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Eğitim Bilgileri

Doktora, Brown University, Biyomedikal Mühendisliği, Amerika Birleşik Devletleri 2006 - 2011

Yüksek Lisans, Purdue University, Malzeme Mühendisliği, Amerika Birleşik Devletleri 2003 - 2005

Lisans, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, Türkiye 1998 - 2003

Yabancı Diller

İngilizce, C1 İleri

Yaptığı Tezler

Doktora, Anodized nanotubular titanium as an orthopedic implant and the effect of electrical stimulation, Brown University, Biyomedikal Mühendisliği, 2011

Yüksek Lisans, Stress relaxation and thermal conductivity of heat treated stand-alone hollow sphere plasma-sprayed 7.5 wt% Y2O3-ZrO2 thermal barrier coatings, Purdue University, Malzeme Mühendisliği, 2005

Araştırma Alanları

Metalurji ve Malzeme Mühendisliği, Malzeme Bilimi ve Mühendisliği, Biyomalzemeler, Mühendislik ve Teknoloji

Akademik Unvanlar / Görevler

Doç.Dr., Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, 2020 - Devam Ediyor

Dr.Öğr.Üyesi, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, 2018 -

2020

Yrd.Doç.Dr., Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, 2016 - 2018

Akademik İdari Deneyim

Fakülte Kurulu Üyesi, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, 2021 - Devam Ediyor

Rektörlük Akademik Teşvik Değerlendirme Komisyonu Üyesi, Orta Doğu Teknik Üniversitesi, Rektörlük, 2019 - Devam Ediyor

Birim Stratejik Plan Komisyonu Üyesi, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, 2018 - Devam Ediyor

Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Biyomalzeme Ve Doku Mühendisliği Araştırma Ve Uygulama Merkezi, 2018 - Devam Ediyor

Erasmus Koordinatörü, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, 2018 - Devam Ediyor

Bölüm Başkan Yardımcısı, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, 2018 - 2022

Rektörlüğe Bağlı Komisyon Üyesi, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, 2020 - 2020

Verdiği Dersler

MATERIALS ENGINEERING DESIGN II, Lisans, 2022 - 2023, 2021 - 2022

INTRODUCTION TO METALLURGICAL AND MATERIALS ENGINEERING, Lisans, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020

POLYMER MATERIALS, Lisans, 2023 - 2024, 2022 - 2023

CHEMICAL PRINCIPLES OF PRIMARY MATERIALS PROCESSING, Lisans, 2021 - 2022, 2020 - 2021, 2019 - 2020

FOUNDATIONS OF ENGINEERING MATERIALS, Yüksek Lisans, 2022 - 2023, 2021 - 2022, 2020 - 2021

BIOMATERIALS, Lisans, 2022 - 2023, 2021 - 2022, 2020 - 2021

FUNDAMENTALS OF MATERIALS SCIENCE AND ENGINEERING, Lisans, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2017 - 2018

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CHEMICAL METALLURGY 1, Lisans, 2018 - 2019, 2017 - 2018, 2016 - 2017

SPECIAL TOPICS BIOMATERIALS, Lisans, 2019 - 2020, 2018 - 2019, 2017 - 2018

Yönetilen Tezler

Ercan B., Stent Uygulamaları için 316L Paslanmaz Çeliğin Anodizasyonu ve in vitro Testleri, Doktora, Y.Kemal(Öğrenci), Devam Ediyor

Ercan B., DOKU MÜHENDİSLİĞİ UYGULAMALARI İÇİN İPEK PROTEİNİ SERİSİN BAZLI YAPI İSKELESİ SENTEZİ, Yüksek Lisans, A.Haliloğlu(Öğrenci), Devam Ediyor

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Ercan B., Erdem E. Y., MİKROAKIŞKAN YÖNTEMİ İLE SENTEZLENMİŞ KİYOSAN SUPERPARAMANYETİK DEMİR OKSİT KOMPOZİT NANOPARÇACIKLARIN DIŞ STATİK MANYETİK ALAN ALTINDA ANTİBAKTERİYEL ÖZELLİKLERİ VE KEMİK HÜCRE Sİ ETKİLEŞİMLERİ, Yüksek Lisans, M.Kafalı(Öğrenci), 2022

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Ercan B., SURFACE MODIFICATION OF TANTALUM VIA ANODIZATION FOR ORTHOPEDIC APPLICATIONS, Yüksek Lisans, E.USLU(Öğrenci), 2020

