

Education

- Ph.D. in Chemical Engineering (GPA 4.67/5) Nanyang Technological University, Singapore, 2012
- M.S. in Chemical Engineering (GPA 18.15/20) Sharif University of Technology, Tehran, Iran, 2006
- B.S. in Chemical Engineering, (GPA 17.20/20) Sharif University of Technology, Tehran, Iran, 2003

Teaching Experience

- Lecturer of Process Control (1,2), Chemical Reaction Engineering (Undergraduate and Advanced), Optimization, Computer Programming, English for Chemical Engineering courses Hamadan University of Technology, Hamadan, Iran, 2012-2022.
- Instructor of Process Control and Unit Operations laboratories Hamadan University of Technology, Hamadan, Iran, 2012-2014.
- Instructor of General and Advanced Software Workshop for Chemical Engineering Students Hamadan University of Technology, Hamadan, Iran, 2018-2021.
- Teaching assistant of Chemical and Biomedical Process Control and Dynamics course Nanyang Technological University, Singapore, 2009-2011
- Laboratory assistant of Heat Transfer Laboratory Sharif University of Technology, Tehran, Iran, 2007-2008
- Teaching assistant of Process Control course Sharif University of Technology, Tehran, Iran, 2005

Executive Appointments

- Project Manager, Micronized Sulphur Furnace Revamp Research Project Hamadan University of Technology, Hamadan, Iran, 2021-2022.
- Head of Department of Chemical Engineering Hamadan University of Technology, Hamadan, Iran, 2014-2016.
- Laboratory Manager (Process control and unit operations) Hamadan University of Technology, Hamadan, Iran, 2013-2018

Professional Experience

- Design, fabrication, and operation of Revamped Micronized Sulphur Furnace Misaagh Sulphur Company, Hamadan, Iran, 2021-2022.
- Design, fabrication, and operation of the pilot plant for ethanol production Hamadan University of Technology, Hamadan, Iran, 2020.
- Investigation of aldehydes and ketones formation with optimized ozone injection in water treatment Hamadan University of Technology, Hamadan, Iran, 2013.

- Design of an improved single-column chromatographic (ISCC) separation process Nanyang Technological University, Singapore, 2010-2012
- Establishing communication with PerkinElmer HPLC modules using LabVIEW Nanyang Technological University, Singapore, 2010-2011.
- Simulation of a loop reactor for the production of polypropylene Petrochemical Research & Industry Co., Tehran, Iran, 2006.
- Establishing a pilot plant for the production of animal feed supplements Ministry of Agriculture, Tehran, Iran, 2004-2008.

Supervision

- Supervision of 14 M.S. and over 30 B.S. students Hamadan University of Technology, Hamadan, Iran, 2014-2023

Selected M.S. Thesis Projects

- Dynamic Simulation and Control of the Demethanizer Unit in Natural Gas Refining Plant Hamadan University of Technology, Hamadan, Iran, 2014-2016
- Dynamic Simulation and Control of Slurry Copolymerization of Ethylene-1-Butene Hamadan University of Technology, Hamadan, Iran, 2015-2017
- Simulation of Ethylene Slurry Polymerization Using Efficient Modeling Methods Hamadan University of Technology, Hamadan, Iran, 2013-2015
- Evolutionary Optimization and Heat Integration of Sulfuric Acid Production Plant Using a High-Fidelity Process Simulation Hamadan University of Technology, Hamadan, Iran, 2017-2019

Selected Publications

1. Shahab-Deljoo, M., **Medi, B.**, Kazi, M.K., Jafari, M., 2023. A techno-economic review of gas flaring in Iran and its human and environmental impacts. *Process Saf. Environ. Protect.* 173, 642–665.
2. Seyf, J. Y.; Nasiri, L.; **Medi, B.**, Development of the NRTL functional activity coefficient (NRTL-FAC) model using high quality and critically evaluated phase equilibria data. *Fluid Phase Equilib.* 2024, 577, No. 113982.
3. **Medi, B.** and A. Asadbeigi (2021). "Application of a GA-Optimized NNARX controller to nonlinear chemical and biochemical processes." *Heliyon* 7(8): e07846.
4. **Medi, B.**, A. Bahramian and V. Nazari (2021). "Synthesis and Characterization of Conducting Polyaniline Nanostructured Thin Films for Solar Cell Applications." *JOM Journal of the Minerals Metals and Materials Society* 73(2): 504-514.
5. **Medi, B.** and M. Nomvar (2020). "Developing a fast and robust numerical method for the simulation of cocurrent hollow fiber gas separation membranes for process flowsheet synthesis." *SN Applied Sciences* 2(3): 426.
6. Mousavi, S. M., A. Babapoor, S. A. Hashemi and **B. Medi** (2020). "Adsorption and Removal Characterization of Nitrobenzene by Graphene Oxide Coated by Polythiophene Nanoparticles."

