

## Assoc. Prof. BATUR ERCAN

### Personal Information

**Office Phone:** [+90 312 210 2513](tel:+903122102513)

**Fax Phone:** [+90 312 210 2518](tel:+903122102518)

**Email:** [baercan@metu.edu.tr](mailto:baercan@metu.edu.tr)

**Web:** <https://avesis.metu.edu.tr/baercan>

**Address:** Üniversiteler Mahallesi, Dumlupınar Bulvarı, Orta Doğu Teknik Üniversitesi Metalurji ve Malzeme Mühendisliği No:1, 06800 Çankaya/Ankara

### International Researcher IDs

ScholarID: VhqlTKoAAAAJ

ORCID: 0000-0003-1657-1142

Publons / Web Of Science ResearcherID: A-1232-2016

ScopusID: 15759431000

Yoksis Researcher ID: 249119

### Education Information

Doctorate, Brown University, Biyomedikal Mühendisliği, United States Of America 2006 - 2011

Postgraduate, Purdue University, Malzeme Mühendisliği, United States Of America 2003 - 2005

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, Turkey 1998 - 2003

### Foreign Languages

English, C1 Advanced

### Dissertations

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

Postgraduate, 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

### Research Areas

Metallurgical and Materials Engineering, Material science and engineering, Biomaterials, Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, 2020 - Continues

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials

Engineering, 2018 - 2020

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, 2016 - 2018

## Academic and Administrative Experience

Rektörlük Akademik Teşvik Değerlendirme Komisyonu Üyesi, Middle East Technical University, Presidency Office, 2019 - Continues

Birim Stratejik Plan Komisyonu Üyesi, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, 2018 - Continues

Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi, Middle East Technical University, Faculty of Engineering, Biyomalzeme Ve Doku Mühendisliği Araştırma Ve Uygulama Merkezi, 2018 - Continues

Erasmus Coordinator, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, 2018 - Continues

Faculty Board Member, Middle East Technical University, Faculty Of Engineering, Department Of Metallurgical And Materials Engineering, 2021 - 2024

Deputy Head of Department, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, 2018 - 2022

Rectorate Commissioner, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, 2020 - 2020

## Courses

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

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

POLYMER MATERIALS, Undergraduate, 2023 - 2024, 2022 - 2023

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

FOUNDATIONS OF ENGINEERING MATERIALS, Postgraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021

BIOMATERIALS, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021

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

FUNDAMENTALS OF MATERIALS SCIENCE AND ENGINEERING, Undergraduate, 2021 - 2022, 2018 - 2019

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

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

## Advising Theses

Ercan B., Ortopedik ve kardiyovasküler uygulamalar için nanoyapılı 316L paslanmaz çeliğin kullanımı: üretimi, karakterizasyonu ve in vitro hücresel etkileşimleri, Doctorate, Y.Kemal(Student), 2024

Ercan B., Biyomedikal uygulamalar için sersin bazlı kompozit filmlerin üretimi ve karakterizasyonu, Postgraduate, A.Haliloğlu(Student), 2023

Ercan B., İyon katkılı amorf kalsiyum-magnezyum karbonat sentezi ve kullanım alanları, Postgraduate, Y.Göçtü(Student), 2023

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

Ercan B., MANYETİK BİYOAKTİF CAM NANOPARTİKÜLLERİN ÜRETİMİ, Postgraduate, C.Taşar(Student), 2022

Ercan B., Yanık T., Nanoboyutlu YüzeY PürüzlülüĐünün Nöral Hücrelerin Yapışmasına, ÇoĐalmasına ve Protein Ekspresyonuna Olan Etkisinin İncelenmesi, Doctorate, D.MimiroĐlu(Student), 2022

ERCAN B., Antibacterial properties and osteoblast interactions of microfluidically synthesized chitosan – spion composite nanoparticles under external static magnetic field, Postgraduate, M.KAFALI(Student), 2022

ERCAN B., Fabrication of magnetic bioactive glass nanoparticles, Postgraduate, C.TAŞAR(Student), 2022

Ercan B., SURFACE MODIFICATION OF TANTALUM VIA ANODIZATION FOR ORTHOPEDIC APPLICATIONS, Postgraduate, E.USLU(Student), 2020

Ercan B., Synthesis of calcium carbonate particles for biomedical applications, Postgraduate, Ç.MERT(Student), 2020

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

Ercan B., Anodization of titanium alloys for orthopedic applications, Postgraduate, M.İZMİR(Student), 2018

## Jury Memberships

Post Graduate, Post Graduate, Orta DoĐu Teknik Üniversitesi, June, 2018

## Designed Lessons

AydoĐan Güngör E., Öztürk A., Ercan B., Kaynak C., Foundations of Engineering Materials, Postgraduate, 2019 - 2020

