

Asst. Prof. ERDEM AKÇA

Personal Information

Office Phone: [+90 346 487 2808](tel:+903464872808)

Email: erdemakca@cumhuriyet.edu.tr

Web: <https://avesis.cumhuriyet.edu.tr/erdemakca>

Address: SCÜ Metalurji ve Malzeme Müh. A-Blok Ofis:204

International Researcher IDs

ScholarID: AV5GUfAAAAAJ

ORCID: 0000-0003-3391-627X

Publons / Web Of Science ResearcherID: H-3840-2017

ScopusID: 35306418500

Yoksis Researcher ID: 53227

Education Information

Doctorate, Gebze Technical University, Institute Of Science, Malzeme Bilimi Ve Mühendisliği (Dr), Turkey 2010 - 2016

Postgraduate, Gebze Yüksek Teknoloji Enstitüsü, Mühendislik Ve Fen Bilimleri Enstitüsü, Malzeme Bilimi Ve Mühendisliği (YI) (Tezli), Turkey 2007 - 2010

Undergraduate, Anadolu University, Faculty Of Engineering-Architecture, Department Of Materials Science And Engineering, Turkey 2002 - 2007

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Çevre dostu KNN ferroelektrik seramiklerin yüksek güç ultrasonik uygulamalar için modifikasyonu, Gebze Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Malzeme Bilimi Ve Mühendisliği (Dr), 2016

Postgraduate, Kurşun esaslı elektroseramik tozların sentezlenmesi, seramiklerin üretilmesi ve karakterizasyonları, Gebze Yüksek Teknoloji Enstitüsü, Mühendislik Ve Fen Bilimleri Enstitüsü, Malzeme Bilimi Ve Mühendisliği (YI) (Tezli), 2010

Research Areas

Metallurgical and Materials Engineering, Material science and engineering, Ceramic Materials, Testing and Control of Materials, Physical Properties, Electrical and Magnetic Properties, Composites, Material Characterization, Nanomaterials, Thermal Properties, Structure-Property Relationship, Powder Metallurgy, Engineering and Technology

Academic Titles / Tasks

Assistant Professor, Sivas Cumhuriyet University, Mühendislik Fakültesi, Metalürji Mühendisliği, 2017 - Continues

Research Assistant, Gebze Technical University, Faculty Of Engineering, Department Of Materials Science And

Engineering, 2007 - 2016

Academic and Administrative Experience

Deputy Head of Department, Sivas Cumhuriyet University, Mühendislik Fakültesi, Metalurji Ve Malzeme Mühendisliği Bölümü, 2017 - 2020

Courses

Uzmanlık Alan Dersi, Postgraduate, 2023 - 2024, 2022 - 2023

Point Defects in Crystalline Materials and Defect Chemistry, Postgraduate, 2022 - 2023, 2021 - 2022

Materials Selection and Design, Undergraduate, 2022 - 2023, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018

Transport Phenomena, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018

Ferroelectric Materials and Devices, Postgraduate, 2022 - 2023, 2021 - 2022

Polymer Materials, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018

Introduction to Metallurgical and Materials Engineering, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018

Sintering Theory and Particle Processing, Postgraduate, 2022 - 2023, 2021 - 2022, 2019 - 2020, 2018 - 2019

Seminar, Postgraduate, 2022 - 2023, 2021 - 2022

Dielectrics ve Electroceramics, Postgraduate, 2022 - 2023, 2021 - 2022

Electrical Properties of Materials, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019

