Assist. Prof. Dr. ERSIN EMRE OREN

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EDUCATION

Ph. D., Metallurgical & Materials Engineering Department, Middle East Technical University, Ankara, TURKEY, Graduated January 2003, (*Magna Cum Laude*)
Mentor: Prof. Dr. Tarık Ömer Oğurtanı.

M. Sc., Metallurgical & Materials Engineering Department, Middle East Technical University, Ankara, TURKEY, Graduated September 2000, (*Cum Laude*)
Mentor: Prof. Dr. Tarık Ömer Oğurtanı.

B. Sc. Major Program, Metallurgical & Materials Engineering Department, Middle East Technical University, Ankara, TURKEY, Graduated June 1997.

B. Sc. Minor Program, Solid State Physics in the Department of Physics, Middle East Technical University, Ankara, TURKEY, Graduated June 1997.

ADMINISTRATIVE APPOINTMENTS

2020 – Present **Committee Member** Modeling and Simulation Technical Committee (TC 10) of the IEEE Nanotechnology Council.

2012 – Present **Associate Chair** Department of Biomedical Engineering, TOBB University of Economics and Technology, Ankara, TURKEY

PROFESSIONAL EXPERIENCE

2012 – Present **Adjunct Assistant Professor** Department of Materials Science and Nanotechnology Engineering, TOBB University of Economics and Technology, Ankara, TURKEY

2011 – Present **Assistant Professor** Department of Biomedical Engineering, TOBB University of Economics and Technology, Ankara, TURKEY

2011 – 2011 **Visiting Professor** Department of Electrical Engineering, University of Washington, Seattle, WA, USA

2008 – 2010 **Acting Instructor** Genetically Engineered Materials Science and Engineering Center, GEMSEC, NSF/UW-MRSEC Materials Science and Engineering Department, University of Washington, Seattle, WA, USA

2006 – 2007 **Postdoctoral Fellow** Computational Biology Group, Department of Microbiology, and Genetically Engineered Materials Science and Engineering Center, GEMSEC, NSF/UW-MRSEC Materials Science and Engineering Department, University of Washington, Seattle, WA, USA

2003 – 2005 **Postdoctoral Fellow** Materials Science and Engineering Department, University of Washington, Seattle, WA, USA

1997 – 2003 **Research Assistant** Metallurgical and Materials Engineering Department, Middle East Technical University (METU), Ankara, TURKEY

2001 – 2001 **Visiting Scientist** Max-Planck-Institut für Metallforschung, Seestrasse 92, D-70174, Stuttgart, GERMANY

1996 – 1997 **Student Assistant** Metallurgical & Materials Engineering Department, Middle East Technical University, Ankara, TURKEY

AWARDS, FELLOWSHIPS & GRANTS

- ***TÜBA GEBİP, Outstanding Young Scientist Award, 2012****, the Turkish Academy of Sciences.*
- ***Research Incentive Award 2012***, METU Prof. Dr. Mustafa N. Parlar Education & Research Foundation.
- ***Postdoctoral Fellowship***, National Science Foundation (NSF) MRSEC Program through the University of Washington Genetically Engineered Materials Science and Engineering Center (DMR 0520567).
- ***Postdoctoral Fellowship***, Army Research Office (ARO) DURINT program through the University of Washington (DAAD19-01-1-04999).
- ***TCBG Computational Biophysics Workshop*** (20/107 applicants selected). An NIH-sponsored Workshop on Theoretical and Computational Biophysics, University of Illinois at Urbana Champaign, Chicago, IL, USA, June 9-13, 2005.
- ***TUBITAK-NATO-A2 Research Grant*** (to visit Max-Planck-Institut für Metallforschung, Stuttgart, GERMANY, 2001).
- ***Fulbright Conference Travel Grant*** (MRS 2001 Fall Meeting, Boston, MA, USA).
- ***The Best Thesis Award 2000***, Prof. Dr. Mustafa N. Parlar Education & Research Foundation, METU, Ankara, TURKEY.

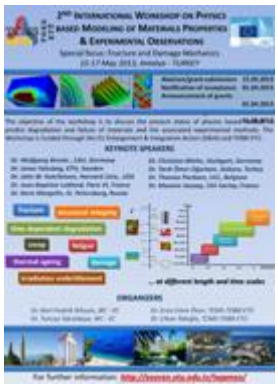
RESEARCH FUNDING

- **PI**, 05.01.2016-05.01.2018 ($ 100,000)
  TUBITAK 1001 Research Projects No. 315M222: Quantum dot formation models in crystalline solids under the simultaneous action of electric and strain fields.
- **Co-PI**, 01.01.2017-Ongoing ($ 100,000)
  TUBITAK 1005 National New Ideas and Products R&D Funding Program: Development of graphene-copper laminate heat spreaders. (PI: Göknur Cambaz Büke).
- **Co-PI**, 06.01.2014-06.01.2017 ($ 120,000)
  TUBITAK 1001 Research Projects No. 213M481: Synthesis of vertically aligned carbon nanostructures for potential use in Mikro/nano electronics applications. (PI: Göknur Cambaz Büke).
- **PI**, 11.01.2011-01.02.2014 ($ 100,000)
  TUBITAK 1001 Research Projects No. 111T343: Computer simulation of film/substrate interface (in)stabilities and development of quantum dots from heteroepitaxially strained anisotropic thin films on rigid substrates.
- **Co-PI**, 09.01.2007-09.01.2009 ($ 100,000)
  TUBITAK 1001 Research Projects No. 104M399: Computer simulation of electromigration-induced failure of metallic interconnects: special reference to the effects of diffusion anisotropy and thermal stresses on the evolution of surface morphology and cathode failure (PI: Tarik Omer Ogurtani).
- **Co-PI**, 07.01.2005-07.01.2007 ($ 110,000)
  TUBITAK 1001 Research Projects No. 107M011: Computer simulations of electromigration driven intragranular macro-voids and grain boundary grooves under the hydrostatic and biaxial stress systems in metallic thin film interconnects (PI: Tarik Omer Ogurtani).

CONFERENCES/WORKSHOPS ORGANIZED

- The 3rd BEYOND 2023: Computational Science, Mathematical Modeling and Engineering Conference, October 19-20, 2023, Ankara, Turkey,
- XXV International Materials Research Congress: Bionanodesign (IMRC 2016), August 14-19, 2016, Cancun/Mexica.
- 2nd International Workshop on Physics Based Modeling of Material Properties & Experimental Observations (IWPMEO II), May 15-17, 2013, Antalya/Turkey.
- 10th Chemical Physics Congress (CPC X), October 10-12, 2012, Ankara/Turkey.

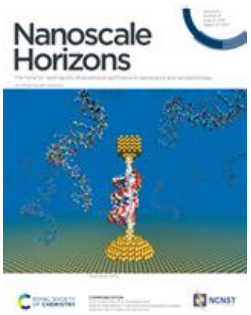
- Molecular Biomimetics & Bionanotechnology-IV: Protein-based Materials & Systems for Technology & Medicine, September 24-28, 2009, San Juan Islands, WA, USA.
- Molecular Biomimetics & Bionanotechnology-III: Protein-based Materials & Systems for Technology & Medicine, September 10-12, San Juan Islands, WA, USA.
- Molecular Biomimetics & Bionanotechnology-II: Protein-based Materials & Systems for Technology & Medicine, September 4-7, 2007, San Juan Islands, WA, USA.
- Molecular Biomimetics-I: Protein-based Materials for Technology & Medicine, September 6-8, 2006, San Juan Islands, WA, USA.

