

# *Seyyed Hamid Esmaeili-Faraj*

*Assistant Professor*

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## **1. Personal information**

- **Gender:** Male
- **Marital status:** Married
- **Birth Date:** 23/08/1984, Kermanshah, Iran
- **Family:** Parents, 2 sisters, 2 brothers, and my wife
- **Nationality:** Iranian

## **2. Academic qualifications**

- ***Doctor of Philosophy in Chemical Engineering:*** Department of Chemical Engineering, Isfahan University of Technology, Isfahan 84156-83111, Iran, Since 2010-2016.
  - **Ph.D. dissertation title:** Investigation of Hydrogen Sulfide Removal from Biogas Stream by Bioscrubbing Process with Using of Nanofluid.
  - **Results:** **Excellent**
  - **Supervisor:** Dr. Mohsen Nasr Esfahany
  - **Advisor:** Dr. Nasrin Etesamy
  - **Total GPA:** **17.65 out of 20**
- ***Master of Science in Chemical Engineering:*** Department of Chemical Engineering, Isfahan University of Technology, Isfahan, Iran, 2007-2010.
  - **M. Sc. thesis title:** Design, Construction and Investigation of performance of Biotrickling Filter for Vinyl Chloride Removal from an Air Stream.
  - **Results:** GPA: **19.50/20**
  - **Supervisor:** Dr. Mohsen Nasr Esfahany and Dr. Mahdi Kadivar
  - **Advisor:** Dr. Hamid Zilouei
  - **Total GPA:** **17.93 out of 20,**

- ***Bachelor in Chemical Engineering***: College of Engineering, Department of Chemical Engineering, Razi University of Kermanshah, Kermanshah, Iran, 2003-2007.
  - BSc. research title: *Kermanshah refinery waste water treatment by photo catalytic process*
  - Total GPA: **16.30 out of 20**. Graduated as a valedictorian bachelor student in university ranking.
- Pre-University ***Diploma in Math and Physic Sciences***, Dr. Moein Pre-University, Harsin, Iran, 2002.
  - Total GPA: **18.77 out of 20**.

### 3. Research skills and interest:

- Odor and VOCs control by biological method
- Gas and wastewater treatment process
- Biogas production and purification
- Emission Control and Environmental Engineering
- Modeling and Simulation of chemical processes.
- Working in Chemistry and Biotechnology lab, Design of Experiments (DOE)
- Working with Gas Chromatography (GC), spectrophotometric,

### 4. Computer skills:

- Advanced knowledge of Microsoft ® Windows environments, Windows 10, Office package (Word, Excel and PowerPoint), advanced knowledge of EndNote and Design Expert for DOE.
- **Simulation Programs**: Advanced knowledge of Aspen-HYSYS, Petro-SIM, Petro-plan and basic knowledge of Aspen plus, Artificial Neural Network.
- **Programming software**: advanced knowledge of MATLAB.

### 5. Language skills and Communication:

- **Kurdish:** Mother Tongue
- **Persian (Farsi):** National language
- **English:** working knowledge of written and spoken English (**MSRT language examination = 56/100, Date: 10/04/2012**).
- I have been trained in an international environment throughout my academic life, so I have learned to adapt to new environments swiftly. My linguistic skills have helped me to fit in quickly in international laboratories and to communicate my scientific results to co-workers and other scientists with various backgrounds.

## 6. Academic Experiences & Projects

- **Research leader:** *Preparation of Off-line software for optimization of olefin production and scheduling in thermal cracking- Jam Petrochemical complex, (2019)*
- **Research leader:** *“ design and construction of Oxygen generator by PSA process” Isfahan Science and Technology Town (ISTT ) (2012-2013).*
- **Research leader:** *Design of septic waste water treatment unit- Karaj, Iran (2017)*
- **Research leader:** *Design of ventilation system for a floating- Isfahan Science and Technology Town (2014)*
- **Research leader:** *investigation of biogas purification by Bioscrubber in pilot plant” in Isfahan University of Technology (2012 -2015).*
- **Research leader:** *“Treatment of dyeing waste water by Advanced Oxidation Process (AOP)” Isfahan Science and Technology Town (2010).*
- **Research leader:** *construction and investigation of vinyl chloride removal from an air stream by biotrickling filter” Isfahan University of Technology (M.Sc. Thesis) Financed by Bandar Imam Petrochemical Company (BIPC) (2008- 2009).*
- **Research Assistant:** *Feasibility study for development of industrial esters production, Isfahan chemical industries (2013-2015)*
- **Research Assistant:** *Preparation of comprehensive software for unit 101, Isfahan university of technology (2012-2014)*

