

## **RESUME**

1. Name Surname: ZAFER EVİS
2. Title: Prof. Dr.

## **EDUCATION**

- 1- Ph.D Engineering Science, December 2003-Rensselaer Polytechnic Institute, Troy, NY
- 2- M.S. Materials Engineering, December 1999-Rensselaer Polytechnic Institute, Troy, NY
- 3- B.S. Metallurgical and Materials Engineering, July 1996-Middle East Technical University, Ankara, Turkey

## **RESEARCH FIELDS**

Nanophase ceramics; Biomaterials: bone implants, magnesium alloys; Bone: aging, bone mineral.

## **ACADEMIC EXPERIENCE**

- 1- Middle East Technical University, Ankara, Turkey  
Prof. Dr., Department of Engineering Sciences, (04/15 – present)
- 2- Middle East Technical University, Ankara, Turkey  
Assoc. Prof. Dr., Department of Engineering Sciences, (06/09 – 04/15)
- 3- Middle East Technical University, Ankara, Turkey  
Assist. Prof. Dr., Department of Engineering Sciences, (9/05 - 06/09)
- 4- Middle East Technical University, Ankara, Turkey  
Instructor Dr., Department of Engineering Sciences, (11/04 - 9/05)
- 5- Rensselaer Polytechnic Institute, Troy, NY  
Post-Doctoral Research Associate, Department of Biomedical Engineering, (01/04-06/04)
- 6- Rensselaer Polytechnic Institute, Troy, NY  
Teaching / Research Assistant, Department of Materials Science and Engineering (08/99-12/03)

## **REVIEWER FOR THE JOURNALS**

Acta Biomaterialia, Advances in Nano Research An International Journal, Arabian Journal of Chemistry, Biomedical Materials, Ceramics International, Chemical Engineering Journal, Current Organic Chemistry, Engineering Science and Technology: An International Journal, High Temperature Materials, Indian Journal of Engineering & Sciences, International Journal of Applied Ceramic Technology, International Journal of Modern Physics B, International Journal of Nano and Biomaterials, Ionics, Journal of Adhesion, Journal of Alloys and Compounds, Journal of Applied Crystallography, Journal of the American Ceramic Society, Journal of Biomaterials Applications, Journal of Biomedical Materials Research A, Journal of Fluorine Chemistry, Journal of Inorganic Materials, Journal of Spectroscopy, Journal of Thermal Analysis and Calorimetry, Journal of the American Ceramic Society, Journal of

the European Ceramic Society, Journal of the Faculty of Engineering and Architecture of Gazi University, Materials and Design, Materials Chemistry and Physics, Materials Research Bulletin, Materials Science & Engineering B, Materials Science & Engineering C, Modern Physics Letters B, Ömer Halisdemir University Engineering Sciences Journal, Powder Technology, Processing and Application of Ceramics, Progress in Natural Science: Materials International, Scientific Reports, Solid State Sciences, Trakya University Journal of Natural Sciences, Surface Review and Letters

