



Nasrin Lotfibakhshaiesh

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School of Advanced Technologies in Medicine, Tissue Engineering Department,
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EDUCATION

- **Imperial College London**, Department of Materials, London, UK
PhD in Tissue Engineering and Biomaterials, 2011
Thesis title: "High Phosphate Strontium Bioactive Glass Coatings for Bone Tissue Engineering".
Supervisors:
 - Prof. Molly Stevens, Professor of Biomedical Materials and Regenerative Medicine
 - Prof. Robert Hill, Professor of Biomaterials
- **Tabriz University of Medical sciences**, Islamic Azad University, Faculty of Medicine, Tabriz, Iran
Degree of Doctor in Medicine, 2002
Thesis title: "The Role of Mannitol in the Management of Traumatic Hyphema in Young Patients below 20 years".
Supervisor:
 - Dr Rakhshandeh Alipanahi, Associate Professor of Ophthalmology
- **National Organization for Development of Exceptional Talents (NODET)**, Tabriz, Iran
High School Diploma of Mathematics-Physics, 1994

QUALIFICATIONS

- Personal license for modulus 1- 4, Institute of Biology, Royal Veterinary College, London, UK, Sep 2009.
- Iranian Medical Council full registration, Registration No. 90017, Tehran, Iran, Sep 2002.

EMPLOYMENT/ WORK EXPERIENCE

- Vice dean of education in tissue engineering department, School of Advanced Technologies in Medicine, Tehran University of Medical Sciences, Tehran, Iran (2014 – present).
- Vice dean of international affairs, School of Advanced Technologies in Medicine, Tehran University of Medical Sciences, Tehran, Iran (2014 – 2019).
- Associate Professor, Department of Tissue Engineering, School of Advanced Technologies in Medicine, Tehran University of Medical Sciences, Tehran, Iran (2012 – present).
- Post-doctoral research associate, Dental Physical Sciences Unit, Queen Mary University, London, UK (2012).
- Post-doctoral research associate, Biomaterials Department, South Kensington Campus, Imperial College London, UK (2011).
- Student Demonstrator, 1st year undergraduate biomaterials student, Department of Materials, South Kensington Campus, Imperial College London, UK (2008 – 2011).
- Student Demonstrator, 1st year undergraduate medical students, Faculty of Medicine, South Kensington Campus, Imperial College London, UK (2008 – 2011).
- Research Assistant, Endocrinology and Metabolism Research Centre, Tabriz University of Medical Sciences, Tabriz, Iran (2006 – 2007).
- General Practitioner (GP), Outpatient Clinic, Tabriz, Iran, (2004 – 2006).
- General Practitioner (GP), Emergency and Poisoning wards, Sina Medical Hospital, Tabriz, Iran (2002 – 2004).

