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Professional Background

Retired Professor	June 2021	Chemical Engineering ,Sharif University of Technology ,Tehran,Iran
Professor	June 2001	Chemical Engineering ,Sharif University of Technology ,Tehran,Iran
Associate Professor	1992-2001	Chemical Engineering ,Sharif University of Technology,Tehran
Sabbatical leave	1991-1992	Chemical Engineering, Kansas State University, KS, USA
Assistant Professor	1982-1992	Chemical Engineering,Sharif University of Technology, Tehran
Research Assistant	1976-1978	Chemical Engineering, Sharif University of Technology, Tehran

Educational Background

PHD	1982	Institute National de Recherche Appliquées (INRA) Toulouse, France
MSC	1978	INRA- Toulouse-France
BSC	1976	Chemical Engineering, Sharif University of Technology, Tehran, Iran

Position at SUT

Vice Chancellor for Research of Biochemical and Bioenvironmental Research Center (SUT)	1984-1986
Deputy of education of Chemical Engineering Department (SUT)	1987-1989
Head of Chemical Engineering Department (SUT)	1989-1991
Head of Biochemical and Bioenvironmental Research Center (BBRC)	1997-2002
Head of Biochemical and Bioenvironmental Institute (BBI)	2010-2014

Awards

Graduate Fellowship	SUT- Tehran,Iran	1972-1976
French Government Scholarship	INRA-Toulouse ,France	1978-1982
Distinguished Researcher	SUT-Tehran ,Iran	1990

Editorial board of Iranian Journal of Biotechnology (IJB), Tehran 2000–Present
 Editorial board of Agricultural Engineering Journal (TMU), Tehran ,Iran 1996-present
 present–Editorial board of Agricultural Technology Journal (Minstry of Agricultural, Tehran)
 1994Advisory
 board of Scientia Journal (SUT),Tehran,Iran 1999-present
 Advisory board of Journal of Engineering (Minstry of Higher Education) Tehran ,Iran 1990-present
 Advisory board of Iranian Journal of science and Technology 1992-present
 (Shiraz University) Shiraz, Iran

Teaching

Undrgraduat Courses

- Material and energy Balance, Fluid Mechanics ,Rheology, Food Engineering, Biochemical Engineering, Water and wastewater treatment, Environmental Engineering, Industrial Microbiology

Gratuated Courses

Advanced Biochemical Engineering, Environmental Biotechnology, Food Biotechnology, Industrial waste water treatment, Bioreactor Design, Solid Waste Management, Advanced Industrial Microbiology , Enzyme Technology

Reasesch Interest

Covers a range of topics related to Environmental Engineering, Immobilized cell Technology , Biofilm, Biological production of organic and amino acids in fixed bed bioreactor (Valine, Glutamic), Biological production of Industrial enzyme , Biofloculant production, Biodesulfurization of diesel fuels, Fixed film reactor for Biogas production, WasteWater treatment by Constructed wetlands, Phosphorous uptake in an anearobic-anoxic-aerobic reactor, Nitrification and Denitrification in Moving Bed Bioreactor(MBBR) , Sulfate removal in an Anearobic Baffled Reactor(ABR) , Methane production in upflow ,Anearobic Fixed bed(UAFB), Production of Ethanol from lignocelluloseics.

Consulting Experiences

Contribution to design a number of food factories such as (Canning , Beverages and meat processing), for Ministry of Agricultural.

Member of panel of experts in the baker's yeast and alcohole projects for sugar cane and By products
Company

Involved in UN projects for Intergovernmental panel on climate change. (Environmental Protection Organization),Tehran,Iran

Membership in Societies

Japan Societies of Bioscience, Biotechnology and Agrochemistry.
 International water Association (IWA)
 Iranian Biotechnology Society
 Iranian Association of Chemical Engineer(IACHE)
 Iranian Food Engineering Association
 Iranian Environmental Association

