

Curriculum Vitae

Seyedeh-Saba Ashrafmansouri

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General Information:

Name: Seyedeh-Saba Ashrafmansouri

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Education:

- Visiting PhD researcher in Chemical Engineering, Chair of Separation Science and Technology, Department of Mechanical and Process Engineering, TU Kaiserslautern, Kaiserslautern, Germany, 15th February 2015-14th November 2015.
- Ph.D in Chemical Engineering, Department of Chemical Engineering, Isfahan University of Technology, Isfahan, Iran, January 2016, **GPA: 17.58/20**
- M.Sc. in Chemical Engineering, School of Chemical and Petroleum Engineering, Shiraz University, Shiraz, Iran, September 2010, **GPA: 17.16/20**
- B.Sc. in Chemical Engineering, School of Chemical and Petroleum Engineering, Shiraz University, Shiraz, Iran, September 2007, **GPA: 17.00/20**

Research Project at TU Kaiserslautern:

Mass Transfer in Micro-Extraction Process: Supervisor: Prof. Hans-Jorg Bart

I investigated the influence of nanoparticles on the micro-extraction process. I studied how nanoparticles influence the mass transfer.

Ph.D Thesis:

Experimental Investigation of Mass Diffusion Coefficient and Liquid-Liquid Extraction in Nanofluids, Supervisor: Prof. Mohsen Nasr Esfahany

This thesis was divided into two sections. In the first section, to investigate the influence of nanoparticles on mass diffusion coefficient, water self-diffusion coefficient and tracer diffusion coefficient of tert-butanol in water-based silica nanofluids were measured by using pulsed field gradient nuclear magnetic resonance (PFG-NMR) method. In the second part, hydrodynamics and mass transfer at the presence of nanoparticles in liquid-liquid extraction process were experimentally investigated.

M.Sc. Thesis:

Modeling Gas Solubility in Ionic Liquids with the SAFT- γ Group Contribution Method, Supervisor: Dr. Sona Raeissi

In this work, a group contribution approach was used to predict the phase behavior of CO₂+ionic liquids systems based on the statistical associating fluid theory (SAFT- γ). This approach could accurately predict the P-x diagrams of these systems up to high pressures.

B.Sc. Thesis:

The Modeling of CO₂ Solubility in Ionic Liquids, Supervisor: Dr. Sona Raeissi

In this thesis, various equations and thermodynamic models that had been applied to predict the phase behavior of CO₂+ionic liquids were studied and by comparing their predictive capabilities, appropriate equations and models were introduced. Also, this

study considered the strengths and weaknesses of other theoretical models that had not yet been used to predict CO₂ solubility in ionic liquids.

Research Project with MehrPazhooh Group:

I was a team member in a student-run scientific group called MehrPazhooh which carries out innovative projects on solar energy especially solar stills. This group is supported by **Solar Energy Center of Shiraz University** and **Premier Ideas Support Center of Shiraz University**.

National and International Publications:

[1] **Ashrafmansouri S.S.**, Willersinn S., Nasr Esfahany M., Bart H.-J., Influence of Silica Nanoparticles on Mass Transfer in a Membrane-based Microcontactor, **RSC Advances** 6 (2016) 19089-19097.

[2] **Ashrafmansouri S.S.**, Nasr Esfahany M., Mass Transfer into/from Nanofluid Drops in a Spray Liquid-Liquid Extraction Column, **AIChE Journal** 62 (3) (2016) 852-860.

[3] **Ashrafmansouri S.S.**, Nasr Esfahany M., The Influence of Silica Nanoparticles on Hydrodynamics and Mass Transfer in Spray Liquid-Liquid Extraction Column, **Journal of Separation and Purification Technology** 151 (2015) 74-81.

[4] **Ashrafmansouri S.S.**, Nasr Esfahany M., Azimi G.H., Etesami N., Experimental Investigation of Water Self-Diffusion Coefficient and Tracer Diffusion Coefficient of Tert-Butanol in Water-Based Silica Nanofluids, **International Journal of Thermal Sciences** 86 (2014) 166-174.

[5] **Ashrafmansouri S.S.**, Nasr Esfahany M., Mass Transfer in Nanofluids: a Review, **International Journal of Thermal Sciences** 82 (2014) 84-99.