PUBLICATIONS

- Roya Karimi, Zahra Barabadi, Bagher Larijani, Gholamreza Tavoosidana, Nasrin Lotfibakhshaiesh, Moloud Absalan, Zahra Jabbarpour, Seyed Naser Ostad, Jafar Ai. Comparison of insulin secretion by transduced adipose-derived and endometrial-derived stem cells in 2D and 3D cultures on fibrin scaffold. *Journal of Biomedical Materials Research Part A*. 1036-1044, 2021.
- Nima Beheshtizadeh, Yazdan Asgari, Noushin Nasiri, Ali Farzin, Mohammad Ghorbani, Nasrin Lotfibakhshaiesh, Mahmoud Azami. A Network Analysis of Angiogenesis/Osteogenesis-Related Growth Factors in Bone Tissue Engineering Based on In-vitro and In-vivo data: A Systems Biology Approach. *Tissue and Cell*. 2021
- Arghavan Tonkaboni, Nasrin Lotfibakhshaiesh, Pariya Danesh, Roksana Tajerian, Heliya Ziaei. Evaluation of Inhibitory Effects of Caffeine on Human Carcinoma Cells. *Nutrition and Cancer*. 1-5, 2020.
- Fereshteh Ziaei Amiri, Zaidodine Pashandi, Nasrin Lotfibakhshaiesh, Mohammad Javad Mirzaie Parsa, Hossein Ghanbari, Reza Faridi-Majidi. Cell attachment effects of collagen nanoparticles on crosslinked electrospun nanofibers. *The International Journal of Artificial Organs*. 2020.
- Aliakbar Yousefi-Ahmadipour, Somayeh Ebrahimi-Barough, Seddigheh Niknia, Amir Allahverdi, Afsaneh Mirzahosseini-Pourranjbar, Mahnaz Tashakori, Shima Khajouee Ravari, Fatemeh Asadi, Rahim Heidari Barchi Nezhad, Nasrin Lotfibakhshaiesh, Mohammad Reza Mirzaei. Therapeutic effects of combination of platelet lysate and sulfasalazine administration in TNBS-induced colitis in rat. *Biomedicine & Pharmacotherapy*. 125, 2020.
- Hamed Tanimowo Aiyelabegan, Malihe Ebadi, Gholam Ali Kardar, Nasrin Lotfibakhshaiesh, Farid Abedin Dorkoosh, Somayeh Ebrahimi-Barough, Esmaeil Sadroddiny. k-Casein upregulates osteogenic differentiation on bone marrow mesenchymal stem cells cultured on agarose microcarriers. *International Journal of Polymeric Materials and Polymeric Biomaterials*. 373-380, 2020.
- Mansure Kazemi, Bahareh Nazari, Jafar Ai, Nasrin Lotfibakhshaiesh, Ali Samadikuchaksaraei, Seyed Mohammad Tavangar, Mahmoud Azami. Preparation and characterization of highly porous ceramic-based nanocomposite scaffolds with improved mechanical properties using the liquid phase-assisted sintering method. *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*. 233,9, 2019.
- Mona Navaei-Nigjeh, Milad Moloudizargari, Maryam Baeeri, Mahdi Gholami, Nasrin Lotfibakhshaiesh, Masoud Soleimani, Ebrahim Vasheghani-Farahani, Al Jafar, Mohammad Abdollahi. Reduction of marginal mass required for successful islet transplantation in a diabetic rat model using adipose tissue-derived mesenchymal stromal cells. *Cytherapy*. 20 (9), 1124-1142, 2018.
- Saeid Kargozar, Francesco Baino, Nasrin Lotfibakhshaiesh, Robert G Hill, Peiman Brouki Milan, Sepideh Hamzehlou, Mohammad Taghi Joghataei, Masoud Mozafari. When size matters: Biological response to strontium-and cobalt-substituted bioactive glass particles. *Materials Today: Proceedings*. 5 (7), 15768-15775, 2018.
- Kiasatdolatabadi A, **Lotfibakhshaiesh N**, Yazdankhah M, Ebrahimi-Barough S, Jafarabadi M, Ai A, Sadroddiny E, Ai J. Molecular neurobiology. *The Role of Stem Cells in the Treatment of Cerebral Palsy: a Review*. Vol 54(7) 4963-4972, (2017).
- Kargozar, S; **Lotfibakhshaiesh, N**; Ai, J; Taghi Joghataei, M; Baino, Francesco. *Osteogenic evaluation of stem cell-seeded bioactive glasses containing strontium and cobalt in a critical size defect in rabbit femur*. ESB Local Committee, (2017).
- Kargozar S, **Lotfibakhshaiesh N**, Ai J, Mozafari M, Milan P B, Hamzehlou S, Barati M, Baino F, Hill RG. *Strontium-and cobalt-substituted bioactive glasses seeded with human umbilical cord perivascular cells to promote bone regeneration via enhanced osteogenic*. *Acta Biomaterialia*. (2017).
- Maghsoudloo M, Abolhassani F, **Lotfibakhshaiesh N**. *Connecting Primary Health Care: A Comprehensive Pilot Study*. *ACTA MEDICA IRANICA*. Vol 54(7) 441-447, (2016).

