

## **Prof.Dr. Aslı Baysal**

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ScopusID: 36931021500

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### **Eğitim Bilgileri**

Doktora, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Türkiye 2005 - 2011

Yüksek Lisans, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Türkiye 2002 - 2005

Lisans, İstanbul Üniversitesi, Türkiye 1998 - 2002

### **Yaptığı Tezler**

Doktora, İnsan saçı örneklerinde eser elementlerin katı örneklemeli atomik absorpsiyon Yöntemi ile tayini, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, 2011

Yüksek Lisans, Slurry teknigi ile eser elementlerin zenginlestirmesi ve atomik absorpsiyon spektrometrisi ile tayini, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, 2005

### **Araştırma Alanları**

Temel Bilimler, Mühendislik ve Teknoloji

### **Akademik Unvanlar / Görevler**

Prof.Dr., İstanbul Teknik Üniversitesi, Fen-Edebiyat, Kimya, 2024 - Devam Ediyor

Doç.Dr., İstanbul Teknik Üniversitesi, Fen-Edebiyat, Kimya, 2022 - 2024

Prof.Dr., İstanbul Aydın Üniversitesi, Sağlık Hizmetleri Meslek Yüksekokulu, Tibbi Hizmetler Ve Teknikler Bölümü, 2020 - 2022

Doç.Dr., İstanbul Aydın Üniversitesi, Sağlık Hizmetleri Meslek Yüksekokulu, Tibbi Hizmetler Ve Teknikler Bölümü, 2015 - 2020

Yrd.Doç.Dr., İstanbul Aydın Üniversitesi, Sağlık Hizmetleri Meslek Yüksekokulu, Tibbi Hizmetler Ve Teknikler Bölümü, 2013 - 2015

## Akademik İdari Deneyim

Araştırma Enstitüsü Müdür Yardımcısı, İstanbul Teknik Üniversitesi, 2024 - 2027

Bölüm Başkanı, İstanbul Aydin Üniversitesi, Sağlık Hizmetleri Meslek Yüksekokulu, Tıbbi Hizmetler Ve Teknikler Bölümü, 2014 - 2022

Enstitü Müdürü, İstanbul Aydin Üniversitesi, Sağlık Bilimleri Enstitüsü, 2016 - 2019

## Yönetilen Tezler

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## SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. **Oxidative stress, biofilm-formation and activity responses of *P. aeruginosa* to microplastic-treated sediments: Effect of temperature and sediment type**  
Saygin H., Tilkili B., Kayisoglu P., Baysal A.  
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- II. **Culture dependent analysis of bacterial activity, biofilm-formation and oxidative stress of seawater with the contamination of microplastics under climate change consideration**  
Baysal A.  
THE SCIENCE OF THE TOTAL ENVIRONMENT AN INTERNATIONAL JOURNAL FOR SCIENTIFIC RESEARCH INTO THE ENVIRONMENT AND ITS RELATIONSHIP WITH MAN, cilt.922, ss.1-16, 2024 (SCI-Expanded)
- III. **Exposure to phagolysosomal simulated fluid altered the cytotoxicity of PET micro(nano)plastics to human lung epithelial cells**  
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Toxicology Mechanisms and Methods, cilt.34, sa.1, ss.72-97, 2024 (SCI-Expanded)
- IV. **A characterization and an exposure risk assessment of microplastics in settled house floor dust in Istanbul, Turkey**  
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Environmental science and pollution research international, cilt.30, sa.57, ss.121030-121049, 2023 (SCI-Expanded)
- V. **Oxidative stress and chemical characteristics of indoor PM2.5: a case study in an underground (-3rd) floor**  
Saygin H., Baysal A., ONAT B., Zora S. T.  
Air Quality, Atmosphere and Health, cilt.16, sa.7, ss.1345-1356, 2023 (SCI-Expanded)
- VI. **Elemental, Oxidative and Functional Group Characteristics of Sediments in the Industrial Marine area in Tuzla Aydinli Bay, Istanbul, Turkey Between 2016 and 2020**  
Baysal A.  
BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY, cilt.110, sa.85, ss.1-13, 2023 (SCI-Expanded)
- VII. **Sorption of thiamin (vitamin B1) onto micro(nano)plastics: pH dependence and sorption models**  
Kilincer M., Saygin H., Özyürek M., Baysal A.  
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- VIII. **Multispectroscopic Characterization of Surface Interaction between Antibiotics and Micro(nano)-sized Plastics from Surgical Masks and Plastic Bottles**

