

Contact information:
Email: avami@sharif.ir

Updated: 17 Dec. 2017

Current position

2014-now, Assistant professor, Energy systems engineering group, Energy engineering department, Sharif University of Technology, Tehran, I. R. Iran.

Professional experience

Researcher, Sharif Energy Research Institute, 2014-2017.

Manager, Innovation center of the committee of energy efficiency and environment, Vice presidency for science and technology, 2014-2016, Tehran, I. R. Iran.

Assistant professor, Energy systems engineering group, Mechanical engineering department, K. N. Toosi university of technology, 2012-2014, Tehran, I. R. Iran.

International institute for Energy Studies (IIES), 2007, Tehran, I. R. Iran.

National Gas Company, R&D Department, 2006, Mashhad, I. R. Iran.

Education

PhD in Mechanical Engineering - Energy conversion, Sharif University of Technology, Tehran, I. R. Iran, 2012.

PhD visiting student, Process systems engineering, RWTH, Aachen, Germany, 2010.

Thesis title: "Development of optimal integrated and intensive model of energy processing and conversion"

M. Sc. in Energy Engineering systems, Sharif University of Technology, Tehran, I. R. Iran, 2005.

Thesis title: "Optimal integrated of energy flows"

B. Sc. in Chemical Engineering, Ferdowsi University, Mashhad, I. R. Iran, 2003.

Thesis title: "Modeling and simulation of water softening by nanofiltration using artificial neural network"

Honors and Awards

Graduated with rank 3 among M. Sc. Students in Energy Engineering systems, Sharif University of Technology, Tehran, Iran, 2006.

Graduated with rank 1 among B. Sc. Students in Chemical Engineering, Ferdowsi University, Mashhad, Iran, 2004.

Research Interests

Energy and Environment, Water and energy integration, Carbon capturing
Process intensification, Conceptual design, Process design
Bioenergy, Biomass, bio-renewable processes

Publications

Books

1. Avami A., Energy and water nexus in industry: fundamentals and applications, in Persian, Sharif University press, in press.

Journal papers

1. Mousavi M., Avami A., “Modeling and simulation of water softening by nanofiltration using artificial neural network”, Iranian Journal of Chemistry & Chemical Engineering, 4 (4), 37-45, 2006 (index ISI).
2. Avami A., Farahmandpour B., “Analysis of environmental emissions and greenhouse gases in Islamic Republic of Iran”, WSEAS Transactions on Environment and Development, 4 (4), 303-312, 2008.
3. Avami A., Sattari S., “Assessment of energy-saving opportunities of cement industry in Iran”, International Journal of Energy, 3 (1), 65-71, 2007.
4. Avami A., Boroushaki M., “Energy consumption forecasting in Iran using recurrent neural networks”, Energy Sources, Part B: Economics, Planning, and Policy, Part B, 6, 339–347, 2011(index ISI).
5. Avami A., Saboohi Y., “A method for phase identification and equilibrium calculations in reactive mixtures”, Chemical engineering research and design, 89, 1901-1908, 2011 (index ISI).
6. Avami A., Marquardt W., Saboohi Y., Kraemer K., “Shortcut design of reactive distillation columns”, Chemical engineering science, 71, 166-177, 2012 (index ISI).
7. Avami A., “A Model for biodiesel supply chain: A case study in Iran”, Renewable and sustainable energy reviews, 16, 4196-4203, 2012 (index ISI).
8. Avami A., “Investigations on conceptual design of double feed reactive distillation columns”, chemical engineering technology, 36, 186-191, 2013, (index ISI).
9. Avami A., "Assessment of optimal biofuel supply chain planning in Iran: technical, economic, and agricultural perspectives", Renewable and sustainable energy reviews (index ISI).
10. Torkfar F., Avami A., “A simultaneous methodology for the optimal design of integrated water and energy networks considering pressure drops in process industries”, Process Safety and Environmental Protection, 103, 442-454, 2016 (index ISI).
11. Kachooee M. S., Haghi P., Avami A., “Optimal design for gasoline supply chain planning in Iran: technical, economical, and environmental perspectives”, International Journal of Energy Technology and Policy, 13, 224-248, 2017.
12. Aliee M. H., Roshandel R., Avami A., “Multi objective optimization and statistic sensitivity analysis of solid oxide fuel cell-gas turbine hybrid system fed by biogas in urban wastewater treatment plants”, Modares Mechanical Engineering, Vol. 17, No. 3, pp. 239-250, 1396 (in Persian).
13. Heidary A. R., Avami A., Achehloo M., “Environmental impact assessment using ecological footprint method: Case study Energy Engineering Department of Sharif University of Technology”, in Persian, Environmental studies, 43, 303-306, 2017 (in Persian).
14. Rostami F., Avami A., “A design procedure for the assessment of carbon capturing and utilization of flue gas from power plant using experimental data”, Chemical Research and Design, in press.

Akram Avami
Assistant professor

15. Vali F., Avami A., “Sustainable assessment of integrated waste to energy systems from municipal solid waste and waste water in Tehran”, Renewable and sustainable energy reviews, under review.
16. Hajhasan A., Avami A., “Water and emissions nexus for biodiesel in Iran”, Renewable and sustainable energy reviews, under review.
17. Rostami F., Avami A., “Adsorption equilibrium and kinetic model of carbon dioxide-nitrogen-oxygen separation on activated carbon”, Chemical Engineering and Technology, under review.
18. Nikoeei E., Avami A., Boroushaki M., “Spatial Dynamic Modeling and Prediction of CO Pollutant in Urban Climate of Tehran City”, International Journal of Global Environmental Issues, under review.
19. Hajhasan A., Avami A., “Towards sustainability of bioethanol in Iran”.
20. Soleimani A., Aramoun F., Bararzadeh M., Avami A., “Life Cycle optimization of Retrofit design of energy efficient educational buildings”.