Refereed papers

1. J. Abdi, N.M Mahmoudi, M. Vossoughi, I. Alemzadeh, synthesis of magnetic metal-organic framework nanocomposite (ZIF-8 SiO₂ MnFe₂O₄) as a novel adsorbent for selective dye removal from multicomponent systems, MICROPOROUS AND MESOPOROUS MATERIALS, (2019)
2. A. vaziri , M. Vossoughi, I. Alemzadeh, Improving survivability of Lactobacillus Plantarum in alginate-chitosan beads reinforced by Na-tripolyphosphate dual cross-linking, FOOD SCIENCE AND TECHNOLOGY-LEBENSMITTEL-WISSENSCHAFT & TECHNOLOGIE, (2018)
3. M. Zandieh, S.N. Hosseini, M. Vossoughi, M. Khatami, S. Abbasian, A. Moshaii, Label-free and simple detection of endotoxins using a sensitive LSPR biosensor based on silver nanocolumns, Analytical biochemistry, (2018)
4. F. Torkashvand, F. Mahboudi, M. Vossoughi, E. Fatem, S.M. Moosavi, A. Heydari B. Vaziri, Quantitative Proteomic Analysis of Cellular Responses to a Designed Amino Acid Feed in a Monoclonal Antibody Producing Chinese Hamster Ovary Cell Line, Iranian Biomedical Journal, (2018)
5. Z. Yazdi, I. Alemzadeh, M. Vossoughi, Comparison and Optimization of Conjugated Linoleic Acid Production by Lactobacillus plantarum and Lactobacillus plantarum subsp. Plantarum, Scientiairanica, (2017)
6. Zamanpour MK, Kariminia HR, Vosoughi M, Zamanpour MK, Kariminia HR, Vosoughi M. Electricity generation, desalination and microalgae cultivation in a biocathode-microbial desalination cell, Journal of Environmental Chemical Engineering, (2017)
7. M. Mohseni, A. Shamlou, Z. Aghababaei, M. Vossoughi, H. Moravvej, Antimicrobial Wound Dressing Containing Silver Sulfadiazine With High Biocompatibility: In Vitro Study, Artificial Organs, (2016)
8. O. Bavi, M. Vossoughi, R. Naghdabadi, Y. Jamali, The Combined Effect of Hydrophobic Mismatch and Bilayer Local Bending on the Regulation of Mechanosensitive Ion Channels, PLoS ONE, (2016)
9. M. Khafaji, M. Vossoughi, M.R. Hormozi-Nezhad, R. Dinarvand, F.x Börrnert, A. Irajizad, A new bifunctional hybrid nanostructure as an active platform for photothermal therapy and MR imaging, Scientific Reports, (2016)
10. Karimi M, M Moosavi Basri S, Vossoughi M, S Pakchin P, Mirshekari H, R Hamblin M., Redox-Sensitive Smart Nanosystems for Drug and Gene Delivery, Current Organic Chemistry, (2016)
11. H. Abedini Najafabadi, M. Malekzadeh, F. Jalilian, M. Vossoughi, G.R. Pazuki, Effect of various carbon sources on biomass and lipid production of Chlorella vulgaris during nutrient sufficient and nitrogen starvation conditions, Bioresource Technology, (2015)
12. A. Bozorg, M. Vossoughi, A. Kazemi, I. Alemzadeh, Optimal Medium Composition to Enhance Poly-β-hydroxybutyrate Production by Ralstonia eutropha Using Cane Molasses as Sole Carbon Source, APPLIED FOOD BIOTECHNOLOGY, (2015)
13. F. Torkashvand, B. Vaziri, S. Maleknia, A. Heydari, M. Vossoughi, F. Davami, F. Mahboudi, Designed Amino Acid Feed in Improvement of Production and Quality Targets of a Therapeutic Monoclonal Antibody, PLoS ONE, (2015)
14. A. Heydari, I. Alemzadeh, M. Vossoughi, Influence of Glycerol and Clay Contents on Biodegradability of Corn Starch Nanocomposites, International Journal of Engineering, (2014)
15. M. Hakim, H. Abedini, G.R. Pazuki, M. Vossoughi, Novel Approach for Liquid-Liquid Phase Equilibrium of Biodiesel (Canola and Sunflower) + Glycerol +

