



Education

- **The Polytechnique Montreal, Montreal, QC, Canada** (2015)
Ph.D. Degree, Department of Chemical Engineering
Thesis: “Dynamics of Cylindrical Particles in a Rotating Drum Using Multiple Radioactive Particle Tracking”
- **The Amirkabir University of Technology, Tehran, Iran** (2008)
M.Sc. Degree, Department of Chemical Engineering
Thesis: “Modeling of Mercury Adsorption from Wastewater by Activated Carbon”
- **The Amirkabir University of Technology, Tehran, Iran** (2005)
B.Sc. Degree, Department of Chemical Engineering
Thesis: “Modeling and Simulation of Multi-Component Distillation Columns by MATLAB and HYSYS”

Research Interests

- Process Design, Development and Optimization
- Oil and Energy
- Solar Energy
- Chemical Reaction Engineering
- Hydrodynamics and Flow Motion
- Computational Fluid Dynamics (CFD) and Discrete Element Method (DEM)
- Particle Tracking Techniques
- Material Characterization Techniques
- Polymerization
- Encapsulation of nanoparticles
- Carbon Coating
- Adsorption

Work Experience

- **Research Center in Process Engineering (CRIP),** Postdoc 2015-
Polytechnique Montreal, Montreal, QC, Canada
- **Research Center in Process Engineering (CRIP),** Research Assistant 2008-2015
Polytechnique Montreal, Montreal, QC, Canada
- **Research Center in Process Engineering (CRIP),** Research Assistant 2005-2008
Amirkabir University of Technology, Tehran, Iran
- **Tehran Oil Refinery,** Trainee 2003
Tehran, Iran

Expertise

- Project Management
- Experimental Design and Data Analysis
- Characterization Techniques, e.g. TGA, XRD, SEM, TEM, BET, PSD, NAA, LECO, ...
- Simulation, Modeling and Optimization, e.g. Aspen-HYSYS, COMSOL Multiphysics, CONMIN, Factsage
- Trouble Shooting
- Programming, e.g. MATLAB, FORTRAN, Pascal, VB
- Monte Carlo Simulation
- Data Processing and Big Data Handling
- Particle Tracking Techniques, e.g. RPT, MRPT and PIV
- Deployment and Implementation of New Idea

Research Background

- Gas-Phase Carbon Coating of Nano-Size Cathode Material of the Lithium Ion Batteries
- Development of a Multiple Radioactive Particle Tracking (MRPT) Technique
- Dynamics of Particles in Rotating Drums
- Dynamics of Biomass Particles in Fluidized Beds
- Polymerization
- Encapsulation of Nanoparticles
- Carbon Coating
- Development of Powder Electrical Conductivity Meter
- Powder Technology (Mixing, DEM, ...)
- Simulation and Modeling of Multi-Component Distillation Tower
- Mercury Removal From Wastewater
- Adsorption Process
- Optimization of Heat Exchanger Networks

Journal Publications

- Majid Rasouli, François Bertrand, Jamal Chaouki. "A Multiple Radioactive Particle Tracking Technique to Investigate Particulate Flows". *AICHE Journal*. 2015; 61 (2): 384–394.
- Majid Rasouli, Olivier Dubé, François Bertrand, Jamal Chaouki. "Investigating the Dynamics of Cylindrical Particles in a Rotating Drum Using Multiple Radioactive Particle Tracking". Submitted to *AICHE Journal*.

Conference Publication

- Majid Rasouli, François Bertrand, Jamal Chaouki. "A Multiple-Radioactive-Particle Tracking Technique for Mixing Applications". *AICHE Annual Meeting, San Francisco, November, 2013*.

Book Chapter

- Mohammad Fesanghary, Majid Rasouli. 2011. "Advances in Design Optimization of Shell and Tube Heat Exchangers". In: Heat Exchangers: Types, Design and Applications. Nova Science Publishers, pp.199-214.