Bitirme Ödevi, Undergraduate, 2020 - 2021, 2019 - 2020

Bitirme Ödevi, Undergraduate, 2018 - 2019, 2017 - 2018

Proje yönetimi, Undergraduate, 2017 - 2018

Metallurgical Project 2, Undergraduate, 2017 - 2018

Metalografi Laboratuvarı, Undergraduate, 2017 - 2018

Seramik Laboratuvarı, Undergraduate, 2017 - 2018

Materials Selection and Design, Undergraduate, 2017 - 2018

Proje Yönetimi, Undergraduate, 2017 - 2018

Metallurgical Engineering Project 2, Undergraduate, 2017 - 2018

Transport Phenomena, Undergraduate, 2017 - 2018

Metalurji Mühendisliği Projesi 1, Undergraduate, 2017 - 2018

Metallurgical Engineering Project 1, Undergraduate, 2017 - 2018

Polymer Materials, Undergraduate, 2017 - 2018

Jury Memberships

Post Graduate, Post Graduate, Afyon Kocatepe Üniversitesi, August, 2021

Doctoral Examination, Doctoral Examination, Sivas Cumhuriyet Üniversitesi, March, 2021

Published journal articles indexed by SCI, SSCI, and AHCI

- Fabrication and Characterization of High Performance PVDF-based flexible piezoelectric nanogenerators using PMN-xPT (x:30, 32.5, and 35) particles**

Paralı L., Koç M., AKÇA E.

Ceramics International, vol.49, no.11, pp.18388-18396, 2023 (SCI-Expanded)

- II. **Templated grain growth of Bi(Zn0.5Zr0.5)O-3 modified BiScO3-PbTiO3 piezoelectric ceramics for high temperature applications**
Akça E., Duran C., Kowalski B., Sehirlioglu A.
JOURNAL OF ASIAN CERAMIC SOCIETIES, vol.9, no.3, pp.874-881, 2021 (SCI-Expanded)
- III. **Effect of process parameters on the electrodeposition of zinc on 1010 Steel: Central composite design optimization**
Kul M., OSKAY K. O., Erden F., AKÇA E., Katirci R., Köksal E., Akinci E.
International Journal of Electrochemical Science, vol.15, pp.9779-9795, 2020 (SCI-Expanded)
- IV. **Lead-free potassium sodium niobate piezoceramics for high-power ultrasonic cutting application: Modelling and prototyping**
AKÇA E., YILMAZ H.
PROCESSING AND APPLICATION OF CERAMICS, vol.13, no.1, pp.65-78, 2019 (SCI-Expanded)
- V. **Processing and characterization of < 001 >-textured Pb(Mg1/3Nb2/3)O-3-Pb(Yb1/2Nb1/2)O-3-PbTiO3 ceramics**
DURAN C., Cengiz S., Ecebas N., Dursun S., AKÇA E.
JOURNAL OF MATERIALS RESEARCH, vol.32, no.13, pp.2471-2478, 2017 (SCI-Expanded)
- VI. **High strain, < 001 >-textured Pb(Mg1/3Nb2/3)O-3-Pb(Yb1/2Nb1/2)O-3-PbTiO3 piezoelectric ceramics**
DURAN C., Dursun S., Akca E.
SCRIPTA MATERIALIA, vol.113, pp.14-17, 2016 (SCI-Expanded)
- VII. **Sintering behavior and electrical properties of K4CuNb8O23 modified K0.5Na0.5NbO3 ceramics with SnO2, ZnO or Yb2O3 doping**
Akca E., Yilmaz H.
CERAMICS INTERNATIONAL, vol.41, no.3, pp.3659-3667, 2015 (SCI-Expanded)
- VIII. **Dielectric and electromechanical properties of Mn-doped 0.2875 Pb(Mg1/3Nb2/3)O-3-0.2875 Pb(Yb1/2Nb1/2)O-3-0.425 PbTiO3 ceramics**
Akca E., Tatar I., DURAN C.
JOURNAL OF MATERIALS SCIENCE, vol.48, no.23, pp.8287-8291, 2013 (SCI-Expanded)
- IX. **Fabrication and characterization of (Pb(Mg1/3Nb2/3)O-3, Pb(Yb1/2Nb1/2)O-3, PbTiO3) ternary system ceramics**
Akca E., Duran C.
CERAMICS INTERNATIONAL, vol.37, no.7, pp.2135-2142, 2011 (SCI-Expanded)
- X. **Processing and Electrical Properties in Lead-Based (Pb(Mg1/3Nb2/3)O-3, Pb(Yb1/2Nb1/2)O-3, PbTiO3) Systems**
Akca E., Yilmaz H., Duran C.
JOURNAL OF THE AMERICAN CERAMIC SOCIETY, vol.93, no.1, pp.28-31, 2010 (SCI-Expanded)