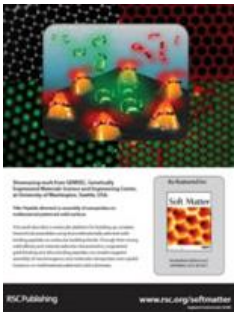
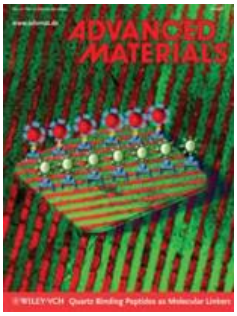



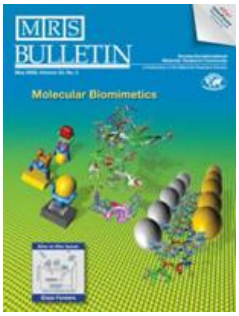

SCIENTIFIC PUBLICATIONS

As of December 2023: 56 listed: 42 articles, 7 proceedings, 5 meeting abstracts & 2 theses;

Science Citation Index:	*Total # of citations:* 1221,	*h-index:* **23**	
Google Scholars:	*Total # of citations:* 1790,	*h-index:* **24**	*h-10 index:* **30**





Journal Articles

1. L. Luo, S. Manda, Y. Park, B. Demir, J. Sanchez, M. P. Anantram, **E.E. Oren**, A. Gopinath & M. Rolandi. "DNA nanopores as artificial membrane channels for bioprotonics" *Nature Communications*, **14**, 5364 (2023). doi:10.1038/s41467-023-40870-1
2. Y. Wang, B. Demir, H. Mohammad, **E.E. Oren** & M. P. Anantram. "Computational study of the role of counterions and solvent dielectric in determining the conductance of b-DNA" *Physical Review E*, **107**, 044404 (2023). doi:10.1103/PhysRevE.107.044404
3. B. Demir, H. Mohammad, M. P. Anantram & **E.E. Oren**. "DNA - Au (111) interactions and transverse charge transport properties for DNA - based electronic devices" *Physical Chemistry Chemical Physics*, **25**, 16570-16577 (2023). doi:10.1039/D2CP05009A
4. M. Alangari, B. Demir, C. Akin Gultakti, **E.E. Oren** & J. Hihath. "Mapping DNA Conformations Using Single-Molecule Conductance Measurements" *Biomolecules*, **13(1)**, 129 (2023). doi:10.3390/biom13010129
5. T.O. Ogurtani, A. Celik & **E.E. Oren**. "Effects of anisotropic surface drift diffusion on the strained heteroepitaxial nanoislands subjected to electromigration stressing" *Journal of Applied Physics*, **131**, 075301 (2022). doi:10.1063/5.0067760

6. H. Mohammad, B. Demir, C. Akin, B. Luan, J. Hihath, **E.E. Oren** & M.P. Anantram "Role of intercalation in the electrical properties of nucleic acids for use in molecular electronics"*Nanoscale Horizons,* **6** (8), 651-660 (2021). doi:10.1039/D1NH00211B * Cover.
7. Y. Li, J.M. Artés, B. Demir, S. Gokce, H.M. Mohammad, M. Alangari, M.P. Anantram, **E.E. Oren** & J. Hihath "Detection and identification of genetic material via single-molecule conductance" *Nature Nanotechnology,* **13**, 1167-1173 (2018). doi:10.1038/s41565-018-0285-x
8. E. Kayali, E. Mercan, **E.E. Oren** & G.C. Buke "Few layer graphene synthesis via SiC decomposition at low temperature and low vacuum" *Journal of Physics D: Applied Physics*, **49**, 165301 (2016). doi:10.1088/0022-3727/49/16/165301
9. H. Yazici, M.B. O'Neill, T. Kacar, B.R. Wilson, **E.E. Oren**, M. Sarikaya & C. Tamerler "Engineered chimeric peptides as antimicrobial surface coating agents towards infection-free implants" *ACS Applied Materials & Interfaces,* **8**, 5070-5081 (2016). *doi:10.1021/acsami.5b03697*
10. H. Erdogan, E. Babur, M. Yilmaz, E. Candas, M. Goerdesel, Y. Dede, **E.E. Oren**, G. Demirel, M. Ozturk & G. Demirel "Morphological versatility in self-assembly of Val-Ala and Ala-Val dipeptides" *Langmuir,* **31**, 7337-7345 (2015). doi:10.1021/acs.langmuir.5b01406
11. T.O. Ogurtani, A. Celik & **E.E. Oren**. "Stranski-Krastanow islanding initiated on the stochastic rough surfaces of the epitaxially strained thin films" *Journal of Applied Physics,* **115**, 224307 (2014). doi:10.1063/1.4883295
12. H. Yazici, H. Fong, B. Wilson, **E.E. Oren**, F.A. Amos, H. Zhang, J.S. Evans, M.L. Snead, M. Sarikaya & C. Tamerler. "Biological response on a titanium implant-grade surface functionalized with modular peptides" *Acta Biomaterialia,* **9**, 5341-5352 (2013). doi:10.1016/j.actbio.2012.11.004
13. M. Gungormus, **E.E. Oren**, J.A. Horst, H. Fong, M. Hnilova, M.J. Somerman, M.L. Snead, R. Samudrala, C. Tamerler & M. Sarikaya. "Cementomimetics-constructing a cementum-like biomineralized microlayer via amelogenin-derived peptides" *International Journal of Oral Science,* **4**, 69-77 (2012). (Cover) doi:10.1038/ijos.2012.40
14. S. Cetinel, S. Dincer, A. Cebeci, **E.E. Oren**, J.D. Whitaker, D.T. Schwartz, N.G. Karaguler, M. Sarikaya & C. Tamerler. "Peptides to bridge biological-platinum materials interface" *Bioinspired, Biomimetic and Nanobiomaterials,* **1**, 143-153 (2012). doi:10.1680/bbn.12.00008
15. O. Akyildiz, **E.E. Oren** & T.O. Ogurtani. "Grain boundary grooving in bi-crystal thin films induced by surface drift-diffusion driven by capillary forces and applied uniaxial-tensile stresses" *Philosophical Magazine,* **92**, 804-829 (2012). doi:10.1080/14786435.2011.634850
16. M. Hnilova, C.R. So, **E.E. Oren**, B.R. Wilson, T. Kacar, C. Tamerler & M. Sarikaya. "Peptide-directed co-assembly of nanoprobes on multilateral patterned solid surfaces" *Soft Matter,* **8**, 4327-4334 (2012). (Inside Cover) doi:10.1039/C2SM06426J
17. M. Hnilova, D. Khatayevich, A. Carlson, **E.E. Oren**, C. Gresswell, S. Zheng, F. Ohuchi, M. Sarikaya & C. Tamerler. "Single-Step Fabrication of Patterned Gold Film Array by an Engineered Multi-Functional Peptide" *Journal of Colloid and Interface Science,* **365**, 97-102 (2012). doi:10.1016/j.jcis.2011.09.006
18. O. Akyildiz, **E.E. Oren** & T.O. Ogurtani. "Mesoscopic nonequilibrium thermodynamics treatment of the grain boundary thermal grooving induced by the anisotropic surface drift diffusion" *Journal of Materials Science,* **46**, 6054-6064 (2011). doi:10.1007/s10853-011-5567-8
19. **E.E. Oren**, R. Notman, I.W. Kim, J.S. Evans, T.R. Walsh, R. Samudrala, C. Tamerler & M. Sarikaya. "Probing the molecular mechanisms of quartz-binding peptides" *Langmuir,* **26**, 11003-11009 (2010). doi:10.1021/la100049s
20. T.O. Ogurtani, A. Celik & **E.E. Oren**. "Generic role of the anisotropic surface free energy on the morphological evolution in a strained-heteroepitaxial solid droplet on rigid substrates" *Journal of Applied Physics,* **108**, 103516 (2010). doi:10.1063/1.3512970
21. R. Notman, **E.E. Oren**, C. Tamerler, M. Sarikaya, R. Samudrala & T. R. Walsh. "Solution studies of strong and weak quartz-binding peptides using replica exchange molecular dynamics" *Biomacromolecules*, **11**, 3266-3274 (2010). doi:10.1021/bm100646z

