

## Asst. Prof. ARDA BÜYÜKSUNGUR

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: AAG-6705-2019

ScopusID: 54782152000

Yoksis Researcher ID: 353614

### Education Information

Doctorate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Biotechnology, Turkey  
2006 - 2013

Postgraduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Biotechnology, Turkey  
2003 - 2006

Undergraduate, Ankara University, Fen Fakültesi, Biyoloji Bölümü, Turkey 1998 - 2002

### Foreign Languages

English, C2 Mastery

### Dissertations

Doctorate, Bioactive agents carrying quantum dot labeled liposomes, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Biotechnology, 2013

Postgraduate, Cloning and expression of benzaldehyde lyase gene from pseudomonas fluorescens biovar i in Pichia pastoris, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Biotechnology, 2006

### Research Areas

Biochemistry, Tissue Engineering, Stem Cell Engineering, Polymeric Materials, Biomaterials

### Academic Titles / Tasks

Assistant Professor, Ankara University, Diş Hekimliği Fakültesi, Temel Tıp Bilimler Bölümü, 2021 - Continues

### Academic and Administrative Experience

Department Academic Incentive Evaluation Commission Member, Ankara University, Diş Hekimliği Fakültesi, Temel Tıp Bilimler Bölümü, 2024 - Continues  
Program Evaluation Board Member, Ankara University, Diş Hekimliği Fakültesi, Temel Tıp Bilimler Bölümü, 2023 - Continues  
Faculty Management Board Member, Ankara University, Diş Hekimliği Fakültesi, Temel Tıp Bilimler Bölümü, 2023 - Continues  
Assistant Coordinator, Ankara University, Diş Hekimliği Fakültesi, Temel Tıp Bilimler Bölümü, 2023 - Continues

## Courses

INTRODUCTION TO RESEARCH METHODOLOGY , Undergraduate, 2023 - 2024  
Dental Materyallerin Temelleri, Undergraduate, 2023 - 2024  
Dental Materials, Undergraduate, 2023 - 2024  
Araştırma Teknikleri ve Sunum, Undergraduate, 2022 - 2023  
Dental Materials, Undergraduate, 2022 - 2023  
Dental Materyaller, Undergraduate, 2022 - 2023  
Ağız Biyokimyası, Undergraduate, 2021 - 2022  
Clinical Biochemistry, Undergraduate, 2021 - 2022  
Introduction to Basic Sciences, Undergraduate, 2022 - 2023, 2021 - 2022  
Digestion and Metabolism, Undergraduate, 2022 - 2023  
Sindirim ve Metabolizma, Undergraduate, 2022 - 2023  
Introduction to Basic Sciences, Undergraduate, 2022 - 2023  
Introduction Basic Sciences, Undergraduate, 2022 - 2023

## Advising Theses

Büyüksungur A., Kolsuz M. E., Radyoeshlenik 3 Boyutlu Model Elde Edilmesi ve Eksternal Kök Rezorpsiyonunun Yapay Zeka ile Tespiti, Dental Specialty, S.TUĞÇE(Student), 2023  
Büyüksungur A., Tezcaner A., DESIGNING DENTAL PULP TISSUE ENGINEERING PRODUCT, Postgraduate, T.SELENAY(Student), 2023  
BÜYÜKSUNGUR A., Bir devlet hastanesi diyaliz ünitesi su sisteminin mikrobiyolojik analizi ve izolatların antibakteriyel dirençliliklerinin tespiti, Postgraduate, F.GÖKTAŞ(Student), 2018

## Jury Memberships

Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, January, 2023  
Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, January, 2023

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

- I. **Effects of Access Cavity Design and Placement Techniques on Mineral Trioxide Aggregate Obturation Quality in Simulated Immature Teeth: A Micro-Computed Tomography Study**  
Odabaşı Tezer E., Büyüksungur A., Çelikten B., Dursun P. H., Sevimay F. S.  
MEDICINA (KAUNAS, LITHUANIA), vol.60, no.6, pp.1-18, 2024 (SCI-Expanded)
- II. **Local application of gingiva-derived mesenchymal stem cells on experimental periodontitis in rats**  
Balaban Y. E., Akbaba S., Bozkurt S. B., BÜYÜKSUNGUR A., Akgun E. E., GÖNEN Z. B., Salkin H., TEZCANER A., Hakki S. S.  
Journal of Periodontology, vol.95, no.5, pp.456-468, 2024 (SCI-Expanded)

