



Afzal Karimi
Chemical Engineering-Biotechnology, Ph. D., 2007
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Educational Background:(Last One First)

CERTIFICATE DEGREE	FIELD OF SPECIALIZATION	NAME OF INSTITUTION ATTENDED	DATE RECEIVED
Scholar Position	Preparation of mesoporous SiO ₂ and TiO ₂ to use as enzyme immobilization support	Department of Chemical and Biological Engineering, UBC, BC, Canada	2007
Ph.D.	Chemical Engineering - Biotechnology Thesis: Production of fungal peroxidative enzymes by <i>Phanerochaete chrysosporium</i> immobilized on Kissiris and study of system performance in degradation of recalcitrant model pollutants in shake flask and trickle bed bioreactor	Amirkabir University of Technology	2007
M. Sc.	Chemical Engineering - Biotechnology Thesis: Application of two impinging stream reactors for preparation of liquid/oil Newcastle Vaccine emulsion	Amirkabir University of Technology	2000
B. Sc.	Applied Chemistry	University of Tabriz	1998

Academic Positions

POSITIONS	FIELD OF SPECIALIZATION	DATE		NAME OF INSTITUTION
		From	To	
Assistant Prof.	Chemical Engineering	2007	2011	University of Tabriz
Associate Prof.	Chemical Engineering	Dec./31/2011	2016	University of Tabriz
Associate Prof.	Biotechnology	2016	2019	Iran University of Medical Sciences

Job Experiences:(Last One First)

JOB TITLE	PLACE OF WORK	DATE		NAME OF INSTITUTION
		From	To	
Faculty member	Tehran	2016	2019	Iran University of Med. Sci.
Faculty member	Tabriz	2007	2016	University of Tabriz
R&D Expert	Tehran	2004	2005	Pars Minoo - Pharmaceutical Co.
Technical Expert	Tehran	2002	2004	Pars Minoo - Pharmaceutical Co.
Water treatment Expert	Tehran	2000	2002	Pars Minoo - Pharmaceutical Co.
Miscellaneous	-----	1995	2004	-----

Teaching Experiences

TITLE OF COURSE	LEVEL	DATE		NAME OF INSTITUTION
		From	To	
Biochemical Engineering	B. Sc.	2008	2009	Sahand University of Technology
Transport phenomena in bio. Systems	M. Sc.	2010	2016	University of Tabriz
Industrial microbiology	M. Sc.	2011	2012	Sahand University of Technology
Transport phenomena	Ph.D.	2010	2016	University of Tabriz
General Chemistry	B. Sc.	2007	2011	University of Tabriz
Principles of Calculations in Chemistry	B. Sc.	2012	2012	University of Tabriz
Instrumentation and Control	M. Sc.	2008	2016	University of Tabriz
Chemistry of Surfactants	M. Sc.	2013	2016	Amirkabir University of Technology
Chemical reactors design	M. Sc.	2014	2016	University of Khwarizmi
Industrial chemistry II	B. Sc.	2014	2016	University of Khwarizmi
Waste Management	M. Sc.	2013	2013	Amirkabir University of Technology
Heat Transfer (I)	B. Sc.	2008	2016	University of Tabriz
Unit Operation (I)	B. Sc.	2008	2011	University of Tabriz
Industrial Chemistry (I)	B. Sc.	2008	2013	University of Tabriz
Industrial Chemistry Lab.	B. Sc.	2008	2012	University of Tabriz
Introduction to petroleum Eng.	B. Sc.	2007	2010	University of Tabriz
Heat Transfer (II)	B. Sc.	2007	2016	University of Tabriz
Flowsheeting and Technical Drawing	B. Sc.	2007	2016	University of Tabriz
Process Control Lab.	B. Sc.	2002	2005	Amirkabir University of Technology

Thesis (selected)