22. T.O. Ogurtani, A. Celik & **E.E. Oren**. "Morphological evolution in a strained-heteroepitaxial solid droplet on a rigid substrate: Dynamical simulations" *Journal of Applied Physics*, **108**, 063527 (2010). doi:10.1063/1.3483937
    Editorially chosen to appear in the *Virtual Journal of Nanoscale Science & Technology* September 27, 2010.
23. A. Dezieck, O. Acton, K. Leong, **E.E. Oren**, H. Ma, C. Tamerler, M. Sarikaya & A.K.-Y. Jen. "Threshold voltage control in organic thin film transistors with dielectric layer modified by a genetically engineered polypeptide" *Applied Physics Letters*, **97**, 013307 (2010). doi:10.1063/1.3459978
24. C. Tamerler, D. Khatayevich, M. Gungormus, T. Kacar, **E.E. Oren**, M. Hnilova & M. Sarikaya. "Molecular biomimetics: Gepi-based biological routes to technology" *Biopolymers: Peptide Science*, **94**, 78-94 (2010). doi:10.1002/bip.21368
25. C.R. So, J.L. Kulp, **E.E. Oren**, H. Zareie, C. Tamerler, J.S. Evans & M. Sarikaya. "Molecular recognition and supramolecular self-assembly of a genetically engineered gold binding peptide on Au{111}" *ACS Nano*, **3**, 1525-1531 (2009). doi:10.1021/nn900171s
26. T. Kacar, J. Ray, M. Gungormus, **E.E. Oren**, C. Tamerler & M. Sarikaya. "Quartz binding peptides used as linkers for making multi-(bio)functional micro-patterned systems" *Advanced Materials*, **21**, 295-299 (2009). (Back Cover) doi:10.1002/adma.200801877
27. M. Hnilova, **E.E. Oren**, U.O.S. Seker, B. Wilson, S. Collino, J.S. Evans, C. Tamerler & M. Sarikaya. "Effect of molecular conformations on adsorption behavior of gold binding peptides" *Langmuir*, **24**, 12440-12445 (2008). doi:10.1021/la801468c
28. T.O. Ogurtani, O. Akyildiz & **E.E. Oren**. "Morphological evolution of tilted grain-boundary thermal grooving by surface diffusion in bicrystal thin solid films having strong anisotropic surface Gibbs free energy" *Journal of Applied Physics*, **104**, 013518 (2008). doi:10.1063/1.2952520
29. J.S. Evans, R. Samudrala, T. Walsh, **E.E. Oren** & C. Tamerler. "The molecular design of inorganic-binding polypeptides" *MRS Bulletin*, **33**, (5) 514-518 (2008). (Cover designed by EEO) doi:10.1557/mrs2008.103
30. **E.E. Oren**, C. Tamerler, D. Sahin, M. Hnilova, U.O.S. Seker, M. Sarikaya & R. Samudrala. "A novel knowledge-based approach to design inorganic-binding peptides" *Bioinformatics*, **23**, (21), 2816-2822 (2007). doi:10.1093/bioinformatics/btm436
31. T.O. Ogurtani, A. Celik & **E.E. Oren**. "Morphological evolution of edge-hillocks on single crystal films having anisotropic drift-diffusion under the capillary and electromigration forces" *Thin Solid Films*, **515** (5), 2974-2983 (2007). doi:10.1016/j.tsf.2006.08.020
32. U.O.S. Seker, B. Wilson, S. Dincer, I.W. Kim, **E.E. Oren**, J.S. Evans, C. Tamerler, & M. Sarikaya. "Adsorption behavior of linear and cyclic genetically engineered platinum binding peptides" *Langmuir*, **23**, 7895-7900 (2007). doi:10.1021/la700446g
33. C. Tamerler, M. Duman, **E.E. Oren**, M. Gungormus, X. Xiong, B.A. Parviz & M. Sarikaya. "Materials specificity and directed assembly of a gold binding peptide" *Small*, **2** (11), 1372-1378 (2006). doi:10.1002/smll.200600070
34. C. Tamerler, **E.E. Oren**, M. Duman, E. Venkatasubramanian & M. Sarikaya. "Adsorption kinetics of an engineered gold binding peptide by surface plasmon resonance spectroscopy and a quartz crystal microbalance" *Langmuir*, **22**, 7712-7718 (2006). doi:10.1021/la0606897
35. **E.E. Oren**, C. Tamerler & M. Sarikaya. "Metal recognition of septapeptides via polypod molecular architecture" *Nano Letters*, **5** (3), 415-419 (2005). doi:10.1021/nl048425x
36. T.O. Ogurtani & **E.E. Oren**. "Irreversible thermodynamics of triple junctions during the intergranular void motion under the electromigration forces" *International Journal of Solids and Structures*, **42** (13), 3918-3952 (2005). doi:10.1016/j.ijsolstr.2004.11.013
37. T.O. Ogurtani & **E.E. Oren**. "Electromigration-induced void grain-boundary interactions: the mean time to failure for copper interconnects with bamboo and near-bamboo structures" *Journal of Applied Physics*, **96** (12), 7246-7253 (2004). doi:10.1063/1.1815389

38. A. Kalkanli & **E.E. Oren**. "Effect of spraying rate on microstructure of spray deposited Al-Fe-V-Si alloy" *Powder Metallurgy*, **46** (4), 324-328 (2003). doi:10.1179/003258903225008571
39. T.O. Ogurtani, M.R. Gungor & **E.E. Oren**. "Simulation of dislocation damping spectra associated with the collective motion of point defects and kink chain subjected to the bulk segregation" *Journal of Applied Physics*, **91** (4), 1860-1870 (2002). doi:10.1063/1.1429769
40. T.O. Ogurtani & **E.E. Oren**. "Computer simulation of void growth dynamics under the action of electromigration and capillary forces in narrow thin interconnects" *Journal of Applied Physics*, **90** (3), 1564-1572 (2001). doi:10.1063/1.1382835
41. **E.E. Oren** & A.C. Tas. "Hydrothermal synthesis of pure & Dy doped $BaTiO_3$ powders at 90 °C" *Metallurgical and Materials Transactions B*, **30**, 1089-93 (1999). doi:10.1007/s11663-999-0115-5
42. **E.E. Oren**, E. Taspinar & A.C. Tas. "Preparation of lead zirconate ($PbZrO_3$) by homogeneous precipitation and calcinations" *Journal of American Ceramic Society*, **80** (10), 2714-2716 (1997). doi:10.1111/j.1151-2916.1997.tb03181.x

