

Prof. Semih
SEZER



Personal Information

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International Researcher IDs

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ResearcherID: AAG-5102-2019

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Education Information

Post Doctorate, Purdue University, Engineering Faculty, Mechanical Engineering, United States Of America 2005 - 2006

Doctorate, Yildiz Technical University, Makina Fakültesi/Fen Bilimleri/Makina Mühendisliği, Makina Teorisi,Sistem Dinamiği Ve Kontrol, Turkey 1998 - 2003

Postgraduate, Istanbul Technical University, Makina Fakültesi/Fen Bilimleri/Makina Mühendisliği, Makina Teorisi,Sistem Dinamiği Ve Kontrol, Turkey 1995 - 1998

Undergraduate, Istanbul Technical University, Makina Fakültesi/Makina Mühendisliği, Turkey 1990 - 1995

Dissertations

Doctorate, Plastik boru üretiminde kullanılan polietilen malzemenin statik - dinamik davranışlarının analizi ve viskoelastik modellenmesi, Yildiz Technical University, Graduate School of Natural and Applied Sciences, 2003

Postgraduate, Piezoelektrik tutucunun dizayn ve analizi, Istanbul Technical University, Fen Bilimleri Enstitüsü, 1998

Research Areas

Mechanical Engineering, Machine Theory and Dynamics, Machine Dynamics, System Dynamics and Control, Vehicle Systems Dynamics, Robotics, Modeling and Simulation of Dynamic Systems, Mechanical Vibrations, Finite Element Methods

Academic Titles / Tasks

Professor, Yildiz Technical University, Faculty Of Mechanical Engineering, Department Of Mechanical Engineering, 2022 - Continues

Associate Professor, Yildiz Technical University, Faculty Of Mechanical Engineering, Department Of Mechanical Engineering, 2013 - 2022

Assistant Professor, Yildiz Technical University, Faculty Of Mechanical Engineering, Department Of Mechanical Engineering, 2005 - 2013

Researcher, Purdue University, Herrick Laboratories, Mechanical Engineering, 2005 - 2006

Supervised Theses

- Sezer S., Klasik yol planlama algoritmalarının senteziyle oluşturulan dairesel düğüm algoritmasının otonom mobil robot üzerinde uygulanması, Postgraduate, A.GÖKHAN(Student), 2023
- Sezer S., Hibrit Araçlarda Yakıt Tüketimi Ve Emisyonların Modellemesi, Postgraduate, E.Çayır(Student), 2019
- Sezer S., Debriyaj kavramasındaki diyafram yay kabartma formunun ayırma strokuna etkisi, Postgraduate, F.ŞENEL(Student), 2019
- Sezer S., Plak Titreşimlerinin Aktif Kontrolü, Postgraduate, O.TUNA(Student), 2019
- Sezer S., Katsayı diyagram metodunun hareket kontrol sistemlerine uygulanması, Postgraduate, A.AVCU(Student), 2018
- Sezer S., Akıllı çubuk titreşimlerinin piezoelektrik eyleyiciler ile aktif kontrolü, Postgraduate, D.SOFU(Student), 2017
- Sezer S., Üç kademeli tek etkili pistonlu kompresörün dinamik analizi, Postgraduate, S.PIŞİRİCİ(Student), 2017
- Sezer S., AKBAROV S., Piezoelektrik katmanlı öngerilmeli sistemlerde yüzey ve lamb dalgalarının dispersiyonu, Doctorate, İ.KURT(Student), 2016
- Sezer S., Hibrit elektrikli otobüste (PHILEAS) sürücü sistemlerinin modellenmesi ve güç aktarma organlarının tasarımı, Postgraduate, B.TİMUÇİN(Student), 2016
- Sezer S., Elektrik tahrikli asansörlerin lineer grafik yöntemiyle modellenmesi ve dinamik analizi, Postgraduate, M.OĞUZ(Student), 2016
- Sezer S., Helisel sarımlı termoplastik kompozitlerin sarım özelliklerinin mekanik özelliklere etkisinin incelenmesi, Postgraduate, L.DERE(Student), 2016
- Sezer S., Hafif raylı bir taşıtın taşıyıcı bojsinin titreşim analizi, Postgraduate, F.ZAFER(Student), 2015
- Sezer S., Vites kutusu dişli titreşimlerinin debriyaj damperi kullanılarak azaltılması, Postgraduate, A.YÜCEŞAN(Student), 2014
- Sezer S., Fırçasız doğru akım motorunun ses ve titreşim seviyesinin düşürülmesi, Postgraduate, M.YILMAZ(Student), 2013
- Sezer S., Raylı bir taşıtın dinamik modelinin oluşturulması ve titreşim kontrolü, Postgraduate, A.ÖREN(Student), 2011
- Sezer S., Panel titreşimlerinin kabin gürültüsüne olan katkılarının incelenmesi, Postgraduate, M.USLU(Student), 2010
- Sezer S., Akıllı malzemeler yardımıyla plak titreşimlerinin aktif kontrolü, Postgraduate, İ.KURT(Student), 2010
- Sezer S., Akıllı çubukların tasarım ve analizi, Postgraduate, O.AYDOS(Student), 2009
- Sezer S., E43000 lokomotifinin dinamik modelinin oluşturulması ve titreşim kontrolü, Postgraduate, A.ERDEM(Student), 2009

