

## EDUCATION

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<b>Postdoctoral Fellow</b> Harvard University, Massachusetts Institute of Technology, Boston, MA, USA	2015-2016
<b>Ph.D. (Chemical Engineering)</b> University of Connecticut, Storrs, CT, USA	2011-2015
<b>M.S. (Chemical Engineering)</b> University Technology Malaysia, JB, Malaysia	2009-2011
<b>B.Sc (Chemical Engineering)</b> Shiraz University, Shiraz, Iran	2001-2005

## RESEARCH EXPERIENCE

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<b>Visiting Professor</b> (Rowan University)	2016-present
<ul style="list-style-type: none"><li>• Ionic liquid functionalized polymeric catalyst for cellulose conversion to levulinic acid</li><li>• Imidazolium ionic liquid based methacrylate polymer membranes for efficient pervaporative enrichment of 1,3-propanediol from binary aqueous mixtures</li></ul>	
<b>Postdoctoral Fellow</b> (Wyss Institute for Biologically Inspired Engineering, Harvard-MIT Division of Health Science and Technology)	2015-2016
<ul style="list-style-type: none"><li>• Zwitterionic liquid functionalized conductive biomaterials</li></ul>	
<b>Ph.D. research</b> (University of Connecticut)	2011-2015
<ul style="list-style-type: none"><li>• <b>Material and Polymer Development: Synthesis, Characterization, and Application</b><ul style="list-style-type: none"><li>○ Ionic liquid functionalized polydivinylbenzene (PDVB) solid acid catalyst</li><li>○ Ionic liquid functionalized ordered mesoporous polymeric catalysts for biodiesel production from brown grease</li><li>○ Ionic liquid functionalized N-doped nanoporous graphene for cellulose conversion to levulinic acid (LA)</li><li>○ Mesoporous crystalline Al<sub>2</sub>O<sub>3</sub>/KF solid base for converting acidulated bone oil to biodiesel</li></ul></li><li>• <b>Mathematical Modeling and Data Analysis</b><ul style="list-style-type: none"><li>○ Modeling and process optimization of biodiesel production using ANFIS (Adaptive Neuro-Fuzzy Inference System)</li><li>○ Modeling and process optimization for continuous fermentative 1,3 Propanediol production from industrial waste glycerol and environmental bacterial consortium using Response Surface Methodology</li><li>○ ASPEN simulation of continuous biodiesel production</li></ul></li><li>• <b>Other research</b><ul style="list-style-type: none"><li>○ Polymer synthesis for pervaporation membrane applications: Hydrosilylated Poly(siloxanes), Polymers and copolymers of hydrophobic ionic liquids</li></ul></li></ul>	
<b>Master's Research</b> (University Technology Malaysia)	2009-2011
<ul style="list-style-type: none"><li>○ Continuous production of biofuel from waste cooking oil in a reactive distillation column</li><li>○ Modeling and optimization of biofuel production in reactive distillation column by response surface methodology</li><li>○ Kinetic study of heteropolyacid catalyzed transesterification of cooking oil</li><li>○ Synthesis, rheological properties and magnetoviscos effect of Fe<sub>2</sub>O<sub>3</sub>/paraffin Ferro-fluids</li></ul>	
<b>Bachelor's research</b> (Shiraz University)	2001-2006
<ul style="list-style-type: none"><li>• Current distribution and cathode flooding prediction in a PEM fuel cell by using Two-dimensional partially flooded GDL models in MATLAB</li></ul>	

## TEACHING EXPERIENCE

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- Instructor: Chemical Engineering Thermodynamic, Sophomore Engineering Clinic, Jr./Sr. Engineering Clinic.
- Teaching Assistant (TA): ASPEN simulation, Foundation of Engineering, Advanced Chemical Reaction.
- Mentored three PhD, four master and twenty undergraduate students on research projects on polymer synthesis, tissue engineering, drug delivery, catalysis, biofuel process, fermentation, mathematical modeling

## HONOR AND AWARDS

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- National Biodiesel Award by National Biofuel Board, U.S.A -**2014**
- 1st place in 2013 Connecticut Collegiate Business Model Competition for Organic Liquid seaweed based lawn fertilizer with Sea Green Organics Inc. in the venture business category -**2013**
- 3rd place in Innovation Quest, CT for Seaweed fertilizer Award along with Sea Green Organics Inc **2013**.
- Doctoral Dissertation Fellowship Award, University of Connecticut-**2013**
- ACS Award for Creative Invention: Symposium in Honor of Timothy M. Swager -**2013**
- ACS, PMSE Division – Talk chosen for IBM Almaden Center award session for **Excellence in Graduate Research** - 2013
- Innovation Accelerator Fellowship award (Connecticut center of innovation and entrepreneurship)-**2012**