FULL NAME OF STUDENT	LEVEL	TITLE OF THESIS	DATE
Seyed Mahdi Moosavi	M. Sc.	Study on activity of α -amylase immobilized on modified perlite	2009
Heidar Badr	M. Sc.	Removal of 2,4-diclorophenol from aqueous solution by laccase immobilized on nanoporous silica in a tow impinging stream reactor	2010
Fatemeh Mahdizadeh	M. Sc.	Removal of dissolved oxygen from water by glucose oxidase immobilized on nanoporous support	2011
Mahsa Babaei	M. Sc.	Production of biodiesel using immobilized lipase in a two impinging stream reactor	2012
Mostafa Aghbolaghy	M. Sc.	CFD simulation of bio-fenton processes	2012
Javad Zabarjadi	M. Sc.	CFD analysis of deoxygenation of water using immobilized glucose oxidase in a fluidized bed bioreactor	2012
Siamak Bahrami	M.Sc.	Heat integration of heat exchanger network in distillation unit of I.K.O.R.C. after changing development plant	2012
Mohammadreza Eskandarian	M. Sc.	Biomachining of copper metal by glucose oxidase	2012
Morteza Rezaei	M. Sc.	Simulation and improvement of operation conditions of Tabriz refinery sure water plant	2012
Mehrdad Dinian	M.Sc.	Recovery of waste water treated with reverse osmosis	2012

		technologic method	
Neda Eimani	M.Sc.	Bio-decolorization of Sugar syrup	2013
Shabnam Shoabargh	M. Sc.	Photo-bio-advanced oxidation for treatment of colorant waste waters	2013
Faranak Akhigan	M.Sc.	CFD simulation of oxygen distribution in a stirred tank bioreactor	2013
Morad Shahbazi	M.Sc.	Wastewater treatment from alcohol producing industries using combination of ozonation/biological method	2013
Fatemeh Jolaei	M.Sc.	CFD simulation of STR bioreactor in enzymatic production of hydrogen peroxide	2013
Behzad Esmailpour	M.Sc.	Production of super absorbent from carboxymethyl cellulose	2014
Vahid Lotfi	M.Sc.	Alkali catalyzed production of biodiesel in an impinging stream reactor	2015
Mohammad Razaghi	Ph.D.	Bio-chemical disposal of phenolic wastes using hybrid enzymatic catalyst and simulation of the process	2017
Rahim Shojaat	Ph.D.	Application of hybrid bio-chemical Process for management of textile wastes	2016
Mohamadreza Rahimi	Ph.D.	Continuous fermentation of <i>Pichia astoris</i> for production of recombinant Hepatit B surface antigen	2019

Book(s)

TITLE	TYPE OF WORK			PUBLISHER	DATE OF PUBLICATION
	By	Translation	Editor		
Bioprocess Engineering Principles, Pauline M. Doran	*	*		University of Tabriz	In press
Principles of design and mapping in chemical industry				University of Tabriz	2019
Chemistry of nanomaterials			*	Setareh	2010
Formulation Technology			*	Naghshe Bayan	2010

Journal papers

AUTORS & TITLE OF PAPER	PLACE OF PUBLICATION	DATE OF PUBLICATION
1. Use of <i>Phanerochaete chrysosporium</i> immobilized on Kissiris for synthetic dye decolourization: involvement of manganese peroxidase A. Karimi , F. Vahabzadeh*, B. Bonakdarpour	World J Microbiol. Biotechnol.	2006
2. Performance of a trickle-bed bioreactor for Maxilon-red decolorization by Kissiris immobilized <i>Phanerochaete chrysosporium</i> A. Karimi *, B. Bonakdarpour, F. Vahabzadeh	Iran. J. Biology (Farsi)	2008
3. Involvement of ligninolytic enzymes of <i>Phanerochaete chrysosporium</i> in treating the textile effluent containing Astrazon Red FBL in a packed-bed bioreactor M. Sedighi, A. Karimi *, F. Vahabzadeh	J. Hazard. Mater.	2009