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

Ercan B., NANOBIMATERIALS, Doctorate, 2016 - 2017

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Biocompatible Janus microparticle synthesis in a microfluidic device**  
Saqib M., TUFAN Y., Orsel Z. C., ERCAN B., Erdem E. Y.  
Biomedical Microdevices, vol.26, no.3, 2024 (SCI-Expanded)
- II. **Microstructure, mechanical properties, and bone cell interactions of ZTA composites reinforced with BN**  
Buyuker G. A., TUFAN Y., Kayan G. O., ERCAN B., Akın Karadayı İ., Göller G.  
Ceramics International, vol.50, no.10, pp.16956-16964, 2024 (SCI-Expanded)
- III. **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, vol.34, no.6, 2024 (SCI-Expanded)
- IV. **Synergistic effect of nanostructured topography and CNF incorporation into silk fibroin films enhances mouse neuroblastoma cell functions**  
MİMİROĐLU D., TUFAN Y., YANIK T., ERCAN B.  
Surfaces and Interfaces, vol.45, 2024 (SCI-Expanded)
- V. **Morphology of Nanostructured Tantalum Oxide Controls Stem Cell Differentiation and Improves Corrosion Behavior**  
Erdogan Y. K., Uslu E., Aydinol M. K., Saglam A. S. Y., Odabas S., Ercan B.  
ACS BIOMATERIALS SCIENCE & ENGINEERING, vol.10, no.1, pp.377-390, 2024 (SCI-Expanded)
- VI. **Synthesis, characterization, and biological properties of calcium and zinc based ION incorporated amorphous carbonate nanoparticles**  
Göçtü Y., TUFAN Y., ERCAN B.  
Ceramics International, 2024 (SCI-Expanded)
- VII. **Production and characterization of Zn- and Cu-doped Y2O3-Al2O3-SiO2 (YAS) glass microspheres**  
Ünal F., ERCAN B.

Turkish journal of medical sciences, vol.54, no.5, pp.1092-1101, 2024 (SCI-Expanded)

- VIII. **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, vol.39, no.48, pp.17080-17087, 2023 (SCI-Expanded)
- IX. **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, vol.111, no.11, pp.1662-1677, 2023 (SCI-Expanded)
- X. **Selenite-Incorporated Amorphous Calcium-Magnesium Carbonate Nanoparticles Reduce Bacterial Growth**  
Göçtü Y., Oral C. M., ERCAN B.  
ACS Applied Nano Materials, vol.6, no.18, pp.16286-16296, 2023 (SCI-Expanded)
- XI. **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, vol.15, no.36, pp.42271-42283, 2023 (SCI-Expanded)
- XII. **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, vol.12, no.20, 2023 (SCI-Expanded)
- XIII. **Fabrication and in vitro characterization of antibacterial magneto-luminescent core-shell bioactive glass nanoparticles**  
Unal F., Tasar C., ERCAN B.  
Ceramics International, vol.49, no.12, pp.20118-20126, 2023 (SCI-Expanded)
- XIV. **Fabrication and biological properties of magnetic bioactive glass nanoparticles**  
Tasar C., ERCAN B.  
CERAMICS INTERNATIONAL, vol.49, no.8, pp.12925-12933, 2023 (SCI-Expanded)
- XV. **Anodized Nanostructured 316L Stainless Steel Enhances Osteoblast Functions and Exhibits Anti-Fouling Properties**  
ERDOĞAN Y. K., ERCAN B.  
ACS BIOMATERIALS SCIENCE & ENGINEERING, vol.9, no.2, pp.693-704, 2023 (SCI-Expanded)
- XVI. **Impregnation of polyethylene terephthalate (PET) grafts with BMP-2 loaded functional nanoparticles for reconstruction of anterior cruciate ligament**  
Karahaliloglu Z., ERCAN B., HAZER B.  
JOURNAL OF MICROENCAPSULATION, vol.40, no.3, pp.197-215, 2023 (SCI-Expanded)
- XVII. **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.  
MACROMOLECULAR BIOSCIENCE, vol.22, no.12, 2022 (SCI-Expanded)
- XVIII. **Enhanced bioactivity and low temperature degradation resistance of yttria stabilized zirconia/clay composites for dental applications**  
Tufan Y., Park J., Öztürk A., Ercan B.  
JOURNAL OF THE EUROPEAN CERAMIC SOCIETY, vol.42, no.15, pp.7300-7310, 2022 (SCI-Expanded)
- XIX. **ELECTRICALLY CONDUCTIVE BIODEGRADABLE SILK FIBROIN/CARBON NANOFIBER SCAFFOLDS FOR CARDIAC TISSUE ENGINEERING**  
TUFAN Y., Oztatli H., GARİPCAN B., ERCAN B.  
TISSUE ENGINEERING PART A, vol.28, 2022 (SCI-Expanded)
- XX. **THE SURFACE MODIFICATION OF 316L STAINLESS STEEL AND IN VITRO TESTS FOR**

## CARDIOVASCULAR STENT APPLICATION

ERDOĞAN Y. K., ERCAN B.