- Baysal A., Saygin H.  
ACS OMEGA, cilt.0, sa.0, ss.1-13, 2023 (SCI-Expanded)
- IX. An assessment of ecological and possible human health risks from Cr and Ni in sediments affected by the industrial marine area in Tuzla Aydinli Bay, Istanbul, Turkey between 2016-2020  
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- X. Interaction of nanoplastics with simulated biological fluids and their effect on the biofilm formation  
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ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH, cilt.29, sa.53, ss.80775-80786, 2022 (SCI-Expanded)
- XI. Influence of Ca species on the surface properties of TiO<sub>2</sub> nanoparticles and its possible transformation  
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- XII. Single and combined effects of antibiotics and nanoplastics from surgical masks and plastic bottles on pathogens  
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COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY C-TOXICOLOGY & PHARMACOLOGY, cilt.257, 2022 (SCI-Expanded)
- XIII. Co-occurrence of antibiotics and micro(nano)plastics: a systematic review between 2016-2021  
Baysal A., Saygin H.  
JOURNAL OF ENVIRONMENTAL SCIENCE AND HEALTH PART A-TOXIC/HAZARDOUS SUBSTANCES & ENVIRONMENTAL ENGINEERING, cilt.57, sa.7, ss.519-539, 2022 (SCI-Expanded)
- XIV. Interaction of amino acids with nanoplastic traces and their effect on *Staphylococcus aureus*  
Saygin H., Baysal A.  
JOURNAL OF ENVIRONMENTAL SCIENCE AND HEALTH PART A-TOXIC/HAZARDOUS SUBSTANCES & ENVIRONMENTAL ENGINEERING, cilt.56, sa.11, ss.1253-1263, 2021 (SCI-Expanded)
- XV. Insights into the Degradation Behavior of Submicroplastics by *Klebsiella pneumoniae*  
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JOURNAL OF POLYMERS AND THE ENVIRONMENT, cilt.29, sa.3, ss.958-966, 2021 (SCI-Expanded)
- XVI. Microplastic Occurrences in Sediments Collected from Marmara Sea-Istanbul, Turkey  
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Bulletin of Environmental Contamination and Toxicology, cilt.105, sa.4, ss.522-529, 2020 (SCI-Expanded)
- XVII. Degradation of sub mu-sized bioplastics by clinically important bacteria under sediment and seawater conditions: Impact on the bacteria responses  
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- XVIII. Risks of graphene nanomaterial contamination in the soil: evaluation of major ions  
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- XIX. Biofilm Formation of Clinically Important Bacteria on Bio-Based and Conventional Micro/Submicron-Sized Plastics  
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BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY, cilt.105, sa.1, ss.18-25, 2020 (SCI-Expanded)
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- XXI. Age-related physicochemical differences in ZnO nanoparticles in the seawater and their bacterial

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- XXII. **Bacterial interactions of microplastics extracted from toothpaste under controlled conditions and the influence of seawater**

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- XXIII. **An insight into the dependency on sample preparation for (eco) toxicity assessment of TiO<sub>2</sub> nanoparticles**

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- XXIV. **The miniaturised process for lead removal from water samples using novel bioconjugated sorbents**

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INTERNATIONAL JOURNAL OF ENVIRONMENTAL ANALYTICAL CHEMISTRY, cilt.99, sa.14, ss.1397-1414, 2019 (SCI-Expanded)

- XXV. **Occurrence and risk assessment of microplastics from various toothpastes**

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- XXVI. **Influence of Al<sub>2</sub>O<sub>3</sub> Nanoparticles on the Soil Elements**

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- XXVII. **The miniaturised solid phase extraction of some trace metals using graphene nanoplatelets by GFAAS**

Özbek N., Baysal A.

International Journal of Environmental Analytical Chemistry, cilt.98, sa.7, ss.685-694, 2018 (SCI-Expanded)

- XXVIII. **Assessment of chromium and nickel levels in surface sea waters and sediments from industrial marine area in Tuzla Aydinli Bay, Istanbul Turkey**

Baysal A., Akman S.

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- XXIX. **Starch coated titanium dioxide nanoparticles as a challenging sorbent to separate and preconcentrate some heavy metals using graphite furnace atomic absorption spectrometry**

Baysal A., Kuznek C., Özcan M.

