POLYTECHNIQUE MONTRÉAL
LE GÉNIE EN PREMIÈRE CLASSE

Sepehr Hamzehlouia, Ph.D. Candidate

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Education

- **Ecole Polytechnique Montreal, Montreal, QC, Canada** **2012 - Current**
Ph.D. Candidate, Department of Chemical and Biochemical Engineering

- **University of Windsor, Windsor, ON, Canada** **2009 – 2011**
M.Sc. Degree, Department of Civil and Environmental Engineering
Thesis: "A Study of the Densities and Viscosities of Multi-Component Regular Liquid Systems at 308.15 K and 313.15 K"

- **Sharif University of Technology, Tehran, Iran** **2004 – 2009**
B.Sc. Degree, Department of Chemical Engineering
Thesis: "Sustainable Development in Iran: A Review"

Research Interests

- Process Design and Optimization
- Chemical reaction Design and Development
- Fluidized Bed Reactor Design and Operation
- Micro/Nano Scaled Particle Classification and Characterization
- Material Coating and Chemical Vapor Deposition
- Syngas Production via Gasification and Partial Oxidation
- Microwave Heating Optimization
- Catalyst Design and Application
- Microwave Receptor Development and Optimization
- Water and Industrial Water Treatment
- Energy Conservation and Renewable Energies
- Biomass and Waste Thermochemical Conversion (Pyrolysis, Gasification and Combustion)
- Reactor Design for Fluidized and Fixed Bed Applications
- Induction Heating Assisted Material Processing

Work Experience

• **Research Center in Process Engineering (CRIP)** Ecole Polytechnique Montreal, Montreal, QC, Canada	Research Assistant	2012 –
• **Canamidex International Corporation** Richmond Hill, ON, Canada	Technical Specialist	2011 – 2012
• **Department of Environmental Engineering** University of Windsor, Windsor, ON, Canada	Research Assistant	2009 – 2011
• **Kavosh Azmoon Company** Tehran, Iran	Sales and Marketing Manager	2004 – 2009

Expertise

- Microscopic analysis techniques: SEM, TEM, XRD, XPS, FIB and EDX
- Component detection and analysis: LECO, GC-MS, GC-FID, FTIR, TGA and Elemental Analysis
- Reactor design and reaction processing: CVD, Particle coating, Fluidized bed, Induction heating and Microwave heating
- Statistical analysis and data processing: Matlab, Statistica, Maple and Mathematica
- Process simulation and modeling: FactSage, COMSOL, Simulink, Aspen Hysis and ANSYS Fluent
- Image processing: Image J
- Catalyst and support design and applications
- Biomass and waste thermochemical conversion
- Project management and strategic planning

Research Background

- Microwave heating assisted catalytic reaction design
- Catalyst production and deposition on carbon coated microwave receptor
- Development of a novel microwave receptor by induction heating assisted carbon coating of sand
- Microwave assisted biomass gasification tar removal
- Study of the densities and viscosities of multi-component regular liquid systems
- Study of the sustainable development in Iran

Teaching Experience

- **Thermodynamics** — Teaching Assistant — 2011
  University of Windsor, Windsor, ON, Canada
- **Numerical Methods** — Teaching Assistant — 2010
  University of Windsor, Windsor, ON, Canada
- **MATLAB for Engineers** — Teaching Assistant — 2009, 2010
  University of Windsor, Windsor, ON, Canada

Journal Publications

- Hamzehlouia, S., & Asfour, A. F. A. (2013). Densities and Viscosities of the Quinary System: Cyclohexane (1)+ *m*-Xylene (2)+ Cyclooctane (3)+ Chlorobenzene (4)+ Decane (5) and Its Quaternary Subsystems at 308.15 K and 313.15 K. *International Journal of Thermophysics*, *34*(6), 987-1001.
- Hamzehlouia, S., & Asfour, A. F. A. (2012). Densities and viscosities of ten binary and ten ternary regular solution systems at 308.15 and 313.15 K. *Journal of Molecular Liquids*, *174*, 143-152.