4. Decolorization of Maxilon-red by Kissiris immobilized <i>Phanerochaete chrysosporium</i> in a trickle bed bioreactor – involvement of ligninolytic enzymes A. Karimi [#] , F. Vahabzadeh, M. Mohseni	Iran. J. Chem. & Chem. Eng.	2009
5. Enhancement of Perlite specific surface area using nano-porous silica linkage A. Karimi [*] S.M. Moosavi, D. Salari, A. Niaei	Iran. J. Chem. & Chem. Eng. (Farsi)	2010
6. Use of Enzyme as a structure directing agent in preparation of nano-porous silica A. Karimi [*] , S.M. Moosavi	Iran. J. Chem. & Chem. Eng. (Farsi)	2010
7. Decolorization of textile dyes using <i>Phanerochaete chrysosporium</i> immobilized on mineral Kissiris R. Ghasemzadeh [*] , A. Karimi , F. Vahabzadeh	Science and Environmental Technology (Farsi)	2011
8. Bio-deoxygenation of water using glucose oxidase immobilized in mesoporous MnO ₂ A. Karimi [*] , F. Mahdizadeh, D. Salari, A. Niaei	Desalination	2011
9. Enzymatic scavenging of oxygen dissolved in water: Application of response surface methodology in optimization of conditions Afzal Karimi [*] , Fatemeh Mahdizadeh, Dariush Salari, Farzaneh Vahabzadeh, Alireza Khataee	CICEQ	2012
10. Use of mesoporous MnO ₂ as a support for immobilization of lipase from <i>Candida rugosa</i> Mahsa Babaei, Afzal Karimi [*] , Mohammad Amin Hejazi	CICEQ	2012
11. Enzymatic in-situ generation of H ₂ O ₂ for decolorization of Acid Blue 113 by fenton process A. Karimi [*] , F. Mahdizadeh, D. Salari	CICEQ	2012
12. Use of enzymatic bio-Fenton as a new approach in decolorization of Malachite Green A. Karimi [*] , M. Aghbolaghy, A. Khataee, S. ShoaBargh	The Scientific World Journal	2012
13. Immobilization of Glucose Oxidase on Synthesized Superparamagnetic Fe ₃ O ₄ Nanoparticles; Application for Water Deoxygenation Fatemeh Mahdizadeh, Afzal Karimi , Leili Ranjbarian	International Journal of Scientific & Engineering Research	2012
14. Studies on Enzymatic Biomachining of copper by Glucose Oxidase M.R. Eskandarian, A. Karimi [*] , M.R. Shabgard	Journal of the Taiwan Institute of Chemical Engineers	2013
15. Immobilization of Glucose Oxidase on Meso-Porous Glass-Ceramic with the Skeleton of CaTi ₄ (PO ₄) ₆ M. Ahmadi, M. Rezvani, SH. SHoa Bargh, M. S. Shakeri, [*] A. Karimi	Journal of Advanced Materials and Processing	2013
16. Simulation and Optimization of Enzymatic Hydrogen Peroxide Production in a Continuous Stirred Tank Reactor Using CFD-RSM Combined Method Afzal Karimi , Mostafa Aghbolaghy	Journal of the Taiwan Institute of Chemical Engineers	2014
17. Performance study of open channel reactor on AO7 decolorization using glucose oxidase/TiO ₂ /polyurethane under UV-Vis LED light Shabnam Shoabargh, Afzal Karimi [*] , Gholamreza Dehghan	Journal of the Taiwan Institute of Chemical Engineers	2014
18. RSM modeling and optimization of glucose oxidase immobilization on TiO ₂ /polyurethane: feasibility study of AO7 decolorization Shabnam Shoabargh, Afzal Karimi [*]	Journal of Environmental Chemical Engineering	2014

19. A hybrid photocatalytic and enzymatic process using glucose oxidase immobilized on TiO ₂ /polyurethane for removal of a dye Shabnam Shoabargh, Afzal Karimi* , Gholamreza Dehghan, Alireza Khataei	Journal of Industrial and Engineering Chemistry	2014
20. Investigation and comparison of three alpha-cellulose extraction methods from Turkmen Sahra cotton waste Ahmad Hivechi, Mokhtar Arami*, S. Hajir Bahrami, Afzal Karimi	Journal of advanced materials and new coatings	2014
21. Synthesis of nano zinc oxide on granular porous scoria: Application for photocatalytic removal of pharmaceutical and textile pollutants from synthetic and real wastewaters F. Mahdizadeh, S. Aber, A. Karimi	Journal of the Taiwan Institute of Chemical Engineers	2014
22. Preparation of heterogeneous bio-Fenton catalyst for decolorization of Malachite Green Vahide Elhami, Afzal Karimi* , Mostafa Aghbolaghi	Journal of the Taiwan Institute of Chemical Engineers	2015
23. Ultrasonic mediated production of carboxymethyl cellulose: Optimization of conditions using response surface methodology Ahmad Hivechi, Mokhtar Arami*, S. Hajir Bahrami, Afzal Karimi	Carbohydrate Polymers	2015
24. Simultaneous adsorption–degradation of organic dyes using MnFe ₂ O ₄ /calcium alginate nano-composites coupled with GOx and laccase R. Shojaat, N. Saadatjoo, A. Karimi* , S. Aber	Journal of environmental chemical engineering	2016
25. Immobilization of Glucose Oxidase on Fe ₃ O ₄ Magnetic Nanoparticles and its Application in the Removal of Acid Yellow 12 S. Aber, E. Mahmodikia, A. Karimi , F. Mehdizade	Water Air and Soil Pollution	2016
26. Keggin type of cesium phosphomolybdate synthesized via solid-state reaction as an efficient catalyst for the photodegradation of a dye pollutant in aqueous phase H. Rezaei, S. Aber, A. Karimi	J MOL CATAL A-CHEM)	2016
27. Improvement in ligninolytic activity of <i>Phanerochaete chrysosporium</i> cultures by glucose oxidase Zahra Ansari, Afzal Karimi* , Sirous Ebrahimi, Elham Emami	Biochemical Engineering Journal	2016
28. Continuously deoxygenation of water in a reactor packed with glucose oxidase immobilized in MnO ₂ /calcium alginate composite A. Abdi, A. Karimi* , M. Razzaghi	Journal of environmental chemical engineering	2016
29. Glucose oxidase effect on treatment of textile effluent containing reactive azo dyes by <i>Phanerochaete chrysosporium</i> Z. Ansari, A. Karimi* , S. Sedghi, M. Razzagh, S. Ebrahimi	Journal of Chemical Technology and Biotechnology	2016
30. Dye removal from artificial wastewater using heterogeneous bio-Fenton system R. Shojaat, A. Karimi* , N. Saadatjoo, S. Aber	CICEQ	2016
31. Preparation of Kissiris/TiO ₂ /Fe ₃ O ₄ /GOx biocatalyst: Feasibility study of MG decolorization V Elhami, A. Karim	Advances in Environmental Technology	2016
32. Application of a hybrid enzymatic and photo-fenton process for investigation of azo dye decolorization on TiO ₂ /metal-foam catalyst A. Farzi, P. Abdi, A. Karimi*	Journal of the Taiwan Institute of Chemical Engineers	2016
33. Effect of glucose oxidase on decolorization efficiency of	Biocatalysis and	2017