Proceedings

43. R. Samudrala, **E.E. Oren**, C. Cheng, J. Horst, B. Bernard, M. Gungormus, M. Hnilova, H. Fong, C. Tamerler & M. Sarikaya. "Knowledge-based design of inorganic-binding peptides" *The FNANO08 Conference Proceedings*, 75-80 (2008).
44. T.O. Ogurtani, M.R. Gungor & **E.E. Oren**. "Interactive computer simulation of dislocation damping spectra associated with the coupled motion of geometric kinks and point defects subjected to the bulk segregation phenomenon" *Solid State Phenomena*, **89**, 141-190 (2003).
45. **E.E. Oren** & T.O. Ogurtani. "Void intergranular motion under the action of electromigration forces in thin film interconnects with bamboo structure" *MRS Symp. Proc.*, **695**, 209-215 (2002).
46. **E.E. Oren** & T.O. Ogurtani. "The effect of initial void configuration on the morphological evolution under the action of normalized electron wind forces" *MRS Symp. Proc.*, **714E**, L9.2.1-L9.2.6 (2001).
47. T.O. Ogurtani & **E.E. Oren**, "A computer simulation of void dynamics under the action of electromigration and capillary forces in narrow thin interconnects" *Advanced Metallization Conference*, **16**, 483-487 (2000).
48. **E.E. Oren** & A.C. Tas. "Hydrothermal synthesis of pure and Dy:$BaTiO_3$ powders at 90°C, the sintering behavior and microstructures of Dy:$BaTiO_3$ powders heated on Ti-strips" *Dielectric Ceramic Materials: Ceramic Transactions* (Wiley-Am. Ceram. Soc.), **100**, 95-104 (1999).
49. **E.E. Oren** & A.C. Tas. "Preparation of piezoelectric lead zirconate titanate ($PbZr_{0.52}Ti_{0.48}O_3$) powders by homogeneous precipitation and calcinations" *Dielectric Ceramic Materials: Ceramic Transactions* (Wiley-Am. Ceram. Soc.), **100**, 105-114 (1999).

Meeting Abstracts

50. M. Gungormus, H. Fong, **E.E. Oren**, C. Tamerler, M. Somerman & M. Sarikaya. "Cementum-analogs using hydroxyapatite binding peptides: Toward periodontal regeneration" *Abstracts of Papers of the American Chemical Society*, **237**, 25-NANO (2009).
51. R. Samudrala, **E.E. Oren**, C. Tamerler & M. Sarikaya. "In silico design of solid binding peptides as molecular building blocks in technology and medicine" *Abstracts of Papers of the American Chemical Society*, **237**, 32-NANO (2009).
52. T. Kacar, J. Ray, M. Gungormus, **E.E. Oren**, C. Tamerler & M. Sarikaya. "Quartz binding peptides as molecular linkers for co-assembling nanoentities on multifunctional micropatterned substrates" *Abstracts of Papers of the American Chemical Society*, **237**, 13-NANO (2009).
53. D. Sahin, H. Kahraman, **E.E. Oren**, C. Tamerler & M. Sarikaya. "Peptide (GEPI)-protein molecular hybrid construction for materials and medical applications – 'GEPI-based tag application" *FEBS Journal*, **275**, 371-371 (2008).

54. A. Sert, N.G. Karaguler, D. Sahin, **E.E. Oren**, M. Sarikaya & C. Tamerler. "Construction and expression of a bi-functional peptide by using genetic engineering methods for bionanotechnologies" *FEBS Journal*, **275**, 372-372 (2008).

Theses

55. **E.E. Oren**. "Computer simulation of electromigration induced void – grain boundary interactions with a special reference to the prediction of cathode failure times in bamboo structures" *Ph. D. Thesis*, Middle East Technical University, January 2003.
56. **E.E. Oren**. "Electromigration – induced transgranular void motion in interconnects with special reference to computer simulation" *M. Sc. Thesis*, Middle East Technical University, Sept. 2000.

CONFERENCE PRESENTATIONS

(18 invited, >40 talks, >20 posters)

Invited/Keynote Talks

1. **E. E. Oren** "Molecular Electronics: Genetic material detection and identification using single-molecule conductance measurements" *15th Nanoscience & Nanotechnology Conference, Antalya, Turkey*, November 03-06, 2019.
2. **E.E. Oren** "Bionanodesign: Computational Methods in Bionanotechnology" *12th Chemical Physics Congress*, Safranbolu, Karabuk, Turkey, October 13, 2018.
3. **E.E. Oren** "Bionanodesign: Computational Methods in Bionanotechnology" *Department of Chemical Engineering, Shriram Center for Bioengineering & Chemical Engineering, Stanford University*, Palo Alto, CA, USA, March 06, 2017.
4. **E.E. Oren** "Computational Methods in Bionanotechnology" *Department of Biomedical Engineering, ODTÜ*, Ankara, Turkey, November 10, 2016.
5. **E.E. Oren** "Bionanodesign" *2nd Turkish-Mexican Workshop on Science and Technology, CONACYT*, Mexico City, Mexico, June 11-12, 2015.
6. **E.E. Oren** "Quantum dot formation models: Topologic instabilities in epitaxially strained solids" *20th Condensed Matter Physics Conference, Hacettepe Univ.*, Ankara, Turkey, December 26, 2014.
7. **E.E. Oren** "Computational Methods in Bionanotechnology" *Department of Chemistry, Gazi Univ.*, Ankara, Turkey, November 12, 2014.
8. **E.E. Oren** "Computational Methods in Nanobiotechnology" *National Nanotechnology Research Center (UNAM), BILKENT*, Ankara, Turkey, December 27, 2013.
9. **E.E. Oren** "Computational Methods in Nanobiotechnology" *Institute of Applied Mathematics, METU*, Ankara, Turkey, April 30, 2013.
10. **E.E. Oren** "Homology Modeling in Membrane Proteins" *Molecular Dynamics Workshop II*, Ankara, Turkey, September 13, 2011.
11. **E.E. Oren** "Morphological Evolution of Surfaces and Interfaces: Electromigration - Grain Grooving - Thin Film Growth" *Seminar: Nanoscale Devices*, Seattle, WA, USA, July 5, 2011.
12. **E.E. Oren** "Bioinformatics design of solid binding peptides for bionanotechnology" *Biomaterials Seminar, Univ. of Washington*, Seattle, WA, USA, March 11, 2010.
13. **E.E. Oren** & R. Samudrala "Knowledge-based peptide design" *Molecular Biomimetics & Bionanotechnology-IV: Protein-based Materials & Systems for Technology & Medicine*, Friday Harbor, WA, USA, August 24-28, 2009.
14. **E.E. Oren**, R. Samudrala, C. Tamerler & M. Sarikaya "Knowledge-based design of GEPIs as molecular building blocks in bionanotechnology" *SimBioMa Workshop: Challenges in modeling the interface between biomolecules and inorganic surfaces*, Mainz, Germany, March 18-20, 2009.
15. **E.E. Oren**, "Design of inorganic binding peptides for nanotechnology applications" *Nanotechnology Research Center, Bilkent Univ.*, Ankara, Turkey, July 18, 2008.

16. **E.E. Oren**, "Modeling biomolecules on inorganic surfaces" *Centre for Scientific Computing, Department of Chemistry, University of Warwick*, Keynote Talk, Coventry, UK, July 9-15, 2008.
17. **E.E. Oren**, "Knowledge based design of inorganic binding peptides" *5th Annual Conference on Foundations of nanoscience: Self-assembled architectures and devices, Symp: Self-assembly of Peptide-Protein Nanostructures*, Snowbird, UT, USA, April 18-21, 2008.
18. T.O. Ogurtani, M.R. Gungor & **E.E. Oren**. "Computer simulation of internal friction spectrum utilizing an interactive kink chain mobile foreign interstitials model" *Second International School on Mechanical Spectroscopy – 2*, Kraków-Krynica, Poland, December 3-8, 2000.