TISSUE ENGINEERING PART A, vol.28, 2022 (SCI-Expanded)

- XXI. **Microfluidic Methods in Janus Particle Synthesis**  
Saqib M., Tran P. A., ERCAN B., ERDEM E. Y.  
INTERNATIONAL JOURNAL OF NANOMEDICINE, vol.17, pp.4355-4366, 2022 (SCI-Expanded)
- XXII. **Nanophase surface arrays on poly (lactic-co-glycolic acid) upregulate neural cell functions**  
Mimiroğlu D., Yanık T., Ercan B.  
Journal of Biomedical Materials Research - Part A, vol.110, no.1, pp.64-75, 2022 (SCI-Expanded)
- XXIII. **Nanostructured modifications of titanium surfaces improve vascular regenerative properties of exosomes derived from mesenchymal stem cells: Preliminary in vitro results**  
Gardin C., Ferroni L., Erdoğan Y. K., Zanotti F., De Francesco F., Trentini M., Brunello G., Ercan B., Zavan B.  
Nanomaterials, vol.11, no.12, 2021 (SCI-Expanded)
- XXIV. **Development of electrically conductive porous silk fibroin/carbon nanofiber scaffolds**  
Tufan Y., Öztatlı H., Garipcan B., Ercan B.  
BIOMEDICAL MATERIALS, vol.16, no.2, 2021 (SCI-Expanded)
- XXV. **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.  
INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, vol.22, no.2, pp.1-10, 2021 (SCI-Expanded)
- XXVI. **Calcium carbonate polymorph dictates in vitro osteoblast proliferation**  
Oral C. M., ERCAN B., KAPUSUZ D.  
JOURNAL OF THE AUSTRALIAN CERAMIC SOCIETY, vol.56, no.4, pp.1421-1426, 2020 (SCI-Expanded)
- XXVII. **Fabrication and cellular interactions of nanoporous tantalum oxide**  
USLU E., Öztatlı H., Garipcan B., ERCAN B.  
Journal of Biomedical Materials Research - Part B Applied Biomaterials, vol.108, no.7, pp.2743-2753, 2020 (SCI-Expanded)
- XXVIII. **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, vol.46, no.13, pp.21319-21327, 2020 (SCI-Expanded)
- XXIX. **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, vol.10, no.3, 2020 (SCI-Expanded)
- XXX. **Synthesis of calcium carbonate microspheres via inert gas bubbling for orthopedic applications**  
Oral C. M., Çalışkan A., Goctu Y., KAPUSUZ D., ERCAN B.  
CERAMICS INTERNATIONAL, vol.46, no.3, pp.3513-3522, 2020 (SCI-Expanded)
- XXXI. **Comprehensive Evaluation of the Biological Properties of Surface-Modified Titanium Alloy Implants**  
Piszczek P., Radtke A., Ehlert M., Jędrzejewski T., Sznarkowska A., Sadowska B., Bartmanski M., ERDOĞAN Y. K., ERCAN B., Jędrzejczyk W.  
JOURNAL OF CLINICAL MEDICINE, vol.9, no.2, 2020 (SCI-Expanded)
- XXXII. **Efficient fabrication of ultrafine-grained 316L stainless steel surfaces for orthopaedic applications**  
Tufan Y., Demir E. C., Efe M., Ercan B.  
Materials Science and Technology (United Kingdom), vol.35, pp.1891-1897, 2019 (SCI-Expanded)
- XXXIII. **Ti6Al4V foams having nanotubular surfaces for orthopaedic applications**  
Izmir M., Tufan Y., Tan G., Ercan B.  
SURFACE AND INTERFACE ANALYSIS, vol.51, no.9, pp.954-963, 2019 (SCI-Expanded)
- XXXIV. **Fabrication of micropit structures on Ti6Al4V alloy using fluoride-free anodization for orthopedic applications**