crystal violet by <i>Phanerochaete chrysosporium</i> cultures Z. Ansari, A. Karimi* , F. Ebadi Fard Azar, N.A. Latifi	Biotransformation	
34. Phenol removal by HRP/GOx/ZSM-5 from aqueous solution: Artificial Neural Network simulation and Genetic Algorithms optimization Mohammad Razzaghi, Afzal Karimi* , Zahra Ansari	Journal of the Taiwan Institute of Chemical Engineers	2018
35. Production of biodiesel by an impinging jet reactor using alkali and enzymatic catalysts A. Karimi , M. Babaei, H. Aghdasinia*, V. Lotfi	Biofuel	2018
36. Implementation of magnetic Fe ₃ O ₄ @ZIF-8 nanocomposite to activate sodium percarbonate for highly effective degradation of organic compound in aqueous solution	<i>Journal of Industrial and Engineering Chemistry</i>	2018
37. Application of fluidized bed reactor containing GOx/MnFe ₂ O ₄ /Calcium alginate nano-composite in degradation of a model pollutant Pezhman Zolfaghari, Rahim Shojaat, Afzal Karimi* , Naghi Saadatjoo	<i>Journal of Environmental Chemical Engineering</i>	2018
38. Analysis of biological pretreatment of rapeseed straw with white rot fungi for enzymatic hydrolysis Rasool Ghasemzadeh, Mohammad T. Hamed Mosavian, Afzal Karimi	Maderas	2018
39. Application of artificial neural network in deoxygenation of water by glucoseoxidase immobilized in calcium alginate/MnO ₂ composite A Abdi, M Sh Izadkhah, A Karimi, M Razzaghi, H Moradkhani	Iranian Journal of Chemical Engineering (IJChE)	2018
40. Enhanced removal of nitrate and phosphate from wastewater by <i>Chlorella vulgaris</i> : Multi-objective optimization and CFD simulation M. Sabeti, M. A. Hejazi, Afzal Karimi	Chinese Journal of Chemical Engineering	2019
41. Continuous degradation of an organic pollutant using heterogeneous magnetic biocatalyst and CFD analysis of the process Pezhman Zolfaghar, Mostafa Aghbolaghy, Afzal Karimi* , Alireza Khataee**	<i>Process Safety and Environmental Protection</i>	2019
42. CFD modelling of a rectangular photobioreactor used for decolorization of Acid Orange 7 by GOx/TiO ₂ /PU porous catalyst Pezhman Zolfaghari, Shabnam Shoaebargh, Mostafa Aghbolaghy, Afzal Karimi*	CICEQ	2019
43. Evaluation of cellular attachment and proliferation on different surface charged functional cellulose electrospun nanofibers	Carbohydrate polymers	2019
44. Enhancing the efficiency of recombinant hepatitis B surface antigen production in <i>Pichia pastoris</i> by employing continuous fermentation Alireza Rahimi, Seyed Nezamedin Hosseini*, Afzal Karimi** , Hassan Aghdasinia, Reza Arabi Mianroodi	Biochemical Engineering Journal	2019
45. Modification of Immobilized Titanium Dioxide by Argon Plasma for Photocatalytic removal of Organic Dyes Hamid Reza Khaledian, Pezhman Zolfaghari, Vahide Elhami, Mostafa Aghbolaghy, Sirous Khorram, Afzal Karimi* , Alireza Khataee**	Molecules	2019
		2021
46. Facile surface modification of immobilized rutile nanoparticles by non-thermal glow discharge plasma: Effect of treatment gases on photocatalytic process	Applied Surface Science	2019

