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**ADRES:** [Biyonanotasarım Laboratuvarı](#)  
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### EĞİTİM

*Doktora*, Metalurji ve Malzeme Mühendisliği Bölümü, Orta Doğu Teknik Üniversitesi, Ankara, TÜRKİYE, Mezuniyet: Ocak 2003.  
Danışman: Prof. Dr. Tarık Ömer Oğurtanı.

*Y. Lisans*, Metalurji ve Malzeme Mühendisliği Bölümü, Orta Doğu Teknik Üniversitesi, Ankara, TÜRKİYE, Mezuniyet: Eylül 2000.  
Danışman: Prof. Dr. Tarık Ömer Oğurtanı.

*Lisans Ana Dal*, Metalurji ve Malzeme Mühendisliği Bölümü, Orta Doğu Teknik Üniversitesi, Ankara, TÜRKİYE, Mezuniyet: Haziran 1997.

*Lisans Yan Dal*, Katı Hal Fiziği, Fizik Bölümü, Orta Doğu Teknik Üniversitesi, Ankara, TÜRKİYE, Mezuniyet: Haziran 1997.

### İDARİ GÖREVLER

2012 – **Bölüm Başkan Yardımcısı**, Biyomedikal Mühendisliği Bölümü, TOBB Ekonomi ve Teknoloji Mühendisliği, Ankara, TÜRKİYE

2012 – **Fakülte Yönetim Kurulu**, Mühendislik Fakültesi, TOBB Ekonomi ve Teknoloji Mühendisliği, Ankara, TÜRKİYE

### AKADEMİK KARIYER

2012 – **Afiliye Dr. Öğr. Üyesi**, Malzeme Bilimi ve Nanoteknoloji Mühendisliği Bölümü, TOBB Ekonomi ve Teknoloji Mühendisliği, Ankara, TÜRKİYE

2011 – **Dr. Öğr. Üyesi**, Biyomedikal Mühendisliği Bölümü, TOBB Ekonomi ve Teknoloji Mühendisliği, Ankara, TÜRKİYE

2011 – 2011 **Ziyaretçi Bilim Adamı**, Elektrik Mühendisliği Bölümü, University of Washington, Seattle, WA, ABD

2008 – 2010 **Okutman**, Genetically Engineered Materials Science and Engineering Center, GEMSEC, NSF/UW-MRSEC Malzeme Bilimi ve Mühendisliği Bölümü, University of Washington, Seattle, WA, ABD

2006 – 2007 **Doktora Sonrası Araştırmacı**, Hesaplamalı Biyoloji Gurubu, Mikrobiyoloji Bölümü, and Genetically Engineered Materials Science and Engineering Center, GEMSEC, NSF/UW-MRSEC Materials Science and Engineering Department, University of Washington, Seattle, WA, ABD

2003 – 2005 **Doktora Sonrası Araştırmacı** Malzeme Bilimi ve Mühendisliği Bölümü, University of Washington, Seattle, WA, ABD

1997 – 2003 **Araştırma Görevlisi**, Metalurji ve Malzeme Mühendisliği Bölümü, Orta Doğu Teknik Üniversitesi, Ankara, TÜRKİYE

2001 – 2001 **Ziyaretçi Bilim Adamı**, Max-Planck-Institut für Metallforschung, Seestrasse 92, D-70174, Stuttgart, ALMANYA

1996 – 1997 **Öğrenci Asistan**, Metalurji ve Malzeme Mühendisliği Bölümü, Orta Doğu Teknik Üniversitesi, Ankara, TÜRKİYE