- Izmir M., ERCAN B.  
JOURNAL OF MATERIALS RESEARCH, vol.34, no.7, pp.1084-1092, 2019 (SCI-Expanded)
- XXXV. **Anodization of titanium alloys for orthopedic applications**  
Izmir M., Ercan B.  
FRONTIERS OF CHEMICAL SCIENCE AND ENGINEERING, vol.13, pp.28-45, 2019 (SCI-Expanded)
- XXXVI. **Interaction of anodized Ti6Al7Nb with simulated body fluid**  
Izmir M., Tufan Y., Ercan B.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.34, pp.495-503, 2019 (SCI-Expanded)
- XXXVII. **Influence of pH on morphology, size and polymorph of room temperature synthesized calcium carbonate particles**  
Oral C. M., Ercan B.  
POWDER TECHNOLOGY, vol.339, pp.781-788, 2018 (SCI-Expanded)
- XXXVIII. **Addition of Selenium Nanoparticles to Electrospun Silk Scaffold Improves the Mammalian Cell Activity While Reducing Bacterial Growth**  
Chung S., Ercan B., Roy A. K., Webster T. J.  
FRONTIERS IN PHYSIOLOGY, vol.7, 2016 (SCI-Expanded)
- XXXIX. **Understanding the Role of Polymer Surface Nanoscale Topography on Inhibiting Bacteria Adhesion and Growth**  
Liu L., Ercan B., Sun L., Ziemer K. S., Webster T. J.  
ACS BIOMATERIALS SCIENCE & ENGINEERING, vol.2, pp.122-130, 2016 (SCI-Expanded)
- XL. **Antimicrobial performance of mesoporous titania thin films: role of pore size, hydrophobicity, and antibiotic release**  
Atefyekta S., Ercan B., Karlsson J., Taylor E., Chung S., Webster T. J., Andersson M.  
INTERNATIONAL JOURNAL OF NANOMEDICINE, vol.11, pp.977-990, 2016 (SCI-Expanded)
- XLI. **Antibacterial Nanostructured Polyhydroxybutyrate Membranes for Guided Bone Regeneration**  
Karahaliloglu Z., Ercan B., Taylor E. N., Chung S., DENKBAŞ E. B., Webster T. J.  
JOURNAL OF BIOMEDICAL NANOTECHNOLOGY, vol.11, no.12, pp.2253-2263, 2015 (SCI-Expanded)
- XLII. **Adding MgO nanoparticles to hydroxyapatite-PLLA nanocomposites for improved bone tissue engineering applications**  
Hickey D. J., Ercan B., Sun L., Webster T. J.  
ACTA BIOMATERIALIA, vol.14, pp.175-184, 2015 (SCI-Expanded)
- XLIII. **Nanofeatured silk fibroin membranes for dermal wound healing applications**  
Karahaliloglu Z., Ercan B., DENKBAŞ E. B., Webster T. J.  
JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART A, vol.103, no.1, pp.135-144, 2015 (SCI-Expanded)
- XLIV. **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.  
JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART A, vol.102, no.12, pp.4598-4608, 2014 (SCI-Expanded)
- XLV. **A mechanism for the enhanced attachment and proliferation of fibroblasts on anodized 316L stainless steel with nano-pit arrays**  
Ni S., Sun L., Ercan B., Liu L., Ziemer K., Webster T. J.  
JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART B-APPLIED BIOMATERIALS, vol.102, no.6, pp.1297-1303, 2014 (SCI-Expanded)
- XLVI. **Decreased Staphylococcus aureus and increased osteoblast density on nanostructured electrophoretic-deposited hydroxyapatite on titanium without the use of pharmaceuticals**  
Mathew D., Bhardwaj G., Wang Q., Sun L., Ercan B., Geetha M., Webster T. J.  
INTERNATIONAL JOURNAL OF NANOMEDICINE, vol.9, pp.1775-1781, 2014 (SCI-Expanded)
- XLVII. **Effects of different sterilization techniques and varying anodized TiO<sub>2</sub> nanotube dimensions on bacteria growth**  
Kummer K. M., Taylor E. N., Durmas N. G., Tarquinio K. M., Ercan B., Webster T. J.

- JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART B-APPLIED BIOMATERIALS, no.5, pp.677-688, 2013 (SCI-Expanded)
- XLVIII. **Using mathematical models to understand the effect of nanoscale roughness on protein adsorption for improving medical devices**  
 Ercan B., Khang D., Carpenter J., Webster T. J.  
 INTERNATIONAL JOURNAL OF NANOMEDICINE, vol.8, pp.75-81, 2013 (SCI-Expanded)
- XLIX. **Decreased bacteria activity on Si<sub>3</sub>N<sub>4</sub> surfaces compared with PEEK or titanium**  
 Gorth D. J., Puckett S., Ercan B., Webster T. J., Rahaman M., Bal B. S.  
 INTERNATIONAL JOURNAL OF NANOMEDICINE, vol.7, pp.4829-4840, 2012 (SCI-Expanded)
- L. **Diameter of titanium nanotubes influences anti-bacterial efficacy**  
 Ercan B., Taylor E., Alpaslan E., Webster T. J.  
 NANOTECHNOLOGY, vol.22, no.29, 2011 (SCI-Expanded)
- LI. **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.  
 ACTA BIOMATERIALIA, vol.7, no.7, pp.3003-3012, 2011 (SCI-Expanded)
- LII. **Reduced adhesion of macrophages on anodized titanium with select nanotube surface features**  
 Rajyalakshmi A., Ercan B., Balasubramanian K., Webster T. J.  
 INTERNATIONAL JOURNAL OF NANOMEDICINE, vol.6, pp.1765-1771, 2011 (SCI-Expanded)
- LIII. **Anodized 20 nm diameter nanotubular titanium for improved bladder stent applications**  
 Alpaslan E., Ercan B., Webster T. J.  
 INTERNATIONAL JOURNAL OF NANOMEDICINE, vol.6, pp.219-225, 2011 (SCI-Expanded)
- LIV. **Microstructural, mechanical, and osteocompatibility properties of Mg<sup>2+</sup>/F<sup>-</sup>-doped nanophase hydroxyapatite**  
 Sun Z. P., Ercan B., EVÍS Z., Webster T. J.  
 JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART A, no.3, pp.806-815, 2010 (SCI-Expanded)
- LV. **The effect of biphasic electrical stimulation on osteoblast function at anodized nanotubular titanium surfaces**  
 Ercan B., Webster T. J.  
 BIOMATERIALS, vol.31, no.13, pp.3684-3693, 2010 (SCI-Expanded)
- LVI. **Nanofunctionalized zirconia and barium sulfate particles as bone cement additives**  
 Gillani R., Ercan B., Qiao A., Webster T. J.  
 INTERNATIONAL JOURNAL OF NANOMEDICINE, vol.5, pp.1-11, 2010 (SCI-Expanded)
- LVII. **Greater osteoblast proliferation on anodized nanotubular titanium upon electrical stimulation**  
 Ercan B., Webster T. J.  
 INTERNATIONAL JOURNAL OF NANOMEDICINE, vol.3, no.4, pp.477-485, 2008 (SCI-Expanded)
- LVIII. **Nanobiomaterial applications in orthopedics**  
 Christenson E. M., Anseth K. S., Van Den Beucken L. J. J. P., Chan C. K., Ercan B., Jansen J. A., Laurencin C. T., Li W., Murugan R., Nair L. S., et al.  
 JOURNAL OF ORTHOPAEDIC RESEARCH, vol.25, pp.11-22, 2007 (SCI-Expanded)
- LIX. **Effect of initial powder morphology on thermal and mechanical properties of stand-alone plasma-sprayed 7 wt.% Y<sub>2</sub>O<sub>3</sub>-ZrO<sub>2</sub> coatings**  
 Ercan B., Bowman K. J., Trice R. W., Wang H., Porter W.  
 MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING, vol.435, pp.212-220, 2006 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Investigation of Antibacterial Properties of Ion-Doped  $\beta$ -Tri-calcium Phosphate Powders Produced via Microwave-Assisted Synthesis Technique**