## **PUBLICATIONS JOURNAL ARTICLES**

- 1- Z. Evis, R.H. Doremus, "Coatings of hydroxyapatite – nanosize alpha alumina composites on Ti-6Al-4V", *Materials Letters*, 59, 3824-3827 (2005).
- 2- Z. Evis, C. Ergun, R.H. Doremus, "Hydroxylapatite-zirconia composites: Thermal stability of phases and sinterability as related to the CaO-ZrO<sub>2</sub> phase diagram", *Journal of Materials Science*, 40-5, 1127-1134 (2005).
- 3- Z. Evis, "Al<sup>3+</sup> doped nano-hydroxyapatites and their sintering characteristics", *Journal of the Ceramic Society of Japan*, 114, 1001-1004 (2006).
- 4- Z. Evis, M. Sato, T. J. Webster, "Increased osteoblast adhesion on nanograined hydroxyapatite and partially stabilized zirconia composites" *Journal of Biomedical Materials Research Part A*, 78A, 500-507 (2006).
- 5- Z. Evis, "Reactions in hydroxylapatite-zirconia composites", *Ceramics International*, 33, 987-991 (2007).
- 6- Z. Evis, R.H. Doremus, "Hot pressed hydroxylapatite / monoclinic zirconia composites with improved mechanical properties", *Journal of Materials Science*, 42, 2426-2431 (2007).
- 7- E. Zafer, R.H. Doremus, "Effect of MgF<sub>2</sub> on hot pressed hydroxylapatite - monoclinic zirconia composites", *Journal of Materials Science*, 42, 3739-3744 (2007).
- 8- M. Bayrak, F. Ozturk, M. Demirezen, Z. Evis, "Analysis of tempering treatment on material properties of DIN 41Cr4 and DIN 42CrMo4 Steels", *Journal of Materials Engineering and Performance*, 16, 597-600 (2007).
- 9- Z. Evis, R.H. Doremus, "Effect of YF<sub>3</sub> on hot-pressed hydroxyapatite and monoclinic zirconia composites", *Materials Chemistry and Physics*, 105, 76-79 (2007).
- 10- Z. Evis, R.H. Doremus, "Effect of ZrF<sub>4</sub> on hot-pressed hydroxyapatite/monoclinic zirconia composites", *Scripta Materialia*, 56, 53-56 (2007).
- 11- Z. Evis, R.H. Doremus, "A study of phase stability and mechanical properties of hydroxylapatite-nanosize  $\alpha$ - alumina composites", *Materials Science and Engineering C, Materials for Biological Applications*, 27, 421- 425 (2007).
- 12- Z. Evis, F. Ozturk, "Investigation of tensile strength of hydroxyapatite with

- various porosities by diametral strength test”, *Materials Science and Technology*, 24, 474-478 (2008).
- 13-Z. Evis, M. Usta, I. Kutbay, “Hydroxyapatite and zirconia composites: Effect of MgO and MgF<sub>2</sub> on the stability of phases and sinterability”, *Materials Chemistry and Physics*, 110, 68-75 (2008).
- 14-Z. Evis, R.H. Doremus, “Effect of AlF<sub>3</sub>, CaF<sub>2</sub> and MgF<sub>2</sub> on hot-pressed hydroxyapatite–nanophase alpha- alumina composites”, *Materials Research Bulletin*, 43, 2643-2651 (2008).
- 15-Z. Evis, “Cu<sup>2+</sup> eklenmiş hidroksiapatitlerin yüksek sıcaklıkta sinterlenmesi ve iç yapı incelemesi”, *Gazi Üniversitesi Mühendislik - Mimarlık Fakültesi Dergisi*, 4, 569-573, (2009), (In Turkish).
- 16-Z. Evis, M. Usta, I. Kutbay, “Improvement in sinterability and phase stability of hydroxyapatite and partially stabilized zirconia composites”, *Journal of the European Ceramic Society*, 29, 621-628 (2009).
- 17-B. Basar, Z. Evis, “Structural investigation of nano hydroxyapatite doped with Y<sup>3+</sup> and F<sup>-</sup> ions”, *Materials Science and Technology*, 25, 794-798 (2009).
- 18-Z. Evis, “Microstructural investigation of Cu<sup>2+</sup> doped nano - hydroxyapatites”, *Materials Science and Technology*, 26, 630-632 (2010).
- 19-Z. Evis, “Zirkonya ilave edilmiş hidroksiapatitlerin yoğunluk ve iç yapı incelemeleri”, *International Journal of Engineering Research & Development*, 2, 48-51, (2010), (In Turkish).
- 20-B. Basar, A. Tezcaner, D. Keskin, Z. Evis, “Improvements in microstructural, mechanical, and biocompatibility properties of nano-sized hydroxyapatites doped with yttrium and fluoride”, *Ceramics International*, 36, 1633- 1643 (2010).
- 21-U. Kockan, Z. Evis, “Prediction of hexagonal lattice parameters of various apatites by artificial neural networks”, *Journal of Applied Crystallography*, 43, 769-779 (2010).
- 22-Z. P. Sun, B. Ercan, Z. Evis, T. J. Webster, “Structural, mechanical and osteocompatibility properties of Mg<sup>2+</sup>/F<sup>-</sup> doped nanophase hydroxyapatite”, *Journal of Biomedical Materials Research Part A*, 94A, 806-815 (2010).
- 23-Z. Evis, B. Basar, Z.P. Sun, “Diametral strength testing of hydroxyapatites doped with yttrium and fluoride”, *Advances in Applied Ceramics: Structural, Functional and Bioceramics*, 109, 383-388, (2010).
- 24-Z. Evis, Z.P. Sun, “Structural and mechanical investigations of magnesium and fluoride doped nanosize calcium phosphates”, *Journal of Ceramic Processing Research*, 11, 701-715, (2010).
- 25-C. Ergun, Z. Evis, T.J. Webster, F. Cinar Sahin, “Synthesis and microstructural characterization of nano-size calcium phosphates with different stoichiometry”, *Ceramics International*, 37, 971-977, (2011).

