

Omid Ebrahimpour

Apt. 707, 165 Cote saint-Catherine, Montréal, Québec, Canada, H2V 2A7

Cell: 514-692-3124, E-mail: omid.ebrahimpour@polymtl.ca

QUALIFICATIONS

- Over 7 years background in chemical engineering including materials science, process and product development
- Successfully published a US patent on developing an innovative technology to fabricate porous ceramics to separate gas/solid at high temperature resulting in savings energy, costs, and higher product life-span
- Significant experiences with design and installation of various chemical processes
- Extensive experience in a wide variety of materials characterization techniques and instruments including mechanical, physico-chemical and morphological techniques such as TGA, DSC, FTIR, XPS, XRD, SEM and TEM
- Specialist in computational modeling and experimental data analysis
- Mindful of sustainable development, versatile within a team, dynamic, management and leadership qualities

EDUCATION

- Doctor of Philosophy, Chemical Engineering 2007- 2013
Polytechnique Montreal, Montreal, Canada
- Master of Science, Kinetic-catalysis 2004- 2007
Sharif University of Technology, Tehran, Iran
- Bachelor of Science, Chemical & Petroleum Engineering 2000- 2004
Sharif University of Technology, Tehran, Iran

PROFESSIONAL EXPERIENCE

- Research Scientist** Oct. 2015-present
DuPont, Central research & Development (C&RD)
 - Work as a Chemical researcher-Process Development Engineer to scale-up of new processes/products
- Industrial Postdoctoral Researcher** Sep. 2014 – Sep 2015
Enerkem Inc., Advanced Energy Research Facility (AERF)
 - Evaluated new strategies to produce chemical products via techno-economic analysis of different process technologies based on the CAPEX and OPEX
 - Pilot plant experience to synthesis methanol synthesis from municipal solid waste(MSW) materials (300 kg/h)
 - Investigated the performance of a novel catalyst to make syngas
 - Drafted a successful proposal regarding to a novel process for CO₂ valorization
- Lead Chemical Researcher** 01.2014-09.2014
Chemical engineering R&D lab at Polytechnique Montreal, Canada
 - Led a part of multi-disciplinary and multi-organization project (\$ 6 M) related to the scale-up a novel process to manufacture Li-ion battery for automotive applications
 - Supervised and trained 2 graduate students with the preparation and execution of their research activities
 - Implemented in-situ polymerization technique to coat surface of LiFePO₄ cathode materials with a nano-layer of carbon to improve the material's conductivity
- R&D Research Engineer** 2007- 2013
Chemical engineering R&D lab at Polytechnique Montreal, Canada
 - Innovated a new process to fabricate porous SiC ceramic via sol-gel and *in situ* polymerization; reduced the production cost of ceramic filter by decreasing the sintering temperature to save energy cost and doubled of the mechanical strength properties of the product
 - Developed a mathematical model to describe any non-catalytic gas-solid reaction where all mass diffusion steps and the chemical reaction may affect the overall reaction rate using MATLAB
 - Enhanced the homogeneity of the micro and nano particles mixtures via coating them with alumina sol
 - Characterized the composite products via different methods such as TGA, XPS, XRD, SEM, TEM, BET, FTIR, particle size analysis, mercury porosimetry and three point bending test
 - Contacted and discussed with several International companies to transfer a novel fabrication route of porous SiC ceramics into commercial scale
 - Supervised 4 summer students to conduct their internship projects
 - Drafted a successful proposal to NSERC (Idea to Innovation grant, \$120,000)

Teaching Assistantship

- Transport phenomena, Polytechnique Montreal, Canada 2011- 2012
- Chemical Engineering Thermodynamic, Polytechnique Montreal, Canada Winter 2011
- Unit Operations, Sharif University, Iran 2005-2006
- Reactor Design, Sharif University, Iran 2004-2005

LEADERSHIP AND VOLUNTEER ACTIVITIES

- Collaborated with organizing committee of the 8th World Congress of Chemical Engineering, Montreal August 2009
- Provided the head of the student union at Sharif university in Zanjan Dormitory with +1000 residences 2003-2006
- Provided a board memberships of the student union at Sharif University as an Educational Affairs with + 8000 students, Iran 2004-2006
- Led as a volunteer organizer in the industry committee of in 4th National Chemical Eng. Student Conference, Oct. 2003
- Provided support as an executive member in the first congress of the application of membrane, Iran April 2002

HONORS AND AWARDS

- Mitacs Accelerate PDF award (\$ 61,000 per year)- University of Alberta- Enerkem 2014
- Received the best doctorate graduate seminar prize, research day conference in chemical department of McGill and Polytechnique de Montreal 2013
- Obtained the Idea to Innovation grant from NSERC, Canada 2011-2012
- Received a doctoral scholarship grant from Polytechnique Montreal 2007-2012
- Ranked 31st among about 5,000 best student of Chemical Engineering in MS Entrance Exam. 2004
- Ranked 1900st among about 400,000 participants in the nationwide entrance exam for B.Sc degree 2000

PATENT, PUBLICATION AND CONFERENCE PRESENTATIONS

- US Patent: “Porous SiC ceramic and method for the fabrication thereof”, US20140206525 A1 2014
- “ Manufacturing process for in-situ reaction-bonded porous SiC ceramics using a combination of graft polymerization and sol-gel approaches”, *Industrial & Engineering Chemistry Research* 2014
- “ Novel fabrication route for porous silicon carbide ceramics through the combination of *in situ* polymerization and reaction bonding techniques”, *Journal of the Applied Polymer Science* 2014
- “Fabrication of Mullite-bonded Porous SiC Ceramics via a Sol-gel Assisted In-situ Reaction Bonding”, *Journal of the European Ceramic Society* 2013
- “Diffusional effects on the oxidation of SiC powders in thermo-gravimetric analysis experiments”, *Journal of Materials Science* 2013
- “Structural changes and surface activities of ethylbenzene dehydrogenation catalysts during deactivation” *Applied catalysis A: General* 2007
- “Fabrication and characterization of mullite-bonded porous SiC derived by oxidation of SiC and sol-gel process”, Oral presentation, 62nd Canadian Chemical Engineering Conference, Canada 2012
- “Ethylbenzene Dehydrogenation to Styrene Over Fresh and Used Commercial Catalysts” Oral presentation, *AIChE Spring Meeting and 7th Global Congress on Process Safety, USA* 2011
- “Effect of particle size and crystalline structure on passive-oxidation behavior of SiC powders, Oral presentation”, 33rd International Conference & Exposition on Advanced Ceramics & Composites, USA 2010
- “Synthesis and Characterization of Polyethylene-Grafted SiC Particles by Polymerization Compounding”, Oral presentation, 8th World Congress of Chemical Engineering, Canada 2009

LANGUAGE SKILLS

- English Fluent
- French Intermediate

COMPUTER SKILLS

- Software: MATLAB, COMSOL, HYSYS, Aspen, Microsoft Office

HOBBIES

Football, Badminton, Hiking, Biking, Literature