47. Fabrication and evaluation of carboxymethylated diethylaminoethyl cellulose microcarriers as support for cellular applications	Carbohydrate polymers	2019
48. Ratiometric visual detection of tetracycline residues in milk by framework-enhanced fluorescence of gold and copper nanoclusters A Khataee, R Jalili, M Dastborhan, A Karimi , AEF Azar	Spectrochimica Acta	2020
49. Effects of stabilizers on sustainability, activity and decolorization performance of Manganese Peroxidase enzyme produced by Phanerochaete chrysosporium E Emami, P Zolfaghari, M Golizadeh, A Karimi , A Lau, B Ghiasi, Z Ansari	Journal of Environmental Chemical Engineering	2020
50. Sonophotocatalytic degradation of sulfadiazine by integration of microfibrillated carboxymethyl cellulose with Zn-Cu-Mg mixed metal hydroxide/g-C ₃ N ₄ composite P Gholami, A Khataee, B Vahid, A Karimi , M Golizadeh, M Ritala	Separation and Purification Technology	2020
51. In-situ formation and entrapment of Ag/AgCl photocatalyst inside cross-linked carboxymethyl cellulose beads: A novel photoactive hydrogel for visible-light-induced photocatalysis H Heidarpour, M Golizadeh, M Padervand, A Karimi , M Vossoughi, ...	Journal of Photochemistry and Photobiology A: Chemistry	2020
52. Decolourisation of beet sugar syrup using activated carbon and glucose oxidase enzyme P Zolfaghari, NI Payandeh, M Golizadeh, A Karimi , AEF Azar	Chemistry Journal of Moldova	2020
53. Fabrication of multifunctional microfibrinous and nanofibrous cellulose carriers and comparison of cell adhesion and spreading potential on them RR Kalmer, M Mohammadi, G Najafpour, M Golizadeh, Y Haghghatnia, A Karimi	Biointerface Research in Applied Chemistry	2020
54. Implementing short-term continuous fermentation for optimizing cell density of Pichia pastoris producing recombinant hepatitis B surface antigen Rahimi A. , Karimi A. * , Hosseini S.N. **, Aghdasinia H., Arabi Mianroodi R.	Research Journal of Biotechnology	2021
55. Development of a cellulose-based scaffold for sustained delivery of curcumin R Tarrahi, A Khataee, A Karimi , M Golizadeh, FEF Azar	International Journal of Biological Macromolecules	2021
56. Removal of Acid Brown 354 from wastewater by aminized cellulose acetate nanofibers: experimental and theoretical study of the effect of different parameters on adsorption ... M Namjoufar, A Farzi, A Karimi	Water Science and Technology	2021
57. Implementing Chemostat Fermentation of Pichia Pastoris Producing Recombinant HBsAg to Optimize Cell Density Affected by Methanol Rate A Rahimi, A Karimi, SN Hosseini, H Aghdasinia, RA Mianroodi	Biointerface Research in Applied Chemistry	2021
58. Large-Scale Analysis of MicroRNA Expression in Motor Neuron-like Cells derived from Human Umbilical Cord Blood Mesenchymal Stem Cells D Sanooghi, A Lotfi, F Faghihi, A Karimi , Z Bagher, B Yousefi, E Lotfi, ...		

Honors

No. 1 Researcher in industrial relation (University of Tabriz, 2012)

No. 1 Inventor in exhibition of Tabriz

No. 2 Inventor in exhibition of Tabriz

Research interests

1) Biomass and cellulose derivatives

2) Tissue engineering

3) Water and wastewater treatment