- 26-S.M. Toker, A. Tezcaner, Z. Evis, "Microstructure, microhardness, and biocompatibility characteristics of yttrium hydroxyapatite doped with fluoride", *Journal of Biomedical Materials Research Part B: Applied Biomaterials*, 96B, 207-217, (2011).
- 27-Z. Evis, "Çeşitli iyonlar eklenmiş nano- hidroksiapatitler: Üretim yöntemleri, iç yapı, mekanik ve biyouyumluluk özellikleri yönlerinden incelenmesi", *International Journal of Engineering Research & Development*, 3, 55-61, (2011), (In Turkish).
- 28-Z. Evis, E. Arcaklioglu, "Artificial neural network investigation of hardness and fracture toughness of hydroxylapatite", *Ceramics International*, 37, 1147-1152, (2011).
- 29-B. Basar, A. Tezcaner, D. Keskin, Z. Evis, "Synthesis, phase transitions and cellular biocompatibility of nanophase alumina -hydroxyapatite composites", *Advances in Applied Ceramics: Structural, Functional and Bioceramics*, 110, 238-243, (2011).
- 30-Z. Evis, T.J. Webster, "Nanosize hydroxyapatite: doping with various ions", *Advances in Applied Ceramics: Structural, Functional and Bioceramics*, 110-5, 311-320 (2011).
- 31-Z. Evis, B. Yilmaz, M. Usta, S.L. Aktug, "X-ray investigation of sintered cadmium doped hydroxyapatites", *Ceramics International*, 39, 2359-2363, (2013) (SCI).
- 32-I. Uysal, F. Severcan, Z. Evis, "Structural and mechanical characteristics of nano-hydroxyapatite doped with zinc and chloride", *Advances in Applied Ceramics: Structural, Functional and Bioceramics*, 112, 149-157, (2013).
- 33-F. Ozturk, R.E. Ece, N. Polat, A. Koksall, Z. Evis, A. Polat, Mechanical and microstructural evaluations of hot formed titanium sheets by electrical resistance heating process, *Materials Science and Engineering A*, 578 (2013) 207-214.
- 34-I. Uysal, F. Severcan, Z. Evis, "Characterization by Fourier transform infrared spectroscopy of hydroxyapatite co-doped with zinc and fluoride", *Ceramics International*, 39, 7727-7733, (2013).
- 35-A. Aykul, I. Kutbay, Z. Evis, M. Usta, "Effect of YF<sub>3</sub> on the phase stability and sinterability of hydroxyapatite - partially stabilized zirconia composites", *Ceramics International*, 39, 7869-7877, (2013).
- 36-M.B. Turkoz, A.O. Atilla, Z. Evis, "Silver and fluoride doped hydroxyapatites: Investigation by microstructure, mechanical and antibacterial properties", *Ceramics International*, 39, 8925-8931, (2013).
- 37-A. Tahmasebifar, Z. Evis, "Structural and mechanical investigation of hydroxyapatite and tri-calcium phosphates doped with Al<sup>3+</sup> and F<sup>-</sup> ions", *Journal of Ceramic Processing Research*, 14, 549-556, (2013).
- 38-B. Yilmaz, Z. Evis, "Raman spectroscopy investigation of nano hydroxyapatite doped with yttrium and fluoride ions ", *Spectroscopy Letters*, 47, 24-29 (2014).

