

Personal information

Ali Ghiaseddin

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Date of birth: March 29,1977; Married

Residency Status: lawful USA permanent resident.

Education

- Ph.D. in Tissue Engineering, "Embryonic stem cells differentiation into pacemaker phenotype cardiomyocyte in perfusion micro-bioreactor using electromagnetic stimuli" at Biomedical Engineering Group, Faculty of Chemical Engineering, Tarbiat Modares University, Iran, Tehran, 2017, February.
Program included:
 - Advanced Transport Phenomena
 - Advanced Biochemical Process Design
 - Genetics
 - Biomaterials science
 - Tissue Engineering
 - Nanoengineering
- Ph.D. in Chemical Engineering, By-research (DISTANCE LEARNING) on "Using of Natural Gas as Reduction Agent in Fluidized Bed Reactors", International Paramount University, USA, CA. 2009-2011, December
- MSc of Biochemical Engineering, "Chitin Extraction Optimization from Shrimp Shell in Pilot Plant Scale.", Chemical Engineering Faculty of Tarbiat Modares University, Iran, Tehran, 2001-2004.
Program included:
 - Transport Phenomena
 - Advanced Mathematics
 - Separation Processes in Biotechnology
 - Biochemistry
 - Microbiology and its lab.
 - Industrial Biotechnology
 - Thermodynamics
 - Enzymes and Enzymatic Processes
- BS of Chemical Engineering, "Investigation and Design of Sodium Sulfide Manufacturing Process.", Chemical Engineering Faculty of Iran University of Science and Technology, 1996-2001

Courses

- Real time PCR 2014
- Bioconjugation techniques 2013
- Microfluidics & Soft lithography method 2013
- Free Attending in Tarbiat Modares Medical Sciences Faculty courses:
Human Anatomy, Human Physiology, Mammalian Cell Culture, Pathology, Immunology, Medical Histology.
- Proteomics workshop, Tarbiat Modares University 2012
- English academic writing , Sharif University of Technology 2012
- Project management professional course according to PMBOK standard, at University of Tehran 2009- 2010

Technical & Work Experiences

- Research Scientist at AhuraTech LLC. PI: Dr. Hashem Akhavan-Tafti, Research on Bioconjugation and using in microfluidic chips. 2017 to present
- Research scholar position, Wake Forest Institute for Regenerative Medicine, Organ on a chip, 2014-2015
- Research associate (Head of team) in "Heart-on-a-chip" project, in this project we studied the effect of microenvironment and cell patterning on cardiac pacemaker cell-cell communication and electrically conduction thereof, using micro scale bioreactor. PIs: **Ahmadi Tafti S.H., EbrahimVasheghani-Farahani, Soleimani M.**, Biomedical Engineering Department, Faculty of Chemical Engineering, TarbiatModares University, Tehran, Iran and Tehran Heart Center, Tehran, Iran. 2014-2016
- Research associate in "Biological pacemaker" project, in this project we were using genetically manipulated cardiac cells loaded on hydrogel as electrical pacemaker in ablated hearts of large animal model, PIs: **Ahmadi Tafti S.H., EbrahimVasheghani-Farahani, Soleimani M.**, Tehran Heart Center, Tehran University of Medical Sciences, Iran. 2014-2016
- Research associate in "cell laden chitosan hydrogel using in cardiac regeneration after acute myocardial infarction" project, Principal Investigators: **Ahmadi Tafti S.H., EbrahimVasheghani-Farahani**, Biomedical Engineering Department, Faculty of Chemical Engineering, TarbiatModares University, Tehran, Iran 2013-2014
- Research associate in "Cardiomyocyte 3D cell culture over chitosan hydrogel and study of cell viability and proliferation" project, Principal Investigators: **Soleimani M., EbrahimVasheghani-Farahani**, Biomedical Engineering Department, Faculty of Chemical Engineering, TarbiatModares University, Tehran, Iran. 2013
- Research associate in "low diameter vascular graft using decellularized small intestinal submucosa for sever heart ischemia" project, Principal Investigators: **Ahmadi Tafti S.H., EbrahimVasheghani-Farahani**, Biomedical Engineering Department, Faculty of Chemical Engineering, Tarbiat Modares University, Tehran, Iran. 2014

- Research associate in “small intestinal submucosa acellularization and functionalizing it as a bio artificial skin graft” project, Principal Investigator: **EbrahimVasheghani-Farahani**, Biomedical Engineering Department, Faculty of Chemical Engineering, TarbiatModares University, Tehran, Iran. 2013

Technical & Work Experiences Cont.