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- XXX. **Effect of zinc oxide nanoparticles on the trace element contents of soils**

Baysal A., Saygin H.

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- XXXI. **Influence of environmental media on carbon nanotubes and graphene nanoplatelets towards bacterial toxicity**

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- XXXII. **Interaction of PM2.5 airborne particulates with ZnO and TiO<sub>2</sub> nanoparticles and their effect on bacteria**

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- XXXIII. **Starch coated titanium dioxide nanoparticles as a challenging sorbent to separate and preconcentrate some heavy metals using graphite furnace atomic absorption spectrometry**

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- XXXIV. **Chemical characterization of surface snow in Istanbul (NW Turkey) and their association with atmospheric circulations**  
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- XXXV. **Determination of sulfur in human hair using high resolution continuum source graphite furnace molecular absorption spectrometry and its correlation with total protein and albumin**  
Özbek N., Baysal A.  
Spectrochimica Acta - Part B Atomic Spectroscopy, cilt.130, ss.17-20, 2017 (SCI-Expanded)
- XXXVI. **Determination of sulfur by high-resolution continuum source atomic absorption spectrometry: Review of studies over the last 10 years**  
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- XXXVII. **Determination of Mercury in Istanbul Airborne Particles Using Solid Sampling High-Resolution Continuum Source Graphite Furnace Atomic Absorption Spectrometry**  
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- XXXVIII. **Investigation of fluorine content in PM2.5 airborne particles of Istanbul, Turkey**  
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- XL. **Lead and cadmium sorption in water samples using modified nano-sized cobalt aluminate**  
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- XLI. **A new approach for the determination of sulphur in food samples by high-resolution continuum source flame atomic absorption spectrometer**  
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- XLII. **Influence of surface properties of zinc oxide nanoparticles on their cytotoxicity**  
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- XLIII. **Chemical characterization of PM2.5 fractions of urban aerosol collected in Budapest and Istanbul**  
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- XLIV. **Monitoring of Pd in airborne particulates by solid sampling high-resolution continuum source electrothermal atomic absorption spectrometry**  
ATILGAN S., Akman S., BAYSAL A., Bakircioglu Y., Szigeti T., Ovari M., Zaray G.  
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- XLV. **Slurry sampling electrothermal atomic absorption spectrometric determination of chromium after separation/enrichment by mercaptoundecanoic acid modified gold coated TiO<sub>2</sub> nanoparticles**  
BAYSAL A., Akman S., DEMIR S., Kahraman M.  
Microchemical Journal, cilt.99, sa.2, ss.421-424, 2011 (SCI-Expanded)
- XLVI. **A practical method for the determination of sulphur in coal samples by high-resolution continuum source flame atomic absorption spectrometry**  
Baysal A., Akman S.  
Talanta, cilt.85, sa.5, ss.2662-2665, 2011 (SCI-Expanded)
- XLVII. **Determination of some trace elements by flame atomic absorption spectrometry after preconcentration and separation by Escherichia coli immobilized on multiwalled carbon nanotubes**  
AYDEMIR N., Tokman N., AKARSUBASI A. T., BAYSAL A., Akman S.  
Microchimica Acta, cilt.175, sa.1-2, ss.185-191, 2011 (SCI-Expanded)