## ÖDÜLLER ve BURSLAR

- **2012 Yılı TÜBA GEBİP Üstün Başarılı Genç Bilim İnsanı Ödülü**, Türkiye Bilimler Akademisi.
- **2012 Yılı Araştırma Teşvik Ödülü**, Prof. Dr. Mustafa N. Parlar Eğitim ve Araştırma Vakfı, ODTÜ, Ankara.
- **Doktora Sonrası Araştırmacı Bursu**, National Science Foundation (NSF) MRSEC Program through the University of Washington Genetically Engineered Materials Science and Engineering Center (DMR 0520567).
- **Doktora Sonrası Araştırmacı Bursu**, Army Research Office (ARO) DURINT program through the University of Washington (DAAD19-01-1-04999).
- **TCBG Computational Biophysics Workshop** (20/107 aday seçilmiştir). An NIH-sponsored Workshop on Theoretical and Computational Biophysics, University of Illinois at Urbana Champaign, Chicago, IL, USA, June 9-13, 2005.
- **TÜBİTAK-NATO-A2 Araştırma Bursu** (Max-Planck-Institut für Metallforschung, Stuttgart, ALMANYA, 2001).
- **Fulbright Konferans Seyahat Bursu** (MRS 2001 Sonbahar Toplantısı, Boston, MA, A.B.D.).
- **ODTÜ 2000 Yılı Yılın Tezi Ödülü**, Prof. Dr. Mustafa N. Parlar Eğitim ve Araştırma Vakfı, ODTÜ, Ankara.

## PROJELER

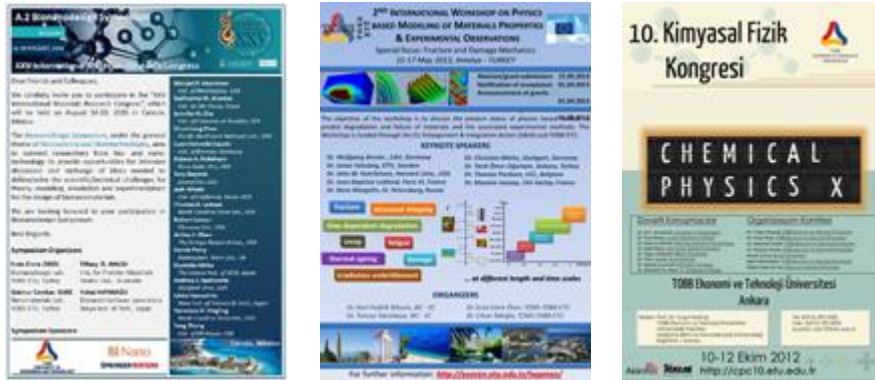
- **Yürütücü**, 01.05.2016-01.05.2018 (300600 TL)  
TÜBİTAK 1001 Araştırma Projesi No. 315M222: Kristalli katı yüzeylerde kuantum nokta oluşumlarının elektrik ve gerinim alanları altında modellenmesi.
- **Araştırmacı**, 01.01.2017-01.01.2019  
TÜBİTAK 1005 Ulusal Yeni Fikirler ve Ürünler Araştırma Projesi: Grafen – Bakır Lamine Yapılı Isı Dağıtıcı Plaka Geliştirilmesi. (Yürütücü: Gökür Cambaz Büke).
- **Araştırmacı**, 01.06.2014-01.06.2017 (226926 TL)  
TÜBİTAK 1001 Araştırma Projesi No. 213M481: Mikro/nano elektronik uygulamalarda kullanım potansiyeline sahip dik hizalanmış karbon nanoyapıların sentezi. (Yürütücü: Gökür Cambaz Büke).
- **Yürütücü**, 01.11.2011-01.11.2013 (138000 TL)  
TÜBİTAK 1001 Araştırma Projesi No. 111T343: Epitaksiyel gerginliğe ve yön bağımlı özelliklere sahip ince filmlerde film/altlık arayüzey denge(sizlik) durumlarının ve kuantum noktalarının oluşumunun bilgisayar modellemesi.
- **Araştırmacı**, 09.01.2007-09.01.2009 (134400 TL)  
TÜBİTAK 1001 Araştırma Projesi No. 104M399: Mikroelektronik devrelerde metalik iletişim bağlarının elektrogöç sonucu tahribatının bilgisayar modellemesi: Özellikle difüzyon anisotropisinin ve termal streslerin yüzey morfolojisine ve katot tahribatına etkileri. (Yürütücü: Tarık Ömer Oğurtanı).
- **Araştırmacı**, 07.01.2005-07.01.2007 (120900 TL)  
TÜBİTAK 1001 Araştırma Projesi No. 107M011: İnce film metalik iletişim bağlarında oluşan elektrogöç güdümündeki iç makro boşlukların ve yüzey tane oluklarının hidrostatik ve çift akslı gerilimler altındaki dinamiklerinin matematik modellemesi ve bilgisayar benzetimi. (Yürütücü: Tarık Ömer Oğurtanı).