- III. **The Value of Micro-CT in the Diagnosis of Lung Carcinoma: A Radio-Histopathological Perspective**  
Dizbay Sak S., Sevim S., Buyuksungur A., Kayı Cangır A., Orhan K.  
Diagnostics, vol.13, no.20, 2023 (SCI-Expanded)
- IV. **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., ÇİÇEK M. Ö., Döş İ. T., Berberoğlu Ç., ÜNALAN H. E., Garipcan B., ERCAN B.  
ACS Applied Materials and Interfaces, vol.15, no.36, pp.42271-42283, 2023 (SCI-Expanded)
- V. **Effect of Traditional and Conservative Endodontic Access Cavities on Instrumentation Efficacy of Two Different Ni-Ti Systems: A Micro-CT Study**  
Koohnavard M., ÇELİKTEK B., BÜYÜKSUNGUR A., ORHAN K.  
APPLIED SCIENCES-BASEL, vol.13, no.9, 2023 (SCI-Expanded)
- VI. **The assessment of internal adaptation and fracture resistance of glass ionomer and resin-based restorative materials applied after different caries removal techniques in primary teeth: an in-vitro study**  
DEMİREL A., ORHAN A. I., BÜYÜKSUNGUR A.  
PEERJ, vol.11, 2023 (SCI-Expanded)
- VII. **Fracture Resistance of Esthetic Prefabricated and Custom-Made Crowns for Primary Molars After Artificial Aging**  
OĞUZ E. İ., BEZGİN T., ORHAN A. I., BÜYÜKSUNGUR A., ORHAN K.  
PEDIATRIC DENTISTRY, vol.44, no.5, pp.368-374, 2022 (SCI-Expanded)
- VIII. **Effects of Preheating and Sonic Delivery Techniques on the Internal Adaptation of Bulk-fill Resin Composites**  
Demirel G., Orhan A., Irmak O., Aydin F., Buyuksungur A., Bilecenoglu B., Orhan K.  
OPERATIVE DENTISTRY, vol.46, no.2, pp.226-233, 2021 (SCI-Expanded)
- IX. **Micro-computed tomographic evaluation of the effects of pre-heating and sonic delivery on the internal void formation of bulk-fill composites**  
DEMİREL G., ORHAN A. I., Irmak O., Aydin F., Buyuksungur A., Bilecenoglu B., ORHAN K.  
Dental Materials Journal, vol.40, no.2, pp.525-531, 2021 (SCI-Expanded)
- X. **A two-compartment bone tumor model to investigate interactions between healthy and tumor cells**  
Komez A., BÜYÜKSUNGUR A., ANTMEN ALTUNSOY E., Swieszkowski W., HASIRCI N., Hasirci V.  
Biomedical Materials (Bristol), vol.15, no.3, 2020 (SCI-Expanded)
- XI. **The effect of high-temperature on foamed concrete**  
CANBAZ M., Dakman H., Arslan B., Buyuksungur A.  
Computers and Concrete, vol.24, no.1, pp.1-6, 2019 (SCI-Expanded)
- XII. **Nuclear targeting peptide-modified, DOX-loaded, PHBV nanoparticles enhance drug efficacy by targeting to Saos-2 cell nuclear membranes**  
Sahin A., Eke G., Buyuksungur A., HASIRCI N., Hasirci V.  
Journal of Biomaterials Science, Polymer Edition, vol.29, no.5, pp.507-519, 2018 (SCI-Expanded)
- XIII. **Evaluation of Threshold Values for Root Canal Filling Voids in Micro-CT and Nano-CT Images**  
ORHAN K., Jacobs R., Celikten B., Huang Y., Vasconcelos K. d. F., Nicolielo L. F. P., Buyuksungur A., Van Dessel J.  
Scanning, vol.2018, 2018 (SCI-Expanded)
- XIV. **3D printed poly( $\epsilon$ -caprolactone) scaffolds modified with hydroxyapatite and poly(propylene fumarate) and their effects on the healing of rabbit femur defects**  
BÜYÜKSUNGUR S., ENDOĞAN TANIR T., Buyuksungur A., Bektas E. I., Kose G. T., Yucel D., Beyzadeoglu T., Cetinkaya E., Yenigun C., TÖNÜK E., et al.  
Biomaterials Science, vol.5, no.10, pp.2144-2158, 2017 (SCI-Expanded)
- XV. **Micro-CT and nano-CT analysis of filling quality of three different endodontic sealers**  
Huang Y., Celikten B., Vasconcelos K. d. F., Pinheiro Nicolielo L. F., Lippiatt N., Buyuksungur A., Jacobs R., ORHAN K.  
Dentomaxillofacial Radiology, vol.46, no.8, 2017 (SCI-Expanded)
- XVI. **Construction and in vitro testing of a multilayered, tissue-engineered meniscus**

