

## Assoc. Prof. SİNAN BAŞARAN

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: E-1298-2017

ScopusID: 55210290600

Yoksis Researcher ID: 53527

### Education Information

Doctorate, Gebze Technical University, Institute Of Science, Makine Mühendisliği (Dr), Turkey 2011 - 2017

Postgraduate, Gebze Technical University, Institute Of Science, Makine Mühendisliği (YI) (Tezli), Turkey 2009 - 2011

Undergraduate, Istanbul Technical University, Makine Fakültesi, Makine Mühendisliği Bölümü, Turkey 2003 - 2009

### Dissertations

Doctorate, The design and adaptive control of a novel hybrid magnetic bearing system, Gebze Technical University, Fen Bilimleri Enstitüsü, Makine Mühendisliği (Dr), 2017

Postgraduate, Aktif manyetik yataklı elastik rotorun robust kontrolü, Gebze Technical University, Fen Bilimleri Enstitüsü, Makine Mühendisliği (YI) (Tezli), 2011

### Research Areas

Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Bilecik Seyh Edebali University, Mühendislik Fakültesi, Makine Mühendisliği, 2022 - Continues

### Academic and Administrative Experience

Bilecik Seyh Edebali University, 2021 - Continues

Bilecik Seyh Edebali University, 2019 - Continues

Bilecik Seyh Edebali University, 2018 - Continues

Director of the Center, Bilecik Seyh Edebali University, 2022 - 2025

Bilecik Seyh Edebali University, 2021 - 2022

Bilecik Seyh Edebali University, 2019 - 2021

Bilecik Seyh Edebali University, 2018 - 2021

## Courses

MIM331 MÜHENDİSLİKTE DENEYSEL METODLAR I, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
MIM5000 TEZ ÇALIŞMASI, Postgraduate, 2021 - 2022, 2020 - 2021  
MIM7000 UZMANLIK ALAN (bahar dönemi), Postgraduate, 2021 - 2022, 2020 - 2021  
MIM5016 İLERİ SİSTEM DİNAMİĞİ KONTROL (bahar dönemi), Postgraduate, 2021 - 2022  
MIM5000 TEZ ÇALIŞMASI (bahar dönemi), Postgraduate, 2021 - 2022, 2020 - 2021  
MIM334 MÜHENDİSLİKTE DENEYSEL METODLAR II, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
MM308 MAKİNE TEORİSİ VE DİNAMİĞİ, Undergraduate, 2021 - 2022  
MM304 TASARIM PROJESİ, Undergraduate, 2021 - 2022  
MIM401 TASARIM PROJESİ, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
MM209 DİNAMİK, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
MM307 MEKANİZMA TEKNİĞİ, Undergraduate, 2021 - 2022  
BM419 ROBOTİK SİSTEMLERE GİRİŞ, Undergraduate, 2021 - 2022  
MM310 OTOMATİK KONTROL, Undergraduate, 2021 - 2022  
MIM5016 İLERİ SİSTEM DİNAMİĞİ KONTROL, Postgraduate, 2021 - 2022, 2020 - 2021  
MIM7000 UZMANLIK ALAN, Postgraduate, 2021 - 2022, 2020 - 2021  
MIM404 BİTİRME PROJESİ, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
MIM328 MAKİNE TEORİSİ VE DİNAMİĞİ, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
MIM307 MEKANİZMA TEKNİĞİ, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019  
MIM5027 MODERN KONTROL SİSTEMLERİ TASARIMI, Postgraduate, 2020 - 2021  
MIM5025 MEKATRONİK SİSTEMLERİN TASARIMI VE UYGULAMASI, Postgraduate, 2020 - 2021  
MIM330 OTOMATİK KONTROL, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
MIM500 YÜKSEK LİSANS TEZ ÇALIŞMASI, Postgraduate, 2019 - 2020, 2018 - 2019  
MIM534 MODERN KONTROL SİSTEMLERİ TASARIMI, Postgraduate, 2019 - 2020, 2018 - 2019  
MIM430 MEKATRONİĞE GİRİŞ, Undergraduate, 2019 - 2020, 2018 - 2019  
MIM520 İLERİ SİSTEM DİNAMİĞİ KONTROL, Postgraduate, 2019 - 2020, 2018 - 2019  
MIM700 UZMANLIK ALAN DERSİ, Postgraduate, 2019 - 2020, 2018 - 2019  
MIM500 YÜKSEK LİSANS TEZ ÇALIŞMASI (bahar dönemi), Postgraduate, 2018 - 2019  
MIM427 MEKANİK TİTREŞİMLER, Undergraduate, 2018 - 2019  
MIM700 UZMANLIK ALAN DERSİ (bahar dönemi), Postgraduate, 2018 - 2019  
MIM521 MEKATRONİK SİSTEMLERİN TASARIMI VE UYGULAMASI, Postgraduate, 2018 - 2019  
MIM520 İLERİ SİSTEM DİNAMİĞİ KONTROL (bahar dönemi), Postgraduate, 2018 - 2019  
MM211 BİLGİSAYAR DESTEKLİ TASARIM, Undergraduate, 2018 - 2019  
MM209 DİNAMİK (yaz okulu), Undergraduate, 2018 - 2019