COŞKUN A. Y., GÖÇTÜ Y., ERCAN B.

Afyon Kocatepe Üniversitesi Fen ve Mühendislik Bilimleri Dergisi, vol.23, no.6, pp.1488-1496, 2023 (Peer-Reviewed Journal)

**II. Nanofeature Size and Morphology of Tantalum Oxide Surfaces Control Osteoblast Functions**

USLU E., MİMİROĞLU D., ERCAN B.

ACS APPLIED BIO MATERIALS, vol.4, no.1, pp.780-794, 2021 (ESCI)

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

Kapusuz D., Ercan B.

Celal Bayar Üniversitesi Fen Bilimleri Dergisi, vol.15, pp.301-306, 2019 (Peer-Reviewed Journal)

**IV. Enhanced vaterite and aragonite crystallization at controlled ethylene glycol concentrations**

Oral Ç. M., Kapusuz D., Ercan B.

Sakarya University Journal Of Science, vol.23, pp.1, 2019 (Peer-Reviewed Journal)

## Books & Book Chapters

**I. Doğu M. N., Ercan B.**

in: , Filiz Kuralay, Editor, Hacattepe Üniversitesi, Ankara, pp.223-244, 2018

**II. Monitoring Inflammation and Infection via Implanted Nanosensors**

Ercan B., Tran N., Webster T.

in: , Thomas Webster, Editor, Springer, London/Berlin , New-York, pp.61-73, 2011

**III. Cell Response to Nanoscale Features and Its Implications in Tissue Regeneration: An Orthopedic Perspective**

Ercan B., Webster T.

in: Nanotechnology and Regenerative Engineering The Scaffold, Cato T. Laurencin, Lakshmi S. Nair, Editor, CRC, New York , Florida, pp.145-190, 2008

## Refereed Congress / Symposium Publications in Proceedings

**I. Enhanced endothelization on nanostructured 316L stainless steel for cardiovascular stent application**

Erdoğan Y. K., Ercan B.

31st Annual Conference of the European Society for Biomaterials, Porto, Portugal, 5 - 09 September 2021, pp.1301

**II. Kemik doku mühendisliği uygulamaları için serisin-biyoaktif cam kompozit yapı iskelesi üretimi**

Haliloğlu A., Ercan B.

25th National Biomedical Science and Technology Symposium, Ankara, Turkey, 18 - 19 December 2021, pp.25

**III. Magnetic bioactive glass fabrication with sol-gel process**

Taşar C., Ercan B.

5th International Ceramic, Glass, Porcelain Enamel, Glaze and Pigment Congress, Eskişehir, Turkey, 13 - 15 October 2021, pp.48-50

**IV. Influence of pore size, morphology and fibroin molecular weight on 3D silk fibroin scaffolds**

Kafalı M., Tufan Y., Ercan B.

31st Annual Conference of the European Society for Biomaterials, Porto, Portugal, 5 - 09 September 2021, pp.1588

**V. Kemik çimentosu uygulamalarına yönelik çinko katkılı amorf kalsiyum karbonat üretimi**

Göçtü Y., Ercan B.