- Milan PB, **Lotfibakhshaiesh N**, Joghataie MT, Ai J, Pazouki A, Kaplan DL, Amini N, Hamblin MR, Mozafari M, Samadikuchaksaraei A. *Accelerated wound healing in a diabetic rat model using decellularized dermal matrix and human umbilical cord perivascular cells*. Acta Biomaterialia. (2016).
- Barabadi Z, Azami M, Sharifi E, Karimi R, **Lotfibakhshaiesh N**, Roozafzoon R, Joghataei MT, Ai J. *Fabrication of hydrogel based nanocomposite scaffold containing bioactive glass nanoparticles for myocardial tissue engineering*. Materials Science and Engineering: C. Vol 96, 1137-1146, (2016).
- Kargozar S, **Lotfibakhshaiesh N**, Ai, J, Samadikuchaksaraie A, Hill RG, Shah PA, Milan P, Mozafari M, Fathi M. *Synthesis, physico-chemical and biological characterization of strontium and cobalt substituted bioactive glasses for bone tissue engineering*. Journal of Non-Crystalline Solids. Vol 449 133-140, (2016).
- Ramzgouyan M, Tavangar M, Hajati J, **Lotfibakhshaiesh N**, Amidi F, Ebrahimi-Barough S, Karimi R, Roozafzoon R, Jafarabadi M, Bekloo A, Ai J, *Human endometrial stem cells (hEnSCs) differentiation into germ cell-like cells by encapsulating in fibrin scaffold*. Basic Research Journal of Medicine and Clinical Sciences. Vol. 4(3) 101-110, (2015).
- Niafar M, Jamali B, **Lotfibakhshaiesh N**, Aghamohadzadeh N, Nader N. *Effect of metformin on serum vitamin B12 level in patients with type 2 diabetes mellitus*. International Journal of Diabetes in Developing Countries. Vol 35 628-629, (2015).
- Newman S*, **Lotfibakhshaiesh N***, O'Donnell M, Walboomers X, Horwood N, Jansen J, Amis A, Cobb J, Stevens M. *Enhanced Osseous Implant Fixation with Strontium-substituted Bioactive Glass Coating*. Tissue Eng Part A. 20(13-14):1850-7, (2014).(* joint first authors)
- Niknamasl A, Ostad S, Soleimani M, Azami M, Kabir Salmani M, **Lotfibakhshaiesh N**, Ebrahimi-Barough S, Karimi R, Ai J. *A new approach for pancreatic tissue engineering: human endometrial stem cells encapsulated in fibrin gel can differentiate to pancreatic islet beta-cell*. Cell Biology International. doi: 10.1002/cbin.10314. (2014).
- Ai J, Kiasat-Dolatabadi A, Ebrahimi-Barough S, Ai A, **Lotfibakhshaiesh N**. *Polymeric scaffolds in neural tissue engineering: a review*. Archives of Neuroscience; 1(1), 15-20, (2013).
- Taherkhani S, Moztafzadeh F, Mozafar M, **Lotfibakhshaiesh N**. *SoI-gel synthesis and characterization of unexpected rod-like crystal fibers based on $\text{SiO}_2-(1-x)\text{CaO}-x\text{SrO}-\text{P}_2\text{O}_5$ dried-gel*. Journal of Non-Crystalline Solids; 358(2), 342-348, (2012).
- **Lotfibakhshaiesh N**, Gentleman E, Hill RG, Stevens MM. *Strontium-substituted bioactive glass coatings for bone tissue engineering*. Clinical Biochemistry, Volume 44, Issue 13, Supplement, Page S36, (2011).
- **Lotfibakhshaiesh N**, Gentleman E, Stevens MM, Hill RG. *Strontium bioactive glass coatings for medical implants*. Journal of Biomechanics, Volume 43, Supplement 1, Page S58, (2010).
- **Lotfibakhshaiesh N**, Brauer DS, Hill RG. *Bioactive glass engineered coatings for Ti6Al4V alloys: Influence of strontium substitution for calcium on sintering behaviour*. Journal of Non-Crystalline Solids; 356(44-49), 2583-90 (2010).
- Gentleman E, Fredholm YC, Jell G, **Lotfibakhshaiesh N**, O'Donnell MD, Hill RG, Stevens MM. *The effects of strontium-substituted bioactive glasses on osteoblasts and osteoclasts in vitro*. Biomaterials; 31(14), 3949-3956 (2010).
- **Lotfibakhshaiesh N**, Alipanahi R. *Traumatic hyphema management and Mannitol role in young patients below 20 years*. Journal of Faculty of Pharmacy 1, 1-10 (2004). Indexed by Chemical Abstracts Service, ISSN: 1735-403X.
- Ansarin K, **Lotfibakhshaiesh N**, et al. *Guideline for bronchial Asthma management*. Accepted and disturbed by the Iranian Medical Science House with CME credit, (2002).
- **Lotfibakhshaiesh N**. *Laser and its application*. Journal of Exceptional Talents; 2, 1-5 (1993).