Oral Presentations

19. C. Akin, B. Demir, H. Mohammad, J. Hihath, M. P. Anantram, **E. E. Oren** "Effect of molecular doping on the molecular structure and electrical conductivity of DNA" *E-MRS 2021 Fall Meeting, Symposium G: Computer-aided materials modelling: fundamental and applied insights merging physics and chemistry viewpoints at the atomic-scale*, September 20, 2021.
20. D. Ozkaya, C. Akin, B. Demir, **E. E. Oren** "Interactions between Au (111) surface and peptide sequences" *E-MRS 2021 Fall Meeting, Symposium G: Computer-aided materials modelling: fundamental and applied insights merging physics and chemistry viewpoints at the atomic-scale*, September 20, 2021.
21. C. Akin, B. Demir, **E. E. Oren** "Effect of molecular doping on the molecular structure and electrical conductivity of DNA" *15th Nanoscience & Nanotechnology Conference, Antalya, Turkey*, November 03-06, 2019.
22. O. R. Caylan, B. Demir, **E. E. Oren**, T. Kokturk, G. Buke "Graphene/Copper heterostructures for thermal management" *AVT-304 Specialists Meeting on Graphene Technologies and Applications for Defence, Trondheim, Norway*, October 10-11, 2019.
23. B. Demir, S. Gokce, H.M. Mohammad, S.R. Patil, Y. Li, J.M. Artés, J. Hihath, M.P. Anantram & **E.E. Oren** "Effect of solvent on the molecular structure and electrical conductivity of DNA" *MRS 2018 Fall Meeting, Symposium BM03: Multiscale Modeling of Soft Materials and Interfaces,* Boston, MA, USA, November 25 - 30, 2018.
24. N.S. Aydın & **E.E. Oren** "Theory and Simulation of Quantum Dot Formation in Heteroepitaxialy Grown Thin Films under External Forces" *TMS 2017, Symposium: Computational Thermodynamics and Kinetics*, San Diego, CA, USA, February 26-March 02, 2017.
25. N.S. Aydın & **E.E. Oren** "Design of Heteroepitaxialy Grown Quantum Dots Under External Force Fields" *TMS 2017, Symposium: Computational Approaches to Materials for Energy Applications*, San Diego, CA, USA, February 26-March 02, 2017.
26. N.S. Aydın, M. Y. Sengul & **E.E. Oren** "Design of quantum dots via adjusting the material and process properties in heteroepitaxial growth" *IMRC 2016, Symposium A2: Bionanodesign*, Cancun, Mexico, August 14-19, 2016.
27. G. Gokce, E. Candas, N. S. Aydın & **E.E. Oren** "Forecasting antiviral drug resistance development among influenza viruses" *IMRC 2016, Symposium A2: Bionanodesign*, Cancun, Mexico, August 14-19, 2016.
28. H.T. Yener, M. Sahin & **E.E. Oren** "Controlled drug release systems from bulk-degrading polymers" *IMRC 2016, Symposium A2: Bionanodesign*, Cancun, Mexico, August 14-19, 2016.
29. B. Demir, J. Qi, S. Gokce, **E.E. Oren** & M.P. Anantram "Environmental effects on DNA backbone and conductance" *IMRC 2016, Symposium A2: Bionanodesign*, Cancun, Mexico, August 14-19, 2016.
30. E. Candas, G. Gokce, B. Demir, G. Demirel & **E.E. Oren** "Modeling of morphological versatility in self-assembly of Val-Ala and Ala-Val dipeptides" *MRS 2015 Fall Meeting, Symposium WW: Modeling and theory-driven design of soft materials,* Boston, MA, USA, November 29 - December 4, 2015.
31. E. Kayali, E. Mercan, M. Sahin, H.T. Yener, N.S. Aydin, G.K. Dogu, **E.E. Oren** & G.C. Buke "Investigation of catalyst effect on the formation of 1D carbon nanostructures via low temperature

vacuum decomposition of SiC" *MRS 2015 Fall Meeting, Symposium Q: Nano carbon materials - 1D to 3D,* Boston, MA, USA, November 29 - December 4, 2015.

32. M.Y. Sengul, S. Haddadian, A. Celik, T.O. Ogurtani & **E.E. Oren** "Simulation of Strained-Heteroepitaxial Quantum Dot Formation Under the Effect of Anisotropic Surface Properties" *MRS 2014 Spring Meeting, "Symposium WW: Materials by Design—Merging Advanced In-Situ Characterization with Predictive Simulation*, San Francisco, CA, ABD, April 21-25, 2014.
33. T.O. Ogurtanı, A. Celik, O. Akyıldız & **E.E. Oren** "Nonequilibrium thermodynamics of surfaces and interfaces in solids with applications" *IWPMEO II: International Workshop on the Physics based Modeling of Material Properties & Experimental Observations*, Antalya, Turkey, May 15-17, 2013.
34. T.O. Ogurtani, L.N. Brush & **E.E. Oren** "Effects of electromigration stressing on the topological instabilities of the Stranski-Krastanow islanding" *MRS 2012 Spring Meeting, "Symposium XX: Computational Materials Design in Heterogeneous Systems*, San Francisco, CA, ABD, April 9-13, 2012.
35. J. Qi, S. Edirisinghe, **E.E. Oren** & M.P. Anantram "Charge transport in biomolecules" *IWPSD 2011: XVI International Workshop on the Physics of Semiconductor Devices*, Kanpur, India, December 19-22, 2011.
36. **E.E. Oren**, R. Samudrala, J.S. Evans, M.L. Snead, M.J. Somerman, C. Tamerler & M. Sarikaya "Computational biomimetic design of materials specific peptides" *TMS 2010 139th Annual Meeting & Exhibition" Bio-inspired Materials Design and Processing I: Macromolecular Concepts and Applications*, Seattle, WA, USA, February 14-18, 2010.
37. C. So, M. Noyes, **E.E. Oren**, H. Meskine, H. Yazici, P. Mulheren, C. Tamerler, J. Evans & M. Sarikaya "Binding and assembly of material-specific peptides on solid substrates by atomic force microscopy" *TMS 2010 139th Annual Meeting & Exhibition" Biological Materials Science: Computational Materials Science*, Seattle, WA, USA, February 14-18, 2010.
38. Y. Hayamizu, M. Hnilova, **E.E. Oren**, C. Zhong, C. Tamerler, M. Rolandi & M. Sarikaya "Electronic transport through solid-binding peptides" *TMS 2010 139th Annual Meeting & Exhibition" Biological Materials Science: Bio-inspired Materials Design and Processing I: Macromolecular Concepts and Applications*, Seattle, WA, USA, February 14-18, 2010.
39. T. Kacar, M. Hnilova, B. Taktak, Y. Hayamizu, **E.E. Oren**, J. Evans, C. Tamerler, & M. Sarikaya "Bridging inorganic nanoparticles and biomolecules via genetically engineered peptides" *TMS 2010 139th Annual Meeting & Exhibition" Biological Materials Science: Bio-inspired Materials Design and Processing I: Macromolecular Concepts and Applications*, Seattle, WA, USA, February 14-18, 2010.
40. **E.E. Oren**, R. Samudrala, C. Tamerler & M. Sarikaya. "*In silico* design of solid binding peptides as molecular building blocks in technology and medicine" *237th ACS National Meeting Division of Medicinal Chemistry,* Salt Lake City, UT, USA, March 22-26, 2009.
41. T. Kacar, J. Ray, M. Gungormus, **E.E. Oren**, C. Tamerler & M. Sarikaya. "Quartz binding peptides as molecular linkers for co-assembling nanoentities on multifunctional micropatterned substrates" *237th ACS National Meeting Division of Medicinal Chemistry,* Salt Lake City, UT, USA, March 22-26, 2009.
42. M. Gungormus, H. Fong, **E.E. Oren**, C. Tamerler, M. Somerman & M. Sarikaya. "Cementum-analogs using hydroxyapatite binding peptides: Toward periodontal regeneration" *237th ACS National Meeting Division of Medicinal Chemistry,* Salt Lake City, UT, USA, March 22-26, 2009.
43. C. Tamerler, R. Samudrala, **E.E. Oren**, J. Evans, B. Traxler & M Sarikaya. "Molecular biomimetics – coupling peptides and nanoparticles for nanotechnology and medicine" 6*th Annual Conference on Foundations of Nanoscience: Biomedical Nanotechnology,* Snowbird, UT, USA, April 20-24, 2009.
44. **E.E. Oren**, R. Samudrala, J.S. Evans, C. Tamerler & M. Sarikaya "Bioinformatics-based design of multifunctional solid-binding peptides" *MRS 2008 Fall Meeting, "Symposium UU: Molecular Biomimetics and Materials Design*, Boston, MA, USA, December 1-2, 2009.