## PATENT

1. Method and system for designing polypeptides and polypeptide-like polymers with specific chemical and physical characteristics. A.B.D. Patent başvuru numarası: 20100070200, 2008.

## KONFERANS / ÇALIŞTAY ORGANİZASYONLARI

- XXV International Materials Research Congress: Bionanodesign ([IMRC 2016](#)), 14-19 Ağustos, 2016, Cancun/Meksika.
- 2<sup>nd</sup> International Workshop on Physics Based Modeling of Material Properties & Experimental Observations ([IWPMEQ II](#)), 15-17 Mayıs, 2013, Antalya/Türkiye.
- 10<sup>th</sup> Chemical Physics Congress ([CPC X](#)), 10-12 Ekim, 2012, Ankara/Türkiye.
- [Molecular Biomimetics & Bionanotechnology-IV](#): Protein-based Materials & Systems for Technology & Medicine, 24-28 Eylül, 2009, San Juan Islands, WA, USA.
- [Molecular Biomimetics & Bionanotechnology-III](#): Protein-based Materials & Systems for Technology & Medicine, 10-12 Eylül, 2008, San Juan Islands, WA, USA.
- [Molecular Biomimetics & Bionanotechnology-II](#): Protein-based Materials & Systems for Technology & Medicine, 4-7 Eylül, 2007, San Juan Islands, WA, USA.
- [Molecular Biomimetics-I](#): Protein-based Materials for Technology & Medicine, 6-8 Eylül, 2006, San Juan Islands, WA, USA.



## BİLİMSEL YAYINLAR

Aralık 2019 itibarıyla: 50 tane: 36 makale, 7 basılı bildiri, 5 konferans özeti ve 2 tez;

[Science Citation Index:](#)

Toplam atf sayısı: 1349,

*h-index*: 21

[Google Scholars:](#)

Toplam atf sayısı: 1965,

*h-index*: 23

*h-10 index*: 28



## Uluslararası Hakemli Dergilerde Yayınlanan Makaleler

1. Y. Li, J.M. Artés, B. Demir, S. Gokce, H.M. Mohammad, M. Alangari, M.P. Anantram, **E.E. Ören** & 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](https://doi.org/10.1038/s41565-018-0285-x)
2. E. Kayali, E. Mercan, **E.E. Ören** & 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](https://doi.org/10.1088/0022-3727/49/16/165301)
3. H. Yazici, M.B. O'Neill, T. Kacar, B.R. Wilson, **E.E. Ören**, M. Sarikaya & C. Tamerler “Engineered chimeric peptides as antimicrobial surface coating agents towards infection-free implants” *ACS Applied Materials & Interfaces*, **8** (8), 5070-81 (2016). [doi:10.1021/acsami.5b03697](https://doi.org/10.1021/acsami.5b03697)

4. 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](https://doi.org/10.1021/acs.langmuir.5b01406)
5. 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](https://doi.org/10.1063/1.4883295)
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Editörler tarafından [Virtual Journal of Nanoscale Science & Technology](https://doi.org/10.1021/acs.nanolett.2010.00000) September 27, 2010 dergisinde ayrıca yayınlanmak üzere seçilmiştir.
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**Uluslararası bilimsel toplantılarda sunulan ve bildiri kitabında basılan bildiriler**

37. 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 \(2008\).](#)
38. 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 \(2003\).](#)
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40. **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 \(2001\).](#)
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43. **E.E. Oren** & A.C. Tas. “Preparation of piezoelectric lead zirconate titanate (PbZr<sub>0.52</sub>Ti<sub>0.48</sub>O<sub>3</sub>) powders by homogeneous precipitation and calcinations” [\*Dielectric Ceramic Materials: Ceramic Transactions \(Wiley-Am. Ceram. Soc.\)\*, \*\*100\*\*, 105-114 \(1999\).](#)

**Konferans Özetleri (SCI tarafından taranan)**

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46. 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 \(2009\).](#)
47. 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 \(2008\).](#)
48. 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 \(2008\).](#)

**Tezler**

49. **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.\*](#)
50. **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.