Ercan B., Synthesis of calcium carbonate particles for biomedical applications, Yüksek Lisans, Ç.MERT(Öğrenci), 2020

Ercan B., DEVELOPMENT OF ELECTRICALLY CONDUCTIVE POROUS SILK FIBROIN/CARBON NANOFIBER SCAFFOLDS, Yüksek Lisans, Y.TUFAN(Öğrenci), 2020

Ercan B., Anodization of titanium alloys for orthopedic applications, Yüksek Lisans, M.İZMİR(Öğrenci), 2018

Jüri Üyelikleri

Tez Savunma (Yüksek Lisans), Tez Savunma (Yüksek Lisans), Orta Doğu Teknik Üniversitesi, Haziran, 2018

Tasarladığı Dersler

Aydoğan Güngör E., Öztürk A., Ercan B., Kaynak C., Foundations of Engineering Materials, Yüksek Lisans, 2019 - 2020

Ercan B., SPECIAL TOPICS BIOMATERIALS, Lisans, 2016 - 2017

Ercan B., NANOBIMATERIALS, Doktora, 2016 - 2017

SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. **An Edible Supercapacitor Based on Zwitterionic Soy Sauce-Based Gel Electrolyte**
DURUKAN M. B., Keskin D., TUFAN Y., Dincer O., ÇİÇEK M. Ö., YILDIZ B., ÇINAR AYGÜN S., ERCAN B., ÜNALAN H. E.
ADVANCED FUNCTIONAL MATERIALS, cilt.34, sa.6, 2024 (SCI-Expanded)
- II. **Synergistic effect of nanostructured topography and CNF incorporation into silk fibroin films enhances mouse neuroblastoma cell functions**
MİMİROĞLU D., TUFAN Y., YANIK T., ERCAN B.
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- III. **Morphology of Nanostructured Tantalum Oxide Controls Stem Cell Differentiation and Improves Corrosion Behavior**
Erdogan Y. K., Uslu E., Aydınol M. K., Sağlam A. S. Y., Odabas S., Ercan B.
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- IV. **Synthesis of Anisotropic Magnetic Polymeric Janus Particles by In Situ Separation of Magnetic Nanoparticles in a Microfluidic Device**
Saqib M., Ercan B., Erdem E. Y.
LANGMUIR, cilt.39, sa.48, ss.17080-17087, 2023 (SCI-Expanded)
- V. **Antibacterial properties and osteoblast interactions of microfluidically synthesized chitosan – SPION composite nanoparticles**
Kafali M., Şahinoğlu O. B., Tufan Y., Orsel Z. C., Aygun E., Alyuz B., Saritas E. U., Erdem E. Y., Ercan B.
Journal of Biomedical Materials Research - Part A, cilt.111, sa.11, ss.1662-1677, 2023 (SCI-Expanded)
- VI. **Selenite-Incorporated Amorphous Calcium-Magnesium Carbonate Nanoparticles Reduce Bacterial Growth**
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ACS Applied Nano Materials, cilt.6, sa.18, ss.16286-16296, 2023 (SCI-Expanded)
- VII. **Multifunctional Silk Fibroin/Carbon Nanofiber Scaffolds for In Vitro Cardiomyogenic Differentiation**

of Induced Pluripotent Stem Cells and Energy Harvesting from Simulated Cardiac Motion

Tufan Y., Öztatlı H., Doğanay D., Büyüksungur A., Çiçek M. Ö., Döş I. T., Berberoğlu Ç., Ünal H. E., Garıpcan B., Ercan B.

ACS Applied Materials and Interfaces, cilt.15, sa.36, ss.42271-42283, 2023 (SCI-Expanded)

