

Reza Taherian

(Assistant Professor) Material Science & Engineering group, Faculty of Chemical and Materials Engineering, Shahrood University of Technology, Shahrood, Iran

Tel: +98-32392205, Post code:

✓ 3619995161

Email: rezataherian@gmail.com

rezataherian@shahroodut.ac.ir

EDUCATION

Doctor of Philosophy: Material Engineering in Shiraz University, Shiraz (2006-2011)

Thesis title: Manufacturing and modeling of polymer based nanocomposite bipolar plates in order to utilize in PEM fuel cells, supervisors M.J.Hadianfard, Ahmad Nozad

Master of Engineering: Material Engineering in Isfahan University of Technology, Isfahan (2002-2004) **Thesis title:** Investigation in thermomechanical behavior of NiCrMoV steel and hot-radial- forging simulation by dilatometry-deformation apparatus, *supervisor A.Najafzadeh*

Bachelor of Engineering: Material Engineering in Iran University of Science and Technology (1998-2003) **Thesis title:** manufacture of Al/Cu bimetals by cold roll welding method, *supervisor H.Arab and m.Tamizifar*

Language: fluent in English

RESEARCH INTERESTS

Composites

-Manufacture of polymer based nanocomposites reinforced by carbon allotropies such as graphene, carbon nanotube, and carbon fibers and investigation on the electrical, gas permeability, and mechanical properties

-Investigation on conductive adhesives and study on stability, homogeneity, electrical conductivity, and durability of solvent-based polymers and water-based polymer containing conductive fillers such as carbon, silver and copper

- Investigation on shape and surface morphology of fillers used for conductive adhesives - production methods of nanowires of Ag and copper to enhance electrical conductivity of conductive adhesives.

PEM Fuel Cell

-manufacture of nanocomposite bipolar plates for PEM fuel cell

-Investigation of properties of composite bipolar plates (mechanical strength, electrical and thermal conductivity, gas permeability, interfacial contact resistance with DL)

- Gas diffusion layer properties (study on void fraction of GDL under the deformation), and similar topics

- Hydrogen storage methods, hydrogen storage materials, attribution for automotive applications and techniques for materials discovery among carbon nanotube, metallic hydrides, Intermetallic compounds, magnesium alloy-graphite composites,....

JOURNAL REVIEWER

- Journal of Power Source
 - International Journal of Hydrogen Energy
 - Composites Part A: Applied Science and Manufacturing
 - Iranian Polymer Journal
 - Polymer Composite
 - Journal of Materials Processing of technology
 - Applied Polymer
-

LECTURES

Work shopping on “Nanotechnology application”, Damghan University, Iran, 2012

Description: definition of nanotechnology and Nanomaterials, Methods of making the nanomaterial, Methods for nanomaterials synthesis, Methods for nanomaterials characterization

TEACHING EXPERIENCE

1) 1 year experience on teaching the following courses in Shahrood University of technology:

material science, the industrial metals and alloys, forming of the ceramics.

2) 10 years of experience on teaching the following courses In Azad University of Shahrood University: mechanical properties of materials, physical metallurgy of materials, surface coating on metals, advanced formability of ceramics, errors in determining, material analyses, material science, nonferrous metals

3) A project in collaboration with the Institute of Science and Technology, Iran, 2006

ADMINISTRATIVE ACTIVITIES

- 1) Managing Director of company established in Science and Technology Park with title of “Energy Gostar Pilvaran” that is active in the field of renewable energies, hydrogen and fuel cell 2008 up to now
 - 2) Working in R&D of Petroleum Refinery Complex, Iran, 2005-2006
 - 3) An agreement project on “Material selection for corrosion resistant metals”, Petroleum Refinery Complex, Iran, 2005
 - 4) Project executive at Isfahan Alloy Steel Complex titled “ thermomechanical behavior of special steel 1.6959” Iran, 2002-2004
 - 5) Project executive at Alda casting company titled “manufacture of Al/Cu bimetals by using cold roll welding method”, Iran, 1998
-

RESEARCH ASSISTANT

- 1) Conducting two undergraduate students in the project of “study on thermodynamic properties of metals” 2002-2004
 - 2) Conducting a graduate student in the project of “ thermodynamic properties of a ultra- high strength metal in a national research project” 2002-2005
 - 3) Conducting four undergraduate students in project of “manufacture and the physical and mechanical properties of polymer composites containing carbon nanotubes and carbon fibers” (2006-2011)
 - 4) Conducting a graduate student in project of “manufacture of nano asphalt by using nano-materials such as nano silica” 2007
-