**KONFERANS SUNUMLARI**

(18 davetli, &gt;41 sunu, &gt;19 poster bildirisi)

**Davetli Konuşmalar**

1. **E.E. Oren** “Molecular Electronics: Genetic material detection and identification using single-molecule conductance measurements” *12<sup>th</sup> Nanoscience & Nanotechnology Conference*, Antalya, Türkiye, Kasım 03-06, 2019.
2. **E.E. Oren** “Bionanodesign: Computational Methods in Bionanotechnology” *12<sup>th</sup> Chemical Physics Congress*, Safranbolu, Karabük, Türkiye, Ekim 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, ABD, 6 Mart, 2017.
4. **E.E. Oren** “Computational Methods in Bionanotechnology” *Department of Biomedical Engineering, ODTÜ*, Ankara, Türkiye, 10 Kasım, 2016.
5. **E.E. Oren** “Bionanodesign” *2<sup>nd</sup> Turkish-Mexican Workshop on Science and Technology*, CONACYT, Meksiko, Meksika, 11-12 Haziran, 2015.
6. **E.E. Oren** “Quantum dot formation models: Topologic instabilities in epitaxially strained solids” *20<sup>th</sup> Condensed Matter Physics Conference, Hacettepe Üniversitesi*, Ankara, Türkiye, 26 Aralık, 2014.
7. **E.E. Oren** “Computational Methods in Bionanotechnology” *Department of Chemistry, Gazi Üniversitesi*, Ankara, Türkiye, 12 Kasım, 2014.
8. **E.E. Oren** “Computational Methods in Nanobiotechnology” *Ulusal Nanoteknoloji Enstitüsü, BİLKENT*, Ankara, Türkiye, 27 Aralık, 2013.
9. **E.E. Oren** “Computational Methods in Nanobiotechnology” *Uygulamalı Matematik Enstitüsü, ODTÜ*, Ankara, Türkiye, 30 Nisan, 2013.
10. **E.E. Oren** “Homology Modeling in Membrane Proteins” *Molecular Dynamics Workshop II*, Ankara, Türkiye, 13 Eylül, 2011.
11. **E.E. Oren** “Morphological Evolution of Surfaces and Interfaces: Electromigration - Grain Grooving - Thin Film Growth” *Seminar: Nanoscale Devices*, Seattle, WA, ABD, 5 Temmuz 2011.
12. **E.E. Oren** “Bioinformatics design of solid binding peptides for bionanotechnology” *Biomaterials Seminar, Univ. of Washington*, Seattle, WA, ABD, 11 Mart 2010.
13. **E.E. Oren** and R. Samudrala “Knowledge-based peptide design” *Molecular Biomimetics & Bionanotechnology-IV: Protein-based Materials & Systems for Technology & Medicine*, Friday Harbor, WA, ABD, 24-28 Ağustos 2009.
14. **E.E. Oren**, R. Samudrala, C. Tamerler and 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, Almanya, 18-20 Mart 2009.
15. **E.E. Oren**, “Design of inorganic binding peptides for nanotechnology applications” *Nanoteknoloji Araştırma Merkezi, Bilkent Univ.*, Davetli Sunu, Ankara, Türkiye, 18/07/2008.
16. **E.E. Oren**, “Modeling biomolecules on inorganic surfaces” *Centre for Scientific Computing, Department of Chemistry, University of Warwick*, Coventry, İngiltere, 9-15 Temmuz 2008.
17. **E.E. Oren**, “Knowledge based design of inorganic binding peptides” *5<sup>th</sup> Annual Conference on Foundations of Nanoscience: Self-assembled architectures & devices, Symposium: Self-assembly of peptide/protein nanostructures*, Snowbird, UT, ABD, 18-21 Nisan 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, Polonya, 3-8 Aralık 2000.