Conference papers

1. Avami A., Saboohi Y., “Development of an analytical tool for integrating the energy flows”, in Persian, 1st International Conference of Energy Planning and Management, Tehran University, IRAN, June, 2006.
2. Sattari S., Avami A., “Assessment of energy conservation in the high energy intensive industries in Iran”, Oral presentation in Persian, 12th IIES International Oil & Gas Conference, December 9-10, 2007, Tehran, I.R. Iran.
3. Avami A., “Development of nanotechnology in energy systems”, in Persian, the 2nd conference of energy, industry and environment, Sharif University of technology, Tehran, IRAN, 24-25 February, 2005.
4. Sattari S., Farahmadpour B., Avami A., ”Energy consumption and conservation in petrochemical industry of Iran”, in Persian, The first Iran petrochemical conference, Tehran, IRAN, July 22-23 2008.
5. Avami A., Boroushaki M., “An Intelligent model for forecasting of Iran’s final energy consumption”, in Persian, Annual International conference on Mechanical Engineering ISME, 19-21 May 2009, University of Tehran, IRAN.
6. Saboohi Y., Avami A., “A method for multiphase reactive equilibrium calculations”, Oral presentation and printed in proceeding, The 6th International Chemical Engineering Congress and Exhibition (ICHEC 2009), 16-20 Nov. 2009, Kish, I.R. Iran.
7. Saboohi Y., Avami A., “Equilibrium approach to reactive distillation calculations with identification of phases”, 19th International Congress of Chemical and Process Engineering, CHISA 2010 and 7th European Congress of Chemical Engineering, ECCE-7, 2010.
8. Zandie M., Yavari P., Avami A., “An optimal model development for carbon capturing in cement industry”, 3rd international conference and exhibition on cement industry, energy and environment, 2014, University of Tehran, I. R. Iran.
9. Baramaki M., Avami A., “Calcium looping for carbon capturing in cement industry”, 3rd international conference and exhibition on cement industry, energy and environment, 2014, University of Tehran, I. R. Iran.
10. Jamali N., Avami A., Boroushaki M., “Multi objective optimization of hybrid solar-biomass power plant using particle swarm optimization”, in Persian, Annual International conference on Mechanical Engineering ISME, 2015, Amirkabir University of Technology, I. R. Iran.
11. Vali F., Avami, “Feasibility and optimal energy flows to produce bio gas and bioethanol from solid municipal waste and waste water of the city of Tehran”, 2nd International conference on sustainable development, strategies and challenges With a focus on Agriculture, Natural Resources, Environment and Tourism 23-25 Feb 2016, Tabriz , I. R. Iran.
12. Aramoun F., Bararzadeh M., Avami A., “Retrofit design of energy efficient buildings using life cycle assessment case study on research institute building”, Life cycle assessment and other assessment tools for waste management and resource optimization conference, 5-10 June 2016, Cetraro, Italy.
13. Javid A. S., Avami A., “Life cycle assessment of low retrofit options of educational building considering renewable and non-renewable energies”, Life cycle assessment and other assessment tools for waste management and resource optimization conference, 5-10 June 2016, Cetraro, Italy.

Akram Avami
Assistant professor

14. Heidary A. R., Achehloo M., Avami A., "Environmental assessment of brick industry in Iran and evaluating pollution control technologies for stack gases", IAET, 2016, Ardabil, I. R. Iran.
15. Hadi H., Avami A., "Development of model for biogas generation via anaerobic digestion and determining the optimal ratio of MSW and WWT of residential building to maximize biogas production", in Persian, ISME, 2-4 May 2017, Tehran, I. R. Iran.
16. Shahsavani A., Avami A., Boroushaki M., "Monthly demand prediction of Water, electricity, and natural gas for residential section of Tehran using NARX", in Persian, ISME, 2-4 May 2017 Tehran, I. R. Iran.
17. Heidary A.R., Fallahi M., Avami A., "Design and technical and environmental analysis of heat, power, cooling power plant generation unit using gasification of coke residues: case study Abadan oil refinery", in Persian, ISME, 2-4 May 2017, Tehran, I. R. Iran.
18. Avami A., "Water-emission nexus for electricity in Iran", The 12th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 4-8 October 2017, Dubrovnic, Croatia.
19. Afsari F., Avami A., Nabi-Bidhendi G., "An innovative conceptual model for co-dispatch of power and water systems", The 12th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 4-8 October 2017, Dubrovnic, Croatia.

Languages

Persian (Native)
English (Good)
French (Intermediate)
German (Elementary)

Teaching courses

Undergraduate

Environmental effects of energy systems

Graduate

Energy and environment
Bio energy
Conceptual process design
Process design

Industrial projects

1. Modeling of Environmental impact assessment of Altemor and Khinarab waste water treatment units in the city of Mashhad using life cycle and proposing the environmental management system, 2017-2018, ABFA, Mashhad, IRAN.
2. Development of a model to optimally select the pathway for waste water treatment for the city of Mashhad and investigation on the new technologies and systems for wastewater treatment operation, 2017-2018, ABFA, Mashhad, IRAN.
3. Innovation center of energy efficiency and environment, The committee of energy efficiency and environment, Vice presidency for science and technology, 2015-2016, Tehran. IRAN.
4. Load forecasting of useful energy demand in Iran, Iran Energy Efficiency Organization (SABA), 2012, Tehran, IRAN.
5. Energy efficiency improvement in Iranian industrial sectors, Iran Energy Efficiency Organization (SABA), 2012, Tehran, IRAN.