## Advising Theses

BAŞARAN S., Süperiletken manyetik yataklı lineer fırlatıcı tasarımı, Postgraduate, M.AL TINKİLİÇ(Student), 2022  
BAŞARAN S., Holonomik olmayan diferansiyel sürürlü bir mobil robotun uyarlamalı kontrolü, Postgraduate, G.ÖZDEMİR(Student), 2021

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

1. **A vertical take-off and landing (VTOL) unmanned aircraft vehicle trajectory control model with air-launched missiles**  
Sivrioglu S., BAŞARAN S.

Aircraft Engineering and Aerospace Technology, vol.96, no.10, pp.1302-1310, 2024 (SCI-Expanded)

- II. **Flag Fluttering-Triggered Piezoelectric Energy Harvester at Low Wind Speed Conditions**  
ÖZKAN M., ERKAN O., BAŞARAN S.  
Energy Technology, vol.12, no.4, 2024 (SCI-Expanded)
- III. **Energy Harvesting by V-Shape Bluff Bodies with Various Apical Angles Attached to a Revolute Joint**  
ÖZKAN M., BAŞARAN S., ERKAN O.  
ENERGY TECHNOLOGY, vol.11, no.10, 2023 (SCI-Expanded)
- IV. **A Linear Motor Launcher System Integrating a Multisurface Superconducting Magnetic Bearing**  
BAŞARAN S., Altinkilic M., Sivrioglu S.  
IEEE Transactions on Applied Superconductivity, vol.33, no.6, 2023 (SCI-Expanded)
- V. **Experimental comparative analysis of hybrid energy harvesters exposed to flow-induced vibrations**  
Bolat F. C., 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)
- VI. **Design and Finite Element Analysis of a 6/4 Pole Multi-Layer Fully Pitched Switched Reluctance Motor to Reduce Torque Ripple**  
Sahin C., BAŞARAN S.  
Electric Power Components and Systems, vol.51, no.18, pp.2069-2084, 2023 (SCI-Expanded)
- VII. **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)
- VIII. **Effect of lamination angle on control performance for composite beams subject to galloping-based flow-induced vibration**  
BAŞARAN S., Bolat F. C.  
European Physical Journal Plus, vol.137, no.8, 2022 (SCI-Expanded)
- IX. **Vibration suppression of wind turbine nacelle with active electromagnetic mass damper systems using adaptive backstepping control**  
BAŞARAN S., Bolat F. C., Sivrioglu S.  
JVC/Journal of Vibration and Control, vol.28, no.13-14, pp.1621-1634, 2022 (SCI-Expanded)
- X. **Hybrid energy harvesting system under the electromagnetic induced vibrations with non-rigid ground connection**  
BAŞARAN S.  
Mechanical Systems and Signal Processing, vol.163, 2022 (SCI-Expanded)
- XI. **Investigation of energy harvesting in composite beams with different lamination angles under dynamic effects**  
Cakmak Bolat F., BAŞARAN S., Kara M.  
Composite Structures, vol.270, 2021 (SCI-Expanded)
- XII. **Vibration control of truck cabins with the adaptive vectorial backstepping design of electromagnetic active suspension system**  
BAŞARAN S., Basaran M.  
IEEE Access, vol.8, pp.173056-173067, 2020 (SCI-Expanded)
- XIII. **Piezoelectric and electromagnetic hybrid energy harvesting with low-frequency vibrations of an aerodynamic profile under the air effect**  
Bolat F. C., BAŞARAN S., Sivrioglu S.  
Mechanical Systems and Signal Processing, vol.133, 2019 (SCI-Expanded)
- XIV. **Novel repulsive magnetic bearing flywheel system with composite adaptive control**  
BAŞARAN S., Sivrioglu S.  
IET Electric Power Applications, vol.13, no.5, pp.676-685, 2019 (SCI-Expanded)
- XV. **Levitation force analysis of ring and disk shaped permanent magnet-high temperature superconductor**