## PROFESSIONAL ACTIVITIES

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- Member, American Chemical Society (ACS)
- Member, American Institute of Chemical Engineering (AIChE)
- Member, Biodiesel National Board (BNB)

## COMMUNITY ACTIVITIES AND SERVICES

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| • Director, Rumi Seminar, UCONN                                    | 2015      |
| • President, Iranian Cultural Organization of UCONN                | 2013-2014 |
| • Mentored ten undergraduate students on various research projects | 2011-2013 |
| • Member, Bistoun Tanboor Ensemble (Classical music band)          | 2004-2008 |
| • President, Cultural Organization of Shiraz University            | 2001-2004 |

## SKILLS

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- **Techniques:** In vivo animal study, Ex vivo animal study, In vitro Cell Culture, Cell cytotoxicity, PCR, Immunostaining, Hematoxylin and Eosin stain (H&E), Bacterial culture, Tissue Engineering, Nanomaterial synthesis, Microfluidics, Micro and Nano fabrication
- **Material Synthesis:** Biomaterial synthesis, Hydrothermal synthesis of chelated metal oxides, Solvothermal polymeric catalyst synthesis, Nanoporous carbon and graphene synthesis, Ionic liquid functionalization of polymeric and nano carbon catalysts, Zeolite synthesis
- **Polymer Synthesis and processing:** Hydrosilylation for polysiloxane functionalization, Ionic liquid polymerization, Radical emulsion and solution polymerization, Spin coating, Electrospinning, Solution casting
- **Analytical Instruments** Spectroscopy (NMR, FTIR, UV-VIS, Raman etc.), Chromatography (GC, HPLC, GPC), Thermal Analysis (DSC, TGA, etc.), Mechanical Testing (Tensile, compression, cyclic, etc), Microscopy (FESEM, TEM), XPS, XRD, Surface Area measurements by BET
- **Software:** MATLAB, ASPEN, DESIGN EXPERT, ORIGIN, Prism, Microsoft Office
- **Languages Spoken:** English, Persian, Turkish

## PATENT

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- ***I Noshadi***, R Parnas, NAS Amin. Methods and system for biodiesel production by heteropolyacid catalysis. Provisional patent application
- ***I Noshadi***, T Jafari, S Suib, Superhydrophobic and Stable Mesoporous Polymeric Adsorbent. Provisional patent application.
- ***I Noshadi***, Nasim Annabi. Engineering biocompatible and conductive hydrogels with tunable physical and electrical properties for biomedical applications. Provisional patent application.