- 39-B. Yilmaz, Z. Evis, M. Gultiken, "Biomimetic calcium phosphate coating of titanium alloy in 1.5xSBF", *Journal of the Faculty of Engineering and Architecture of Gazi University*, 29, 105-109 (2014).
- 40-U. Kockan, F. Ozturk, Z. Evis, "Artificial neural networks prediction of hexagonal lattice parameters for non- stoichiometric apatites", *Materiali in Tehnologije / Materials and Technology*, 48, 73-79 (2014).
- 41-I. Uysal, F. Severcan, A. Tezcaner, Z. Evis, "Co-doping of hydroxyapatite with zinc and fluoride improves mechanical and biological properties of hydroxyapatite", *Progress in Natural Science: Materials International*, 24, 340-349, (2014).
- 42-I. Kutbay, B. Yilmaz, Z. Evis, M. Usta, "Effect of calcium fluoride on mechanical behavior and sinterability of nano hydroxyapatite and titania composites", *Ceramics International*, 40, 9B, 14817-14826, (2014).
- 43-A. Tahmasebifar, S. Güngör, Z. Evis, "Flor iyonları ilave edilmiş Nano-Kalsiyum fosfatların mikroyapısının araştırılması", *Journal of the Faculty of Engineering and Architecture of Gazi University*, 30, 1-7, (2015).
- 44-U.T. Kalyoncuoglu, B. Yilmaz, S. Gungor, Z. Evis, P. Uyar, G. Akca, G. Kansu, "Evaluation of chitosan coating effectiveness on dental titanium alloy in terms of microbial and fibroblastic attachment and effect of aging", *Materiali in Tehnologije / Materials and Technology*, 49, 925-931, (2015).
- 45-A.A. Poundarik, P.-C. Wu, Z. Evis, G.E. Sroga, A. Ural, M. Rubin, D. Vashishth, A direct role of collagen glycation in bone fracture, *Journal of the Mechanical Behavior of Biomedical Materials*, 50 82-92, (2015).
- 46-J.Y. Sheikh-Ahmad, F. Ozturk, F. Jarrar, Z. Evis, Thermal history and microstructure during friction stir welding of Al-Mg alloy, *The International Journal of Advanced Manufacturing Technology*, 86, 1071-1081, (2016).
- 47-S.M. Kayhan, A. Tahmasebifar, M. Koç, Y. Usta, A. Tezcaner, Z. Evis, Experimental and numerical investigations for mechanical and microstructural characterization of micro-manufactured AZ91D magnesium alloy discs for biomedical applications, *Materials & Design*, 93, 397-408, (2016).
- 48-A. Tahmasebifar, S.M. Kayhan, Z. Evis, A. Tezcaner, H. Çinici, M. Koç, Mechanical, electrochemical and biocompatibility evaluation of AZ91D magnesium alloy as a biomaterial, *Journal of Alloys and Compounds*, 687, 906-919, (2016).
- 49-F. Ozturk, R.E. Ece, N. Polat, A. Koksall, Z. Evis, J.Y. Sheikh-Ahmad, Application of electric resistance heating method on titanium hot forming at industrial scale, *Arabian Journal for Science and Engineering*, 41, 4441-4448, (2016).
- 50-A.Z. Alshemary, A.E. Pazarceviren, A. Tezcaner, Z. Evis, Mesoporous strontium doped nano sized sulphate hydroxyapatite as novel biomaterial for bone tissue applications, *RCS Advances*, 6, 68058-68071,(2016).
- 51-B. Yilmaz, Z. Evis, Boron-substituted bioceramics: A review, *Bor Dergisi - Journal of Boron*, 1, 6-14, (2016).
- 52-S. Khoshsima, B. Yilmaz, A. Tezcaner, Z. Evis, Structural, mechanical and

biological properties of hydroxyapatite-zirconia-lanthanum oxide composites, *Ceramics International*, 42, 15773-15779, (2016).

53-B. Yilmaz, Z. Evis, A. Tezcaner, S. Banerjee, Surface characterization and biocompatibility of selenium- doped hydroxyapatite coating on titanium alloy, *International Journal of Applied Ceramic Technology*. 13, 1059-1068, (2016).

54-O. Bozkurt, M. Dincer Bilgin, Z. Evis, N. Pleshko, F. Severcan, Early alterations in bone characteristics of type I diabetic rat femur: A Fourier transform infrared (FT-IR) imaging study, *Applied Spectroscopy* 70(12), 2005-2015, (2016).