Bahcecioglu G., Buyuksungur A., KIZILTAY A., HASIRCI N., Hasirci V.

Journal of Bioactive and Compatible Polymers, vol.29, no.3, pp.235-253, 2014 (SCI-Expanded)

XVII. **Advanced cell therapies with and without scaffolds**

Demirbag B., HURİ P., KÖSE G., Buyuksungur A., Hasirci V.

BIOTECHNOLOGY JOURNAL, vol.6, no.12, pp.1437-1453, 2011 (SCI-Expanded)

## Articles Published in Other Journals

I. **Micro-Computed Tomography Analysis of Resin and Calcium Silicate Based Sealers Removal in Mandibular Molars Curved Canals.**

BÜYÜKSUNGUR A., ÖNCÜ A., KOOHNAVARD M., ÇELİKTEK B., ODABAŞI TEZER E., YAN H., ORHAN K.

Acta stomatologica Croatica: International journal of oral sciences and dental medicine, 2024 (Peer-Reviewed Journal)

II. **Micro-CT Evaluation of Centering Ability and Canal Transportation of Protaper Ultimate and RevoS+ Rotary File Systems in Simulated Curved Canals**

BÜYÜKSUNGUR A., ÖNCÜ A., ÇELİKTEK B., Huang Y.

European annals of dental sciences (Online), 2023 (Peer-Reviewed Journal)

## Books & Book Chapters

I. **The Effects of Microplastics on Human Health Systemically**

Büyüksungur A., Bağış N.

in: Exposure to Microplastics in Life and Dentistry, Hilal Toygar, Nur Balci, Editor, Türkiye Klinikleri Yayınevi, İstanbul, pp.17-23, 2024

II. **Artificial Intelligence in Dentistry**

Gökdeniz S. T., Büyüksungur A., Kolsuz M. E.

in: Human Teeth - From Function to Esthetics, Dr. Lavinia Cosmina Ardelean Prof. Laura-Cristina Rusu, Editor, Intechopen, London, pp.1-23, 2023

III. **Doğal Hidrojeller ve Biyomürekkepler**

BÜYÜKSUNGUR A.

in: Doku Mühendisliği Hidrojeller ve Biyomürekkepler 3 - Boyutlu Organ Yapımı, Vasif Hasirci, Nesrin Hasirci, Editor, ODTÜ, Ankara, pp.69-82, 2023

IV. **Fundamentals of Micro-CT Imaging**

ORHAN K., BÜYÜKSUNGUR A.

in: Micro-computed Tomography (micro-CT) in Medicine and Engineering , Kaan Orhan, Editor, Springer Nature, pp.27-34, 2020

V. **Nanotechnology in biomaterials: Nanoparticulates as drug delivery systems**

Demirbag B., Kardeşler S., Büyüksungur A., Küçükürhan A., Eke Çevik G., Hasirci N., Hasirci V. N.

in: Bionanotechnology II: Global prospects, David E. Reisner, Editor, CRC Press, Alabama, pp.227-246, 2011

## Refereed Congress / Symposium Publications in Proceedings

I. **Evaluation of the Effects of Myrrh (Commiphora Molmol) Application on Periodontal Tissues in Rats with Experimental Periodontitis**

Sayarlı E., Özgenc Çınar Ö., Ceylan A., Büyüksungur A., Orhan K., Özen D., Ekim O., Önder C.