45. C. So, J. Kulp, H. Meshine, P. Mulheran, **E.E. Oren**, C. Tamerler, J. S. Evans & M. Sarikaya. "Binding, molecular recognition, and supramolecular assembly of solid binding peptides on solid substrates: a multi-scale perspective" *MRS 2009 Fall Meeting, Symposium UU: Biomimetics and Materials Design,* Boston, MA, USA, November 30-December 2, 2009.
46. T. Kacar, M. Gungormus, Y. Hayamizu, **E.E. Oren**, J.S. Evans, C. Tamerler & M. Sarikaya. "Nanoparticle assembly via bifunctional genetically engineered peptides for inorganics" *MRS 2009 Fall Meeting, Symposium TT: Nanobiotechnology and Nanobiophotonics--Opportunities and Challenges,* Boston, MA, USA, November 30-December 2, 2009.
47. **E.E. Oren**, R. Samudrala, J.A. Horst, M. Gungormus, H. Fong, Hnilova, C. Tamerler & M. Sarikaya. "*In silico* prediction of functional binding domains of natural proteins" *MRS 2008 Spring Meeting, Symposium DD: From biological materials to biomimetic material synthesis,* San Francisco, CA, USA, March 24-28, 2008.
48. T. Kacar, M. Gungormus, M. Hnilova, **E.E. Oren**, C. Tamerler & M. Sarikaya. "Optically active metal nanoparticle and quantum dot co-immobilization using genetically engineered peptides for inorganics" *MRS 2008 Fall Meeting, Symposium FF: Nanofunctional Materials, Structures, and Devices for Biomedical Applications,* Boston, MA, USA, December 1-5, 2008.
49. **E.E. Oren**, M. Gungormus, R. Samudrala, J.A. Horst, H. Fong, M. Hnilova, J. Evans, M. Snead, M. Somerman, C. Tamerler & M. Sarikaya. "A knowledge-based quest for amelogenin function in enamel biomineralization" *MRS 2008 Fall Meeting, "Symposium Y: Biomineral Interfaces – From Experiment to Theory* Boston, MA, USA, December 1-5, 2008.
50. **E.E. Oren**, R. Samudrala, D. Sahin, M. Hnilova, M. Gungormus, U.O.S. Seker, S. Cetinel, A. Cebeci, N.G. Karaguler, C. Tamerler & M. Sarikaya. "A novel informatics-based approach for the design of inorganic binding peptides" *MRS 2007 Spring Meeting, "Symposium T: The nature of design-utilizing biology's portfolio,* San Francisco, CA, USA, April 10-13, 2007.
51. J.S. Evans, J.L. Kulp**,** I.W. Kim, S. Collino, **E.E. Oren**, H. Zareie, C. So, C. Tamerler & M. Sarikaya. "Guiding theory: Materials genomics and lessons learned from polypeptide "interactions" with natural and artificial inorganic solids" *Centre Europeen de Calcul Atomique et Moleculaire (CECAM) Workshop on "Modeling the interaction of biomolecules with inorganic surfaces,* Lyon, France, July 25-27, 2007.
52. **E.E. Oren**, R. Samudrala, D. Sahin, T. Kacar, M. Hnilova, C. Tamerler & M. Sarikaya. "Design of multifunctional binding peptides" *MRS 2007 Fall Meeting, Symposium NN: Protein and peptide engineering for therapeutic and functional materials*, Boston, MA, USA, November 26-30, 2007.
53. J.S. Evans, W.K. Il, J.L. Kulp, S. Collino, K. Delak, U.O.S. Seker, C. So, **E.E. Oren**, C. Tamerler & M. Sarikaya. "Molecular structures of engineered inorganic-binding peptides" *MRS 2007 Fall Meeting, Symposium NN: Protein and Peptide Engineering for Therapeutic and Functional Materials,* Boston, MA, USA, November 26-28, 2007.
54. C. So, **E.E. Oren**, U.O.S. Seker, B. R. Wilson, J. Kulp, C. Tamerler, J.S. Evans & M. Sarikaya. "Supramolecular self-assembly of a metal-binding polypeptide and implications for molecular recognition" *MRS 2007 Fall Meeting, Symposium NN: Protein and Peptide Engineering for Therapeutic and Functional Materials,* Boston, MA, USA, November 26-28, 2007.
55. M. Sarikaya, C. Tamerler, M. Duman, E. Venkatasubramanian, S. Dincer, **E.E. Oren**, H. Dai, C. Nguyen, D.T. Schwartz & F. Baneyx. "Recognition and binding of engineered polypeptides on functional inorganics" *MRS 2004 Spring Meeting, Symposium Z: Hybrid Biological-Inorganic Interfaces,* San Francisco, CA, USA, April 12-16, 2004.
56. M. Sarikaya, C. Tamerler, **E.E. Oren**, M.H. Zaraie, H. Fong & F. Baneyx. "Molecular biomimetics: Biomaterialization and assembly using engineered polypeptides" *8th International Conference on the Chemistry and Biology of Mineralized Tissues,* Alberta, Canada, October 17-22, 2004.
57. E. Venkatasubramanian, M. Duman, T. Kacar, D. Heidel, **E.E. Oren**, C. Tamerler & M. Sarikaya. "Binding and specificity of engineered polypeptides on functional inorganics" *MRS 2004 Fall*

Meeting, Symposium Z: Bio-Inspired and Bio-Derived Materials and Processes, Boston, MA, USA, November 29-December 2, 2004.