- Methanol, Industrial and Engineering Chemistry Research, (2014)
16. Y. Bahari, M. Ghorbani, M. Ghalkhani, M. Vossoughi, A. Dolati, Highly sensitive 3D gold nanotube ensembles: Application to electrochemical determination of metronidazole, *Electrochimica Acta*, (2013)
 17. M. Yavari, G.R. Pazuki, M. Vossoughi, S. A. Mirkhani, A. A. Seifkordi, Partitioning of alkaline protease from *Bacillus licheniformis* (ATCC 21424) using PEG–K₂HPO₄ aqueous two-phase system, *Fluid Phase Equilibria*, (2013)
 18. Alemzadeh, A. Heydari, M. Vossoughi, Functional properties of biodegradable corn starch nanocomposites for food packaging applications, *Materials and Design*, (2013)
 19. M. Yavari, G.R. Pazuki, M. Vossoughi, S.A. Mirkhani, A.A. Seifkordi, Partitioning of alkaline protease from *Bacillus licheniformis* (ATCC 21424) using PEG–K₂HPO₄ aqueous two-phase system, *FLUID PHASE EQUILIBRIA*, (2012)
 20. Hamed Abedini Najafabadi, Gholamreza Pazuki, and Manouchehr Vossoughi, Estimation of Biodiesels Physical Properties Using Local Composition Based Models, *INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH*, (2012)
 21. Khosvari, M. Vossoughi, S. Shahrokhian, I. Alemzadeh, Magnetic labelled HRP–polymer nanoparticles: a recyclable nanobiocatalyst, *Journal of Serbian Chemical Society*, (2012)
 22. Kamankesh, M. Vossoughi, A. Shamloo, S.A. Mirkhani, J. Akbari, Liquid–liquid equilibrium (LLE) data for ternary mixtures of {aliphatic + p-xylene + [EMpy][ESO₄]} at T = 313.15 K, *FLUID PHASE EQUILIBRIA*, (2012)
 23. Azam Gholizadeh, Saeed Shahrokhian, Azam Irajizad, Shamsoddin Mohajerzadeh, Manouchehr Vossoughi, Sara Darbari, Javad Koohsorkhi, and Mahdiyeh Mehran, Fabrication of Sensitive Glutamate Biosensor Based on Vertically Aligned CNT Nanoelectrode Array and Investigating the Effect of CNTs density on the electrode performance, *ANALYTICAL CHEMISTRY*, (2012)
 24. Arezoo Shamloo, Manouchehr Vossoughi¹, Iran Alemzadeh, Ashkan Tavakoli Naeini, Mahdi Darvish, Two nano structured polymers: Polyaniline nanofibers and new linear dendritic matrix of Poly(citric acid)-block-poly(ethylene glycol) copolymers for environmental monitoring in novel biosensors, *International Journal of Polymeric Materials*, (2012)
 25. Azam Gholizadeh, Saeed Shahrokhian, Azam Irajizad, Shamsoddin Mohajerzadeh, Manouchehr Vossoughi, Sara Darbari, Zeinab Sanaee, Mediator-less highly sensitive voltammetric detection of glutamate using glutamate dehydrogenase/vertically aligned CNTs grown on silicon substrate, *IOSENSORS & BIOELECTRONICS*, (2012)
 26. Eshragh Ghodjani, Riyaz Kharrat, Manouchehr Vossoughi, Seyed Hamed Bolouri, A Review on Thermal Enhanced Heavy Oil Recovery from Fractured Carbonate Reservoirs, *Journal of Petroleum & Environmental Biotechnology*, (2012)
 27. E. Tamjid, R. Bagheri, M. Vossoughi, A. Simchi, Effect of particle size on the in vitro bioactivity, hydrophilicity and mechanical properties of bioactive glass-reinforced polycaprolactone composites, *MATERIALS SCIENCE & ENGINEERING C-BIOMIMETIC AND SUPRAMOLECULAR SYSTEMS*, (2011)
 28. Behzad Satari Baboukani, Manouchehr Vossoughi, Iran Alemzadeh, Optimization of dilute-acid pretreatment conditions for enhancement sugar recovery and enzymatic hydrolysis of wheat straw, *BIOSYSTEMS ENGINEERING*, (2011)
 29. Nasim Hashemi, Gholamreza Pazuki, Manouchehr Vossoughi, Shohreh Hemmati, Yadollah Saboohi, The Application of a New Gibbs Energy Equation to Modelling a Distillation Tower for the Production of Pure Ethanol, *CHEMICAL ENGINEERING & TECHNOLOGY*, (2011)
 30. E. Tamjid, R. Bagheri, M. Vossoughi, A. Simchi, Effect of TiO₂ morphology on in vitro bioactivity of polycaprolactone/TiO₂ nanocomposites, *MATERIALS LETTERS*, (2011)
 31. S.A. Mirkhani, M. Vossoughi, G.R. Pazuki, A.A. Safekordi, A. Heydari, J. Akbari, M. Yavari, Liquid-Liquid Equilibrium for Ternary Mixtures of Heptane+ Aromatic Compounds+ [EMpy][ESO₄] at T=298.15 K, *JOURNAL OF CHEMICAL*