- BAŞARAN S., Sivrioglu S.  
Indian Journal of Pure and Applied Physics, vol.55, no.4, pp.261-268, 2017 (SCI-Expanded)
- XVI. **Radial stiffness improvement of a flywheel system using multi-surface superconducting levitation**  
BAŞARAN S., Sivrioglu S.  
Superconductor Science and Technology, vol.30, no.3, 2017 (SCI-Expanded)
- XVII. **Composite Adaptive Control of Single Gimbal Control Moment Gyroscope Supported by Active Magnetic Bearings**  
BAŞARAN S., Sivrioglu S., Zergeroglu E.  
Journal of Aerospace Engineering, vol.30, no.1, 2017 (SCI-Expanded)
- XVIII. **Multisurface HTS-PM Levitation for a Flywheel System**  
Sivrioglu S., BAŞARAN S., Yildiz A. S.  
IEEE Transactions on Applied Superconductivity, vol.26, no.8, 2016 (SCI-Expanded)
- XIX. **A Dynamical Stiffness Evaluation Model for a Ring-Shaped Superconductor Magnetic Bearing System**  
Sivrioglu S., BAŞARAN S.  
IEEE Transactions on Applied Superconductivity, vol.25, no.4, 2015 (SCI-Expanded)

### Articles Published in Other Journals

- I. **Manyetik Dişli Sisteminin Sonlu Elemanlar Yöntemi ile Analizi**  
BAŞARAN S.  
Avrupa Bilim ve Teknoloji Dergisi, vol.0, no.21, pp.37-42, 2021 (Peer-Reviewed Journal)
- II. **Süperiletken Manyetik Yataklı Doğrusal Fırlatıcı Sisteminin Ray Konfigürasyonun H-Formülü Yöntemi ile Tasarlanması**  
BAŞARAN S., Altınkılıç M., YILDIZ A. S.  
Avrupa Bilim ve Teknoloji Dergisi, vol.0, no.23, pp.742-749, 2021 (Peer-Reviewed Journal)
- III. **HIZ TÛMSEĞİ PROFİLLERİ İÇİN YARIM TAŞIT MODELİ YAKLAŞIMI KULLANILARAK AKTİF SÛPANSİYON SİSTEMİNİN MODELLENMESİ VE SİMÛLASYONU**  
BAŞARAN S.  
EJONS International Journal of Mathematic, Engineering and Natural Sciences, vol.4, no.14, 2020 (Peer-Reviewed Journal)
- IV. **Robust Variable Structure Controllers for Axial Active Magnetic Bearing**  
BAŞARAN S., SİVRİOĞLU S.  
International Journal of Applied Mathematics, Electronics and Computers, vol.4, pp.178, 2016 (Peer-Reviewed Journal)

