



## **Hamidreza Farnoush**

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**Department of Metallurgical and Materials Engineering**

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**Objectives and Major Interests:**

Mechanical Behavior of Materials, Electrophoretic Deposition, Biomaterials, Solid Oxide Fuel Cells, Friction Stir Processing, Synthesis of Nanomaterials, Powder Metallurgy, Tribology, Corrosion Behavior

**Education:**

**BSc** in Materials Science and Engineering, Department of Mining and Metallurgical Engineering, Amirkabir University of Technology, Tehran, Iran (2001-2005)

**MSc** in Materials Science and Engineering, Department of Materials Science and Engineering, Sharif University of Technology, Tehran, Iran (2005-2007)

**PhD student** in Materials Science and Engineering, Department of Mining and Metallurgical Engineering, Amirkabir University of Technology, Tehran, Iran (2008-2013)

## **Honors:**

Top ranked PhD student in Materials Science and Engineering, Amirkabir University of Technology (2008-2013)

Awarded facilities for educating in MSc at Amirkabir University of Technology without any entrance examination (2005)

Top ranked undergraduate student in Materials Science and Engineering, Amirkabir University of Technology (2001-2005)

## **Teaching Experiences:**

Teaching Diffusion in Solids, Department of Metallurgical and Materials Engineering, University of Kashan (2014-up to now)

Teaching Advanced Powder Metallurgy, Department of Metallurgical and Materials Engineering, University of Kashan (2014-up to now)

Teaching Advanced Methods in Materials Characterization Lab., Department of Metallurgical and Materials Engineering, University of Kashan (2013-up to now)

Teaching Statics, Department of Mining Engineering, University of Kashan (2014-up to now)

Teaching Mechanical Behavior of Materials Lab., Department of Mining and Metallurgical Engineering, Amirkabir University of Technology (2008- up to now)

Teaching Assistant of Mechanical Properties of Materials I, Department of Mining and Metallurgical Engineering, Amirkabir University of Technology (2008- up to now)

Teaching Materials Science, Islamic Azad University (Central Tehran Branch), Mechanical Engineering Department (2008-up to now)

Teaching Engineering Graphics I & II, Islamic Azad University (Central Tehran Branch), Mechanical Engineering Department (2008-up to now)

Teaching Fabrication of Casting Models, Sharif University of Technology (2005-2007)

## **Research Experiences:**

Designing and Manufacturing of SOFC power unit by using natural gas, Niroo Research Institute, (2013- up to now)

PhD Thesis: “Graded and Layered Electrophoretic Deposition of HA/TiO<sub>2</sub> Nanoparticles on Ti6Al4V Substrates with Refined Microstructure”, Department of Mining and Metallurgical Engineering, Amirkabir University of Technology, (2011-2013)

Surface Modification of CP-Ti Substrate by Combining Micro-arc Oxidation and Electrophoretic Deposition, Istanbul Technical University, (2012-2013)

Fabrication of Ti–CaP Nanocomposite Layer by Friction Stir Processing, Amirkabir University of Technology, (2011-2013)

Biomimetic Synthesis of Nano-hydroxyapatite Coatings on Friction Stir Processed Ti-6Al-4V Substrates, Amirkabir University of Technology, (2012-2013)

Sol-gel Derived Nano-hydroxyapatite Film on Friction Stir Processed Ti-6Al-4V Substrate, Amirkabir University of Technology, (2012-2013)

Fabrication of Nanostructured Al-AlN Composite by Mechanical Alloying, Materials & Energy Research Center (MERC), (2008-2010)

Thermokinetic Study on Oxidation Behavior of AlN Nanoparticles, Materials & Energy Research Center (MERC), (2009-2010)

MSc Thesis: “The Effect of Dynamic Strain Aging on Fatigue Properties of Ferrite-Bainite Dual-Phase Steels”, Department of Materials Science and Engineering, Sharif University of Technology (2005-2007)

BSc Thesis: “Hot Deformation Characteristics of 2205 Duplex Stainless Steel Based on the Behavior of Constituent Phases”, Department of Mining and Metallurgical Engineering, Amirkabir University of Technology, (2004-2005)