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Design, Fabrication and Characterization of L&T Hybrid Mode Transducers for Thermoplastic Welding**
Ergun C., Sezer S.
JOURNAL OF VIBRATION ENGINEERING & TECHNOLOGIES, vol.13, pp.120-133, 2025 (SCI-Expanded)
- II. **Modeling and Simulation of Elevation Dynamics of Main Battle Tank Weapon System with Linear Graph Method**
Çakır M. F., Sezer S., Bayraktar M.
Arabian Journal for Science and Engineering, vol.49, no.8, pp.11157-11166, 2024 (SCI-Expanded)
- III. **Vibration isolation with clutch disk pre-damper mechanism for the idle rattle phenomenon**
Yucesan A., Sezer S.
JOURNAL OF VIBRATION AND CONTROL, vol.24, pp.1518-1534, 2018 (SCI-Expanded)
- IV. **Validation of railway vehicle dynamic models in training simulators**
Ozturk V., Arar O. F., Rende F. S., ÖZTEMEL E., SEZER S.
VEHICLE SYSTEM DYNAMICS, vol.55, no.1, pp.41-71, 2017 (SCI-Expanded)
- V. **The influence of the initial stresses on Lamb wave dispersion in pre-stressed PZT/Metal/PZT sandwich plates**
Kurt İ., Akbarov S., Sezer S.
STRUCTURAL ENGINEERING AND MECHANICS, vol.58, pp.347-378, 2016 (SCI-Expanded)
- VI. **Lamb wave dispersion in a PZT/metal/PZT sandwich plate with imperfect interface**

- Kurt İ., Akbarov S., Sezer S.
WAVES IN RANDOM AND COMPLEX MEDIA, vol.26, pp.301-327, 2016 (SCI-Expanded)
- VII. **Load sharing in lumbar spinal segment as a function of location of center of rotation**
Alapan Y., SEZER S., DEMİR C., Kaner T., Inceoglu S.
JOURNAL OF NEUROSURGERY-SPINE, vol.20, no.5, pp.542-549, 2014 (SCI-Expanded)
- VIII. **Application of fuzzy logic based control algorithms on a railway vehicle considering random track irregularities**
Sezer S., Atalay A. E.
JOURNAL OF VIBRATION AND CONTROL, vol.18, pp.1177-1198, 2012 (SCI-Expanded)
- IX. **Dynamic modeling and fuzzy logic control of vibrations of a railway vehicle for different track irregularities**
Sezer S., Atalay A. E.
SIMULATION MODELLING PRACTICE AND THEORY, vol.19, pp.1873-1894, 2011 (SCI-Expanded)
- X. **An Analytical Model for Compressive Creep Behavior of HDPE Used in Plastic Pipe Manufacturing**
SEZER S., Ataoğlu Ş., GÜLLÜOĞLU A. N., Kadioglu N.
POLYMER-PLASTICS TECHNOLOGY AND ENGINEERING, vol.47, no.12, pp.1302-1307, 2008 (SCI-Expanded)
- XI. **Residual stress analysis of multi-layered buffer layers on Ni substrate for YBCO coated conductor**
Arda L., Ataoglu S., SEZER S., Abdulaliyev Z.
SURFACE & COATINGS TECHNOLOGY, vol.202, no.3, pp.439-446, 2007 (SCI-Expanded)
- XII. **The effect of support locations on the steady-state response of viscoelastically point-supported rectangular orthotropic plates**
Kocaturk T., Sezer S., Demir C.
ARCHIVE OF APPLIED MECHANICS, vol.75, no.1, pp.58-67, 2005 (SCI-Expanded)
- XIII. **Determination of the steady state response of visco elastically point-supported rectangular specially orthotropic plates with added concentrated masses**
Kocaturk T., SEZER S., Demir C.
JOURNAL OF SOUND AND VIBRATION, vol.278, pp.789-806, 2004 (SCI-Expanded)
- XIV. **Determination of the steady state response of viscoelastically corner point-supported rectangular specially orthotropic plates under the effect of sinusoidally varying moment**
KOCATÜRK T., Demir C., Sezer S., İlhan N.
JOURNAL OF SOUND AND VIBRATION, vol.275, pp.317-330, 2004 (SCI-Expanded)

