

Elnaz Tamjid, PhD

Assistant Professor

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Education

PhD. in Nanoscience and Nanotechnology (2006-2011), Institute for Nanoscience and Nanotechnology, Sharif University of Technology, Tehran, Iran

- Thesis: Bioactivity and kinetics of tissue growth in Poly(ϵ -Caprolactone)/Bioglass[®]/TiO₂ nanocomposite scaffolds with controlled pore structure produced by 3D-Printing process

M.Sc. in Materials Science and Engineering (2003-2005), Department of Materials Science and Engineering, Sharif University of Technology, Tehran, Iran

- Thesis: An investigation on the thixoforming and workability of 7075 aluminum alloy

B.Sc. in Materials Science and Engineering (1998-2003), Department of Materials Science and Engineering, Sharif University of Technology, Tehran, Iran

- Thesis: Study of the fatigue properties of metal forming risers: Experimental and simulation

Honors and Awards

- “Nanoprototype” Competition Winner, Start-up Research Grant (Young Scientists), National Nanotechnology Initiative Council, October 2014
- “Incubator” Postdoctoral Fellowship, National Nanotechnology Initiative Council, December 2012- December 2013

- First rank PhD graduate with highest degree, Institute for Nanoscience and Nanotechnology, Awarded by the President of Sharif University of Technology, 2012
- Hot Paper published in Nanomedicine: Nanotechnology, Biology and Medicine, 2011-2012
- Highlighted oral presentation in Euro BioMat 2011, Jena, Germany
- Nanotechnology Research Grant, Iranian Nanotechnology Initiative Council, 2008 and 2011
- Exceptional Talents Award, Exceptional talents office, Dean of graduate studies, Sharif University of Technology, 2008 and 2009
- 5th Khawrazmi Student Award (the highest national science award), 1998, Ministry of Science and Education, Iran

Research Interest

- Development of novel biocompatible nanomaterials for regenerative medicine and tissue engineering, cell tracking and bioimaging and stem cell therapy

Work Experience

Tenure-track Assistant Professor

- Since September 2014: Nanobiotechnology Department, Faculty of Biological Sciences, Tarbiat Modares University, Tehran, Iran

Postdoctoral Fellow

- Dec. 2012- April 2014: Institute for Biotechnology and Environmental Research, Sharif University of Technology, Tehran, Iran
- Dec. 2011- Sept 2012: Institute of Biomaterials and Biomedical Engineering (IBBME), University of Toronto, Toronto, Canada

Visiting Researcher

- Sept.- Dec. 2010: Department of Biomaterials, Max-Planck Institute of Colloids and Interfaces, Potsdam-Golm, Germany
- July- Sept. 2006 and 2007: Fraunhofer Institute for Manufacturing and Advanced Materials (IFAM), Bremen, Germany

Teaching Experience

PhD courses

1. Principles of Nanotechnology (PhD)
2. Characterizations of Nanostructures (PhD);

M.Sc. courses

3. Biomaterials (MSc);
4. Principles of Nanotechnology (MSc);
5. Surface Science and Engineering in Nanobiotechnology, (MSc);
6. Metals and Their Applications in Biomedical Engineering, (MSc);
7. Biodegradation in Physiological Environments, (MSc)

Professional Experiences

- Member of Bone & Cartilage Scientific Committee, National Stem Cell Initiative Council, Since 2016
- Adjunct Member of Institute for Nanoscience and Nanotechnology, Sharif University of Technology, Since 2015

Editorial board of Peer-reviewed journals

- *Scientific Reports*, “Biological Physics” section, Nature publishers, Since May 2018
- *International Journal of Applied Tissue Engineering*, ISSN (online): 2383-3149, Since January 2018

Professional Peer Review

- Nanoscale Research Letters (NRL), Springer
- Scientia Nanotechnology, Elsevier
- Powder Technology, Elsevier
- Journal of Materials Engineering and Performance (JMPEP), Springer
- Journal of Biomaterials Applications (JBA), SAGE
- International Journal of Nanoscience and Nanotechnology (IJNN)
- Iranian Journal of Biotechnology (IJB)
- Journal of Iranian Biology Society
- Journal of Biotechnology Tarbiat Modares University (BIOT)