### Refereed Congress / Symposium Publications in Proceedings

- I. **TOP DENGELEME SİSTEMİNİN DOĞRUSAL KUADRATİK KONTROL TASARIMI**  
TEZCAN S., BAŞARAN S.  
BİLSEL 1. BİLSEL INTERNATIONAL EFES SCIENTIFIC RESEARCHES AND INNOVATION CONGRESS, İzmir, Turkey, 22 July 2023, pp.69-81
- II. **Top Dengeleme Sisteminin Doğrusal Kuadratik Kontrol Tasarimi**  
TEZCAN S., BAŞARAN S.  
1st BILSEL International Efes Scientific Researches and Innovation Congress, İzmir, Turkey, 22 - 23 July 2023, vol.1, pp.69-81
- III. **Design and Fabrication of an Open Loop Wind Tunnel With Low Turbulence Intensity**  
Uçar R., ERKAN O., BAŞARAN S., ÖZKAN M.  
MAS 15th International European Conference On Mathematics, Engineering, Natural and Medical Sciences, Adana, Turkey, 7 - 08 September 2021, vol.1, pp.81-89

- IV. **Düşük türbülans şiddetine sahip açık çevrim bir rüzgar tüneli tasarımı ve imalatı**  
Uçar R., ERKAN O., BAŞARAN S., ÖZKAN M.  
MAS 15th INTERNATIONAL European Conference On Mathematics, Engineering, Natural & Medical Sciences, Adana, Turkey, 7 - 08 September 2021
- V. **Holonomik Olmayan Diferansiyel Sürürlü Mobil Robotun Uyarlamalı Kontrolü**  
ÖZDEMİR G., BAŞARAN S.  
International Asian Congress on Contemporary Sciences-V (01.06.2021 - 02.06.2021), Azerbaijan, 01 June 2021
- VI. **Tilting Torque Generation with Electromagnetic and Superconducting Magnetic Bearing Flywheel System**  
Altınkılıç M., BAŞARAN S.  
International African Conference on Current Studies of Science, Technology Social Sciences, Johannesburg, South Africa, 6 - 07 July 2020, pp.59-65
- VII. **Design and The Torque Analysis of Magnetic Gear Mechanism**  
BAŞARAN S.  
2. International European Conference on Interdisciplinary Scientific Researches, 4 - 05 July 2020, pp.709-716
- VIII. **Modeling and simulation of active suspension system using a half-car model approach for different road bump profiles**  
BAŞARAN S.  
International Black Sea Coastline Countries Symposium-4, 5 - 06 May 2020
- IX. **Computational fluid dynamics analysis of bluff bodies for energy harvesters**  
BAŞARAN S.  
International ICONTECH SYMPOSIUM on Innovative Surveys in Positive Sciences, 02 May 2020
- X. **Lyapunov type nonlinear robust control of active magnetic levitation experimental system**  
BAŞARAN S.  
International OECD Studies Conference on Engineering, Technology Robotics, Ankara, Turkey, 19 - 21 March 2020, pp.12
- XI. **Mathieu Equation Stability Analysis of a Repulsive Magnetic Bearing Flywheel System**  
BAŞARAN S., SİVRİOĞLU S.  
3. International Conference on Mathematics: An Istanbul Meeting for World Mathematicians, İstanbul, Turkey, 3 - 05 July 2019, pp.457-467
- XII. **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
- XIII. **Robust Variable Structure Controllers for Axial Active Magnetic Bearing**  
BAŞARAN S., SİVRİOĞLU S.  
International Conference on Advanced Technology & Sciences (ICAT'16), 1 - 03 September 2016
- XIV. **Hibrid Manyetik Yataklı Volan Sisteminin Uyarlamalı Kontrolü**  
BAŞARAN S., SİVRİOĞLU S.  
Otomatik Kontrol Ulusal Toplantısı (TOK 2016), Eskişehir, Turkey, 29 September - 01 October 2016, pp.23-28
- XV. **Flywheel System Levitation Using Multi Surface Ring HTS PM Setup**  
SİVRİOĞLU S., BAŞARAN S., YILDIZ A. S., Memiş B., Havva ö.  
5th International Conference on Superconductivity and Magnetism- ICSM2016, 29 - 30 April 2016
- XVI. **Aktif Manyetik Yataklı Elastik Rotor Sisteminde Doğrusal Olmayan PI Tipi Denetleyici Uygulaması Deneysel Sonuçlar**  
Okur B., ZERGEROĞLU E., BAŞARAN S., SİVRİOĞLU S.  
Otomatik Kontrol Ulusal Toplantısı (TOK 2013), Turkey, 26 - 28 September 2013
- XVII. **Adaptive control of a novel hybrid magnetic bearing flywheel system for use in momentum exchange devices**  
BAŞARAN S., Sivrioglu S.  
6th International Conference on Recent Advances in Space Technologies, RAST 2013, İstanbul, Turkey, 12 - 14 June 2013, pp.55-60

