fly ash to synthetic NaP zeolite. *Fuel*. 171: 195-202.
- Bukhari, S.S., Behin, J., Kazemian, H., and Rohani, S. (2015) Conversion of coal fly ash to zeolite utilizing microwave and ultrasound energies: A review. *Fuel*. 140: 251-266.
- Bukhari, S.S., Behin, J., Kazemian, H., and Rohani S. (2015) Synthesis of zeolite Na-A using single mode microwave irradiation at atmospheric pressure: The effect of microwave power. *Canadian Journal of Chemical Engineering*. 93: 1081-1090.
- Bukhari, S.S., Behin, J., Kazemian, H., and Rohani S. (2014) A comparative study using direct hydrothermal and indirect fusion methods to produce zeolites from coal fly ash utilizing single-mode microwave energy. *Journal of Material Science*. 49: 8261-8271.
- Behin, J., Bukhari S.S., Dehnavi, V., Kazemian, H., and Rohani, S. (2014) Using coal fly ash and wastewater from microwave synthesis of LTA zeolite. *Chemical Engineering & Technology*. 37: 1532-1540.