Publications

Peer-reviewed Journals

1. R. Ghaffari, N. Eslahi, **E. Tamjid**, A. Simchi, “Dual-Sensitive Hydrogel Nanoparticles Based on Conjugated Thermoresponsive Copolymers and Protein Filaments for Triggerable Drug Delivery”, *ACS Applied Materials & Interfaces* (2018), under publication.
2. P. Nasrollahi, K. Khajeh, **E. Tamjid**, M. Taleb, M. Soleimani, G. Nie, “Sustained release of sodium deoxycholate from PLGA-PEG-PLGA thermosensitive polymer”, *Journal of Artificial Cells, Nanomedicine, and Biotechnology (IANB)* (2018), under publication.
3. **E. Tamjid**, “Three-dimensional polycaprolactone-bioactive glass composite scaffolds: Effect of particle size and volume fraction on mechanical properties and in vitro cellular behavior”, *International Journal of Polymeric Materials and Polymeric Biomaterials* (2018), under publication.
4. M. Rezaei, **E. Tamjid**, A. Dinari, “Enhanced cell attachment and hemocompatibility of titanium implants by nanoscale surface modification through severe plastic integration of magnesium-rich islands and porosification”, *Scientific Reports* 7 (2017) 12965.
5. A. Dinari, **E. Tamjid**, “A review on the latest innovations in promotion of optical microscopy resolution at the nano-scale”, *Journal of Biosafety* (2018), under publication.
6. M. Ayoubi, P. Naserzadeh, M.T. Hashemi, M.R. Rostami, **E. Tamjid**, M.M. Tavakoli, A. Simchi, “Biochemical Mechanisms of dose-dependent cytotoxicity and ROS-mediated apoptosis induced by lead sulfide/graphene oxide quantum dots for potential bioimaging applications”, *Scientific Reports*, 7 (2017) 12896 .
7. A. Nojoomi, **E. Tamjid**, A. Simchi, S. Bonakdar, P. Stroeve, “Injectable Polyethylene Glycol-Laponite Composite Hydrogels as Articular Cartilage Scaffolds with Superior Mechanical and Rheological Properties”, *International Journal of Polymeric Materials and Polymeric Biomaterials* 66 (2017) 105-114.
8. M. Mazaheri, N. Eslahi, F. Ordikhani, **E. Tamjid**, A. Simchi, "Nanomedicine applications in orthopedic medicine: state of the art", *International Journal of Nanomedicine* 10 (2015), 6039-6054.

9. **E. Tamjid**, A. Simchi, "Fabrication of a highly ordered hierarchically designed porous nanocomposite via indirect 3D printing: Mechanical and cellular response", *Journal of Materials and Design* 88 (2015) 924-931.
10. F. Ordikhani, M. Ramezani Farani, M. Dehghani, **E. Tamjid**, A. Simchi, "Physicochemical and biological properties of electrodeposited graphene oxide/chitosan films with drug-eluting capacity", *Carbon* 84 (2015) 91-102.
11. F. Ostadhossein, N. Mahmoudi, G. Morales-Cid, **E. Tamjid**, F.J. Navas-Martos, B. Soriano-Cuadrado, J.M. Lopez Paniza, A. Simchi, PhD, "Development of chitosan/bacterial cellulose composite films containing nanodiamonds as a flexible platform for wound dressing", *Materials* 8 (2015) 6401-6418.
12. F. Ordikhani, A. Simchi, **E. Tamjid**, "Characterization and antibacterial performance of electrodeposited chitosan–vancomycin composite coatings for prevention of implant-associated infections", *Materials Science and Engineering C*, 1 (2014) 41:240–248.
13. **E. Tamjid**, A. Simchi, J.W.C. Dunlop, P. Fratzl, R. Bagheri, M. Vossoughi, "Tissue growth into three-dimensional composite scaffolds with controlled micro-features and nanotopographical surfaces", *Journal of Biomedical Materials Research A*, 101 (2013) 2796-2807.
14. M. Mansorianfar, M.A. Shokrgozar, M. Mehrjoo, **E. Tamjid**, A. Simchi, "Nanodiamonds for surface engineering of orthopedic implants: Enhanced biocompatibility in human osteosarcoma cell culture", *Diamond & Related Materials* 40 (2013) 107–114.
15. A. Simchi, **E. Tamjid**, F. Pishbin, A.R. Boccaccini, "Recent progress in inorganic and composite coatings with bactericidal capability for orthopedic applications", *Nanomedicine: Nanotechnology, Biology and Medicine*, 7 (2011) 22-39.
16. **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 PCL composites", *Journal of Materials Science and Engineering C*, 31 (2011) 1526-1533.
17. **E. Tamjid**, R. Bagheri, M. Vossoughi A. Simchi, "Effect of TiO₂ morphology on the in vitro bioactivity and mechanical properties of polycaprolactone/TiO₂ nanocomposites for tissue engineering", *Materials Letters*, 65 (2011) 2530-2533.
18. **E. Tamjid**, Bernd H. Guenther, "Rheology and colloidal structure of silver nanoparticles dispersed in diethylene glycol", *Powder Technology* 197 (2010) 49-53.

19. **E. Tamjid**, Bernd H. Guenther, "Study of rheology and sedimentation properties of silver nanoparticles dispersed in ethylene glycol", *Int. J. of Nanomanufacturing*, 5 (2009) 383-392
20. M. Dourandish, A. Simchi, **E. Tamjid** Shabestary, T. Hartwig, "Co-sintering of zirconia-stainless steels for fabrication of functionally graded composite layers", *Journal of the American Ceramic Society*, 91 (2008) 3493-3503.