- Establishment and Managing Sepidan Aradan Chemical Complex (a private family company) 2008-present
- Executive and Research Director of NOPA Chemicals Co. (a private family company) 2000- present
- Process Design of Hydrochloric Acid and Sodium Sulphate
- Sodium Sulfide Process Design
- Sulfuric Acid Process Design
- Sodium Sulphate Purifying Process Design
- Chitin Extraction Process Design (from Shrimp Shell)

Note1: In these processes, wide varieties of chemical engineering unit operations have been designed, as it is mentioned below:

- | | | |
|------------------------|--|-----------------------|
| ○ CSTR Reactor | ○ Packed Bed Absorber Tower | ○ Spray Dryer |
| ○ Pneumatic conveyor | ○ Shell & Tube Heat Exchanger | ○ Rotary Kiln |
| ○ Cyclone & Bag filter | ○ Kiln and burner | ○ Centrifuge |
| ○ Steam Ejector | ○ Mixer-settler sedimentor | ○ Crystallizer |
| ○ Air cooled Exchanger | ○ Fixed-bed catalytic convertor(Reactor) | ○ 3-effect Evaporator |

Note2: All the equipment has been manufactured and installed by our team in NOPA Chemicals Co.

Note3: It was started with only three employees in year 2000 by me; up to now, 6 factories with more than 150 employees have been run. It is due to near 9000 hours project managing, research and investigating in 11 years.

Note4: These days, I am a full-time researcher of tissue engineering. All of my previous works support me by valuable experiences remained from projects.

Note5: It is obvious that there are some other experiences in managing such as time, cost, quality, risk, communication, procurement, and human resource management which they are not relevant to aim of this CV., so they are not mentioned nevertheless they could be essential for all kind of projects like as research projects.

Publications, Conferences and Patents

- Microfluidic device in alliance with native scaffold enhances cardiac 3D cell culture in population, density, alignment and allocating the cells in apposite location
Ghiaseddin A., Sadeghi M., Vasheghani-Farahani E., Soleimani M., Ahmadi Tafti S.H., submitted at Acta Biomaterialia
- The effect of mimic the natural micro-environment in perfused micro-bioreactor on differentiation embryod bodies into the cardiomyocyte,
Ghiaseddin A., Sadeghi M., Vasheghani-Farahani E., Soleimani M., Ahmadi Tafti S.H., **in preparation.**
- pH-Sensitive Chitosan Hydrogel with Instant Gelation for Myocardial Regeneration
Alimirzaei F, Vasheghani-Farahani E, Ghiaseddin A, Soleimani M, Pouri and Zeinab Najafi-Gharavi, J Tissue Sci Eng 2016, Vol 8(3): 212
DOI: 10.4172/2157-7552.1000212
- Cell laden hydrogel construct on-a-chip for mimicry of cardiac tissue in-vitro study
A Ghiaseddin, H Pouri, M Soleimani, E Vasheghani-Farahani, HA Tafti, ...
Biochemical and biophysical research communications 484 (2), 225-230
- Microfluidic system for synthesis of nanofibrous conductive hydrogel and muscle differentiation
S Hosseinzadeh, SM Rezayat, A Giaseddin, A Aliyan, M Soleimani
Journal of biomaterials applications 32 (7), 853-861
- Regenerating Heart Using a Novel Compound and Human Wharton Jelly Mesenchymal Stem Cells
S Rabbani, M Soleimani, M Imani, M Sahebjam, A Ghiaseddin, ...
Archives of medical research 48 (3), 228-237
- Simultaneous delivery of Wharton's jelly mesenchymal stem cells and insulin-like growth factor-1 in acute myocardial infarction
S Rabbani, M Soleimani, M Sahebjam, M Imani, A Haeri, A Ghiaseddin, ...
Iranian Journal of Pharmaceutical Research 17 (2), 426-441
- Skeletal muscle regeneration via engineered tissue culture over electrospun nanofibrous chitosan/PVA scaffold
M Kheradmandi, E Vasheghani-Farahani, A Ghiaseddin, F Ganji
Journal of Biomedical Materials Research Part A 104 (7), 1720-1727
- S Rabbani, M Soleimani, M Sahebjam, M Imani, SM Nassiri, A Ghiaseddin, ..., Effect of endothelial and mesenchymal stem cells on improving myocardial function, The Journal of Tehran University Heart Center 2017 (12), 65-71
- S Zeraatian, A Salehiomran, RM Aghdam, SHA Tafti, SR Ghiasi, N Kiaee, A Ghiaseddin ..., Cardiac Effects of Glucagon-Like Peptide 1 with Chitosan-Based Scaffold after Inducing Myocardial Infarction in Dogs, Cardiovascular Pharmacology ,2016: Open Access