[6] Karimi Estahbanati M.R., Ahsan A., Feilizadeh M., Jafarpur K., **Ashrafmansouri S.S.**, Feilizadeh M., Theoretical and experimental investigation on internal reflectors in a single-slope solar still, **Applied Energy** 165 (2016) 537-547.

[7] Shariati A., **Ashrafmansouri S.S.**, Haji Osbuei M., Hooshdaran B., Critical Properties and Acentric Factors of Ionic Liquids, **Korean Journal of Chemical Engineering** 30(1) (2013) 187-193.

[8] **Ashrafmansouri S.S.**, Raeyssi S., Modeling Gas Solubility in Ionic Liquids with the SAFT- γ Group Contribution Method, **Journal of Supercritical Fluids** 63 (2012) 81-91.

[9] **Ashrafmansouri S.S.**, Willersinn S., Nasr Esfahany M., Bart H.-J., Influence of Silica Nanoparticles on Mass Diffusion in a Membrane-Based Microcontactor, **Chemie Ingenieur Technik** 87 (8) (2015) 1054.

[10] Feilizadeh M., Soltaneih M., Karimi Estahbanati M.R., Jafarpur K., **Ashrafmansouri S.S.**, Optimization of Geometrical Dimensions of Single-Slope Basin Solar Stills, **Applied Energy**, submitted, 2015.

[11] **Ashrafmansouri S.S.**, Willersinn S., Nasr Esfahany M., Bart H.-J., Influence of Silica Nanoparticles on Mass Diffusion in a Membrane-Based Microcontactor, **Jahrestreffen der ProcessNet-Fachgemeinschaft Fluidodynamik und Trenntechnik**, September 2015, Bamberg, Germany.

[12] **Ashrafmansouri S.S.**, Nasr Esfahany M., Azimi G., Etesami N., Experimental Investigation of Tracer Diffusion Coefficient of tert-Butanol in Water-based Silica Nanofluids, **International Congress of Nanosciences and Nanotechnology (ICNN)**, October 2014, Tehran, Iran.

[13] **Ashrafmansouri S.S.**, Nasr Esfahany M., Azimi G.H., Etesami N., Experimental Investigation of Water Self-Diffusion Coefficient in Water-Based Silica Nanofluids, **5th International Conference of Nanostructures (ICNS5)**, March 2014, Kish, Iran.

[14] **Ashrafmansouri S.S.**, Raeissi S., Modeling Gas Solubility in Ionic Liquids with the SAFT- γ Group Contribution Method, **14th International Symposium on Solubility Phenomena and Related Equilibrium Processes**, July 2010, Leoben, Austria.

[15] Shariati A., **Ashrafmansouri S.S.**, Haji Osbuei M., Hooshdaran B., Critical Properties and Acentric Factors of Ionic Liquids, **14th International Symposium on Solubility Phenomena and Related Equilibrium Processes**, July 2010, Leoben, Austria.

[16] **Ashrafmansouri S.S.**, Bizhani M., Raeissi S., The Modeling of CO₂ Solubility in Ionic Liquids, **18th International Congress of Chemical and Process Engineering**, August 2008, Prague, Czech Republic.

[17] **Ashrafmansouri S.S.**, Jafarpur K., Sedigh Ardakani A., Feilizadeh M., Taghvaei H., Investigation of the Solar Still Due to the Desalination of Salty Waste Water, **1th National Conference of Energy and Environment (EERC 2010)**, October 2010, Kerman, Iran.

[18] Karimi Estahbanati M.R., Jafarpur K., Feilizadeh M., **Ashrafmansouri S.S.**, Sedigh Ardakani A., Single-Slope Solar Stills: Challenges in Calculating Input Solar Energy, **International Conference on Water and Waste-Water Treatment**, April 2010, Isfahan, Iran.

[19] **Ashrafmansouri S.S.**, Jafarpur K., Sedigh Ardakani A., Karimi Estahbanati M.R., Taghvaei H., Effect of Using Reflectors Inside a Basin Solar Still, **The 6th International Chemical Engineering Congress and Exhibition (IChEC)**, November 2009, Kish Island, Iran.