- VIII. **3D Printing of Extracellular Matrix-Based Multicomponent, All-Natural, Highly Elastic, and Functional Materials toward Vascular Tissue Engineering**
Isik M., Karakaya E., Arslan T. S., Atila D., Erdogan Y. K., Arslan Y. E., Eskizengin H., Ercan B., Nemutlu E., Eylem C. C., et al.
Advanced Healthcare Materials, cilt.12, sa.20, 2023 (SCI-Expanded)
- IX. **Fabrication and in vitro characterization of antibacterial magneto-luminescent core-shell bioactive glass nanoparticles**
Unal F., Tasar C., ERCAN B.
Ceramics International, cilt.49, sa.12, ss.20118-20126, 2023 (SCI-Expanded)
- X. **Fabrication and biological properties of magnetic bioactive glass nanoparticles**
Tasar C., ERCAN B.
CERAMICS INTERNATIONAL, cilt.49, sa.8, ss.12925-12933, 2023 (SCI-Expanded)
- XI. **Anodized Nanostructured 316L Stainless Steel Enhances Osteoblast Functions and Exhibits Anti-Fouling Properties**
ERDOĞAN Y. K., ERCAN B.
ACS BIOMATERIALS SCIENCE & ENGINEERING, cilt.9, sa.2, ss.693-704, 2023 (SCI-Expanded)
- XII. **Impregnation of polyethylene terephthalate (PET) grafts with BMP-2 loaded functional nanoparticles for reconstruction of anterior cruciate ligament**
Karahaliloglu Z., ERCAN B., HAZER B.
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- XIII. **Decellularized Bone Extracellular Matrix-Coated Electrospun PBAT Microfibrous Membranes with Cell Instructive Ability and Improved Bone Tissue Forming Capacity**
Karakaya E., Erdoğan Y. K., Arslan T. S., Arslan Y. E., Odabaş S., Ercan B., Emregül E., Derkuş B.
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- XIV. **Enhanced bioactivity and low temperature degradation resistance of yttria stabilized zirconia/clay composites for dental applications**
Tufan Y., Park J., Öztürk A., Ercan B.
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- XV. **THE SURFACE MODIFICATION OF 316L STAINLESS STEEL AND IN VITRO TESTS FOR CARDIOVASCULAR STENT APPLICATION**
ERDOĞAN Y. K., ERCAN B.
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- XVI. **ELECTRICALLY CONDUCTIVE BIODEGRADABLE SILK FIBROIN/CARBON NANOFIBER SCAFFOLDS FOR CARDIAC TISSUE ENGINEERING**
TUFAN Y., Oztatli H., GARİPCAN B., ERCAN B.
TISSUE ENGINEERING PART A, cilt.28, 2022 (SCI-Expanded)
- XVII. **Microfluidic Methods in Janus Particle Synthesis**
Saqib M., Tran P. A., ERCAN B., ERDEM E. Y.
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- XVIII. **Nanophase surface arrays on poly (lactic-co-glycolic acid) upregulate neural cell functions**
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- XIX. **Nanostructured modifications of titanium surfaces improve vascular regenerative properties of exosomes derived from mesenchymal stem cells: Preliminary in vitro results**
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- XX. **Development of electrically conductive porous silk fibroin/carbon nanofiber scaffolds**

Tufan Y., Öztatlı H., Garipcan B., Ercan B.

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- XXI. **Osteogenic Properties of 3D-Printed Silica-Carbon-Calcite Composite Scaffolds: Novel Approach for Personalized Bone Tissue Regeneration**
Memarian P., Sartor F., Bernardo E., Elsayed H., ERCAN B., Delogu L. G., Zavan B., Isola M.
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- XXII. **Calcium carbonate polymorph dictates in vitro osteoblast proliferation**
Oral C. M., ERCAN B., KAPUSUZ D.
JOURNAL OF THE AUSTRALIAN CERAMIC SOCIETY, cilt.56, sa.4, ss.1421-1426, 2020 (SCI-Expanded)
- XXIII. **Fabrication and cellular interactions of nanoporous tantalum oxide**
USLU E., Öztatlı H., Garipcan B., ERCAN B.
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- XXIV. **Facile control of hydroxyapatite particle morphology by utilization of calcium carbonate templates at room temperature**
Oral Ç. M., Çalışkan A., Kapsuz D., ERCAN B.
Ceramics International, cilt.46, sa.13, ss.21319-21327, 2020 (SCI-Expanded)
- XXV. **Mineral-Doped Poly(L-lactide) Acid Scaffolds Enriched with Exosomes Improve Osteogenic Commitment of Human Adipose-Derived Mesenchymal Stem Cells**
Gandolfi M. G., Gardin C., Zamparini F., Ferroni L., Esposti M. D., Parchi G., ERCAN B., Manzoli L., Fava F., Fabbri P., et al.
NANOMATERIALS, cilt.10, sa.3, 2020 (SCI-Expanded)
- XXVI. **Synthesis of calcium carbonate microspheres via inert gas bubbling for orthopedic applications**
Oral C. M., Caliskan A., Goctu Y., KAPUSUZ D., ERCAN B.
CERAMICS INTERNATIONAL, cilt.46, sa.3, ss.3513-3522, 2020 (SCI-Expanded)
- XXVII. **Comprehensive Evaluation of the Biological Properties of Surface-Modified Titanium Alloy Implants**
Piszczek P., Radtke A., Ehlert M., Jdrzejewski T., Sznarkowska A., Sadowska B., Bartmanski M., ERDOĞAN Y. K., ERCAN B., Jdrzejczyk W.
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- XXVIII. **Efficient fabrication of ultrafine-grained 316L stainless steel surfaces for orthopaedic applications**
Tufan Y., Demir E. C., Efe M., Ercan B.
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- XXIX. **Ti6Al4V foams having nanotubular surfaces for orthopaedic applications**
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- XXX. **Fabrication of micropit structures on Ti6Al4V alloy using fluoride-free anodization for orthopedic applications**
Izmir M., ERCAN B.
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- XXXI. **Anodization of titanium alloys for orthopedic applications**
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- XXXII. **Interaction of anodized Ti6Al7Nb with simulated body fluid**
Izmir M., Tufan Y., Ercan B.
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- XXXIII. **Influence of pH on morphology, size and polymorph of room temperature synthesized calcium carbonate particles**
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POWDER TECHNOLOGY, cilt.339, ss.781-788, 2018 (SCI-Expanded)
- XXXIV. **Addition of Selenium Nanoparticles to Electrospun Silk Scaffold Improves the Mammalian Cell**