**Konferans Sunumları**

19. C. Akın, B. Demir, **E.E. Ören** “Effect of molecular doping on the molecular structure and electrical conductivity of DNA” *12<sup>th</sup> Nanoscience & Nanotechnology Conference*, Antalya, Türkiye, Kasım 03-06, 2019.
20. B. Demir, S. Gokce, H.M. Mohammad, S.R. Patil, Y. Li, J.M. Artés, J. Hihath, M.P. Anantram & **E.E. Ören** “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, ABD, Kasım 25 - 30, 2018.
21. N.S. Aydın & **E.E. Ören** “Theory and Simulation of Quantum Dot Formation in Heteroepitaxially Grown Thin Films under External Forces” *TMS 2017, Symposium: Computational Thermodynamics and Kinetics*, San Diego, CA, USA, February 26-March 02, 2017.
22. N.S. Aydın & **E.E. Ören** “Design of Heteroepitaxially 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.
23. N.S. Aydın, M.Y. Sengul & **E.E. Ören** “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.
24. G. Gokce, E. Candas, N.S. Aydın & **E.E. Ören** “Forecasting antiviral drug resistance development among influenza viruses” *IMRC 2016, Symposium A2: Bionanodesign*, Cancun, Mexico, August 14-19, 2016.
25. H.T. Yener, M. Sahin & **E.E. Ören** “Controlled drug release systems from bulk-degrading polymers” *IMRC 2016, Symposium A2: Bionanodesign*, Cancun, Mexico, August 14-19, 2016.
26. B. Demir, J. Qi, S. Gokce, **E.E. Ören** & M.P. Anantram “Environmental effects on DNA backbone and conductance” *IMRC 2016, Symposium A2: Bionanodesign*, Cancun, Mexico, August 14-19, 2016.
27. E. Candas, G. Gokce, B. Demir, G. Demirel & **E.E. Ören** “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, ABD, 29 Kasım - 4 Aralık, 2015.
28. E. Kayali, E. Mercan, M. Sahin, H.T. Yener, N.S. Aydın, G.K. Dogu, **E.E. Ören** & 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, ABD, 29 Kasım - 4 Aralık, 2015.
29. M.Y. Sengul, S. Haddadian, A. Celik, T. Ogurtani & **E.E. Ören** “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, 21-25 Nisan 2014.
30. T.O. Ogurtani, A. Celik, O. Akyildiz & **E.E. Ören** “Nonequilibrium thermodynamics of surfaces and interfaces in solids with applications” *IWPME0 II: International Workshop on the Physics based Modeling of Material Properties & Experimental Observations*, Antalya, Türkiye, 15-17 Mayıs 2013.
31. T.O. Ogurtani, L.N. Brush & **E.E. Ören** “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, 9-13 Nisan 2012.
32. J. Qi, S. Edirisinghe, **E.E. Ören** & M.P. Anantram “Charge Transport in Biomolecules” *IWPSD 2011: XVI International Workshop on the Physics of Semiconductor Devices*, Kanpur, India, December 19-22, 2011.
33. **E.E. Ören**, R. Samudrala, J.S. Evans, Malcolm L. Snead, Martha 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, ABD, 14-18 Şubat 2010.
34. C. So, M. Noyes, **E.E. Oren**, H. Meskine, H. Yazici, P. Mulheren, C. Tamerler, J.S. 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, ABD, 14-18 Şubat 2010.
  35. 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, ABD, 14-18 Şubat 2010.
  36. 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, ABD, 14-18 Şubat 2010.
  37. **E.E. Oren**, R. Samudrala, C. Tamerler & M. Sarikaya. "In silico design of solid binding peptides as molecular building blocks in technology and medicine" *237<sup>th</sup> ACS National Meeting Division of Medicinal Chemistry*, Salt Lake City, UT, ABD, 22-26 Mart 2009.
  38. 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" *237<sup>th</sup> ACS National Meeting Division of Medicinal Chemistry*, Salt Lake City, UT, ABD, 22-26 Mart 2009.
  39. M. Gungormus, H. Fong, **E.E. Oren**, C. Tamerler, M. Somerman & M. Sarikaya. "Cementum-analogs using hydroxyapatite binding peptides: Toward periodontal regeneration" *237<sup>th</sup> ACS National Meeting Division of Medicinal Chemistry*, Oral Presentation, Salt Lake City, UT, ABD, 22-26 Mart 2009.
  40. C. Tamerler, R. Samudrala, **E.E. Oren**, J.S. Evans, B. Traxler & M. Sarikaya. "Molecular Biomimetics – Coupling Peptides and Nanoparticles for Nanotechnology and Medicine" *6<sup>th</sup> Annual Conference on Foundations of Nanoscience: Biomedical Nanotechnology*, Snowbird, UT, ABD, 20-24 Nisan 2009.
  41. **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, ABD, 1-2 Aralık 2009.
  42. 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, ABD, 30 Kasım - 2 Aralık, 2009.
  43. 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, ABD, 30 Kasım - 2 Aralık 2009.
  44. **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, ABD, 24-28 Mart 2008.
  45. 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, ABD, 30 Kasım - 5 Aralık 2008.
  46. **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, ABD, 1-5 Aralık 2008.
47. **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 & peptide engineering for therapeutic and functional materials*, Boston, MA, ABD, 26-30 Kasım 2007.
  48. 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, Fransa, 25-27 Temmuz 2007.
  49. **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, ABD, 10-13 Nisan 2007.
  50. J.S. Evans. W.K. II, 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, ABD, 26-28 Kasım 2007.
  51. C. So, **E.E. Oren**, U. 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, ABD, 26-28 Kasım 2007.
  52. M. Sarikaya, C. Tamerler, M. Duman, E. Venkatasubramanian, S. Dincer, **E. E. Oren**, H. Dai, C. Nguyen, D. T. Schwartz and F. Baneyx. "Recognition and binding of engineered polypeptides on functional inorganics" *MRS 2004 Spring Meeting, Symposium Z: Hybrid Biological-Inorganic Interfaces*, San Francisco, CA, ABD, 12-16 Nisan, 2004.
  53. M. Sarikaya, C. Tamerler, **E. E. Oren**, M. H. Zareie, H. Fong and F. Baneyx. "Molecular biomimetics: Biomaterialization and assembly using engineered polypeptides" *8<sup>th</sup> International Conf. on the chemistry & biology of mineralized tissues*, Alberta, Kanada, 17-22 Ekim, 2004.
  54. 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, ABD, November 29 Kasım - 2 Aralık 2004.
  55. 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, ABD, 29 Kasım - 2 Aralık 2004.
  56. **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 ve Konya, Türkiye*, 2-6 Nisan 2001.
  57. **E.E. Oren** & T.O. Ogurtani. "Void intergranular motion under the action of electromigration forces in thin film interconnects with bamboo structure" *MRS 2001 Fall Meeting, Symposium L: Thin Films, Stresses and Mechanical Properties IX*, Boston, MA, ABD, 26-30 Kasım 2001.
  58. **E.E. Oren** & A.C. Tas, "Hydrothermal synthesis of pure and Dy:BaTiO<sub>3</sub> powders at 90°C, their sintering behavior, and microstructures of Dy:BaTiO<sub>3</sub> powders heated on Ti-strips" *JACerS, 100<sup>th</sup> Annual Meeting & Exposition*, Cincinnati, OH, ABD, 3-6 Mayıs 1998.
  59. **E.E. Oren** & A.C. Tas, "Preparation of Piezoelectric Lead Zirconate Titanate (PbZr<sub>0.52</sub>Ti<sub>0.48</sub>O<sub>3</sub>) Powders by Homogeneous Precipitation and Calcination" *JACerS, 100<sup>th</sup> Annual Meeting & Exposition*, Cincinnati, OH, ABD, 3-6 Mayıs 1998.