THERMODYNAMICS, (2011)

32. Ashkan Tavakoli Naeini, Manouchehr Vossoughi, Mohsen Adeli, Simultaneously Synthesis and Encapsulation of Metallic Nanoparticles, Key Engineering Materials, (2011).
33. Pezhman Sasanpour, Bizhan Rashidian , Manouchehr Vossoughi, Photonics and Nanostructures-Fundamentals and Applications (2011)
34. Ali Zarrabi, Mohsen Adeli, Manouchehr Vossoughi, Mohammad Ali Shokrgozar, Design and Synthesis of Novel Polyglycerol Hybrid Nanomaterials for Potential Applications in Drug Delivery Systems, MACROMOLECULAR BIOSCIENCE, (2011)
35. S.M. Ali Dadfar, I. Alemzadeh , S.M. Reza Dadfar, M. Vosoughi, Studies on the oxygen barrier and mechanical properties of low density, MATERIALS & DESIGN, (2011)
36. Ali Asghar Rohani, Gholamreza Pazuki , Hamed Abedini Najafabadi , Saeed Seyfi , Manouchehr Vossoughi, Comparison between the artificial neural network system and SAFT equation in obtaining vapor pressure and liquid density of pure alcohols, EXPERT SYSTEMS WITH APPLICATIONS, (2011)
37. Ashkan Tavakoli Naeini , Gholam Reza Pazuki , Manouchehr Vossoughi & Iran Alemzadeh, Modeling of Osmotic Pressure of Aqueous Poly (ethylene glycol) Solutions Using the Artificial Neural Network and Free Volume Flory-Huggins Model, JOURNAL OF DISPERSION SCIENCE AND TECHNOLOGY, (2011)
38. Reza Shidpour, Hamid Delavari H. , M. Vossoughi, Analytical model based on cohesive energy to indicate the edge and corner, CHEMICAL PHYSICS, (2010)
39. PEZHMAN SASANPOUR, BABAK RASHIDIAN, BIZHAN RASHIDIAN, MANOUCHEHR VOSSOUGH, Novel Method for Cancer Cell Apoptosis by Localized UV Light WITH GOLD NANOSTRUCTURES, NANOTECHNOLOGY, (2010)
40. Shahla Shahriari, Manouchehr Vossoughi, Vahid Taghikhani, Ali Akbar Safekordi, and Iran Alemzadeh, Experimental Study and Mathematical Modeling of Partitioning of Amylase and Amyloglucosidase in PEG - Salt Aqueous Two-Phase Systems, JOURNAL OF CHEMICAL AND ENGINEERING DATA, (2010)
41. Ashkan Tavakoli Naeini, MSa, Mohsen Adeli, Manouchehr Vossoughi, Poly(citric acid)-block-poly(ethylene glycol) copolymers—new biocompatible hybrid materials for nanomedicine, Nanomedicine (2010)
42. Seyed Mohsen Dehnavia; Gholamreza Pazukia; Iraj Goodarzniaa; Manouchehr Vossoughia, Prediction of the Selectivity Coefficient of Ionic Liquids in Liquid-Liquid Equilibrium Systems using the Artificial Neural Network and Excess Gibbs Free Energy Models, PARTICULATE SCIENCE AND TECHNOLOGY, (2010)
43. Mona Mirsiaghi, Gholamreza Pazuki,† Manouchehr Vossoughi, and Iran Alemzadeh, Partitioning of L-Lysine Monohydrochloride in Aqueous Two-Phase Systems of Poly(ethylene glycol) and Dipotassium Hydrogen Phosphate or Trisodium Citrate 5-Hydrate, JOURNAL OF CHEMICAL AND ENGINEERING DATA, (2010)
44. Sh. Shahriaria, V. Taghikhanib, M. Vossoughib, A.A. Safe kordia, I. Alemzadehb, G.R. Pazukib, Measurement partition coefficient of B amylase and glucoamylase, FLUID PHASE EQUILIBRIA, (2010)
45. Asadishad • M. Vossoughi • I. Alamzadeh, In-vitro Release Behavior and Cytotoxicity of Doxorubicin-loaded Gold Nanoparticles in Cancerous Cells, BIOTECHNOLOGY LETTERS, (2010)
46. Asadishad a; M. Vosoughi ab; I. Alamzadeh ac;A. Tavakoli, Synthesis of Folate-Modified, Polyethylene Glycol-Functionalized, JOURNAL OF DISPERSION SCIENCE AND TECHNOLOGY, (2010)
47. Bahareh Asadishad, Manouchehr Vossoughi, and Iran Alemzadeh, Folate-Receptor-Targeted Delivery of Doxorubicin Using Polyethylene Glycol-Functionalized Gold Nanoparticles, INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, (2010)
48. Arezoo Khosravi, Manouchehr Vossoughi, Nano reengineering of horseradish