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- XXXV. **Understanding the Role of Polymer Surface Nanoscale Topography on Inhibiting Bacteria Adhesion and Growth**
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- XXXVI. **Antimicrobial performance of mesoporous titania thin films: role of pore size, hydrophobicity, and antibiotic release**
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- XXXVII. **Antibacterial Nanostructured Polyhydroxybutyrate Membranes for Guided Bone Regeneration**
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- XXXVIII. **Adding MgO nanoparticles to hydroxyapatite-PLLA nanocomposites for improved bone tissue engineering applications**
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- XXXIX. **Nanofeatured silk fibroin membranes for dermal wound healing applications**
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- XL. **Nanostructured anti-bacterial poly-lactic-co-glycolic acid films for skin tissue engineering applications**
Karahaliloglu Z., Ercan B., Chung S., Taylor E., DENKBAŞ E. B., Webster T. J.
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- XLI. **A mechanism for the enhanced attachment and proliferation of fibroblasts on anodized 316L stainless steel with nano-pit arrays**
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- XLII. **Decreased Staphylococcus aureus and increased osteoblast density on nanostructured electrophoretic-deposited hydroxyapatite on titanium without the use of pharmaceuticals**
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- XLIII. **Effects of different sterilization techniques and varying anodized TiO₂ nanotube dimensions on bacteria growth**
Kummer K. M., Taylor E. N., Durmas N. G., Tarquinio K. M., Ercan B., Webster T. J.
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- XLIV. **Using mathematical models to understand the effect of nanoscale roughness on protein adsorption for improving medical devices**
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- XLV. **Decreased bacteria activity on Si₃N₄ surfaces compared with PEEK or titanium**
Gorth D. J., Puckett S., Ercan B., Webster T. J., Rahaman M., Bal B. S.
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- XLVI. **Diameter of titanium nanotubes influences anti-bacterial efficacy**
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- XLVII. **Decreased Staphylococcus aureus biofilm growth on anodized nanotubular titanium and the effect of electrical stimulation**

- Ercan B., Kummer K. M., Tarquinio K. M., Webster T. J.
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- XLVIII. **Anodized 20 nm diameter nanotubular titanium for improved bladder stent applications**
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- XLIX. **Reduced adhesion of macrophages on anodized titanium with select nanotube surface features**
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- L. **Microstructural, mechanical, and osteocompatibility properties of Mg²⁺/F⁻-doped nanophase hydroxyapatite**
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- L.I. **The effect of biphasic electrical stimulation on osteoblast function at anodized nanotubular titanium surfaces**
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- L.II. **Nanofunctionalized zirconia and barium sulfate particles as bone cement additives**
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- L.III. **Greater osteoblast proliferation on anodized nanotubular titanium upon electrical stimulation**
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- L.IV. **Nanobiomaterial applications in orthopedics**
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- L.V. **Effect of initial powder morphology on thermal and mechanical properties of stand-alone plasma-sprayed 7 wt.% Y₂O₃-ZrO₂ coatings**
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Diğer Dergilerde Yayınlanan Makaleler

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- II. **Calcium Phosphate Mineralization on Calcium Carbonate Particle Incorporated Silk-Fibroin Composites**
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