[20] Feilizadeh M., Soltanieh M., Jafarpur K., **Ashrafmansouri S.S.**, Karimi Estahbanati M.R., A Methodology for Studying the Effect of Geometrical Dimensions of a Basin Type Solar Still, **5th Dubrovnik Conference on Sustainable**

Development of Energy, Water and Environment, September 2009, Dubrovnik, Croatia.

[21] Feilizadeh M., Soltanieh M., Jafarpur K., Karimi, M.R., **Ashrafmansouri S.S.**, Performance Comparison of Solar Stills with One and Two Condensing Surfaces: Modeling and Experiment, **12th Iranian Chemical Engineering Congress (IChEC12)**, October 2008, Tabriz, Iran.

[22] Feilizadeh M., Soltanieh M., **Ashrafmansouri S.S.**, Karimi Estahbanati M.R., Investigation of the Internal Reflector application in Basin Solar Stills, **Fuel, Energy and Environment National Congress**, June 2008, Tehran, Iran.

Some Other Research Projects:

- Sedigh Ardakani A., Feilizadeh M., Karimi Estahbanati M.R., Ashrafmansouri S.S., Taghvaei H., Ahmad Asasi M., Theoretical and Experimental Investigation of Active Basin Solar Stills, submitted to **Students' Scientific Management of Shiraz University**, 2010.
- Karimi Estahbanati M.R., Feilizadeh M., Sedigh Ardakani A., Feilizadeh E., Taghvaei H., Ashrafmansouri S.S., Designing and Manufacturing an Innovative Distillation System by Using Solar Energy, **National and Applied Project which was supported by Shiraz University**, 2010.
- Feilizadeh M., Ashrafmansouri S.S., Karimi Estahbanati M.R., Technical and Economical Investigation of Various Systems for Potable Water Production, 2009.
- Ashrafmansouri S.S., Feilizadeh M., Karimi Estahbanati M.R., Exact Study of Solar Energy Application in Various Regions of Iran, submitted to **Iran Research Institute of Petroleum Industry**, 2008.
- Feilizadeh M., Karimi Estahbanati M.R., Sedigh Ardakani A., Ashrafmansouri S.S., Feilizadeh E., Taghvaei H., Study of Different Types of Solar Stills Due to Selection, Optimization and Manufacturing the Best Suitable Structure for Using in Various Weather Conditions of Iran, 2007.

Academic Awards:

- TU Kaiserslautern Scholarship for research stay in Germany, 2015.
- Fourth place article among top 25 **most downloaded International Journal of Thermal Science articles**, 2014.
- Third place in entrance exam of PhD degree, Department of Chemical Engineering, Isfahan University of Technology, Isfahan, Iran, 2011.
- First place in the section "**Inventions and Innovations**" of the **National Reforming Norms of Consumption Festival** with Mehrpazhooh Group, June 2010, Shiraz, Iran.

- First place in the section "**Inventions and Innovations**" of the **Second National Movement Festival** with Mehrpazhooh Group, among more than 980 teams, May 2009, Tehran, Iran. (This Festival was held by the Ministry of Science, Research and Technology of Iran.)
- First place team (Mehrpazhooh Group) in the "**Innovations and Inventions Exhibition**" of the **Higher Education Centers of Fars**, May 2008, Shiraz, Iran.
- Fourth place in GPA among all Petrochemical Engineering B.Sc. students (60 students), School of Chemical and Petroleum Engineering, Shiraz University, 2007.
- Selected as a talented student by Shiraz University for M.Sc. degree (without entrance exam), 2007.

Patent:

- Feilizadeh M., Karimi Estahbanati M.R., Ashrafmansouri S.S., Solar Still with Adjustable Internal and External Reflectors, 53649, 2008/ 10/ 14, Iran.

Teaching Experience:

- Applied Thermodynamics, Isfahan University of Technology.
- Fluid Mechanics Lab, Isfahan University of Technology.
- Unit Operation Lab, Isfahan University of Technology.
- Teaching Assistant in Mass Transfer, Fluid Mechanics, Thermodynamics and Material and Energy Balance, Isfahan University of Technology.

References:

- **Dr. Hans-Jorg Bart**, Professor, Chair of Separation Science and Technology, Department of Mechanical and Process Engineering, TU Kaiserslautern, Kaiserslautern, Germany.
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