58. U.O.S. Seker, **E.E. Oren**, C. Selcuki, C. Tamerler & M. Sarikaya. "Molecular modeling of engineered polypeptides" *MRS 2004 Fall Meeting, Symposium Z: Bio-Inspired and Bio-Derived Materials and Processes,* Boston, MA, USA, November 29-December 2, 2004.
59. **E.E. Oren** & T.O. Ogurtani. "Mathematical modeling of the void evolution dynamics under the action of electromigration and capillary forces in thin interconnects" *International Conference on Mathematical Modeling and Scientific Computing, Middle East Technical University and Selçuk University*, Ankara and Konya, Turkey, April 2-6, 2001.
60. **E.E. Oren** & T.O. Ogurtani. "Void Intergranual Motion under the Action of Electromigration Forces in Thin Film Interconnects with Bamboo Structure" *MRS 2001 Fall Meeting, Symposium L: Thin Films, Stresses & Mechanical Properties IX*, Boston, MA, USA, November 26-30, 2001.
61. **E.E. Oren** & A.C. TAS, "Hydrothermal Synthesis of Pure and Dy:BaTiO3 Powders at 90°C, Their Sintering Behavior, and Microstructures of Dy:BaTiO3 Powders Heated on Ti-Strips" *Journal of American Ceramic Society, 100th Annual Meeting & Exposition*, Cincinnati, OH, USA. May 3-6, 1998.
62. **E.E. Oren** & A.C. TAS, "Preparation of Piezoelectric Lead Zirconate Titanate (PbZr0.52Ti0.48O3) Powders by Homogeneous Precipitation and Calcination" *Journal of American Ceramic Society, 100th Annual Meeting & Exposition*, Cincinnati, OH, USA, May 3-6, 1998.

Poster Presentations

63. S. Gokce, B. Demir, H.M. Mohammad, S.R. Patil, M.P. Anantram & **E.E. Oren** "Effect of environment on DNA's structure and electrical conductivity" *12th Chemical Physics Congress,* Safranbolu, Karabuk, Turkey, October 13, 2018.
64. M. Sahin, H.T. Yener, N.S. Aydin, E. Kayali, E. Mercan, G.C. Buke & **E.E. Oren** "Modeling of morphological evolution of catalyst for the synthesis of 1D carbon nanostructures on SiC" *MRS 2015 Fall Meeting, Symposium TT: Topology in materials science - biological and functional nanomaterials, metrology and modeling,* Boston, MA, USA, November 29 - December 4, 2015.
65. A. Celik, M.Y. Sengul, S. Haddadian, T.O. Ogurtani & **E.E. Oren** "Quantum dot formation via the topological instabilities of the epitaxially strained thin films" *MRS 2014 Fall Meeting, Symposium NN: Mathematical and Computational Aspects of Materials Science,* Boston, MA, USA, November 30 - December 5, 2014.
66. M.Y. Sengul, S. Haddadian, A. Celik, T.O. Ogurtani & **E.E. Oren** "The effect of anisotropic surface properties on the formation of strained-heteroepitaxial quantum dots" *Chemical Physics Congress X*, Poster Presentation, Ankara, Turkey, October 10-12, 2012.
67. T. Kacar, M. Gungormus, M. Hnilova, C. So, **E.E. Oren**, C. Tamerler & M Sarikaya. "Optoelectronic properties of ZnO nanoparticles deposition on porous silicon" *6th Annual Conference on Foundations of Nanoscience: Nanoplasmonics & Nanophotovoltaics*, Snowbird, UT, USA, April 20-24, 2009.
68. M. Hnilova, B. Taktak, **E.E. Oren**, C. So, T. Kacar, C. Tamerler & M. Sarikaya. "Targeted immobilization of nanostructures and biomolecules through peptide-based biolinkers towards nanosensing platforms" *MRS 2008 Fall Meeting, Symposium FF: Nanofunctional Materials, Structures, and Devices for Biomedical Applications,* Boston, MA, USA, November 30-December 2, 2008.
69. M. Hnilova, **E.E. Oren**, C. So, T. Kacar, B.A. Parviz, C. Tamerler & M. Sarikaya. "Peptide-Directed Immobilization of Optical Active Nanostructures and Flurophores towards Nanosensing Platforms" *MRS 2008 Spring Meeting, Symposium DD: From Biological Materials to Biomimetic Material Synthesis,* San Francisco, CA, USA, March 25-28, 2008.
70. C. So, **E.E. Oren**, J. Kulp, H. Zereie, C. Tamerler & J. Evans. "Molecular Basis for Patterned Supramolecular Self Assembly of a Genetically Engineered Gold Binding Protein on Au {111}" *4th Annual Conference on Foundations of Nanoscience: Self-assembled architectures and*

devices, Symposium: Self-assembly of Peptide-Protein Nanostructures, Snowbird, UT, USA, April 18-21, 2007.

71. M. Hnilova, **E.E. Oren**, U.O.S. Seker, B. Wilson, X. Xiorong, C. Tamerler & M. Sarikaya. "Selection of Specific Gold-Binding Peptides via Cell Surface Display" *MRS 2007 Spring Meeting, Symposium T: The Nature of Design-Utilizing Biology's Portfolio,* San Francisco, CA, USA, April 10-13, 2007.
72. **E.E. Oren**, R. Samudrala, D. Sahin, M. Hnilova, U.O.S. Seker, M. Gungormus, S. Cetinel, N.G. Karaguler, C. Tamerler & M. Sarikaya. "*In silico* design of inorganic binding peptides" *Molecular Biomimetics and Bionanotechnology Workshop,* Istanbul, Turkey, May 21-23, 2007.
73. **E.E. Oren**, R. Samudrala, D. Sahin, M. Hnilova, C. Tamerler & M. Sarikaya. "*In silico* design of inorganic binding peptides" *4th Annual Conference on Foundations of Nanoscience: Self-assembled architectures and devices, Symposium: Self-assembly of Peptide-Protein Nanostructures,* Snowbird, UT, USA, April 18-21, 2007.
74. **E.E. Oren**, C. Tamerler, M. Sarikaya & R. Samudrala. "A novel informatics-based approach for the design of inorganic binding peptides" *Molecular Biomimetics I: Protein Based Materials for Technology and Medicine,* San Juan Island, WA, USA, Sep 6-8, 2006.
75. **E.E. Oren**, C. Tamerler & M. Sarikaya. "Metal recognition of GEPI's via polypod molecular architecture" *Molecular Biomimetics I: Protein Based Materials for Technology and Medicine,* San Juan Island, WA, USA, Sep 6-8, 2006.
76. **E.E. Oren**, R. Samudrala, D. Sahin, S. Dincer, C. Tamerler & M. Sarikaya. "*De novo* design of inorganic binding polypeptides" *MRS 2005 Fall Meeting, Symposium LL: Combinatorial methods and informatics in materials science,* Boston, MA, USA, Nov 28-Dec 1, 2005.
77. **E.E. Oren**, R. Samudrala, D. Sahin, N. Gul-Karaguler, C. Tamerler & M. Sarikaya. "Bioinformatics-based *de novo* design of biocombinatorially pregenerated quartz binding peptides" *Nanoscale Science and Technology Workshop,* Seattle, WA, USA, Sep 20-21, 2005.
78. **E.E. Oren**, R. Samudrala, D. Sahin, C. Tamerler & M. Sarikaya. "Structure prediction of biocombinatorially generated quartz binding peptides" *Nanoscale Science and Technology Workshop,* Snowbird, WA, USA, Sepember 20-21, 2005.
79. **E.E. Oren**, R. Samudrala, D. Sahin, S. Dincer, C. Tamerler & M. Sarikaya. "Similarity analysis of polypeptides generated via directed evolution" *2nd Annual Conference on Foundations of Nanoscience: Self-assembled architectures and devices, Symposium: Principles and Theory of Self-Assembly,* Snowbird, UT, USA, April 24-28, 2005.
80. **E.E. Oren**, D. Sahin, C. Tamerler & M. Sarikaya. "Similarity analysis of genetically engineered polypeptides for inorganics" *MRS 2004 Fall Meeting, Symposium Z: Bio-inspired and bio-derived materials and processes,* Boston, MA, USA, November 29-December 3, 2004.
81. **E.E. Oren** & T.O. Ogurtani. "Interactive computer simulation of dislocation damping spectra associated with the coupled motion of geometric kinks and point defects subjected to the bulk segregation" *ICIFUAS 13,* Bilbao, Spain, July 8-12, 2002.