25th National Biomedical Science and Technology Symposium, Ankara, Turkey, 18 - 19 December 2021, pp.27

**VI. Nanophase surface roughness enhances neural cell functions**



Mimiroğlu D., Yanık T., Ercan B.

31st Conference of the European Society for Biomaterials (ESB2021), Porto, Portugal, 5 - 09 September 2021, pp.1876-1877

**VII. Yttria Stabilized Zirconia/Clay Composites for Dental Applications**

Tufan Y., Park J., Öztürk A., Ercan B.

the 31st Conference of the European Society for Biomaterials (ESB2021), Porto, Portugal, 5 - 09 September 2021

**VIII. Enhanced cellular functions on nanophase tantalum oxide surfaces**

Uslu E., Odabaş S., Ercan B.

Annual Meeting of Scandinavian Society for Biomaterials, Jonava, Lithuania, 14 June 2021

**IX. Anodization of 316L stainless steel for implant applications**

Erdoğan Y. K., Ercan B.

20. Uluslararası Metalurji ve Malzeme Kongresi, İstanbul, Turkey, 10 June 2021

**X. Synthesis of magnetic bioactive glass**

Taşar C., Ercan B.

20. Uluslararası Metalurji ve Malzeme Kongresi, İstanbul, Turkey, 10 June 2021

**XI. 3D silk fibroin scaffolds for tissue engineering applications**

Kafalı M., Ercan B.

20. Uluslararası Metalurji ve Malzeme Kongresi, İstanbul, Turkey, 10 June 2021

**XII. The role of synthesis methodology on cytotoxicity properties of dextran-coated nanoceria against cancer cells**

Bilgin M., Öztürk Ü., Yılmaz H., Harbeck S., Balcıoğlu K., Kaya F., Erdağ B., Ercan B., Yazıcı H.

International Eurasian Conference on Biotechnology and Biochemistry (BioTechBioChem 2020), Ankara, Turkey, 16 - 18 December 2020

**XIII. Fabrication and characterization of nanostructure on 316L stainless steel via anodization**

Erdogan Y. K., Ercan B.

Nanotr'15, Antalya, Turkey, 3 - 06 November 2019, pp.50

**XIV. Controlling Hydroxyapatite Morphology via Modification of Calcium Carbonate Particulate Templates**

Oral C. M., Kapsuz D., Ercan B.

NanoTR'15, Antalya, Turkey, 3 - 06 November 2019, pp.146

**XV. The Effect of PDMS Nanophase Surface Topography on Cellular Proliferation**

MİMİROĞLU D., YANIK T., ERCAN B.

24. Uluslararası Biyomedikal Bilim ve Teknoloji Sempozyumu (BIOMED), 17 - 20 October 2019

**XVI. Enhance Osteoblast Functions on Nanofeatured 316L Stainless Steel**

ERDOĞAN Y. K., ERCAN B.

24. Uluslararası Biyomedikal Bilim ve Teknoloji Sempozyumu (BIOMED), 17 - 20 October 2019

**XVII. Investigations of Silk/CNF Scaffolds for Cardiac Patch Applications**

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

24. Uluslararası Biyomedikal Bilim ve Teknoloji Sempozyumu (BIOMED), Antalya, Turkey, 17 - 20 October 2019

**XVIII. Ortopedi Uygulamaları için Kalsiyum Karbonat Parçacıklarının Biyouyumluluğunun Araştırılması**

ORAL C. M., KAPUSUZ D., ERCAN B.

10. Seramik Kongresi, 14 - 16 October 2019

**XIX. Nanostructured Tantalum to Enhance Biocompatibility**

USLU E., ERCAN B.

30th Annual Conference of the European Society for Biomaterials, 9 - 13 September 2019

**XX. Enhanced Stability of Hollow Calcium Carbonate Microspheres via Polymorphic Control for Orthopedic Applications**

ORAL C. M., KAPUSUZ D., ERCAN B.

30th Annual Conference of the European Society for Biomaterials, 9 - 13 September 2019

**XXI. Development of Silk Fibroin/CNF Scaffolds for Cardiac Patch Applications**

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

30th Annual Conference of the European Society for Biomaterials, Dresden, Germany, 9 - 13 September 2019