- **I Noshadi**, S Hong, KE Sullivan, A Tamayol, SR Shin, AE Gao, WL Stoppel, LD Black III, A Khademhosseini, N Annabi. Engineered visible light crosslinkable gelatin methacryloyl (GelMA) hydrogels. Submitted (Advanced Healthcare Materials).
- **I Noshadi**, B Walker, RP Lara, E Shirzaei Sani, N Gomes, MR Azizian, N Annabi. Novel biodegradable and biocompatible zwitterionic liquid functionalized hydrogels with tunable conductivity. Submitted (Advance Materials)
- **I Noshadi**, T Jafari, B Kanjilal, E Moharrerri, Khakpash, A Masoumi, F Liu, SL Suib. Amine/Thiol functionalized mesoporous polydivinylbenzene for CO<sub>2</sub> adsorption. RSC advances, Issue 81, 2016, Issue in Progress.
- **I Noshadi**, B Kanjilal, T Jafari, E Moharrerri, N Khakpash, T Jiang, S Suib. Hydrophobic Mesoporous Adsorbent based on Cyclic Amine - Divinylbenzene Copolymer for Highly Efficient Siloxane Removal. RSC Adv., 6, 2016, 77310-77320
- **I Noshadi**, B Kanjilal, F Liu. Porous carbonaceous solid acids derived from farm animal waste and their use in catalyzing biomass transformation. Applied Catalysis A: General, 513, 2016, 19–29
- **I Noshadi**, S Du, B Kanjilal, GM Bollas, SL Suib, A Provas, F Liu, RS Parnas. Catalyzed production of biodiesel and bio-chemicals from brown grease using Ionic Liquid functionalized ordered mesoporous polymer. Applied Energy, 129, 2014, 112-122.
- **I Noshadi**, NAS Amin, RS Parnas. Continuous production of biodiesel from waste cooking oil in a reactive distillation column catalyzed by solid heteropolyacid: Optimization using response surface methodology (RSM). Fuel 94, 2014, 156-164
- **I Noshadi**, RK Kumar, B Kanjilal, R Parnas, H Liu, J Li, F Liu. Transesterification Catalyzed by Superhydrophobic–Oleophilic Mesoporous Polymeric Solid Acids: An Efficient Route for Production of Biodiesel. Catalysis Letters, 1-6, 2013
- T Jafari, **I Noshadi (co-first author)**, N Khakpash, S Suib. Superhydrophobic and Stable Mesoporous Polymeric Adsorbent for Siloxane Removal. Journal of Material Chemistry A. Journal of Materials Chemistry A, 3(9), 2015, 5023-5030
- B Kanjilal, **I Noshadi**, EJ Bautista, R Srivastava, RS Parnas. Batch, design optimization, and DNA sequencing study for continuous 1, 3-propanediol productions from waste glycerol by a soil-based inoculum. Applied microbiology and biotechnology, 99 (5), 2015, 2105-2117
- B Kanjilal, **I Noshadi**, A Asandai, R Parnas, Allylcycohexylamine functionalized siloxane polymer and its phase separated blend as pervaporation membranes for 1, 3-propanediol enrichment from binary aqueous mixtures. Journal of Membrane Science. Journal of Membrane Science, 486, 2015, 59-70.
- F Liu, W Kong, L Wang, Xianfeng Yi, **I Noshadi**, A Zheng, C Qi. Efficient biomass transformations catalyzed by graphene-like nanoporous carbons functionalized with strong acid ionic liquids and sulfonic groups. Green Chem., 2015, 17, 480-489
- F Liu, RK Kamat, **I Noshadi**, D Peck, RS Parnas, A Zheng, Chenze Qi, Yao Lin. Depolymerization of crystalline cellulose catalyzed by acidic ionic liquids grafted onto sponge-like nanoporous polymers. Chem. Commun. 49, 2013, 8456
- F Liu, A Zheng, **I Noshadi**, FS Xiao. Design and synthesis of hydrophobic and stable mesoporous polymeric solid acid with ultra strong acid strength and excellent catalytic activities for biomass transformation. Applied Catalysis B: Environmental. 136, 2013, 193-201.
- F Liu, W Kong, L Wang, **I Noshadi**, Z Zhang, C Qi. Solvothermal synthesis of stable nanoporous polymeric bases-crystalline TiO<sub>2</sub> nanocomposites: visible light active and efficient photocatalysts for water treatment. Nanotechnology 26 (8), 085705.
- W Zhu, W Kong, **I Noshadi**, L Zhao, F Liu. Solvothermal synthesis of nanoporous, polymeric solid bases with controlled wettability and good catalytic activity. Colloids and Surfaces A: Physicochemical and Engineering Aspects 444, 314-320.
- C Diao, H Xia, **I Noshadi**, B Kanjilal, RS Parnas. Wheat gluten blends with a macromolecular cross-linker for improved mechanical properties and reduced water absorption. ACS Sustainable Chemistry & Engineering 2 (11), 2554-2561.
- H Jaliliannosrati, NAS Amin, A Talebian-Kiakalaieh, **I Noshadi**. Microwave assisted biodiesel production from *Jatropha curcas* L. seed by two-step in situ process: optimization using response surface methodology. Bioresource technology 136, 565-573.
- A Talebian-Kiakalaieh, NAS Amin, A Zarei, I Noshadi. Transesterification of waste cooking oil by heteropoly acid (HPA) catalyst: optimization and kinetic model. Applied energy 102, 283-292.
- H Hezaveh, II Muhamad, **I Noshadi**, LS Fen, N Ngadi. Swelling behavior and controlled drug release from cross-linked κ-carrageenan/NaCMC hydrogel by diffusion mechanism. Journal of Microencapsulation 29, 368-379, 2012.
- H Hezaveh, A Fazlali, **I Noshadi**. Synthesis, rheological properties and magnetoviscos effect of Fe<sub>2</sub>O<sub>3</sub>/paraffin ferrofluids. Journal of the Taiwan Institute of Chemical Engineers 43 (1), 159-164.
- A Jamekhorshid, G Karimi, **I Noshadi**. Current distribution and cathode flooding prediction in a PEM fuel cell. Journal of the Taiwan Institute of Chemical Engineers 42 (4), 622-631

- RS Parnas, M Pomykala and **I Noshadi**, Processing Issues in Biofuels Production, in New and Future Developments in Catalysis. Catalytic Biomass Conversion, S. L. Suib, Ed., Elsevier, Amsterdam, 2013, in press.
- A Jahanmiri, MM Zerafat, **I Noshadi**. Process dynamic and control. Translation to the Persian language from Dale E. Seborg, Thomas F.

