

# Assoc. Prof. FEVZİ ÇAKMAK BOLAT

## Personal Information

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## International Researcher IDs

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## Education Information

2012 - 2019	Doctorate, Gebze Technical University, Institute Of Science, Turkey
2005 - 2009	Undergraduate, Ataturk University, Mühendislik Fakültesi, Turkey

## Research Areas

Renewable Energy Systems, Wind power, Machine Design, Computer Aided Design and Manufacturing, Machining Methods, Machine Theory and Dynamics, Machine Dynamics, System Dynamics and Control, Mechanisms, Vehicle Systems Dynamics, Robotics, Mechatronics, Acoustics and Noise Control, Modeling and Simulation of Dynamic Systems, Mechanical Vibrations, Finite Element Methods, Mechanical Testing

## Academic Titles / Tasks

2022 - Continues	Associate Professor, Kocaeli University, Mühendislik Fakültesi, Makina Mühendisliği
2019 - 2022	Assistant Professor, Bolu Abant İzzet Baysal University, Faculty Of Engineering, Department Of Mechanical And Manufacturing Engineering
2012 - 2019	Research Assistant, Gebze Technical University, Faculty Of Engineering, Department Of Mechanical Engineering

## Courses

2022 - 2023	Dinamik Sistemlerin Matematiksel Modelive Simülasyonu, Postgraduate
2022 - 2023	Doğrusal Sistemlerin Gürbüz ve Optimal Kontrolü, Postgraduate
2021 - 2022	Makine Teorisi, Undergraduate
2021 - 2022	Sistem Dinamiği ve Kontrol, Undergraduate

## Advising Theses

2022	Bolat F. Ç., Postgraduate, A.SUGEÇ(Student), Farklı tip negatif poisson oranına sahip (auxetic) kirişlerin titreşim esaslı enerji hasadı performanslarının incelenmesi
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## Published journal articles indexed by SCI, SSCI, and AHCI

1. Design, numerical analysis and experiments of different types auxetic beams for vibration based

**energy harvester**

BOLAT F. Ç., Sugeç A., Özdemir A.

Mechanical Systems and Signal Processing, vol.210, 2024 (SCI-Expanded)

- II. **Optimal and robust control methodologies for 4DOF active suspension systems: A comparative study with uncertainty considerations**  
AL-QADASI Y. S. N., BOLAT F. Ç., MAKARACI M.  
Optimal Control Applications and Methods, 2024 (SCI-Expanded)
- III. **Identification of slotted beam parameters for low frequency flow-induced vibration energy harvesting**  
BOLAT F. Ç., Kara M.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.138, no.5, 2023 (SCI-Expanded)
- IV. **Experimental comparative analysis of hybrid energy harvesters exposed to flow-induced vibrations**  
Bolat F. Ç., BAŞARAN S., Abdelkefi A., Wang J.  
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART C-JOURNAL OF MECHANICAL ENGINEERING SCIENCE, vol.237, no.3, pp.664-672, 2023 (SCI-Expanded)
- V. **Numerical and experimental investigation of the aerodynamic performance of anomalous energy harvester geometries**  
ÖZKAN M., ERKAN O., BAŞARAN S., BOLAT F. Ç.  
Journal of Physics D: Applied Physics, vol.56, no.2, 2022 (SCI-Expanded)
- VI. **Effect of lamination angle on control performance for composite beams subject to galloping-based flow-induced vibration**  
BAŞARAN S., Bolat F. Ç.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.137, no.8, 2022 (SCI-Expanded)
- VII. **Vibration suppression of wind turbine nacelle with active electromagnetic mass damper systems using adaptive backstepping control**  
BAŞARAN S., Bolat F. Ç., Sivrioglu S.  
JOURNAL OF VIBRATION AND CONTROL, vol.28, no.13-14, pp.1621-1634, 2022 (SCI-Expanded)
- VIII. **Experimental and numerical analysis of vibration-based hybrid energy harvesting from non-classical beam structures**  
Bolat F. Ç.  
STRUCTURES, vol.37, pp.504-513, 2022 (SCI-Expanded)
- IX. **Investigation of energy harvesting in composite beams with different lamination angles under dynamic effects**  
Bolat F. Ç., BAŞARAN S., Kara M.  
COMPOSITE STRUCTURES, vol.270, 2021 (SCI-Expanded)
- X. **Improvement in fundamental electronic properties of Bi-2212 electroceramics with trivalent Bi/Tm substitution: a combined experimental and empirical model approach**  
Zalaoglu Y., Erdem U., Bolat F. Ç., Akkurt B., Turgay T., Yildirim G.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.32, no.14, pp.19846-19858, 2021 (SCI-Expanded)
- XI. **Bending vibration control of a MR fluid embedded smart beam exposed by the conjunction of wind-induced galloping effects**  
Bolet F. Ç., Sivrioglu S.  
SMART MATERIALS AND STRUCTURES, vol.29, no.11, 2020 (SCI-Expanded)
- XII. **An Experimental Analysis and Parametric Simulation of Vibration-Based Piezo-Aeroelastic Energy Harvesting Using an Aerodynamic Wing Profile**  
Bolat F. Ç.  
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.45, no.7, pp.5207-5214, 2020 (SCI-Expanded)
- XIII. **Switching linear quadratic Gaussian control of a flexible blade structure containing magnetorheological fluid**  
Sivrioglu S., Bolat F. Ç.

TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.42, no.3, pp.618-627, 2020 (SCI-Expanded)

- XIV. **Piezoelectric and electromagnetic hybrid energy harvesting with low-frequency vibrations of an aerodynamic profile under the air effect**  
Bolat F. Ç., BAŞARAN S., Sivrioglu S.  
MECHANICAL SYSTEMS AND SIGNAL PROCESSING, vol.133, 2019 (SCI-Expanded)
- XV. **Active vibration control of a blade element with uncertainty modeling in PZT actuator force**  
Sivrioglu S., Bolat F. Ç., ERTÜRK E.  
JOURNAL OF VIBRATION AND CONTROL, vol.25, no.21-22, pp.2721-2732, 2019 (SCI-Expanded)
- XVI. **Energy harvesting using an aerodynamic blade element at resonant frequency with air excitation**  
Bolet F. Ç., Sivrioglu S.  
SMART STRUCTURES AND SYSTEMS, vol.24, no.3, pp.379-390, 2019 (SCI-Expanded)
- XVII. **Active vibration suppression of elastic blade structure: Using a novel magnetorheological layer patch**  
Bolat F. Ç., Sivrioglu S.  
JOURNAL OF INTELLIGENT MATERIAL SYSTEMS AND STRUCTURES, vol.29, no.19, pp.3792-3803, 2018 (SCI-Expanded)
- XVIII. **Active Control of a Small-Scale Wind Turbine Blade Containing Magnetorheological Fluid**  
Bolat F. Ç., Sivrioglu S.  
MICROMACHINES, vol.9, no.2, 2018 (SCI-Expanded)