ACADEMIC HONORS

- 1) Establishment of a Patent on manufacturing of a low cost, light, novel sandwich nanocomposite manufactured by carbon cloth and polymer-based composite in order to utilize in bipolar plates of PEMFC, Iran, 2011
- 2) Establishment of a Patent on finding a solution for etching 1.6959 and drawing CCCT curves, Iran, 2004
- 3) Entrepreneurship Award in making PEM fuel cell containing nanocomposite plates, Iran, 2008

PUBLICATIONS

Published Book

Reza Taherian, Ayesha Kausar, "**Electrical Conductivity in Polymer-Based Composites: Experiments, Modelling, and Applications**", Elsevier, William Andrew, *PlasticsDesignLibrary*, 432 pages, 2018.

Journal papers

1. Reza Taherian, Mohammad Matboo Ghorbani, Seyed Rahim Kiahosseini, "**A new method for optimal fabrication of carbon composite paper as gas diffusion layer used in proton exchange membrane of fuel cells**" *Journal of Electroanalytical Chemistry*, 2018
2. R. Taherian, M.M.Ghorbani, "**Investigation of the Electrical Properties of Polymer/Carbon Composites Exposed to Joule Heating and Heat Treatment**", *ECS Journal of Solid State Science and Technology*, 6 (6) M1-M9, 2017
3. A.Soleymani, R.Taherian, S.Manafi, "**The Effects of Co-Mn-Ti and Zn-Mg-Ti Substitutions on the Structural, Magnetic and Physical Properties of Barium Hexaferrites Synthesized by the Co-precipitation Method**", IEEE Magnetics Letters, Accepted, (IF=2), 2016.
4. Reza Taherian, **Experimental and Analytical Model for the Electrical Conductivity of Polymer-Based Nanocomposites**, *Journal of composite Science of Technology* (IF=4), published in December 2105
5. Reza Taherian, **A review of composite and metallic bipolar plates in proton exchange membrane fuel cell: Materials, fabrication, and material selection**, *J of Power Source* (IF=6), 265, 1 November 2014, Pages 370–390
6. Reza.Taherian and Mohammad Nasr, **Performance and material selection of nanocomposite bipolar plate in proton exchange membrane fuel cells**, *Int. J of Energy Research* (IF=2.5)(2013).
7. Reza Taherian, Mohammad Jaffar Hadianfard, Ahmad Nozad Golikand, "**Manufacture of a polymer-based carbon nanocomposite as bipolar plate of proton exchange membrane fuel cells**", *Materials and Design* 49 (2013) 242–251
8. Reza Taherian, Ahmad Nozad Golikand, Mohammad Jaffar Hadianfard, "**Preparation and Properties of a Novel Phenolic/Graphite Nanocomposite Bipolar Plate for Proton Exchange Membrane Fuel Cell**", *ECS Journal of Solid State Science and Technology*, 1 (2012) M39-M46
9. Reza Taherian, Ahmad Nozad Golikand, Mohammad Jaffar Hadianfard, "**A new equation for predicting electrical conductivity of carbon-filled polymer composites used for bipolar plates of fuel cells**", *Appl.Polymer Science*, 128 (2012), 1497-1509.
10. Reza Taherian, Ahmad Nozad Golikand, Mohammad Jaffar Hadianfard, "**the effect of mold pressing pressure and composition on properties of nanocomposite bipolar plate for proton exchange membrane fuel cell**" *Journal of Material & design*, 32(2011), 3883–3892.
11. Reza Taherian, Mozghan Moradzaman, Mohammad Jaffar Hadianfard, Ahmad Nozad Golikand, "**The Optimization of Ball Milling Method in Preparation of Phenolic/Functionalized Multi-Wall Carbon Nanotube Composite and Comparison with Wet Method**" *International Journal of Engineering Research in Africa* Vol.5, , 16-29, 2011.
12. Reza Taherian, **Development of an Equation to Model Electrical Conductivity of Polymer-Based Carbon Nanocomposites**, *ECS Journal of Solid State Science and Technology*, 3 (6) M26-M38 (2014)

13. R. Taherian, R. Shateri, Abbas Najafizadeh, "**Drawing of CCCT diagrams by static deformation and consideration deformation effect on martensite and bainite transformation in NiCrMoV steel**, Journal of Material processing of Technology, 2008.
14. R.Taherian, A. Najafizadeh, M. Shamanian and R. Shateri "**Drawing of CCCT Diagrams and Investigation of the Deformation Effects on Martensite and Bainite Transformations in NiCrMoV steel**" Esteghlal, Journal of Engineering, I.U.T., vol. No. 1, 25, pp. 149-165, 2006.
- 15- M.Mohammadi, M.Goodarzi, R. Taherian," **consideration of electrical and corrososion properties of TiN-coated titanium based bipolar plate of PEMFC by sputtering method**", Science and cetamic engineering, 2019.
16. S.Manafi, R.Taherian, Farahbakhsh, "**Microstructure and properties of nanocomposite of Al₂O₃/CNT by SPS method**" Nanomaterials, 2015.