- peroxidase with dendritic macromolecules for stability enhancement, *ENZYME AND MICROBIAL TECHNOLOGY*, (2012).
49. G. R. Pazuki, R. Azimaei, V. Taghikhani, M. Vossoughi, *Journal of Dispersion Science and Technology*, In Press, 2009.)
 50. G.R. Pazuki, H. R. Radfarnia, V. Taghikhani, C. Ghotbi, M. Vossoughi, Study of Phase Behavior for the Aqueous Two Phase Polymer-Polymer Systems Using the Modified UNIQUAC-NRF Model, *Physics and Chemistry of Liquids*, In Press, 2009.
 51. M. Zainali, M. Vossoughi, S. Ardestani, Naphthalene metabolism in *Nocardia otitidiscaviarum* strain TSH1, a moderately thermophilic microorganism, *Chemosphere*, In Press, 2008.
 52. Mohaghghi, I. Alemzadeh, M. Vossoughi, Study and Optimization of Amino Acid Extraction by Emulsion Liquid Membrane, *Separation Science and Technology*, In Press, 2008.
 53. G. R. Pazuki, V. Taghikhani, M. Vossoughi, A Modified Local Composition-Based Model for Correlating the Vapor-Liquid and Liquid-Liquid Phase Equilibria of Aqueous Polymer-Salt Systems, *Journal of Solution Chemistry*, 37 (2008) 665-675.
 54. Ghorbani, M. Vossoughi, M. Zainali, Biojugation of Interferon-Alpha, *Journal of Dispersion Science and Technology*, In Press, 2008.
 55. M. Zainali, M. Vossoughi, S. Ardestani, Degradation of phenanthrene and anthracene by *Nocardia otitidiscaviarum* strain TSH1, a moderately thermophilic bacterium, *Journal of Applied Microbiology*, In Press, 2008.
 56. S.M. Mousavi, S. Yaghmaei, M. Vossoughi, R. Roosta Azad, A. Jafari, M. Ebrahimi O. Habibollahnia Chabokl. Turunen, The effects of Fe(II) and Fe (III) concentration and initial PH on microbial leaching of low-grade sphalerite ore in a column reactor, *Bioresource Technology*, 99(2008) 2840-2845.
 57. Zahra Sheikholeslami, I. Alemzadeh, M. Vossoughi, Self assembly of tryptophan capped gold nanoparticle onto DNA, *Journal of Dispersion Science and Technology*, In Press, 2008.
 58. Reza Ezzatian, Jahangir Abedi-Kupaei, M. Vossoughi, S. Yaghmaei, M. Borghaei, S. Ghafari, *Petroleum Science and Technology*, In Press, 2009.
 59. M. Vossoughi, Reza Ezzatian, Jahangir Abedi-Kupaei, Gholam Reza Pazuki S. Yaghmaei, Effect of C/N Ratio on the phytoremediation of Crude Oil, *Iranian Journal of Chemistry and Chemical Engineering*, In Press, 2008.
 60. Jahangir Abedi-Kupaei, Reza Ezzatian, M. Vossoughi, S. Yaghmaei, M. Borghaei, The Effect of Microbial Population on Phytoremediation of Petroleum Contaminated Soils Using Tall Feuces, *International Journal of Agriculture and Biology*, 2(2007)242-246.
 61. M. Zainali, M. Vossoughi, S. Ardestani, E. Baban Zadeh, M. R. Masoumian, Hydrocarbon degradation by thermophilic *Nocardia otitidiscaviarum* strain TSH1: physiological aspects, *Journal of Basic Microbiology*, 47(2007)534-539.
 62. Jorjani, B. Rezai, M. Vossoughi, M. Osanloo, Desulfurization of Tabas coal with microwave irradiation/peroxyacetic acid washing, *Fuel* 83(2004) 943-949.
 63. Jorjani, B. Rezai, M. Vossoughi, M. Osanloo, M. Abdollahi, Oxidation pretreatment for enhancing desulfurization of coal with sodium butoxide, *Minerals Engineering* 17(2004) 545-552.
 64. M. Vossoughi, M. Shakeri, I. Alemzadeh, Performance of anaerobic baffled reactor treating synthetic wastewater influenced by decreasing COD/SO₄ ratios, *Chemical Engineering and Processing* 4(2003) 811-816.
 65. G.R. Pazuki, V. Taghikhani, M. Vossoughi, Correlation and prediction the activity coefficients and solubility of amino acids and simple peptide in aqueous solution using the modified local composition model, *Fluid Phase Equilibria*, 255, (2007) 160-166.
 66. S. M. Mousavi, M. Vossoughi, S. Yaghmaei, Copper recovery from chalcopryrite concentrate by an indigenous *Acidithiobacillus ferrooxidans* in an air-lift bioreactor, *Iranian Journal of Chemical & Chemistry*, 3 (2006) 21-26.
 67. S. M. Mousavi, A. Jafari, M. Vossoughi, S. Yaghmaei, R. Roosta Azad, I. Turunen,