## 7. Publications:

- journal papers

[https://scholar.google.com/citations?hl=en&view\\_op=list\\_works&gmla=AJsNF56z7n6PdQ2jW204WQcsByH5OY7JZU5TrNHs9bxJ\\_j\\_vZ3v3\\_I4KNuYIP5o\\_SzOyxd98sfSMXdYl5L4rLePqe3SFLNig&user=EfrZWwOAAAAJ](https://scholar.google.com/citations?hl=en&view_op=list_works&gmla=AJsNF56z7n6PdQ2jW204WQcsByH5OY7JZU5TrNHs9bxJ_j_vZ3v3_I4KNuYIP5o_SzOyxd98sfSMXdYl5L4rLePqe3SFLNig&user=EfrZWwOAAAAJ)

- **S.H. Esmaeili Faraj**, M. Nasr Esfahany, M. Jafari-Asl, N. Etesami, “*Hydrogen Sulfide Bubble Absorption Enhancement in Water-based Nanofluids*”, Industrial & Engineering Chemistry Research, 53 (43), 16851–16858, 2014.
- **Esmaeili Faraj, S.H.**, Nasr Esfahany, “*Absorption of Hydrogen Sulfide and Carbon Dioxide in Water Based Nanofluids*”, Industrial & Engineering Chemistry Research, 55 (16), 4682–4690, 2016.
- **Esmaeili Faraj, S.H.**, Nasr Esfahany, “*Influence of SiO<sub>2</sub> and Graphene Oxide Nanoparticles on Biological Removal of Sulfide*”, Environmental Technology, 38 (21), 2763-2774, 2017.
- **Esmaeili Faraj, S.H.**, Nasr esfahani, M., Kadivar, M. and Ziluoeei, H., “*Removal of Vinyl Chloride from an Air Stream by Biotrickling Filter*”, Journal of Environmental Science and Health, part A, 47, 2263–2269, 2012.
- M.H., Karimi Darvanjooghi, M., Nasr Esfahany, **S.H. Esmaeili-Faraj**, “*Investigation of the Effects of Nanoparticle Size on CO<sub>2</sub> Absorption by Silica-Water Nanofluid*” Separation and Purification Technology, 195, 208-215, 2018.
- **S.H. Esmaeili-Faraj**, M., Nasr Esfahany, M.H., Karimi Darvanjooghi, “*Application of water based nanofluids in bioscrubber for improvement of biogas sweetening in a pilot scale*” Chemical Engineering & Processing: Process Intensification, 143 (2019) 107603.
- **Esmaeili Faraj, S.H.**, Nasr Esfahani, M., Amini, Y., “*Modeling of Biofiltration process for removal of vinyl chloride from an air stream by use of modified ottengraf model*”, Journal of Petroleum Research, in press.

#### ➤ **Book and patents**

- **Esmaeili Faraj, S.H.**, Amiri, H., Bashipour, F., Sotodeh, S., Aliabadi, M., Falahi, A.H., Mircharkhchian, F., *Chemical Engineering Book*, in two volume, Danesh Pagohan Barin Publication, Isfahan, Iran, 2012.
- Esmaeili-Faraj, S.H., Nasr Esfahany, M., Design and construction of biofilter for removal of vinyl chloride from an air stream, Iranian patent, 71028, 2012.
- **Esmaeili Faraj, S.H.**, Jamshidi, T., **Sieve tray with sound velocity** that can be used in the chemical and biochemical industries, Iranian patent 79585, 2014.

## **8. Conference abstracts and presentations:**

- **S.H. Esmaeili-Faraj**, M. Nasr Esfahany, M. Jafari-Asl, “*Mass Transfer Enhancement by Binary Nanofluid for Absorption of Hydrogen Sulfide*”, The 8th International Chemical Engineering Congress & Exhibition (IChEC), Kish Island, Iran, 2014.