- Physical Chemistry Research 8(2): 225-240.
7. Mousavi, S. M., S. A. Hashemi, A. Babapoor and **B. Medi** (2019). "Enhancement of Rheological and Mechanical Properties of Bitumen by Polythiophene Doped with Nano Fe₃O₄." JOM Journal of the Minerals Metals and Materials Society 71(2): 531-540.
 8. **Medi, B.** and M. K. kazi (2018). "Design and Fabrication of an Improved Single-Column Chromatographic Separation Process." Iranian Journal of Chemical Engineering (IJCHE) 15(4): 81-92.
 9. Bahramian, A., M. Maleki and **B. Medi** (2017). "CFD Modeling of Flame Structures in a Gas Turbine Combustion Reactor: Velocity, Temperature, and Species Distribution." International Journal of Chemical Reactor Engineering 15(4).
 10. **Medi, B.**, K. Monzure-Khoda and M. Amanullah (2015). "Experimental Implementation of Optimal Control of an Improved Single-Column Chromatographic Process for the Separation of Enantiomers." Industrial & Engineering Chemistry Research 54(25): 6527-6539.
 11. **Medi, B.**, M.-K. Kazi and M. Amanullah (2013). "Nonlinear direct inverse method: a shortcut method for simultaneous calibration and isotherm determination." Adsorption 19(5): 1007-1018.
 12. Kazi, M. K., **B. Medi** and M. Amanullah (2012). "Optimization of an improved single-column chromatographic process for the separation of enantiomers." Journal of Chromatography A 1231: 22-30.
 13. **Medi, B.**, M. K. Kazi and M. Amanullah (2011). Comparison of Single-Column Chromatography and Simulated Moving Bed Process at Optimal Operating Points. AIChE Annual Meeting 2011, Minneapolis, U.S.A.
 14. **Medi, B.**, M. K. Kazi and M. Amanullah (2011). Optimization of An Improved Single-Column Chromatographic Process for the Separation of Enantiomers. AIChE Annual Meeting 2011, Minneapolis, U.S.A.
 15. **Medi, B.** and M. Amanullah (2011). "Application of a Finite-Volume Method in the Simulation of Chromatographic Systems: Effects of Flux Limiters." Industrial & Engineering Chemistry Research 50(3): 1739-1748.

Fields of Research

- Chemical and biochemical process design
- Adsorption and chromatographic separation process design
- Global optimization
- Dynamic simulation and control

Application Software

- MATLAB (Global Optimization, Neural Network, System Identification, Model Predictive Control)
- Microsoft Office (Word, Excel, Powerpoint, Visio)
- Aspen Hysys (General process simulation, equipment sizing , dynamic simulation, control)
- Aspen Plus (General process simulation, equipment sizing, adsorption, polymers, solids, dynamic simulation, control)
- LabVIEW
- LATEX
- EndNote
- SIEMENS LOGO! Software
- SIEMENS TIA PORTAL

Honors

- The best lecturer award, Department of Chemical and Petroleum Engineering, Hamedan University of Technology, 2015, 2017.
- Achieving the 13th rank between 5000 students in Chemical Engineering M.S. entrance exam, 2003.
- Achieving the 1st rank between 1000 students in Chemical Engineering/Biotechnology M.S. entrance exam, 2003.
- Achieving the 4th rank between 120 undergraduate students, Department of Chemical and Petroleum Engineering, Sharif University of Technology, 2003.
- Achieving the 1st rank between 8 M.S. students of process control and simulation group, Department of Chemical and Petroleum Engineering, Sharif University of Technology, 2006.

Social Activities

- Co-founder and member of executive committee of Graduate Students' Club, Nanyang Technological University, Singapore, 2010-2011.
- Volunteer for the Youth Olympic Games (YOG) 2010, Singapore.
- Member of Red Cross, NTU Chapter, Nanyang Technological University, Singapore, 2008-2011.
- Member and/or coordinator of Students' Union, Zanjan Dormitory, Sharif University of Technology (2003-2008).

Languages

- Persian (Native)
- English (Good, TOEFL IBT Score: 103)
- Arabic (High school level)