## Articles Published in Other Journals

- I. **BİNA MODELİNDEKİ KÜTLE DEĞİŞİMİNİN DİNAMİK KARAKTERİSTİKLER ÜZERİNDEKİ ETKİLERİNİN SAYISAL VE DENEYSSEL YÖNTEMLERLE İNCELENMESİ.**  
BOLAT F. Ç., ERGÜN M.  
EJONS INTERNATIONAL JOURNAL ON MATHEMATICS, ENGINEERING NATURAL SCIENCES, vol.4, no.13, 2020 (Peer-Reviewed Journal)
- II. **Improving Energy Harvesting Efficiency by Vibration-Induced Stresses of Piezoelectric Patch Glued Tapered Beams**  
BOLAT F. Ç.  
SAKARYA UNIVERSITY JOURNAL OF SCIENCE, vol.24, no.4, 2020 (Peer-Reviewed Journal)
- III. **Analysis Model of a Small Scale Counter-Rotating Dual Rotor Wind Turbine with Double Rotational Generator Armature**  
ERTÜRK E., Sivrioglu S., Bolat F. Ç.  
INTERNATIONAL JOURNAL OF RENEWABLE ENERGY RESEARCH, vol.8, no.4, pp.1849-1858, 2018 (ESCI)
- IV. **Modeling and analysis of a single shaft co-rotating dual rotor small wind turbine**  
ERTÜRK E., Gokcol O., Sivrioglu S., Bolat F. Ç.  
International Journal of Mechanical Engineering and Technology, vol.9, no.9, pp.897-906, 2018 (Scopus)
- V. **Active Vibration Suppression of a Flexible Blade Element Using Magnetorheological Layer Patch-Electromagnetic Actuator**  
BOLAT F. Ç., SİVRİOĞLU S.  
Turkish Journal of Electromechanics Energy, vol.3, no.1, 2018 (Peer-Reviewed Journal)
- VI. **H<sub>2</sub>, H<sub>∞</sub> and H<sub>2</sub>/H<sub>∞</sub> Control of Elastic Beam Vibrations Using Piezoelectric Actuator**  
BOLAT F. Ç., SİVRİOĞLU S.  
International Journal of Applied Mathematics, Electronics and Computers, vol.5, no.3, pp.53-61, 2017 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **NUMERICAL ANALYSIS OF SANDWICH STRUCTURES CONTAINING DIFFERENT TYPES OF AUXETIC CORE STRUCTURES**  
BOLAT F. Ç.  
ULUSLARARASI İLERİ ARAŞTIRMALAR VE UYGULAMALAR KONGRESİ, Sivas, Turkey, 1 - 02 December 2023, pp.356-365
- II. **PIEZOELECTRIC BASED ENERGY HARVESTING MODELING AND SIMULATION IN MATLAB/SIMULINK**  
BOLAT F. Ç., Çetin B. T.  
ULUSLARARASI İLERİ ARAŞTIRMALAR VE UYGULAMALAR KONGRESİ, Sivas, Turkey, 1 - 02 December 2023, pp.365-376
- III. **RÜZGAR YÜKÜ NEDENİYLE KULELERDE MEYDANA GELEN TİTREŞİMLERİN AKTİF KONTROLÜ**  
BOLAT F. Ç., ERGÜN M.  
1. ULUSLARARASI HAZAR BİLİMSEL ARAŞTIRMALAR KONGRESİ, 18 - 20 September 2020
- IV. **ELECTROMAGNETIC ENERGY HARVESTING FROM VEHICLE VIBRATIONS USING LORENTZ ACTUATOR**  
BOLAT F. Ç.  
International OECD Studies Conference on Engineering, Technology Robotics held in March 19-21, 2020 in Ankara, Turkey, 19 - 21 March 2020, pp.17
- V. **Precision position control of camless engine valve using electromagnetic actuator**  
BOLAT F. Ç.  
Asia Pasific 3rd International Conference on Contemporary Studies in June 1-2, 2020 in Seoul, South Korea, 1 - 02 June 2020
- VI. **Investigation of energy harvesting performance of galloping bonded auxetic beam structures**  
BOLAT F. Ç.  
INSAC Natural and Health Sciences(ICNHS-2020), 22 - 23 May 2020, pp.293-294
- VII. **DESIGN AND SIMULATION OF A MODEL MAGLEV VEHICLE**  
SİVRİOĞLU S., YILDIZ A. S., BAŞARAN S., BOLAT F. Ç., Kepenek E.  
4th International Symposium on Railway System Engineering, 10 - 12 October 2018, pp.262-271
- VIII. **Active Robust Control of Elastic Blade Element Containing Magnetorheological Fluid**  
Sivrioglu S., Bolat F. Ç.  
3rd International Conference on Mechanical and Aeronautical Engineering (ICMAE), Dubai, United Arab Emirates, 13 - 16 December 2017, vol.326
- IX. **Active Vibration Suppression of a Flexible Blade Element Using MR Layer Patch-Electromagnetic Actuator**  
BOLAT F. Ç., SİVRİOĞLU S.  
International Conference on Advanced Engineering Technologies(ICADET17), 21 - 23 September 2017
- X. **Piezoelektrik Yama Kullanarak Küçük Ölçekli Bir Rüzgar Türbini Kanadının Aktif Titreşim Kontrolü**  
BOLAT F. Ç., SİVRİOĞLU S.  
ElektroseramikTR, Turkey, 2 - 03 November 2017
- XI. **Multi-objective  $H_2/H_\infty$  Control of Blade Vibrations Using Piezoelectric Actuator**  
BOLAT F. Ç., SİVRİOĞLU S.  
International Conference on Advanced Technology Sciences (ICAT'2017), 9 - 12 May 2017
- XII. **Elastik Kiriş Titreşimlerinin Piezoelektrik Eyleyici Kullanarak  $H_2$  ve  $H_\infty$  Kontrol Uygulaması ve Karşılaştırması**  
SİVRİOĞLU S., BOLAT F. Ç.  
Otomatik kontrol Ulusal Toplantısı (TOK), Turkey, 29 September - 01 October 2016
- XIII. **The Free Vibration Analysis of Honeycomb Sandwich Beam Using 3D and Continuum Model**  
BOLAT F. Ç., ŞAKAR G.  
World Academy of Science, Engineering and Technology (WASET), Copenhagen, DK, 11 - 13 June 2015
- XIV. **Bal Peteği Sandviç Kompozit Yapıların Dinamik Analizi**  
ŞAKAR G., BOLAT F. Ç., YAMAN M.  
TİMAK-2010, Turkey, 11 - 12 November 2010
- XV. **Aluminyum Bal Peteği Sandviç Yapıların Serbest Titreşim Analizi**