- XXII. **Fabrication of Micropit Structures on Ti6Al4V Alloy Using Fluoride-Free Anodization for Orthopedic Applications**  
İzmir M., ERCAN B.  
10th International Conference on Materials for Advanced Technologies, 23 - 28 June 2019
- XXIII. **Fabrication of Nanotubular Titanium Oxides on Ti6Al4V Foams for Orthopedic Applications**  
İzmir M., TAN G., ERCAN B.  
10th International Conference on Materials for Advanced Technologies, 23 - 28 June 2019
- XXIV. **Anodization of Tantalum to Enhance Biocompatibility**  
USLU E., ERCAN B.  
Scandinavian Society for Biomaterials 2019 Conference, 12 - 14 June 2019
- XXV. **Enhancing biocompatibility of calcium carbonate particles for biomedical applications**  
Oral C. M., KAPUSUZ D., ERCAN B.  
MRS Fall Meeting and Exhibit, Massachusetts, United States Of America, 1 - 06 December 2018
- XXVI. **Kalsiyum Karbonat ve Hidroksiapatit Parçacık Sentezi**  
Oral C. M., KAPUSUZ D., ERCAN B.  
23. Ulusal Biyomedikal Bilim ve Teknoloji Sempozyumu, İstanbul, Turkey, 15 - 16 December 2018
- XXVII. **Ortopedik Uygulamalar İçin Anodize Tantal**  
Uslu E., Ercan B.  
23. Ulusal Biyomedikal Bilim ve Teknoloji Sempozyumu, İstanbul, Turkey, 15 - 16 December 2018
- XXVIII. **Enhancing biocompatibility of tantalum via anodization for orthopedic applications**  
Uslu E., Ercan B.  
MRS Fall Meeting and Exhibit, Massachusetts, United States Of America, 1 - 06 December 2018
- XXIX. **Anodized Tantalum for Orthopedic Applications**  
Uslu E., Ercan B.  
19. Uluslararası Metalurji ve Malzeme Kongresi, İstanbul, Turkey, 25 - 27 October 2018, pp.720-722
- XXX. **Fabrication and Characterization of a Silk Fibroin Based Cardiac Patch**  
Tufan Y., Öztatlı H., Garıpcan B., Ercan B.  
19. Uluslararası Metalurji ve Malzeme Kongresi, İstanbul, Turkey, 25 - 27 October 2018, pp.723-726
- XXXI. **SYNTHESIS OF HIERARCHICAL CALCIUM CARBONATE PARTICLES**  
Oral C. M., KAPUSUZ D., ERCAN B.  
19. Uluslararası Metalurji ve Malzeme Kongresi, İstanbul, Turkey, 25 - 27 October 2018
- XXXII. **Surface modification of tantalum via anodization for orthopedic applications**  
Uslu E., Ercan B.  
29th Annual Meeting of the European Society for Biomaterials, Maastricht, Netherlands, 9 - 13 September 2018
- XXXIII. **Biocompatibility of calcium carbonate particles synthesized at controlled pH**  
Oral C. M., Ercan B.  
29th Annual Meeting of the European Society for Biomaterials, Maastricht, Netherlands, 9 - 13 September 2018
- XXXIV. **Influence of Alkalinity and Solvent Composition on Solution-Precipitated Calcium Carbonate Particles**  
Oral Ç. M., Ercan B., KAPUSUZ D.  
NanoTR-14, İzmir, Turkey, 22 - 25 September 2018
- XXXV. **Anodized Tantalum Surfaces for Orthopedic Applications**  
Uslu E., Ercan B.  
Scandinavian Society for Biomaterials, Gothenburg, Sweden, 25 - 27 April 2018
- XXXVI. **Anodization of Ti6Al7Nb Alloy for Orthopaedic Applications**  
İzmir M., ERCAN B.  
28TH ANNUAL CONFERENCE OF THE EUROPEAN SOCIETY FOR BIOMATERIALS, 4 - 08 September 2017
- XXXVII. **Synthesis of Calcium Carbonate Particles for Orthopedic Applications**  
ORAL C. M., DOĞU M. N., ERCAN B.  
NANOTR 13, 22 - 25 October 2017
- XXXVIII. **Osseointegrated Amputation Prosthesis**  
ERCAN B.