Articles Published in Other Journals

- I. **A New Local Path Planning Approach by Synthesis of PRM and RRT* Algorithms for an Autonomous Mobile Robot**
GÖKTAŞ A. G., SEZER S.
JOURNAL OF CONTROL, AUTOMATION AND ELECTRICAL SYSTEMS, vol.36, no.1, pp.72-85, 2025 (ESCI)
- II. **Mathematical Modelling of Electrically Driven Elevator via Linear Graph Method, Dynamic Response Analysis and Active Vibration Control**
Nalbant M. O., Sezer S.
Celal Bayar Üniversitesi Fen Bilimleri Dergisi, vol.15, no.3, pp.241-250, 2019 (Peer-Reviewed Journal)
- III. **Comparison of IPD and Fuzzy Logic Velocity Control In Two Degree of Freedom DC Motor System**
Avcu A., Bozkurt A. F., Erkan K., Kurt İ., Sezer S.
International Journal of Engineering Science and Application, vol.2, pp.1-7, 2018 (Peer-Reviewed Journal)
- IV. **W TİP 3 KADEMELİ PİSTONLU KOMPRESÖRÜN P-V DİYAGRAMININ TEORİK VE DENEYSEL İNCELENMESİ**
Pişirici S., Sezer S.
MAKİNATEK, vol.1, no.1, pp.1-5, 2017 (Peer-Reviewed Journal)
- V. **EFFECT OF UNIAXIAL INITIAL STRESSES, PIEZOELECTRICITY AND THIRD ORDER ELASTIC CONSTANTS ON THE NEAR-SURFACE WAVES IN A STRATIFIED HALF-PLANE**
Kurt İ., Akbarov S., Sezer S.
JOURNAL OF THERMAL ENGINEERING, vol.3, pp.1346-1357, 2017 (ESCI)

- VI. **Steady state response of viscoelastically corner point-supported generally orthotropic rectangular plates under the effect of sinusoidally varying moment**
KOCATÜRK T., SEZER S., DEMİR C.
Turkish Journal of Engineering and Environmental Sciences, vol.29, no.6, pp.331-341, 2005 (Scopus)
- VII. **Creep analysis of polyethylene material used in plastic pipe manufacturing**
Sezer S.
Sigma, vol.3, pp.73-83, 2004 (Peer-Reviewed Journal)