Conference Paper

1. R. Taherian, et al., "**Gas permeability and electrical conductivity properties of a novel gas diffusion layer of PEM fuel cells**, 17th Fluid dynamics conference, Shahrood University, 27-29 August, 2017
2. F. Hoseini, R. Taherian, A. Atashi, M. Manoochehri, "**Investigating the Function and Microstructural Properties of Fibrin adhesive as a Type of Natural Adhesive and a Blood Bonder**", The 3th International Conference on Modern Finding in Sciences and Technology, Qhom, 1395
3. F. Hoseini, R. Taherian, A. Atashi, M. Manoochehri, "**Study and microstructural properties of polyvinyl alcohol/fibrin nanocomposite**, The 3th International Conference on Modern Finding in Sciences and Technology, Qhom, 1395
4. R.Taherian, M.Jaffar Hadianfard, A.Nozaad Golikand, "**Manufacture and Characterization of Sandwiched Polymer Nanocomposite for Using in Bipolar Plate of PEMFC**" The 2nd Conference on Hydrogen and Fuel Cell, K. N. Toosi University of Technology, 2012.
5. R. Taherian, M. Jaffar Hadianfard, A. Nozaad, A. R. Gholami, "**Comparison of Weight, Cost and Durability of Composite Bipolar Plate with Graphitic and Metallic Bipolar Plates in PEMFC**", The 2nd Conference on Hydrogen and Fuel Cell, K. N. Toosi University of Technology, 2012.
6. R. Taherian, G. Karimi, A. Gholami, M.J. Hadianfard, A. Nozaad Golikand, "**The Effect of Ohmic Resistances and Clamping Pressure on the Performance of Proton Exchange Membrane Fuel Cell**", The 2nd Conference on Hydrogen and Fuel Cell, K. N. Toosi University of Technology, 2012.
7. R.Taherian, A.R. Gholami, G.R.Karimi, M.J.Hadianfard, A.Nozaad Golikand, "**The Effect of Ohmic Resistances and Clamping Pressure on the Performance of Proton Exchange Membrane Fuel Cell**", The 7th International Chemical Engineering Congress and Exhibition (IChEC 2011), Kish Iland, Iran, 2011.
8. R.Taherian, H.Hamedinia, M.J. Hadianfard, A.Nozaad Golikand, "**manufacture and properties of polymer based nanocomposite to be used in bipolar plate of PEMFC**", 5th Joint Conference of Iranian Metallurgical Engineers Society and Iranian Foundry men's Society, Isfahan, Iran, 2011.
9. R. Taherian, Mozghan Moradzaman, Mohammad Jaffar Hadianfard, Ahmad Nozaad Golikand, "**Investigation of effect of ball milling and functionalizing on electrical, thermal and Mechanical properties of phenolic resin/MWCNT composite**" The 2nd International Conference on Composites:Characterization, Fabrication and Application Dec. 27-30, 2010, Kish Island, Iran.
10. R. Taherian, A. Najafizadeh and R. Shateri, "Simulation of Radial Forging by Triple Hot Compression Tests" 83 Steel Symposium, Organized by Iron and Steel Society of Iran, pp. 345-365, 1-2 March 2005, Yazd, Iran;1-5.
11. R. Taherian, A. Najafizadeh and R. Shateri, "**Study of Phase Transformation Behavior Between Deformed and Undeformed NiCrMoV Steel by Comparison Between CCCT and CCT Diagrams**" 83 Steel Symposium, Organized by Iron and Steel Society of Iran, pp. 412-421, 1-2 March 2005, Yazd, Iran;

12. R. Taherian, A. Najafizadeh and R. Shateri, "**Prediction of Flow Stress of NiCrMoV Steel Under Hot Compression Tests by Neural Network**" 83 Steel Symposium, Organized by Iron and Steel Society of Iran, pp.722-731, 1-2 March 2005, Yazd, Iran