Türk Periodontoloji Derneği 51. Uluslararası Bilimsel Kongresi, Antalya, Turkey, 6 - 09 November 2022, pp.135

II. **Lokal Mezenkimal Kök Hücre Uygulamasının Ratlarda Deneysel Periodontitis Üzerine Etkisi**

Balaban Y. E., Bozkurt Ş. B., Akbaba S., Gönen Z. B., Büyüksungur A., Akgün E. E., Tezcaner A., Hakkı S.

51.Uluslararası Bilimsel Kongresi 29.Bilimsel Sempozyumu, Antalya, Turkey, 6 - 09 November 2022, pp.60

- III. **3 BOYUTLU YAZICI KULLANILARAK DEĞİŞTİRİLEBİLİR RADYOPASİTE ÖZELLİĞİNE SAHİP MODEL ÜRETİLMESİ**  
Gökdeniz S. T., Büyüksungur A., Kolsuz M. E.  
Oral Diagnoz ve Maksillofasiyal Radyoloji Derneği 4. Uluslararası Kongresi, İzmir, Turkey, 19 - 22 October 2022, pp.156
- IV. **Süt dişlerinde cam hibrit restoratif materyalin marjinal sızıntısının mikro-bilgisayarlı tomografi ile karşılaştırmalı olarak değerlendirilmesi**  
Zincir B., Özer L., Büyüksungur A.  
28.Türk Pedodonti Derneği Bilimsel Konresi 6-9 Ekim 2022, Susesi Otel, Antalya., Antalya, Turkey, 6 - 10 October 2022
- V. **Evaluation of the Effect of Rebonding Agent Applied on Compomer and Bulk-Fill Composite Restorations on Microleakage, Surface Roughness and Microhardness**  
Göçer A. R., Bezin T., Büyüksungur A., Orhan K.  
28. Uluslararası Türk Pedodonti Derneği Kongresi, Antalya, Turkey, 6 - 09 October 2022, pp.76
- VI. **PROSTHETIC REHABILITATION OF MAXILLOFACIAL DEFECTS USING 3-DIMENSIONAL PRINTING METHOD AND APPLICATION TO A CASE OF CHONDROBLASTIC TYPE OSTEOSARCOMA**  
Gökdeniz S. T., Kolsuz M. E., Kurt M. H., Büyüksungur A., Gönüldaş F., Şenol M., Bozkurt P., Ardiç M., Beton S.  
18th European Congress of DentoMaxilloFacial Radiology, Lublin, Poland, 8 - 10 June 2022, pp.58
- VII. **Thresholding methods effect on Micromorphometrical analysis of mouse tibia.**  
Szabó B. T. S., BÜYÜKSUNGUR A., ORHAN K.  
18th EADMFR congress, 08 June 2022
- VIII. **A NEW METHOD IN THE DETECTION OF LYMPH NODE METASTASIS OF NSCLC:MICRO CT**  
KAYI CANGIR A., ORHAN K., GÜNEŞ S. G., ÖZAKINCI H., KAHYA Y., KARASOY D., SAK S., BÜYÜKSUNGUR A.  
MicroCT User Meeting 2021, Netherlands, 12 October 2021
- IX. **The Effect of Pre-Heating and Sonic Insertion Techniques on Internal Void Formation in Composite Resins**  
DEMİREL G., AYDIN F., ORHAN A. I., IRMAK Ö., BÜYÜKSUNGUR A., ORHAN K.  
Turkish Society of Restorative Dentistry 23rd International Scientific Congress, Antalya, Turkey, 06 December 2019
- X. **3D Bone Tumor Model by Tissue Engineering Approach**  
Kömez A., Büyüksungur A., Hasırcı N., Hasırcı V.  
BIOMED2019-24th International Biomedical Science and Technology Symposium, İzmir, Turkey, 17 - 20 October 2019, pp.201
- XI. **Development of a 3D Bone Tumor Model in In vitro Conditions**  
Kömez A., Büyüksungur A., Antmen E., Hasırcı N., Hasırcı V.  
BIOMED2018-TR- 23. Biyomedikal Bilim ve Teknoloji Sempozyumu, İstanbul, Turkey, 15 - 16 December 2018, pp.114
- XII. **Kemik Doku Mühendisliğinde 3 Boyutlu PCL/GelMA Hibrit İskeleler**  
Büyüksungur S., Büyüksungur A., Hasırcı N., Hasırcı V.  
BIOMED2018-TR- 23. Biyomedikal Bilim ve Teknoloji Sempozyumu, İstanbul, Turkey, 15 - 16 December 2018, pp.127
- XIII. **Registration of Histopathology and micro CT slices for quantifying periapical lesions in a rat model**  
Orhan K., Aksoy U., Büyüksungur A., Savtekin ., Şehirli A. Ö., Özkayalar H.  
CARS 2018—Computer Assisted Radiology and Surgery Proceedings of the 32nd International Congress and Exhibition, Berlin, Germany, 20 - 23 June 2018, pp.269
- XIV. **Biyobasım Sonrası implant görüntülenmesi: Mikro CT**  
Büyüksungur A.  
Doku Mühendisliğinde Biyobasım: Polimerik Malzemeler, Biyoseramik Kompozitler ve Doku Özdeşleri, Kocaeli, Turkey, 02 November 2016
- XV. **Patient specific material processing approaches in biomaterials and tissue engineering**