## Supported Projects

2024 - Continues	Ceviz kabuğu tozu ve pirinç çeltiği elyafı takviyeli polivinil klorür PVC kompozitlerin delme davranışının incelenmesi, Project Supported by Higher Education Institutions
2024 - Continues	Serbest ve Eğilme Titreşimlerinde Yüksek Esneklikteki Kanat Yapılarının Teorik ve Deneysel İncelenmesi, Project Supported by Higher Education Institutions
2024 - Continues	Eklemeli imalat ile üretilen parça hatalarının titreşim analizi yöntemleri ile belirlenmesi, Project Supported by Higher Education Institutions
2023 - Continues	Motorlu ve Hibrit Elektrikli Taşıtların Performans Testlerinin Sarf Malzeme İhtiyacının Karşlanması Projesi, Project Supported by Higher Education Institutions
2024 - 2025	API 610 12. Versiyon Standardına Uygun 4 Kademeli BB3 Yapı Tipinde Tasarlanan Bir Santrifüj Pompanın Dayanım ve Titreşim Karakteristiğinin Doğrulanması
2022 - 2025	2 Kw Gucunde Zıt Devinimli Cift Rotorlu Ruzgar Turbininin Aktif Tork Dagilimi Kontrolu, TUBITAK Project
2024 - 2024	Kağıt İmalat Makinasının Üretim Kapasitesinin Artırılması
2024 - 2024	Özel uygulamalar için deneysel titreşim cihazı tasarımı ve imalatı, TUBITAK Project
2023 - 2024	Küçük Ölçekli Manuel Transpaletlerin Modernizasyonu, TUBITAK Project
2023 - 2024	Biçim dönüşümüne uğratılan kanat elemanın aerodinamik özelliklerinin belirlenmesi., TUBITAK Project
2023 - 2024	Rulman Titreşimlerinin nümerik ve deneysel olarak incelenmesi, TUBITAK Project
2023 - 2024	Şebeke Suyu İsale Hattındaki Akıştan Elektrik Üretmek İçin Türbin Tasarımı, TUBITAK Project
2021 - 2023	20 Mm Mobil Yakın Hava Savunma Sistemi, TUBITAK Project
2020 - 2022	Piezoelektrik eyleyici kullanılarak firar kenarı biçim değişimine uğratılan bir sabit/döner kanat elemanın aerodinamik performansının artırılması., Project Supported by Higher Education Institutions
2018 - 2022	Yüksek Taşıma Kapasiteli Süperiletken Maglev Kriyostat Sistemi Tasarımı ve Optimizasyonu, TUBITAK Project
2016 - 2017	Hibrid Manyetik Yataklı Volan Sisteminin Doğrusal Olmayan Uyarlamalı Kontrolü, TUBITAK Project
2009 - 2010	Bal peteği sandviç kompozitlerin dinamik davranışlarının incelenmesi, TUBITAK Project

## Scientific Refereeing

January 2024	SUSTAINABLE ENERGY TECHNOLOGIES AND ASSESSMENTS, SCI Journal
January 2024	CHAOS, SOLITONS AND FRACTALS, SCI Journal