**Poster Bildirileri**

60. 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” *12<sup>th</sup> Chemical Physics Congress*, Safranbolu, Karabük, Türkiye, October 13, 2018.
61. 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, ABD, 29 Kasım - 4 Aralık 2015.
62. 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, ABD, 30 Kasım - 5 Aralık 2014.
63. 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, Türkiye, 10-12 Ekim 2012.
64. T. Kacar, M. Gungormus, M. Hnilova, C. So, **E.E. Oren**, C. Tamerler & M Sarikaya. “Optoelectronic properties of ZnO nanoparticles deposition on porous silicon” *6<sup>th</sup> Annual Conference on Foundations of Nanoscience: Nanoplasmonics & Nanophotovoltaics*, Snowbird, UT, ABD, 20-24 Nisan 2009.
65. 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 & devices for biomedical applications*, Boston, MA, ABD, 30 Kasım-2 Aralık 2008.
66. 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, ABD, 25-28 Mart 2008.
67. 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}” *4<sup>th</sup> Annual Conference on Foundations of Nanoscience: Self-assembled architectures & device: Self-assembly of peptide-protein nanostructures*, Snowbird, UT, ABD, 18-21 Nisan 2007.
68. 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, The nature of design-utilizing biology's portfolio*, San Francisco, CA, ABD, 10-13 Nisan, 2007.
69. **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*, İstanbul, Türkiye, 21-23 Mayıs 2007.
70. **E.E. Oren**, R. Samudrala, D. Sahin, M. Hnilova, C. Tamerler & M. Sarikaya. “*In silico* design of inorganic binding peptides” *4<sup>th</sup> Annual Conference on Foundations of Nanoscience: Self-assembled architectures & devices, Symposium: Self-assembly of peptide-protein nanostructures*, Snowbird, UT, ABD, 18-21 Nisan 2007.
71. **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, ABD, 6-8 Eylül 2006.
72. **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, ABD, 6-8 Eylül 2006.
73. **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, ABD, 28 Kasım - 1 Aralık 2005.