**CONFERENCE PROCEEDINGS AND PRESENTATIONS**

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- **I Noshadi** , B Kanjilal, RS Parnas . Fructose Dehydration to 5-Hydroxymethylfurfural Over Superhydrophobic-Oleophilic Mesoporous Polymeric Solid Acids in a Biphasic System. 2013 AIChE Annual Meeting, San Francisco, CA. November, 2013
- **I Noshadi**, NAS Amin. Modeling and simulation of biodiesel production from waste cooking oil in a reactive distillation column, CHEMECA, New South Wales, Australia, September 2011
- **I Noshadi**, NAS Amin. Direct transesterification of algal biomass to produce biodiesel by using Ionic liquid. 1st International Conference on Algal Biomass, Biofuels and Bio-products, St Louis, USA, 17-20 July 2011.
- **I Noshadi**, NAS Amin. A Review of Biodiesel Production via Reactive Distillation. 33rd Symposium on Biotechnology for Fuels and Chemicals, Seattle, WA, USA, May 2011
- **I Noshadi**. Performance prediction and optimization of fuel cells using ANFIS model and DE evolution. ACS, New Orleans, April, 2013
- B Kanjilal, **I Noshadi**, RS Parnas . Pervaporative purification of 1,3 propanediol from binary solutions and model fermentation broths: design optimization on novel functionalized siloxane membranes. 2013 AIChE Annual Meeting , San Francisco, CA, November, 2013
- B Kanjilal, **I Noshadi**, RS Parnas . Design optimization by response surface methodology for continuous fermentative production of 1,3 propanediol from waste glycerol byproduct of biodiesel processes. 2013 AIChE Annual Meeting, San Francisco, CA, November, 2013
- B Kanjilal, **I Noshadi**, RS Parnas . Functionalized siloxane membranes for pervaporative purification of 1,3 propanediol from fermentation broths: Polymer synthesis, characterization, membrane fabrication, and application. ACS, Indianapolis, September, 2013 - **Award session for Excellence in graduate research session PMSE Division sponsored by IBM Almaden Research center**
- B Kanjilal, **I Noshadi**, RS Parnas . Effect of acetate and butyrate cycling on maximizing fermentative production of 1,3 propanediol from industrial waste glycerol and soil based bacterial inoculum. ACS, Indianapolis, September, 2013
- B Kanjilal, **I Noshadi**, RS Parnas. Synthesis of acidic ionic liquids functionalized ordered mesoporous polymer for efficient, green, and low cost production of biodiesel from waste brown grease. ACS, Indianapolis, September, 2013
- B Kanjilal, **I Noshadi**, RS Parnas . Novel polymeric membranes for pervaporative purification of 1,3 Propanediol from fermentation broths. ACS, New Orleans, April, 2013
- B Kanjilal, **I Noshadi**, RS Parnas. Efficient fermentative production of 1,3 Propanediol from industrial waste glycerol and soil based bacterial inocula. ACS, New Orleans, April, 2013

**INVITED SPEAKER**

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- Invited speaker: Biorenewable Chemicals from Waste and Alternative Biomass Based Feedstock. The EITA-New Agriculture, Cornell University, U.S.A, 2013

**INDUSTRIAL EXPERIENCE**

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| <b>Sea Green company (Internship)</b>   | May 2012-Jan 2013     |
| ○ <i>Engineering group leader to commercialize fertilizer from seaweed in the state of CT</i> |                       |
| <b>South Zagros Oil and Gas Production Company</b>  | April 2008 – Jan 2009 |
| ○ Process control and modeling  |                       |
| <b>Fooladfars Workshop Ltd</b>  | Jan 2006 – April 2008 |
| ○ Supervision of accurate construction  |                       |
| ○ Supervision of accurate welding on structure  |                       |
| ○ Corrosion control and accurate sand blasting technology research                            |                       |
| ○ Accurate printing by Zinc rich and Epoxy  |                       |
| <b>Padideh Jonoob Chemical Industries Company Ltd</b>   | May 2003 – Jan 2006   |
| • Process Engineer at quality control lab   |                       |