Articles Published in Other Journals

- I. **The role of Nb2O5 polymorphs on processing-structure-property relationship in lead-based perovskite 0.5Pb(Yb1/2Nb1/2)O-3-0.5PbTiO(3) piezoceramics**
AKÇA E., Unveroglu B., Tatar I., Duran C.
MATERIALIA, vol.20, 2021 (ESCI)
- II. **Effects of Antimony Doping and Sintering Atmosphere on the Properties of K4CuNb8O23 Modified K0.5Na0.5NbO3 (KNN-KCN) Lead-free Piezoceramics**
MURUTOĞLU M., AKÇA E., YILMAZ H.
Seramik - Journal of the Turkish Ceramics Society, vol.1, no.2, pp.33-39, 2021 (Peer-Reviewed Journal)
- III. **Optimization of Molding Unused New Sand Composition by Mixture Design Method**
Kul M., Oskay K. O., Akça E., Alsan A. E., Karaca B.
Cumhuriyet Science Journal, vol.39, no.2, pp.512-523, 2018 (Peer-Reviewed Journal)

- IV. **Üç Bileşenli Pb(Mg₁/3Nb₂/3)O₃-Pb(Yb₁/2Nb₁/2)O₃- PbTiO₃ Piezoseramiklerinde Mn İlavesi İle Elektriksel Sert Karakter Kazandırılması**
AKÇA E., TATAR İ., YILMAZ H., DURAN C.
Afyon Kocatepe Üniversitesi Fen Bilimleri Dergisi, vol.14, no.3, pp.85-91, 2014 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