ORAL PRESENTATIONS

- “ In vitro studies of bioactive glasses coatings”, Third National Congress on Cellular and Molecular News in Non-Contagious Diseases, Babol, Iran, 2015.
- “ Bioactive glass coating for bone tissue engineering”, Progress in Tissue Engineering and Regenerative Medicine, Tehran, Iran, 2015.
- “The applications of tissue engineering for skin repair and wound healing”, 2nd national congress of wound and tissue repair, Tehran, Iran, 2015.
- “ Endometrial Stem Cells for Neural Regeneration: A Review”, 8th IANR & 12th GCNN Annual Conference, Tehran, Iran, 2015.
- “The nanostructured bioactive glass coatings for bone tissue engineering: an in vitro study”, Asian Nono Forum Conference (ANFC2015), Kish Island, Iran, 2015.
- “ Bioactive glasses in tissue engineering”, invited speaker, Innovation in Tissue Engineering, Royan Institute, Tehran, Iran, 2015.
- “ The novel bioactive glass coatings for bone tissue engineering: an in vivo study”. Novel Biomaterials and Technology for use in Regenerative Medicine/Tissue Engineering, London, England, 2014.
- “Bioactive glass coating for bone tissue engineering: In vitro study”, The 1st Middle East and the 6th Iranian Controlled Released Conference, Razi International Hall, Tehran, Iran, 2014.
- “Bladder Tissue Engineering”, 1st Urological Regenerative Medicine Symposium, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran, 2013.
- “High Phosphate Content Bioactive Glass Coatings Promote Apatite Formation and Osteoblast Proliferation *In Vitro*”, Iranian Annual Congress on Progress in Tissue Engineering and Regenerative Medicine, Razi International Conference Centre, Tehran, Iran, 2013.
- “ *In Vivo* and *In Vitro* Evaluation of Strontium-substituted Bioactive Glass Coatings for Medical Prosthesis”, Conference on Application of Bioglasses in Tissue Engineering and Regenerative Medicine, Baghiatollah University of Medical Sciences, Tehran, Iran, 2013.
- “Strontium-substituted Bioactive Glass Coatings for Bone Tissue Engineering”, 12th Iranian Congress of Biochemistry & 4th International Congress of Biochemistry & Molecular Biology, Mashhad, Iran, 2011.
- “Nanostructure Strontium-substituted Bioactive Glass Coatings for Medical Implants”, ESF-UB Conference on Nanomedicine, Sant Feliu de Guixols, Spain, 2010.
- “Strontium-substituted Bioactive Glass Coatings for Bone Tissue Engineering: *In Vitro* Study”, Tissue Engineering and Regenerative Medicine International Society – EU Meeting (TERMIS-EU), Galway, Ireland, 2010.
- “Strontium Bioactive Glass Coatings for Orthopedic Application”, Orthopedics conference, Brunel University, London, UK, 2010.
- “Bioactive Glass Coatings for Medical Applications”, Postgraduate Research Day, Imperial College London, UK, 2010.
- “Bioactive Glass Coatings for Ti6Al4V Alloys for Medical Prosthesis”, EUROMAT Congress, SECC, Glasgow, UK, 2009.
- “Nanostructure Bioactive Glass for Medical Prostheses”, Iranian Academic Symposium, University College London, UK, 2009.
- “Bioactive Glasses and Tissue Engineering”, Departmental seminars, Imperial College London, UK, 2008.
- "Additive Effect of Latanoprost to the Combination of Timolol and Dorzolamide in Open Angle Glaucoma", 15th Iranian Congress of Ophthalmology, Tehran, Iran, 2005.
- "Long-term Effects of Nd-Yag Laser in Treatment of Posterior Capsule Pacification", 1st National Seminar of Medical Sciences, Najaf Abad, Iran, 2000.
- "Evaluation of Therapeutic and Diagnostic Methods in Patients with Optic Nerve Geliuma", 6th National Seminar of Medical Sciences, Tabriz, Iran, 1998.
- "The Effect of Laser Therapy on Diabetic Patients with Retinopathy: Clinical Aspects ", 5th National Seminar of Medical Sciences, Tabriz, Iran, 1997.

