



Education

- **U de M, Ecole Polytechnique de Montréal, Montréal , QC, Canada** (2018)
Ph.D. Degree candidate, Department of Chemical Engineering
Thesis: “Physical beneficiation of rare earth bearing minerals through emulsification process”
- **U de M, Ecole Polytechnique de Montréal, Montréal, QC, Canada** (2014)
M.Eng. Degree, Department of Chemical Engineering
“Energy and Sustainable Development”
- **Industrial management training organization (IMTO), Tehran, Iran** (2009)
Quality management and standardization
“ISO (9000-9001-9002-14000,18000-1) , QS , QC OHSAS , QA”
- **IKCo. Training Center (IKTC), Tehran, Iran** (2008)
Technical program for Peugeot and Renault master trainers (COTECH)
“Engines, emission control, CNG, fuel systems, automatic gearboxes, electronic multiplex”
- **The University of Tehran, Tehran, Iran** (1999)
B.Sc. Degree, Department of Mechanical Engineering
Thesis: “HVAC designed for the car manufacturing with small engines”

Research Interests

- Mineral Processing, Rare Earth Elements, Process Design, Development and Optimization
- Micro and Nanoparticles Characterization
- Design of Mixing and Agitation Setup, Emulsification, Demulsification and Phase Separation
- Pyrolysis, Gasification and Combustion
- Sustainable Development of Renewable Energy Resources, Waste management, Emissions Control

Work Experience

- **Chemical Engineering Department,** Industrial Ph.D. 2014–
Polytechnique Montreal, Montreal, QC, Canada Researcher
- **PYROWAVE company and Chemical Engineering Department,** Industrial 2011–2014
Polytechnique Montreal, Montreal, QC, Canada Internship Research project
- **Engineering Department,** Head of failure 2005–2010
IKCo. analysis and diagnostic center
Car manufacturer of Peugeot and Renault , Tehran, Iran
- **Engineering Department,** Mechanical 1999–2005
IKCo. engineering expert
Car manufacturer of Peugeot and Renault , Tehran, Iran

Research Background

- Application of Pickering emulsion in beneficiation of interesting mineral particles
- Pickering emulsification, demulsification and phase transfer separation, centrifugation
- Rare earth elements bearing minerals physicochemical and surface properties
- Mineral processing and physical beneficiation through froth flotation
- Development of a process for high grade and high recovery production of the rare earth elements
- Size distribution, image microscopic and elemental analysis, mass balances
- Design of rotary microwave pyrolysis reactor for plastic, food and paper waste
- FTIR multi-gas measurements and the cross interferences uncertainties
- Sustainable design for various energetic concepts of industrial projects

Expertise

- Detection and analysis techniques: XPS, GC-MS, GC-FID, FTIR, TGA, NAA
- Experimental design (DOE)
- Simulation, modeling and softwares: COMSOL, Simulink, Aspen plus, TRANSYS, RETScreen, HOMMER, Simapro
- Quality management, QS, QA
- Teaching technical courses for over a decade at IKTC

Work skills

- Engine emission control test stations
- Various fuel systems modification and electrical multiplex systems;
- Analytical solutions for technological problems in various engines and fuel systems
- Quality control and failure monitoring
- Emission control methods;
- Industrial inspection including efficiency, environmental and safety considerations;
- Industrial and laboratory of engine emission control standardization;
- Design of modifications for multi-fuel systems on low/high compress engines;
- Concurrently development of engine troubleshooting systems, engine data acquisition, failure analysis and quality control reports;
- Test plan preparation for engine's modifications, engine diagnosis operations;
- PM & Calibration program for laboratory and workshop equipment;