74. **E.E. Ören**, 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, ABD, 20-21 Eylül 2005.
75. **E.E. Ören**, R. Samudrala, D. Sahin, C. Tamerler & M. Sarikaya. “Structure prediction of biocombinatorially generated quartz binding peptides” *Nanoscale Science and Technology Workshop*, Snowbird, WA, ABD, 20-21 Eylül 2005.
76. **E.E. Ören**, 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, ABD, 24-28 Nisan 2005.
77. **E.E. Ören**, 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, ABD, 29 Kasım - 3 Aralık, 2004.
78. **E.E. Ören** & 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, İspanya, 8-12 Temmuz 2002.

## EĞİTİM FAALİYETLERİ

### Dersler

- BMM 101 Biyomedikal Mühendisliğine Giriş
- BMM 205/205L Malzeme Biliminin Temelleri
- BMM 305 Biyomalzemeler
- BMM 310/311L Biyomedikal Mühendisliğinde Sayısal Yöntemler
- MAK 217/217L Malzeme Bilimi
- MAK 536 Nanomalzemeler ve Nanoteknoloji
- MBN 305 Faz Diyagramları ve Dönüşümleri
- MBN 310 Malzeme Bilimi ve Nanoteknolojide Bilgisayar Uygulamaları
- MNT 521 Biyo ve Nanoteknolojide Bilgisayar Modellemesi

### Davetli Dersler

- 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

### Bilgisayar Laboratuvarı Geliştirilen Dersler

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

### Organize Edilen Seminerler

- [GEMSEC Student Research Discussion Seminar Series](#)

### Sosyal Aktiviteler

- [UW Engineering Discovery Days](#), 23-24 Nisan, 2010
- [Paws-On Science: Huskies Weekend at Pacific Science Center](#), 9-11 Nisan, 2010.
- [Pacific Science Center Discovery Corps Visits GEMSEC](#), 2 Mart, 2008.
- [Strange Matter Exhibition at Pacific Science Center](#), 2 Şubat - 4 Mayıs, 2008.

## PROFESYONEL GÖREVLER

- Üye, the [Modeling and Simulation Technical Committee \(TC 10\)](#) of the [IEEE Nanotechnology Council](#).
- *Başkan Yardımcısı*, Türk Toz Metalurjisi Derneği (TTMD)
- Üye, Materials Research Society (MRS), The Institute of Electrical and Electronics Engineers (IEEE), American Chemical Society (ACS), The Minerals Metals & Materials Society (TMS)
- *Proje Hakemlikleri*: TÜBİTAK 1001, 1003, 1005, 3501, TEYDEB, KOSGEB
- *Hakemlik Yaptığı Bilimsel Dergiler*: Journal of Applied Physics; Nano Letters; Langmuir; Journal of Materials Research; Journal of Materials Science; ChemPhysChem; Small; MRS Proceedings; Nature Scientific Reports.

## İLGİ ALANLARI

### • Malzeme Bilimi

#### ✓ *Teorik ve Hesaplamalı Malzeme Bilimleri*

Yüzey ve arayüzeylerin tersinmez termodinamiği; Continuum mechanics; Sınırlı ve Sonlu elemanlar yöntemleri; Elektrogöç; İç sürtünme; Tozların sinterlenme davranışları; İnce film büyüme modları (Volmer-Weber, Frank-van der Merwe, Stranski-Krastanov); Nano ölçekli yapıların (kuantum noktalar) epitaksiyel yöntemlerle üretimi; Mikro ve nano ölçekli malzemelerin mekanik davranışları; inorganik bağlayıcı peptidlerin modellenmesi ve tasarımı.