POSTER PRESENTATIONS

- “Strontium-Substituted Bioactive Glass Coatings for Bone Tissue Engineering: *In Vivo* Study”, Days of Molecular Medicine conference, Re-engineering Regenerative Medicine, medical campus of Hong Kong university, Hong Kong, 2011.
- “Strontium-Substituted Bioactive Glass Coatings with High Phosphate Content for Bone Tissue Engineering: *In Vivo* Study”, Gordon Research Conferences, Holderness, New Hampshire, USA, 2011.
- “Strontium-Substituted Bioactive Glass Coatings with High Phosphate Content Promote Apatite Formation and Osteoblast Proliferation *In Vitro*”, Orthopaedic Research Society (ORS) Meeting, Long Beach, California, USA, 2011.
- “A Novel Bioactive Glass Coatings”, SET for BRITAIN, House of Commons, London, UK, 2010.
- “Bioactive Glass Coatings for Medical Implants”, Third International Conference on Mechanics of Biomaterials and Tissues (ICOMBT), Clearwater Beach, Florida, USA, 2009.
- “Novel Bone Binding Bioactive Glass Coatings for Medical Prostheses”, GSEPS Research Symposium Poster Competition, South Kensington Campus, Imperial College London, UK, 2009.
- “The Influence of Strontium Substitution for Calcium in Nanostructure Bioactive Glasses”, PG Research Day, Imperial College London, UK, 2009.
- “Strontium-Substituted Bioactive Glasses”, GSEPS Research Symposium Poster Competition, South Kensington Campus, Imperial College London, UK, 2008.

ACADEMIC AWARDS/ PRIZES

- **Travel Award and the Best Abstract Prize** for attending at the Days of Molecular Medicine Conference, Re-engineering Regenerative Medicine, Medical Campus of Hong Kong University, 2011.
- **Armourers and Brasiers Company Travel Award** for attending at the Gordon Research Conferences, Holderness, New Hampshire, 2011.
- **Imperial Smelting Corp. Travel Award** for attending at the Orthopaedic Research Society (ORS) meeting, Long Beach, California, 2011.
- **European Science Foundation Travel Award** for attending at the ESF-UB Conference on Nanomedicine, Sant Feliu de Guixols, Spain, 2010.
- **A Best Abstract Award** of the TERMIS-EU Meeting, Galway, Ireland, 2010.
- **A prize for a Highly Commended poster** in the GSEPS poster competition, Imperial College, London, UK, 2009.
- **First Prize Winner** for the best scientific content of a lecture at Iranian Academic Symposium, University College London, UK, 2009.
- **British Association Annual Festival of Science Award**, Liverpool, UK, 2008.
- **Letter of Appreciation** on active attendance at research projects in Sina Educational and Medical Care Centre, Tabriz, Iran, 2000.
- **“The Youngest Researcher” Prize** for presenting paper at National Seminar of Medical Sciences, Tabriz, Iran, 1997.

COLLABORATION WITH AO RESEARCH INSTITUTE DAVOS (ARI)

Contact person:

Dr. Mauro Alini, Head of Musculoskeletal Regeneration, AO Foundation, Davos

Ongoing projects:

- Influence of polymeric adjuvants on the properties of Platelet Rich Plasma gel.
- Production and evaluation of decellularized hydrogel derived from ovine cartilage for cartilage regeneration.

WORKSHOPS ATTENDED

- Nanotechnology and Regenerative Medicine, institute of nanotechnology, London, UK, 2009.
- Training on Blue hill K2, University College London, UK, 2007.
- Human Vascular Disease: molecular mechanisms and clinical complications, Royal Free Hospital, London, UK, 2007.
- Health Research Methodology, Tabriz University of Medical Sciences, Tabriz, Iran, 2007.
- Microbiological Methods Applied in DNA Manipulation and Gene Cloning, Tabriz University of Medical Sciences, Tabriz, Iran, 2006.
- Bioinformatics and its Applications in Biotechnology, Tabriz University of Medical Sciences, Tabriz, Iran, 2006.
- CME, on GP programme covering congenital disorders with focus on Genetic Diseases, haematological disorders with focus on Laboratory Findings and dermatology diseases with focus on Laser Therapy. Iranian Medical Science House, Tabriz, Iran, 2005-2006.

WORKSHOPS ORGANIZED

- Tissue engineering and bio-printing, Department of Tissue Engineering, School of Advanced Technologist in Medicine, 2019- present
- Dentistry tissue engineering and regenerative medicine short course, Department of Tissue Engineering, School of Advanced Technologist in Medicine, 2017.
- Advances in Tissue Engineering 2014 Short Course, Department of Tissue Engineering, School of Advanced Technologies, 27th -29th September 2014. (This course was a joint program with Barts and The London, School of Medicine and Dentistry, Queen Mary University.)
- Three Dimensional Vs Two Dimensional Cell Culture, Department of Tissue Engineering, School of Advanced Technologies, 5th -6th March 2013.
- An Introduction to Mechanical Stimulation in Cell Differentiation for Tissue Engineering Application, Department of Tissue Engineering, School of Advanced Technologies, 3rd February 2013.
- Workshop on Immunostaining , Department of Tissue Engineering, School of Advanced Technologies, 30th -31st December 2012.