TEACHING EXPERIENCE

Courses

- BMM 101 Introduction to Biomedical Engineering
- BMM 205/205L Fundamentals of Materials Science
- BMM 305 Biomaterials
- BMM 310/311L Computational Methods in Biomedical Engineering
- MAK 217/217L Materials Science
- MAK 536 Nanomaterials and Nanotechnology
- MBN 305 Phase Diagrams and Transformations
- MBN 310 Numerical Methods in Materials Science & Engineering
- MNT 521 Computational Methods in Bio and Nanotechnology

Invited Lectures

- MSE 298 Introduction to Modern Materials
- MSE 555 Biomimetics: Bioinspired Design and Processing of Materials
- CONJ 548 Modelling Proteins and Proteomes
- BioE/ChemE 511 Biomaterials Seminar
- Phys576/Chem560 Frontiers in Nanotechnology

Computer Laboratory Classes Developed

- Met.E. 502 Diffusion Phenomenon
- Met.E. 503/504 Mathematical Methods in Materials Science I/II
- Met.E. 528 Computer Applications in Material Science

Seminar Series Organization

- GEMSEC Student Research Discussion Seminar Series

Outreach Activities

- UW Engineering Discovery Days, April 23 & 24, 2010
- Paws-On Science: Huskies Weekend at Pacific Science Center, April 9 -11, 2010.
- Pacific Science Center Discovery Corps Visits GEMSEC, March 2, 2008.
- Strange Matter Exhibition at Pacific Science Center, February 2 - May 4, 2008.

PROFESSIONAL ACTIVITIES

- *Vice President*, Turkish Powder Metallurgy Association (TTMD)
- *Member*, IEEE
- *Member*, Materials Research Society (MRS)
- *Member*, American Chemical Society (ACS)
- *Member*, The Minerals Metals & Materials Society (TMS)
- *Manuscript Reviewer* for: Journal of Applied Physics, Nano Letters, Langmuir, Journal of Materials Research, Journal of Materials Science, ChemPhysChem, Small, and MRS Proceedings; Nature Scientific Reports.

FIELDS OF INTERESTS

- **Materials Science**
  - ✓ ***Theoretical and Computational Materials Science***
    Irreversible thermodynamics of surfaces and interfaces; Continuum mechanics; Boundary and Finite element methods; Electromigration; Internal friction; Sintering behavior of powder compacts; Thin film growth modes (Volmer-Weber, Frank-van der Merwe, Stranski-Krastanov); Fabricating epitaxial nanoscale structures (quantum dots); Mechanical behavior of micro- and nano-size materials; Modeling and design of inorganic binding peptides.
  - ✓ ***High-Tech Ceramics***
    Ceramic powders (*i.e.* $PbZrO_3$, $PbZr_{0.52}Ti_{0.48}O_3$, $BaTiO_3$) and Ceramic powder synthesis techniques: (*i.e.* Homogeneous precipitation, hydrothermal synthesis).
  - ✓ ***Biomimetics***
    Protein-inorganic interactions and their binding kinetic analysis (QCM, SPR); Peptide directed assembly and material synthesis.
- **Physics**
  - ✓ ***Solid State Physics***
    Electrical, magnetic and optical properties of materials.
  - ✓ ***Astronomy***
    Amateur observations.
- **Biology/Biotechnology/Biomedical Engineering**
  - ✓ ***Molecular Electronics***
    DNA / RNA / PNA design, *Ab initio* quantum mechanical calculations, protein-protein interactions (shape complementarity and electrostatic).
  - ✓ ***Molecular Biology***
    Protein structure prediction: Homology and template-based modeling; Atomistic molecular dynamics modeling, protein-protein interactions (shape complementarity and electrostatic).
  - ✓ ***Drug Repurposing & Design***
    Drug development for COVID-19, Influenza.
  - ✓ ***Evolution***
    Viral evolution and antiviral drug resistance.
  - ✓ ***Bioinformatics***
    Protein/Peptide knowledge (sequence)-based design and characterization.
  - ✓ ***Biomaterials***
    Biomineralization, biocompatibility.
- **Computer-Knowledge**
  - ✓ ***Operation Systems***
    Unix / Linux / Windows 9X/NT/2000/XP/Vista.
  - ✓ ***Programming Languages***
    Pascal / Fortran / C and C++ / Perl / Python, MathCad, MatLab.
  - ✓ ***Softwares***
    AMBER, GROMACS, NAMD, GAUSSIAN, HyperChem, Tinker, Modeller, Hex, Raptor, Autodock, YASARA, VMD, Jmol, PyMOL, RasMol, molecular modeling and visualization systems; Diamond, CrystalMaker and Crystal studio crystallography programs.

Citation Report

Author: (oren ee) (Ersin Emre Oren)
Timespan: All Years.
Databases: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH.
Results found: 52 **Sum of the Times Cited:** 1733
Average Citations per Item: 33.33 **h-index:** **23**

Publication Statistics

Name of the Journal	# of Publication	Database	Impact Factor*
Nature Nanotechnology	***1***	SCI	38.300
Advanced Materials	***1***	SCI	29.400
ACS Nano	***1***	SCI	17.100
Nature Communications	***1***	SCI	16.600
International Journal of Oral Science	***1***	SCI	14.900
Small	***1***	SCI	13.300
Nano Letters	***1***	SCI	10.800
Journal of Colloid and Interface Science	***1***	SCI	9.900
ACTA Biomaterialia	***1***	SCI	9.700
Nanoscale Horizons	***1***	SCI	9.700
ACS Applied Materials & Interfaces	***1***	SCI	9.500
Biomacromolecules	***1***	SCI	6.200
Bioinformatics	***1***	SCI	5.800
Biomolecules	***1***	SCI	5.500
MRS Bulletin	***1***	SCI	5.000
Journal of Materials Science	***1***	SCI	4.500
Applied Physics Letters	***1***	SCI	4.000
Journal of the American Ceramic Society	***1***	SCI	3.900
Langmuir	***5***	SCI	3.900
International Journal of Solids and Structures	***1***	SCI	3.600
Soft Matter	***1***	SCI	3.400
Journal of Physics D: Applied Physics	***1***	SCI	3.400
Physical Chemistry Chemical Physics	***1***	SCI	3.300
Journal of Applied Physics	***8***	SCI	3.200
Metallurgical and Materials Transactions B	***1***	SCI	3.000
Biopolymers (Peptide Science)	***1***	SCI	2.900
Physical Review E	***1***	SCI	2.400
Thin Solid Films	***1***	SCI	2.100
Philosophical Magazine	***1***	SCI	1.600
Powder Metallurgy	***1***	SCI	1.400
Bioinspired, Biomimetic and Nanobiomaterials	***1***	SCI	0.470

* 2-year Impact Factor