#### ✓ *Yüksek Teknoloji Seramikleri*

Seramik tozlar (*i.e.*  $PbZrO_3$ ,  $PbZr_{0.52}Ti_{0.48}O_3$ ,  $BaTiO_3$ ) ve Seramik toz sentezleme teknikleri: Homojen çöktürme, hidrotermal sentezleme.

#### ✓ *Biyobenzeşim*

Protein-inorganic interactions and their binding kinetic analysis (QCM, SPR); Peptide directed assembly and material synthesis.

### • Fizik

#### ✓ *Katı Hal Fiziği*

Malzemeleri, elektrik, manyetik ve optik özellikleri.

#### ✓ *Astronomi*

Amatör gözlemler.

### • Biyoloji/Biyoteknoloji/Biyomedikal Mühendisliği

#### ✓ *Moleküler Elektronik*

DNA/RNA/Protein sistemlerinde yük taşınımı.

#### ✓ *İlaç Tasarımı*

Oseltamiv, zanamivir Nöraminidaz etkileşimi.

#### ✓ *Moleküler Biyoloji*

Protein yapı tahmini: Homoloji ve şablon tabanlı modelleme; Atomistik moleküler dinamik modelleme, *Ab initio* kuantum mekanik yöntemler, protein-protein etkileşimleri (şekil tamamlayıcılık ve elektrostatik).

#### ✓ *Biyoformatik*

Protein / Peptid bilgi (dizisi) tabanlı tasarım ve karakterizasyonu.

#### ✓ *Biyomalzemeler*

Biyomineral oluşumu, Biyouyumluluk.

### • Bilgisayar Bilgisi

#### ✓ *Programlama Dilleri*

Pascal / Fortran / C ve C++ / Perl / Python, MathCad, MatLab.

#### ✓ *Yazılımlar*

AMBER, GROMACS, NAMD, GAUSSIAN, HyperChem, Tinker, Modeller, Hex, Raptor, YASARA, VMD, Jmol, PyMOL, RasMol, moleküler modelleme ve görselleştirme sistemleri; Diamond, CrystalMaker ve Crystal studio kristalografi programları.



## Atıf Raporu

**Yazar:** (oren ee) (Ersin Emre Oren)

**Kapsam:** Tüm yıllar

**Veri Tabanları:** SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH

**Bulunan Yayın Sayısı:** 46

**Toplam Atıf Sayısı:** 1425

**Yıllık Ortalama Atıf Sayısı:** 30.98

**h-index:** 21

## Yayın İstatistikleri

Name of the Journal	# of Publication	Database	Impact Factor*
Nature Nanotechnology	1	SCI	40.301
Advanced Materials	1	SCI	26.444
ACS Nano	1	SCI	15.211
Nano Letters	1	SCI	12.727
Small	1	SCI	10.611
ACS Applied Materials & Interfaces	1	SCI	8.901
ACTA Biomaterialia	1	SCI	7.502
Bioinformatics	1	SCI	9.853
Biomacromolecules	1	SCI	5.775
MRS Bulletin	1	SCI	5.394
Journal of Colloid and Interface Science	1	SCI	6.171
FEBS Journal	2	SCI	4.267
International Journal of Oral Science	1	SCI	3.946
Soft Matter	1	SCI	3.466
Langmuir	5	SCI	3.702
Applied Physics Letters	1	SCI	3.400
Journal of Materials Science	1	SCI	3.282
Journal of the American Ceramic Society	1	SCI	3.475
International Journal of Solids and Structures	1	SCI	3.267
Biopolymers (Peptide Science)	1	SCI	1.909
Journal of Physics D: Applied Physics	1	SCI	2.902
Journal of Applied Physics	7	SCI	2.138
Thin Solid Films	1	SCI	1.884
Philosophical Magazine	1	SCI	1.691
Metallurgical and Materials Transactions B	1	SCI	2.207
Bioinspired, Biomimetic and Nanobiomaterials	1	SCI	0.884
Powder Metallurgy	1	SCI	1.573

\* 5-year Impact Factor