## **ISI Publications:**

1. H. Farnoush, A. Abdi Bastami, A. Sadeghi, J. Aghazadeh Mohandesi, F. Moztarzadeh, Tribological and corrosion behavior of friction stir processed Ti-CaP nanocomposites in simulated body fluid solution, *Journal of the Mechanical Behavior of Biomedical Materials* 20 (2013) 90–97.
2. H. Farnoush, J. Aghazadeh Mohandesi, D. H. Fatmehsari, Effect of particle size on the electrophoretic deposition of hydroxyapatite coatings: a kinetic study based on a statistical analysis, *International Journal of Applied Ceramic Technology* 10 (2013) 87–96.
3. H. Farnoush , A. Sadeghi, A. Abdi Bastami, F. Moztarzadeh, J. Aghazadeh Mohandesi, An innovative fabrication of nano-HA coatings on Ti-CaP nanocomposite layer using a combination of friction stir processing and electrophoretic deposition, *Ceramics International* 39 (2013) 1477–1483.
4. A. Abdi Bastami, H. Farnoush, A. Sadeghi, J. Aghazadeh Mohandesi, Sol-gel derived nano-hydroxyapatite film on friction stir processed Ti-6Al-4V substrate, *Surface Engineering* 29 (2013) 205–210.
5. H. Farnoush, J. Aghazadeh Mohandesi, D. H. Fatmehsari, F. Moztarzadeh, Modification of electrophoretically deposited nano-hydroxyapatite coatings by wire brushing on Ti-6Al-4V substrates, *Ceramics International* 38 (2012) 4885–4893.
6. H. Farnoush, J. Aghazadeh Mohandesi, D. H. Fatmehsari, F. Moztarzadeh, A kinetic study on the electrophoretic deposition of hydroxyapatite-titania nanocomposite based on a statistical approach, *Ceramics International* 38 (2012) 6753–6767.
7. H. Farnoush , D. H. Fatmehsari, A. Ekrami, The effect of pre-straining at intermediate temperatures on the mechanical behavior of high-bainite dual phase (HBDP) steels, *Materials Science and Engineering A* 543 (2012) 224–230.
8. H. Farnoush, D. H. Fatmehsari, J. Aghazadeh Mohandesi, H. Abdoli, Evaluation of strengthening behavior of Al-AlN nanostructured composite by the use of modified Heckel model and response surface methodology, *Journal of Alloys and Compounds* 517 (2012) 45–53.
9. H. Abdoli, H. Farnoush, H. Asgharzadeh, S.K. Sadrnezhad, Effect of high-energy ball-milling on compressibility of a nanostructured composite powder, *Powder Metallurgy* 54 (2011) 24–29.
10. H. Farnoush, A. Momeni, K. Dehghani, J. Aghazadeh Mohandesi, H. Keshmiri , Hot deformation characteristics of 2205 duplex stainless steel based on the behavior of constituent phases, *Materials and Design* 31 (2010) 220–226.

11. H. Abdoli, H. Farnoush, E. Salahi, K. Pourazrang, Study of the densification of a nanostructured composite powder, Part I: effect of compaction pressure and reinforcement addition, *Materials Science and Engineering A* 486 (2008) 580–584.
12. H. Abdoli, E. Salahi, H. Farnoush, K. Pourazrang, Evolutions during synthesis of Al-AlN nanostructured composite powder by mechanical alloying, *Journal of Alloys and Compounds* 461 (2008) 166–172.

### **Conference Publications:**

Surface Modification of CP-Ti Substrate by Combining Micro-arc Oxidation and Electrophoretic Deposition, 9<sup>th</sup> Coatings Science International, 24-28 June 2013, Netherlands.

Corrosion Behavior of the Sol-gel Derived Nano-hydroxyapatite Film on the Modified Titanium Substrate, 14<sup>th</sup> National Corrosion Congress, 14-16 May 2013, University of Tehran, Iran.

Fabrication of Ti–CaP Nanocomposite Layer by Friction Stir Processing, 11<sup>th</sup> Condensed Matter Physics Conference of Iran, 7-8 January 2013, Shahroud University of Technology, Iran.

Electrophoretic Deposition of Hydroxyapatite-Titania Nanocomposites on Ti-6Al-4V Substrates, 4<sup>th</sup> International Congress on Nanoscience and Nanotechnology, 8-10 September 2012, University of Kashan, Iran.

Biomimetic Synthesis of Nano-hydroxyapatite Coatings on Friction Stir Processed Ti-6Al-4V substrates, 4<sup>th</sup> International Congress on Nanoscience and Nanotechnology, 8-10 September 2012, University of Kashan, Iran.

An Oxidation Kinetic Model for AlN Nanopowders, 7<sup>th</sup> Iranian Ceramic Congress, 28-29 April 2009, University of Shiraz, Iran.

Thermokinetic Study on Oxidation Behavior of Aluminum Nitride Powders, First National Congress of Refractory, 14-15 April 2009, Materials & Energy Research Center (MERC), Iran.

### **Patents:**

Fabrication of Ti-CaP Nanocomposite by Friction Stir Processing, National Patent, ID: 13915014000302943, 2013.

Fabrication of Titania-Hydroxyapatite Nanocomposite by Friction Stir Processing, National Patent, ID: 13915014000305919, 2013.