International Conferences

21. **E. Tamjid**, M.Bohlouli, M. Nikkhah, "Fabrication of drug-eluting nanocomposite scaffolds for tissue engineering applications using 3D printing", *EMN2017*, 4-8 Dec 2017, Orlando, USA.
22. **E. Tamjid**, M. Rezaei, A. Dinari, Z. Panahi, "Improved bioactivity of titanium implants by nano-scale magnesium-rich islands", *7th International Conference on Nanostructures (ICNS7)*, 27 Feb-1 March 2018, Tehran, Iran.
23. **E. Tamjid**, Z. Panahi, M. Rezaei, "A study on Biocompatibility of electrospun PCL/BG Nanofibrous composite coatings on magnesium-based implants", *2nd Nanomedicine and Nanosafety International Conference (NMNS 2017)*, 29-30 Nov, 2017, Tehran, Iran.
24. M. Rezaei, A. Dinari, **E. Tamjid**, "Nanostructured bioactive surface modification of titanium implants using friction stir processing (FSP)", *5TH International Conference on Materials Engineering and Metallurgy (5th iMAT)*, 8-9 November 2016, Shiraz, Iran.
25. **E. Tamjid**, "In vivo tracking of human umbilical cord perivascular cells (HUCPVCs) by plasmonic quantum dot hybrid structures", *ICNS6*, 7-10 March 2016, Kish Island, Iran.
26. M. Ayoubi, M.T. Hashemi, M.R. Rostami, M.M. Tavakoli, **E. Tamjid**, A. Simchi, "In vitro toxicity assay of quasi core-shell quantum dot-graphene nanocrystals", *ICNS6*, 7-10 March 2016, Kish Island, Iran.
27. **E. Tamjid**, A. Simchi, R. Bagheri, M. Vossoughi, "Kinetics of Tissue Growth In 3d Polymer-based Nanocomposite Scaffolds", *Artificial Organs* 37 (7), A49.
28. **E. Tamjid**, R. Bagheri, M. Vossoughi, A. Simchi, "Bioactivity and tissue growth kinetics of 3D nanocomposite scaffolds: Effect of titania nanoparticles on cell proliferation and differentiation", *IMES 2012*, 6-8 November 2012, Technical Faculty of Tehran University, Tehran, Iran.

29. **E. Tamjid**, A. Simchi, R. Bagheri, M. Vossoughi, "Kinetics of tissue growth in 3D polymer-based nanocomposite scaffolds: Effect of nanoparticles on cell proliferation and differentiation", IBBME Scientific day, 7 May 2012, Toronto, Canada (Selected for Oral presentation).
30. **E. Tamjid**, A. Simchi, K.P. Kommareddy, J. Dunlop, R. Bagheri, M. Vossoughi, P. Fratzl, "In vitro tissue growth in three-dimensional scaffolds of PCL-TiO₂ nanocomposite prepared by an indirect 3D printing process", Euro BioMat 2011, 12-14 April 2011, Jena, Germany (Highlighted presentation).
31. **E. Tamjid**, A. Simchi, R. Bagheri, M. Vossoughi, "Effect of bioglass particle size on the in vitro bioactivity of polycaprolactone/bioglass composite scaffolds", 14th European Conference on Composite Materials (ECCM14), 7-10 June 2010, Budapest, Hungary.
32. **E. Tamjid**, R. Bagheri, M. Vossoughi, A. Simchi, "Effect of shape of titania nanoparticles on the bioactivity of PCL-based composite scaffolds used for tissue engineering", NMC3-IUMS, 23-25 February 2010, Iran University of Medical Sciences, Tehran, Iran
33. **E. Tamjid**, R. Bagheri, M. Vossoughi, A. Simchi, "Shape-controlled synthesis of TiO₂ nanostructures", 3rd Conference on nanostructures (NS2010), 10-12 March 2010, Kish Island, Iran.
34. **E. Tamjid**, Bernd. H. Guenther, "Rheological investigation of silver colloids based on ethylene glycol", 2nd Conference on nanostructures (NS2008), 11-14 March 2008, Kish Island, Iran.
35. **E. Tamjid**, A. Simchi, T. Hartwig, "Co-sintering of nanoscaled zirconia powder to stainless steels for manufacturing functionally graded composite layers", 1st International Congress on Nanoscience and Nanotechnology (ICNN 2006), 18-20 December 2006, Technical Faculty of Tehran University, Tehran, Iran.
36. **E. Tamjid**, A. Karimi Taheri, "Prediction of semi-solid backward extrusion force using an upper bound analysis", 3rd congress of Iran material and metal forming, 8-10 May 2006, Technical Faculty of Tehran University, Tehran, Iran.
37. **E. Tamjid**, A. Karimi Taheri, "An investigation on the microstructure and mechanical properties of thixoforming ingots produced using a combination of cooling slope technique and vibration", COM 2005, 44th conference of metallurgists, 21-24 August, Alberta, Canada.