- I. **Dielectric and Electromechanical Properties of Textured BiScO₃-PbTiO₃ Based High Temperature Piezoceramics**
ASTAN S., AKÇA E., DURAN C.
3rd International Materials Technologies and Metallurgy Conference-2023, Turkey, 11 - 13 October 2023
- II. **Processing And Characterization Of Crystallographically Textured BiScO₃-PbTiO₃ Based High Temperature Piezoelectric Ceramics**
ASTAN S., AKÇA E.
6. International Palandoken Scientific Studies Congress, Erzurum, Turkey, 24 - 25 June 2023
- III. **Fabrication of Crystallographically Textured BiScO₃-PbTiO₃ Based High Temperature Piezoelectric Ceramics by Templated Grain Growth**
AKÇA E., ASTAN S.
XI. Uluslararası Katılımlı Seramik Kongresi, Afyon, Turkey, 21 - 23 November 2022
- IV. **PNN-PZT Ferroelektriklerinde Fe Katkılandırılmasının Etkisi**
YILMAZ H., Teber M., AKÇA E.
ElektroseramikTR, Turkey, 2 - 03 November 2017
- V. **ÇEVRE DOSTU KNN (K_{0.5}Na_{0.5}NbO₃) PİEZOSERAMİKLERİNE KATKILANDIRMANIN VE SİNERJİLEME ATMOSFERİNİN ETKİSİ**
YILMAZ H., MURUTOĞLU M., AKÇA E.
ElektroseramikTR, Turkey, 2 - 03 November 2017
- VI. **K_{0.5}Na_{0.5}NbO₃ Based Eco firendly Lead free Piezoceramics Processing to Application**
AKÇA E., YILMAZ H.
9. Uluslararası Katılımlı Seramik Kongresi, Afyonkarahisar, 26 - 28 November 2015
- VII. **Pb Mg₁ 3Nb₂ 3 O₃ Pb Yb₁ 2Nb₁ 2 O₃ PbTiO₃ Ternary System Processing Properties and Transducer Application**
DURAN C., GÖÇMEZ H., ORHUN C., TATAR İ., AKÇA E.
Joint IEEE International Symposium on Applications of Ferroelectric (ISAF), International Symposium on Integrated Functionalities (ISIF), and Piezoresponse Force Microscopy Workshop (PFM) (ISAF-ISIF-PFM 2015), Singapore, 24 - 27 May 2015
- VIII. **Sodium Potassium Niobate Based Eco friendly Lead free Piezoceramics Effect of Dopants on the Electrical Properties**
AKÇA E., YILMAZ H.
3. International Ceramic, Glass, Porcelain, Enamel, Glaze and Pigment Congress (SERES'14), Eskişehir, Turkey, 15 - 17 October 2014
- IX. **Sodium Potassium Niobate Based Eco friendly Lead free Piezoceramics Sintering Study**
YILMAZ H., AKÇA E.
3. International Ceramic, Glass, Porcelain, Enamel, Glaze and Pigment Congress (SERES'14), Eskişehir, Turkey, 15 - 17 October 2014
- X. **Fabrication and characterization of Pb Mg₁ 3Nb₂ 3 O₃ Pb Yb₁ 2Nb₁ 2 O₃ PbTiO₃ ternary system ceramics**
AKÇA E., ERDAĞ İ., GÖÇMEZ H., DURAN C.
The 8th Asian Meeting on Ferroelectrics (AMF-8), PATTAYA, Thailand, 9 - 14 December 2012
- XI. **Üç Bileşenli Pb Mg₁ 3Nb₂ 3 O₃ Pb Yb₁ 2Nb₁ 2 O₃ PbTiO₃ Piezoseramiklerine Mn İlavesi İle Elektriksel Sert Karakter Kazandırılması**

AKÇA E., TATAR İ., YILMAZ H., DURAN C.

Uluslararası Katılımlı VIII. Seramik Kongresi, AFYONKARAHİSAR, 22 - 25 November 2012

XII. Processing and Electrical Properties in Lead Based $Pb_{1-x}Mg_xNb_{2-x}Sb_xO_3$ $Pb_{1-x}Yb_xNb_{2-x}Sb_xO_3$ $PbTiO_3$ Systems

AKÇA E., YILMAZ H., DURAN C.

The IMF-ISAF-2009, a joint meeting of 12th International Meeting on Ferroelectricity and 18th IEEE International Symposium on Applications of Ferroelectrics, Xian, China, 23 - 27 August 2009

Supported Projects

Akça E., Duran C., TUBITAK Project, Üstün performans gerektiren yüksek sıcaklık piezoelektrik uygulamalara yönelik kristalografik dokulu $BiScO_3$ - $PbTiO_3$ esaslı seramiklerinin şablonlu tane büyümesi yöntemi ile üretilmesi ve proses-yapı-özellik ilişkisinin irdelenmesi, 2021 - 2023

KUMRUOĞLU L. C., OSKAY K. O., AKÇA E., KUL M., Project Supported by Higher Education Institutions, ELEKTROLİZ İLE ÇİNKO KAPLAMA ŞARTLARININ OPTİMİZASYONU, 2017 - 2018

Akça E., Yılmaz H., Project Supported by Higher Education Institutions, Çok katmanlı aktüatör uygulamaları için $Pb(Ni_{1-x}Nb_{2-x}Sb_xO_3)-PbZrO_3-PbTiO_3$ seramiklerin pizelektrik özelliklerinin modifiye edilmesi ve prototip üretilmesi, 2015 - 2016

Metrics

Publication: 26

Citation (WoS): 64

Citation (Scopus): 93

H-Index (WoS): 6

H-Index (Scopus): 7