- XVIII. **MR Sönümleyici Esaslı Yarı Aktif Taşıt Süspansiyon Sisteminin Uyarlamalı Kontrolü**  
YILDIZ A. S., SİVRİOĞLU S., ZERGEROĞLU E., Şaban Ç., BAŞARAN S.  
Otomatik Kontrol Ulusal Toplantısı (TOK 2012), Turkey, 11 - 12 October 2012
- XIX. **5 Eksenli Elastik Rotor Aktif Manyetik Yatak Sisteminde PID Tipi Denetleyici Uygulaması Deneysel Sonuçlar**  
Okur B., ZERGEROĞLU E., BAŞARAN S., SİVRİOĞLU S.  
Otomatik Kontrol Ulusal Toplantısı (TOK 2011), Turkey, 14 - 16 September 2011
- XX. **Eksenel Aktif Manyetik Yatağın Yumuşak Dayanıklı Denetimi**  
BAŞARAN S., ŞEKER M., ZERGEROĞLU E., SİVRİOĞLU S.  
Otomatik Kontrol Ulusal Toplantısı (TOK 2011), Turkey, 14 - 16 September 2011
- XXI. **Robust Control of Flexible Rotor Active Magnetic Bearing System**  
BAŞARAN S., SİVRİOĞLU S., Okur B., ZERGEROĞLU E.  
6th International Advanced Technologies Symposium, 16 - 18 May 2011
- XXII. **Observer based output feedback control of thrust magnetic bearings**  
Okur B., Zergeroğlu E., TATLICIOĞLU E., BAŞARAN S., Sivrioğlu S.  
2011 50th IEEE Conference on Decision and Control and European Control Conference, CDC-ECC 2011, Orlando, FL, United States Of America, 12 - 15 December 2011, pp.1639-1643
- XXIII. **Beş eksen kontrollü Elastik Rotor Aktif Manyetik Yatak Sisteminin Gürbüz Kontrolü**  
BAŞARAN S., SİVRİOĞLU S., ZERGEROĞLU E., Okur B.  
Otomatik Kontrol Ulusal Toplantısı, Turkey, 21 - 23 September 2010

## Supported Projects

- BAŞARAN S., Süperiletken Manyetik Yataklı Doğrusal Fırlatıcı Tasarımı Ve Deneysel Uygulaması, 2020 - 2022
- Özkan M., Başaran S., Erkan O., Project Supported by Higher Education Institutions, Akış Kaynaklı Titreşimlerle Enerji Toplama, 2020 - 2021
- BAŞARAN S., Project Supported by Higher Education Institutions, Aktif manyetik levitasyon sisteminin Lyapunov tabanlı doğrusal olmayan gürbüz kontrolü, 2018 - 2019
- BAŞARAN S., Manyetik dişli sistemi imalatı, 2015 - 2016