- Ghiaseddin A., Bohloli M., Vasheghani-Farahani E., Soleimani M., Ahmadi Tafti S.H., Electrical pulse and cell alliance micro-patterning via magnetic field using for promote differentiation of embryonic stem cells into the synchronized cardiomyocytes", submitted in Lab on a chip.
- Pouri H., Ghiaseddin A., Vasheghani-Farahani E., Soleimani M., Chitin Extraction from Shrimp Shell for Bone Tissue Engineering; The 9th international chemical engineering congress (ICHEC2015)
- Alimirzaei F., Ghiaseddin A., Vasheghani-Farahani E., Soleimani M., *in vitro* Investigation of pH-Sensitive Injectable Hydrogel with Medium to Promote Cardiac Regeneration after Myocardial Infarction; International congress of biomedical engineering (ICBME2015)
- Ghiaseddin A., Nemati A., "Experimental Investigation of a Novel Reaction in Reduction of Sulfates by Natural Gas as Reduction Agent", 56th International Conference on Chemical Engineering and Technology; Tokyo, Japan, 2012.
- Ghiaseddin A., Shojaosadati S.A., Vasheghani-Farahani E., "Chitin Extraction from Shrimp Shell process optimization", Iranian journal of chemistry and chemical engineering, spring 2011, No.1, 30.
- Ghiaseddin A., "Production of Sodium Sulfate from Sodium Hydrogen Sulfate in co-axial double layer Rotary Kiln" Granted in IR patent office 2008, July, **Patent** No.50423.
- Ghiaseddin A., "Reduction of Sodium Sulfate into Sodium Sulfide in Fluidized Bed Reactor via Natural gas." Granted in IR patent office 2008 Sep., **Patent** No.52064.
- Ghiaseddin A., Shojaosadati S.A., Vasheghani-Farahani E., "Chitin Extraction Optimization." Granted in IR patent office 2009 Sep., **Patent** No.52636.
- "Production Clusters for Increasing Added Value in Industries." Topic of lecture in 'National Conference on High-Technology in Chemical Industries', as **invited lecturer, Iran, 2012.**
- Oral Presentation on "Cell death passing nozzles", Organ Printing Symposium, Tehran University of Medical Sciences, 2013.

Awards

-in education

- Full scholarship awarded by Iran University of Science and Technology owing to 749th rank attained among near 240'000 students attended in country-wide exam. 1996.
- Awarded three diplomas in three different years for first-class honors and achieving the first position in ranking at Iran University of Science and Technology 1998, 99 and 2000.
- Full scholarship awarded by Chemical Engineering Faculty of Tarbiat Modares University owing to 24th rank attained among students attended in country-wide exam. 2000.
- Full funded fellowship by ministry of science, research and technology for attending in PhD program due to 17th rank attained among near 100'000 competitors. 2012.

-In industry

- First-class Diploma at "Festival of Iranian Youth Successful Industrialists", 2006.
- **UNIDO (United Nations Industrial Development Organization) award for 'Prominent Young Industrialist and Entrepreneurship Developer', 2007.**
- 'Distinguished Young Manufacturer' trophy rewarded by Iran president, 2006.
- 'Great leaders of Iranian Chemical Industries' trophy winner due to be the largest HCl manufacturer in the country, by Ministry of Industry and Mine, 2009.

Skills

Lab Skills:

Fluorescent Microscopy,
Tissue processing and histological slide preparation (staining, IHC, ICC),
Multilayer micro fluidic device fabrication
Metal vapor deposition, Inter Digitate Electrode preparation in micro/nanoscale
Mammalian cell culture, 2D & 3D
Static/ perfused cell seeding/culture in microdevices
Cell isolation and characterization: Bone marrow mesenchymal stem cell, Adipocyte
mesenchymal stem cell, Embryonic stem cell, HUVEC, Umbilical cord mesenchymal stem cell,
Organ Decellularization: Small intestinal submucosa, Aorta, intracoronary perfusion heart
decellularization.
Scaffold preparation, Electrospinning, hydrogels,
3D printing
UV/vis & FT-IR spectrophotometry
SEM, TEM
GC, HPLC, XRD, XRF

Computing skills:

Microsoft office (Word, Excel, Power point, MS project);
Matlab; Fluent& Gambit; Aspen plus & B-jac;
COMSOL multiphysics;
AutoCAD (2D).

Language skills:

English, according 2009 IELTS (officially is not valid these days):

Reading skill: 7.5

Speaking skill: 7

Listening skill: 7

Writing skill: 7.5;

Other skills and hobbies:

Project managing, active team collaborating and liaising,
Playing Violin;
Swimming;
Clean driving license;

Referees

Professor Seyed Hossein Ahmadi Tafti,

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Tehran University of Medical Sciences, Iran

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