BIOMED 2017, 12 - 14 May 2017

- XXXIX. **Enhancing the Adhesion Strength of Nanotubular Oxide Layer onto the Ti6Al7Nb Substrate for Bone-Tissue Engineering Applications**  
İzmir M., Ercan B.  
MRS Fall Meeting and Exhibition, Massachusetts, United States Of America, 26 November - 01 December 2017
- XL. **Electrospun Silk Doped with Selenium Nanoparticles to Enhance Antibacterial Properties**  
CHUNG S., STOLZOFF M., ERCAN B., WEBSTER T.  
2015 AICHE Annual Meeting, 8 - 13 November 2015
- XLI. **Preparation of a Nano-patterned Polymer Replica for Reducing Catheter-associated Infections**  
LIU L., ERCAN B., SUN L., WEBSTER T.  
Society For Biomaterials 2015 Annual Meeting and Exposition, 15 - 18 April 2015
- XLII. **Optimizing Mesenchymal Stem Cell Wound Healing Properties on Electrospun Silk with Selenium Nanoparticles**  
CHUNG S., STOLZOFF M., TRAN P., ERCAN B., WEBSTER T.  
Society For Biomaterials 2015 Annual Meeting and Exposition, 15 - 18 April 2015
- XLIII. **MgO Nanoparticles Enhance Osteoblast Functions on Hydroxyapatite Nanocomposites for Antibacterial Orthopedic Tissue Engineering Applications**  
HICKEY D., ERCAN B., SUN L., WEBSTER T.  
2014 AICHE Annual Meeting, 16 - 21 November 2014
- XLIV. **Enhanced Attachment and Proliferation of Fibroblasts on Anodized 316L Stainless Steel with Nanopit Arrays**  
NI S., SUN L., ERCAN B., LIU L., ZIEMER K., WEBSTER T.  
Society For Biomaterials 2014 Annual Meeting and Exposition, 16 - 19 April 2014
- XLV. **Antibacterial Polyhydroxybutyrate (PHB) Membranes for Guided Bone Regeneration**  
KARAHALİLOĞLU Z., ERCAN B., Taylor E., CHUNG S., DENKBAŞ E. B., WEBSTER T.  
Society For Biomaterials 2014 Annual Meeting and Exposition, 16 - 19 April 2014
- XLVI. **Magnesium Oxide Nanocomposites for Improving Orthopedic Tissue Regeneration**  
HICKEY D., SUN L., ERCAN B., WEBSTER T.  
Society For Biomaterials 2014 Annual Meeting and Exposition, 16 - 19 April 2014
- XLVII. **Electrospinning Silk with Selenium for Antibacterial Skin Applications**  
CHUNG S., TRAN P., ERCAN B., WEBSTER T.  
Society For Biomaterials 2014 Annual Meeting and Exposition, 16 - 19 April 2014
- XLVIII. **Anti-bacterial Silk Membrane for Wound Healing Applications**  
ERCAN B., KARAHALİLOĞLU Z., WEBSTER T.  
Society For Biomaterials 2014 Annual Meeting and Exposition, 16 - 19 April 2014
- XLIX. **Electrospun Silk Doped with Selenium for Antibacterial Skin Applications**  
Chung S., Ercan B., Webster T. J., Phong Tran P. T.  
40th Annual Northeast Bioengineering Conference (NEBEC), Massachusetts, United States Of America, 25 - 27 April 2014
- L. **MgO nanocomposites as new antibacterial materials for orthopedic tissue engineering applications**  
Hickey D. J., Ercan B., Chung S., Webster T. J., Sun L., Geilich B.  
40th Annual Northeast Bioengineering Conference (NEBEC), Massachusetts, United States Of America, 25 - 27 April 2014
- LI. **Preparation of a Nanopatterned Polymer Replica for Reducing Catheter Infection**  
Liu L., Ercan B., Sun L., Webster T. J., Ni S.  
40th Annual Northeast Bioengineering Conference (NEBEC), Massachusetts, United States Of America, 25 - 27 April 2014
- LII. **Nanostructured 3D PLGA Scaffolds For Skin-Tissue Engineering Applications**  
KARAHALİLOĞLU Z., ERCAN B., DENKBAŞ E. B., WEBSTER T.  
2013 AICHE Annual Meeting, 3 - 08 November 2013
- LIII. **Using Magnesium Oxide Nanoparticles to Improve Inhomogeneous Soft and Hard Tissue Growth**

HICKEY D., SUN L., ERCAN B., WEBSTER T.

2013 AICHE Annual Meeting, 3 - 08 November 2013

**LIV. Reduced Adhesion of Macrophages On Nanotubular PDMS Molds for Catheter Applications**

LIU L., ERCAN B., SUN L., WEBSTER T.

2013 AICHE Annual Meeting, 3 - 08 November 2013

## Supported Projects

ERCAN B., TUFAN Y., Project Supported by Higher Education Institutions, Anodizasyon yöntemi ile ZnO nanotel üretimi ve ortopedi uygulamalarında kullanımı, 2021 - 2022

ERCAN B., İZMİR M., Project Supported by Higher Education Institutions, Nanoyapılı Ti6Al7Nb üretimi, 2017 - 2017

## Patent

ERCAN B., NANOMATERIALS FOR THE INTEGRATION OF SOFT INTO HARD TISSUE, Patent, CHAPTER A Human Needs, Standard Registration, 2016

## Activities in Scientific Journals

Plos One, Committee Member, 2018 - Continues

## Tasks In Event Organizations

Gür C. H., Keleş Ö., Orhan G., Ercan B., 20th International Metallurgy and Materials Congress , Scientific Congress, Turkey, Haziran 2021

## Metrics

Publication: 133

Citation (WoS): 1964

Citation (Scopus): 2258

H-Index (WoS): 23

H-Index (Scopus): 24

## Awards

Tufan Y., Park J., Öztürk A., Ercan B., Türk Seramik Derneği ECERS 2021 Sunu Yarışması birinciliği, Türk Seramik Derneği , May 2021

Ercan B., Mustafa Parlar Vakfı Araştırma Teşvik Ödülü, Parlar Vakfı, December 2020

Ercan B., TÜBA-Üstün Başarılı Genç Bilim İnsanı Ödülleri (GEBİP), Tüba Türkiye Bilimler Akademisi, December 2019

Ercan B., Bilim Akademisi Genç Bilim İnsanları Ödül Programı , Bilim Akademisi, April 2019

## Non Academic Experience

Orta Doğu Teknik Üniversitesi

Alvimedica Ltd.

Northeastern Üniversitesi  
Harvard Tıp Fakültesi (Massachusetts Genel Hastanesi)