Bahcecioglu B., BÜYÜKSUNGUR A., Hasirci N., Hasirci V.

41st FEBS Congress on Molecular and Systems Biology for a Better Life, Kusadasi, Turkey, 3 - 08 September 2016, vol.283, pp.35-36

**XVI. Nanomaterials as Active Substance**

Büyüksungur A.

2. Ulusal Biyosidal Kongresi, İzmir, Turkey, 9 - 13 November 2015, pp.15

**XVII. Modelling of 3D Scaffolds for Patient Specific Implants**

Büyüksungur A., Endoğan Tanır T., Hasirci N., Hasirci V. N.

BIOMED2015-21th International Biomedical Science and Technology Symposium,, Antalya, Turkey, 22 - 24 October 2015, pp.138

**XVIII. 3D Printed, Tissue Engineered Femoral Implant Design and Production**

Büyüksungur S., Büyüksungur A., Hasirci N., Hasirci V. N.

BIOMED2015-21th International Biomedical Science and Technology Symposium,, Antalya, Turkey, 22 - 24 October 2015, pp.126

**XIX. Liposomal prevention of quantum dots cytotoxicity**

BÜYÜKSUNGUR A., Mutlugun E., Demir H. V., Hasirci V.

24th European Conference on Biomaterials, EBS 2011, Dublin, Ireland, 4 - 08 September 2011

**XX. Fed-batch operation for benzaldehyde lyase production by recombinant Escherichia coli**

Levent H., BÜYÜKSUNGUR A., ÇALIK P.

13th European Congress on Biotechnology (ECB 13), Barcelona, Spain, 16 - 19 September 2007, vol.131

**XXI. Extracellular benzaldehyde lyase production by Pichia pastoris**

BÜYÜKSUNGUR A., ÇALIK P.