Papers Published in Refereed Scientific Meetings

- I. **Non-Newtonian Fluid Based Non-Linear Impedance Control For Robotic Manipulators**
Akbiyık O., SEZER S.
4th International Conference on Design, Research and Development (RDCONF 2024), İstanbul, Turkey, 19 December 2024
- II. **Yüzey Tem zleme Robotunun Tasarımı ve Kontrolü**
Güven N., SEZER S.
4th International Symposium of Scientific Research and Innovative Studies ISSRIS24, 13 March 2024
- III. **Navigation of 3D Printed Delivery Mobile Robot Based on Robotic Operating System**
GÖKTAŞ A. G., SEZER S.
7th International Congress on 3D Printing (Additive Manufacturing) Technologies and Digital Industry 2023, İstanbul, Turkey, 25 October 2023
- IV. **Effect of Aerodynamic Forces on Vibrations in Trucks**
KOÇ O. K., SERTKAYA A., SEZER S.
5TH INTERNATIONAL CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING, 17 - 19 December 2019
- V. **Vehicle dynamics modeling and verification with test of articulated bus**
Çifçi E., Sezer S.
ICAME 2019, İstanbul, Turkey, 17 - 19 December 2019, pp.1032-1040
- VI. **Burun İniş Takımında Meydana Gelen Shimmy Titreşim Hareketinin PID ve LQR ile Kontrolü**
Çakır U., Sezer S.
TOK'2019 Otomatik Kontrol Ulusal Toplantısı, Muğla, Turkey, 11 - 14 September 2019, pp.378-383
- VII. **Investigation of Emissions and Fuel Consumption in Series-Hybrid Vehicles**
Çayır E., Sezer S.
ICOLES 2019 INTERNATIONAL CONFERENCE ON LIFE AND ENGINEERING SCIENCES, İstanbul, Turkey, 27 - 29 June 2019, pp.52
- VIII. **Vibration Reduction of a Plate Using Active Control**
Tuna O., Sezer S.
4. ULUSLARARASI MÜHENDİSLİK MİMARLIK VE TASARIM KONGRESİ , İstanbul, Turkey, 23 April - 24 October 2019, pp.121
- IX. **ANGULAR VELOCITY CONTROL OF A TWO-DEGREES-OF-FREEDOOM FLEXIBLE BELT DRIVEN SYSTEM USING I-PD AND SSI CONTROLLERS**
AVCU A., SEZER S., ERKAN K., BOZKURT A. F., BUCAK M.
4thCONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2018-ICAME2018, İstanbul, Turkey, 19 - 21 December 2018
- X. **ANGULAR VELOCITY CONTROL OF A TWO-DEGREES-OF-FREEDOOM FLEXIBLE BELT DRIVEN SYSTEM USING I-PD AND SSI CONTROLLERS**
AVCU a., SEZER S., ERKAN K., Bozkurt a. f., BUCAK m.
4thCONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2018-ICAME2018, 19 - 21 December 2018
- XI. **Mathematical Modeling of Electrically Driven Elevator with Linear Graph Method**
SEZER S., NALBANT M. O.
International Conference on Natural Engineering Sciences ICNES 2016, 1 - 05 September 2016
- XII. **Steering Knuckle Assy Design and Static Analysis Under Different Forces for Metrobus Phileas**
TİMUÇİN B., KURAR A. F., AKÇİL L., SEZER S.

MECHATECH '16 Mechanical Engineering and Technologies Conference, 17 - 18 May 2016