- XLVIII. **A rapid solid sampling method for determination of nickel and copper along human hair by ETAAS**  
BAYSAL A., Akman S.  
Microchemical Journal, cilt.98, sa.2, ss.291-296, 2011 (SCI-Expanded)
- XLIX. **Comparison of digestion and solid sampling techniques for the determination of Pb and Cu in blackpepper**  
BAYSAL A., Akman S.  
International Journal of Food Science and Technology, cilt.46, sa.7, ss.1515-1521, 2011 (SCI-Expanded)
- L. **A rapid method for the determination of Pb, Cu and Sn in dried tomato sauces with solid sampling electrothermal atomic absorption spectrometry**  
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- LI. **FAAS slurry analysis of lead and copper ions preconcentrated on titanium dioxide nanoparticles coated with a silver shell and modified with cysteamine**  
Baysal A., Saatci A. D., Kahraman M., Akman S.  
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- LII. **In vivo evolutionary engineering of a boron-resistant bacterium: *Bacillus boroniphilus***  
SEN M., YILMAZ U., BAYSAL A., Akman S., Çakar Z. P.  
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- LIII. **The use of gold nanoparticles as an effective modifier for the determination of arsenic and antimony by electrothermal atomic absorption spectrometry**  
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- LIV. **A practical solid sampling method for the determination of lead in chewing gum by electrothermal atomic absorption spectrometry**  
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- LV. **Interaction of multi-functional silver nanoparticles with living cells**  
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- LVI. **The use of silver nanoparticles as an effective modifier for the determination of arsenic and antimony by electrothermal atomic absorption spectrometry**  
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- LVII. **Determination of lead in hair and its segmental analysis by solid sampling electrothermal atomic absorption spectrometry**  
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- LVIII. **Solid-phase extraction of Mn(II) and slurry analysis of the sorbent by electrothermal atomic absorption spectrometry**  
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- LIX. **The solid phase extraction of lead using silver nanoparticles - Attached to Silica gel prior to its determination by FAAS**  
BAYSAL A., Kahraman M., Akman S.  
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- LX. **A novel slurry sampling analysis of lead in different water samples by electrothermal atomic absorption spectrometry after coprecipitated with cobalt/pyrrolidine dithiocarbamate complex**  
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- LXI. **Slurry analysis after lead collection on a sorbent and its determination by electrothermal atomic**

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- LXII. **The use of solid-phase extraction and direct injection of a copolymer sorbent as slurry into the graphite furnace prior to determination of cadmium by ETAAS**

BAYSAL A., Tokman N., Akman S.

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## **Diğer Dergilerde Yayınlanan Makaleler**

### **I. Impact of test conditions on the bacterial bioassay in the presence of tio2 nanoparticles**

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Journal of Chemical Metrology, cilt.14, sa.2, ss.114-124, 2020 (ESCI)

### **II. Importance of sample pretreatment on the bacterial bioassay for toxicity of zno nanoparticles**

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### **III. Physico-chemical and toxicological behaviour of Al2O3 nanoparticles in fine particulate matter**

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### **IV. Adsorption of copper and zinc from sulfate media on a commercial sorbent**

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### **V. Optical studies of semiconductor Quantum Dots**

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## **Kitap & Kitap Bölümleri**

### **I. Smart nanosensors and methods for detection of nanoparticles and their potential toxicity in air**

Baysal A., Saygin H.

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### **II. Interactions of nanomaterials with the soil**

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### **III. Nanomaterials-based absorbents**

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### **V. Spectrochemical Methods Of Analysis**

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### **VI. Environmental Sampling And Sample Preparation**

- Baysal A., Ozcan M.  
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- VII. **Heavy Metal Determination in Environmental Samples**  
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Environmental Applications of Instrumental Chemical Analysis, Barbooti, Mahmood, Editör, Apple Academic Press, Waretown, ss.441-470, 2015
- VIII. **Determination of Trace Metals in Waste Water and Their Removal Processes**  
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- IX. **Optical Studies of Semiconductor Quantum Dots**  
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### **Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar**

- I. **SORPTION OF VITAMIN C ONTO MICROPLASTICS**  
KILINÇER M., SAYGIN H., ÖZYÜREK M., BAYSAL A.  
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- II. **MODIFICATION HYDROXYAPATITE FROM CATTLE BONES WITH BIOPOLYMERS TO REMOVE HEAVY METAL FROM ENVIRONMENTAL SAMPLES AND LIMIT THE BIOFILM FORMATION**  
meltem g., BAYSAL A., SAYGIN H.  
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- III. **IMPACT OF THE IN VITRO HUMAN DIGESTIVE ENVIRONMENT ON THE INTERACTION BETWEEN VITAMIN C AND MICROPLASTICS**  
KILINÇER M., SAYGIN H., ÖZYÜREK M., BAYSAL A.  
12th Aegean Analytical Chemistry Days, Türkiye, 19 - 22 Ekim 2023
- IV. **SYNTHETIC HYDRDROXYAPATITE COATED WITH METAL ORGANIC FRAMEWORK FOR REMOVAL OF HEAVY METAL IONS FROM ENVIRONMENTAL SOLUTIONS**  
meltem g., BAYSAL A., GAZİ M.  
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- V. **Impact of Soluble and Exchangeable Concentrations of Elements in Surface Sediments from Recreational Areas on Culturable Bacterial Behaviors**  
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