13th European Congress on Biotechnology (ECB 13), Barcelona, Spain, 16 - 19 September 2007, vol.131

## Supported Projects

Elçin Y. M., Kansız S., Parmaksız M., Elçin A. E., Vurat M. T., Büyüksungur A., Project Supported by Higher Education Institutions, Osteokondral Doku Mühendisliğinde Kullanıma Yönelik Kompozit Biyomürekkeplerinin Hazırlanması ve Üç-Boyutlu Basımının Optimizasyonu, 2023 - 2024

Büyüksungur A., Kolsuz M. E., Gökdeniz S. T., Project Supported by Higher Education Institutions, 3 Boyutlu Yazıcılar ile Radyografik Olarak Çene Kemikleri Radyopasite ile Uyumlu 3 Boyutlu Model Elde Edilmesi, 2023 - 2024

Büyüksungur A., Kurt M. H., Bağcı N., TÜBİTAK Project, İnternal kök rezorpsiyon hacminin konik-ışınli bilgisayarli tomografi ile farkli ışınlama parametreleri uygulanarak deđerlendirilmesi: Mikro-bilgisayarli tomografi ile karşılaştırmalı in-vitro çalışma, 2023 - 2023

Bezgin T., Yılmaz U. Y., Büyüksungur A., Orhan K., Project Supported by Higher Education Institutions, Evaluation of Microleakage of Different Calcium Silicate Containing Agents in Partial Amputation Treatment, 2023 - 2023

Kayı Cangır A., Dizbay Sak S., BÜYÜKSUNGUR A., Project Supported by Higher Education Institutions, MikroBT solid paternli akciđer tümörlerinin birbirinden ayırımında kullanılabilir mi?, 2022 - 2023

Bezgin T., Göçer A. R., Büyüksungur A., Orhan K., Project Supported by Higher Education Institutions, Süt Dişlerine Uygulanan Kompomer Ve Bulk-Fill Kompozit Restorasyonlarda Rebonding Ajanın Mikrosızıntı, Yüzey Pürüzlülüğü ve Mikrosertliğe Etkisinin Deđerlendirilmesi, 2022 - 2022

Büyüksungur A., Hasirci V. N., Hasirci N., Durucan C., Tönük E., Özen C., Gürses S., Ermiş Şen M., Alagöz A. S., Boran E. T., CB Strateji ve Bütçe Başkanlığı (Kalkınma Bakanlığı) Projesi, BIOMATEN'in Nano-Mikro Alanlarında ve Hastaya özel Üretim Konusunda Gelişmesi, 2016 - 2022

Büyüksungur A., Hasirci N., Hasirci V. N., TÜBİTAK International Bilateral Joint Cooperation Program Project, 3b Yazıcı Ve Liyofilizasyon İle Üretilmiş İskeleler Kullanılarak Kemik Tümörü Modeli Geliştirilmesi, 2016 - 2018

## Patent

Büyüksungur A., Gökdeniz S. T., Kolsuz M. E., HİDROKSİAPATİT KULLANILARAK ÜÇ BOYUTLU RADYOŞELENİK KEMİK MODELİ ÜRETİMİ, Patent, CHAPTER A Human Needs, The Invention Recourse Number: 2023/015554 , Standard Registration, 2023

## Scientific Refereeing

JOURNAL OF FUNCTIONAL BIOMATERIALS, SCI Journal, August 2023

European annals of dental sciences (Online), National Scientific Refreed Journal, August 2023

JOURNAL OF FUNCTIONAL BIOMATERIALS, SCI Journal, August 2023

European annals of dental sciences (Online), National Scientific Refreed Journal, January 2023

## Metrics

Publication: 45

Citation (WoS): 254

Citation (Scopus): 301

H-Index (WoS): 8

H-Index (Scopus): 9

## Scholarships

TUBITAK Scholarship for PhD. Students, Scientific and Technological Research Council of Turkey, 2006, TUBITAK, 2006 - 2011

## Awards

Balaban Y. E., Bozkurt Ş. B., Akbaba S., Gönen Z. B., Akgün E. E., Büyüksungur A., Tezcaner A., Hakkı S., Lokal Mezenkimal Kök Hücre Uygulamasının Ratlarda Deneysel Periodontitis üzerine Etkisi, Türk Periodontoloji Derneği, November 2022  
Uslu A., Ağaçdan F., Büyüksungur A., Demirel G., Irmak Ö., Volume Shrinkage of Injectable Resin Composites Assessed by Micro Computerized Tomography, 11Th Conseuro Bilimsel Komitesi, April 2022