- S. Karamian, F. Esmaeilzadeh, D. Mowla, **S. H. Esmaeili-Faraj**, “Investigation of Mass Transfer for Absorption by Nanofluids”, The 10th International Chemical Engineering Congress & Exhibition (ICChEC) , Isfahan, Iran, 6-10 May, 2018.
- **Esmaeili Faraj, S.H.**, Amini, Y., Nasr Esfahani, “Modeling of Biofiltration process for VC Removal from an Air Stream and Optimization of Model Parameters by Genetic Algorithm”, The 7th International Chemical Engineering Congress & Exhibition (ICChEC) , Kish Island, Iran, 21-24 Nov. 2011.
- **Esmaeili, S.H.**, Amini, Y., “Modeling for production unit of ethylene by steam cracking process”, The 6th International Chemical Engineering Congress & Exhibition (ICChEC), Kish Island, Iran, 2009.
- **Esmaeili Faraj, S.H.**, Ghoreishi, S.M., Askari, M.R., Gharaati, F., Hosseinpour, M., “Simulation of Titan production plant by chloride method”, presented at 14<sup>th</sup> Iranian Chemical Engineering congress, Sharif University of Technology, Tehran, Iran, 2012.
- **Esmaeili Faraj, S.H.**, Nasr esfahani, M., Kadivar, M. and Ziluoeei, H., “Investigation of vinyl chloride removal by biofiltration process”, The 2<sup>nd</sup> seminar of Energy, Fuel and Environment, Kermanshah University of Technology, Kermanshah, Iran, 2010.
- **Esmaeili Faraj, S.H.**, Bolbol, B., Rahimi, Z., Nasr Esfahani, M., “Technical and Economical Investigation and Simulation of Biogas Treatment Process”, The 6th National Conference & Exhibition on Environmental Engineering, Tehran University, Tehran, Iran, 2013.
- **Esmaeili Faraj, S.H.**, Baharlouee, B., Mokhtari, E., Jamshidi, T., Moradzadeh, M., Reduction of Excess Sludge by Increasing Dissolved Oxygen in Waste Water Treatment Plants”, The 6th National Conference of Petroleum, Gas and Petrochemical, Gachsaran, Iran, 2013.
- **Esmaeili Faraj, S.H.**, Fakhrtaha, S.M., Vaferi, B., Karimi, K.K., “Modeling and Kinetic Investigation of CO-Conversion by Radium Catalyst”, The 1<sup>st</sup> seminar of Energy, Fuel and Environment, Shiraz University, Shiraz, Iran, 2008.
- **Esmaeili Faraj, S.H.**, Sharifnia, S., “Effect of UV Intensity in Photochemical process for treatment of Kermanshah Refinery Waste Water”, The 1<sup>st</sup> National Congress of Novel Technologies in Chemical Engineering, Mahshahr, Iran, 2008.

- **Esmaeili Faraj, S.H.**, Amini, Y., Zahedi, G.R., “Simulation of Kermanshah Refinery Process by Petro-Plan Software”, The 1<sup>st</sup> National Congress of Novel Technologies in Refining Engineering, Isfahan University of Technology, Isfahan, Iran, 2010.

## 9. Teaching Experience

- ✓ I have an Assistant Professor position in Material and Chemical Engineering department of Shahrood University of Technology, since Sep. 2018. The courses that I am teaching are:
  - *Plant Design and Economic Engineering for Chemical Engineers*
  - *Kinetic and Reactor Design*
  - *Fluid mechanics*
  - *Separation Processes*
  - *Refinery and Petrochemical processes*
  - *HYSYS and MATLAB workshops*
- ✓ Lecturer of *Plant Design and Economic Engineering for Chemical Engineers and Fluid Mechanics* in Isfahan University of Technology, Department of Chemical Engineering, 2011-2013.
- ✓ Lecturer of *Advanced Reactor Design and Advanced Fluid Mechanics* for graduate students in Jihad Daneshgahi Higher Education Institute of Isfahan Province, 2016-2017.
- ✓ Lecturer of *Reactor Design, Fluid Mechanics, Heat and mass transfer, refinery processes, Economic Engineering, Simulation, and etc.* in Jihad Daneshgahi Higher Education Institute of Isfahan Province, 2013-2017.
- ✓ Lecturer of *Fluid Mechanic* in Islamic Azad University (Shahreza Branch), Department of Chemical Engineering, Academic year 2011.
- ✓ Lecturer of *Thermodynamic and Unit Operation* in Jami Institute, Department of Chemical Engineering, Academic year 2012.
- ✓ Teacher assistance for *Heat transfer and Process Control laboratory* in Isfahan University of Technology, Department of Chemical Engineering, Academic years 2009 & 2011.

## 10. Referees:

- **Dr. Mohsen Nasr Esfahany**, Full Professor
  - Dept.: *Chemical Engineering*
  - College: *Chemical Engineering*
  - University: *Isfahan University of Technology*
  - E-mail: [mnasr@cc.iut.ac.ir](mailto:mnasr@cc.iut.ac.ir)
  
- **Dr. Mahdi Kadivar**, Full Professor
  - Dept.: *Food Technology*
  - College: *Agriculture*
  - University: *Isfahan University of Technology*
  - E-mail: [kadivar@cc.iut.ac.ir](mailto:kadivar@cc.iut.ac.ir)
  
- **Dr. Nasrin Etesamy**, Associate Professor
  - Dept.: *Chemical Engineering*
  - College: *Chemical Engineering*
  - University: *Isfahan University of Technology*
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