- computer simulation of fluid motion in a porous bed using a volume of fluid method: application in heap leaching, *Minerals Engineering*, 19 (2006) 1077-1083.
68. S.M. Mousavi, A. Jafari, S. Yaghmaei, M. Vossoughi, P. Sarkomaa, Computer simulation of fluid motion in a porous bed using a volume of fluid method: Application in heap leaching, *Minerals Engineering*, 19,(2006)1077-1083.
 69. S.M. Mousavi, S. Yaghmaei, M. Vossoughi, A. Jafari, R. Roostaazad, Zinc extraction from Iranian low-grade complex zinc-lead ore by two native microorganisms: *Acidithiobacillus ferrooxidans* and *Sulfobacillus*, *International Journal of Mineral Processing*, 80(2006) 238-243.
 70. J. Amirfakhri, M. Vossoughi, M. Soltanieh, Assessment of desulfurization of natural gas by chemoautotrophic bacteria in an anaerobic baffled reactor (ABR), *Chemical Engineering and Processing*, 45(2006) 232-237.
 71. M.Vossoughi,P.Mosleh Abadi,I.Alemzadeh, Some Investigation on Bioremediation of Sediment in Persian Gulf Coast, *International Journal of Engineering* 18(2005)45-52.
 72. S. Maghsoudi, M. Vossoughi, A. Kheiriloom, Emiko Tanaka, Shigeo Katoh, Biotransformation of hydrocarbons and diesel fuels by *Rhodococcus* sp. strain P32C1, *Biochemical Engineering* (2005) 151-156.
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 - M.Vossoughi,M.Shakeri, Coupled anaerobic baffled reactor/activated sludge treatment of synthetic wastewater with high concentration of sulfate and COD, *International Journal of Engineering* 16(2003)11-20.
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- biopack system", *Process Biochem*, 37, 2001, 447-451..
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