- XIII. **Effect of Uniaxial Initial Stresses Piezoelectricity and Third Order Elastic Constants on the Near Surface Waves in a Stratified Half Plane**
KURT İ., AKBAROV S., SEZER S.
International Conference on Advances in Mechanical Engineering, 10 - 13 May 2016
- XIV. **Vibration Reduction of Semi-Trailer Truck Using MR Dampers: A Fuzzy Logic Control Approach**
KURT İ., PAKSOY M., Cetin S., GÜÇLÜ R., SEZER S.
7th International Conference on Mechanical and Aerospace Engineering (ICMAE), London, Canada, 18 - 20 July 2016, pp.336-340
- XV. **ÖN GERİLMELİ PİEZOELEKTRİK ÖRTÜ TABAKASI VE ÖN GERİLMELİ ELASTİK YARI DÜZLEMENDE OLUŞAN SİSTEMDE GENELLEŞTİRİLMİŞ RAYLEİGH DALGALARININ DİSPERSİYONU**
SURKHAY A., KURT İ., SEZER S.
XVIII. ULUSAL MEKANİK KONGRESİ, Turkey, 26 - 30 August 2013, pp.21-29
- XVI. **Effects Of Center Of Rotation Shift In Sagittal Plane On Load Sharing Characteristics Of The Lumbar Spine**
Alapan Y., Demir C., Sezer S., Kaner T., İnceoğlu S.
60th Annual Meeting of the ORS, California, United States Of America, 15 March 2014, pp.972-975
- XVII. **Kinematics of Disc Degeneration Analysis of Instantaneous Center of Rotation**
Alapan Y., Sezer S., Güçlü R., Kaner T., İnceoğlu S.
Orthopaedic Research Society, Texas, United States Of America, 01 January 2013, pp.89-90
- XVIII. **Active Vibration Control of a Beam with Piezoelectric Actuators**
Sezer S., Aydos O., Ergun C.
ISTEC, International Science and Technology Conference, Dubai, United Arab Emirates, 13 - 15 December 2012, pp.75-80
- XIX. **An Experimental Study on Modal Analysis of a Conventional Rail Vehicle Bogie Structure by Using Two Different Method - Konvansiyonel Hatlarda Kullanılan Bir Raylı Taşıt Bojisinin İki Farklı Yöntemle Deneysel Modal Analizi**
METİN M., Topsakal F. Z., Sezer S., Turan E.
1.Uluslararası Raylı Sistemler Mühendisliği Çalıştayı (IWRSE 12), Karabük, Turkey, 11 October 2012, pp.267-273
- XX. **Application of Self Tuning Fuzzy Logic Control to Full Railway Vehicle Model**
Sezer S., Çetin S., Atalay A. E.
Conference of the Complex Adaptive Systems on Responding to Continuous Global Change in Systems Needs, Illinois, United States Of America, 30 October - 02 November 2011, vol.6
- XXI. **Demiryolu Taşıtının Modellenmesi ve Titreşimlerinin Kontrolü**
SEZER S., ATALAY A. E.
TOK 2009, Turkey, 8 - 10 June 2009
- XXII. **Improving to transmission loss character of multilayered waste water pipes**
İLKORUR İ. O., SEZER S.
INTERNOISE 2007, 6 - 10 August 2007
- XXIII. **ViscoelastikNokta Mesnetli Dikdörtgen Ortotrop Plakların Kararlı Durum Cevabında Mesnet Yerleinin Etkisinin İncelenmesi**
Kocatürk T., Demir C., Sezer S.
UMTS 2005, Kayseri, Turkey, 9 - 11 June 2005, pp.149-155

Supported Projects

- SEZER S., GÖKTAŞ A. G., Project Supported by Higher Education Institutions, Klasik Yol Planlama Algoritmalarının Senteziyle Oluşturulan Dairesel Düğüm Algoritmasının Otonom Mobil Robot Üzerinde Uygulanması, 2022 - 2023
- Erdem H. H., Sandalcı T., Sezer S., Yüksek L., TUBITAK Project, HİBRİT ELEKTRİKLİ ARAÇLARA YÖNELİK ALTERNATİF GAZ YAKITLARI KULLANABİLECEK DİSESEL MOTOR VE MOTOR YÖNETİM SİSTEMİNİN GELİŞTİRİLMESİ, 2016 - 2019
- SEZER S., TUBITAK Project, Otonom Araç Tasarımı, 2013 - 2014
- SEZER S., Project Supported by Higher Education Institutions, Plak ve çubuk sistemleri üzerinde akıllı malzemeler yardımıyla aktif titreşim kontrolü, 2009 - 2012
- SEZER S., TUBITAK Project, Sanal Ortam Tren Sürüş Eğitimleri İçin Milli Benzetim Sistemlerinin Geliştirilmesi Projesi

(TRENSİM), 2007 - 2011

SEZER S., TUBITAK Project, Plastik Boru Üretiminde Kullanılan Yüksek Yoğunluklu Polietilen Malzemenin Basma Gerilmesi Altındaki Statik ve Dinamik Davranışlarının Modellenmesi, 2005 - 2007

SEZER S., Buzdolabı Kompresör Susturucularının Genişband Gürültü Azaltımı, 2005 - 2006

Sezer S., TUBITAK Project, HDPE Malzemenin Bünye Denklemlerinin Belirlenmesi, 2004 - 2006

SEZER S., Oluklu Polietilen Borularda Profil Optimizasyonu, 2003 - 2004

Patent

Sezer S., Plastik esaslı malzemeden mamul borular için halka rijitliği geliştirilen profil, Patent, CHAPTER F Mechanical engineering; Lighting; Heating; Weaponry; Destroyed Materials, The Invention Registration Number: TR200401137 , 2005

Metrics

Publication: 44

Citation (WoS): 113

Citation (Scopus): 182

H-Index (WoS): 7

H-Index (Scopus): 8

Non Academic Experience

ABD Purdue University, Visiting Scholar