

## Prof. SEDAT KARABAY

### Personal Information

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### Education Information

Doctorate, Kocaeli University, Fen Bilimleri Enstitüsü, Makine Mühendisliği Anabilim Dalı, Turkey 1995 - 2000

Postgraduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Maden Mühendisliği (YI) (Tezli), Turkey 1982 - 1986

### Research Areas

Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Kocaeli University, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, 2008 - Continues

Research Assistant, Kocaeli University, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, 1984 - 1986

### Academic and Administrative Experience

Kocaeli Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, 2008 - Continues

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

- I. **Effect of Surface Mechanical Attrition Treatment on Surface Topography and Dry Sliding Wear Performance of AA7075-T6**  
YARAR E., ERTÜRK A. T., KARABAY S.  
Advanced Engineering Materials, vol.26, no.21, 2024 (SCI-Expanded)
- II. **Experimental and Numerical Vibration Analysis of Surface Mechanical Attrition Treatment**  
Yarar E., Ertürk A. T., Açıkgöz Ç., Karabay S.  
JVC/JOURNAL OF VIBRATION AND CONTROL, vol.28, pp.1-17, 2022 (SCI-Expanded)
- III. **Dynamic Finite Element Analysis on Single Impact Plastic Deformation Behavior Induced by SMAT Process in 7075-T6 Aluminum Alloy**  
YARAR E., ERTÜRK A. T., KARABAY S.  
Metals and Materials International, vol.27, no.8, pp.2600-2613, 2021 (SCI-Expanded)
- IV. **Investigation of the effects of ultrasonic assisted drilling on tool wear and optimization of drilling parameters**  
Yarar E., Karabay S.  
CIRP Journal of Manufacturing Science and Technology, vol.31, pp.265-280, 2020 (SCI-Expanded)
- V. **Machining behavior of multiple layer polymer composite bearing with using different drill bits**

ERTÜRK A. T., VATANSEVER F., YARAR E., KARABAY S.

Composites Part B: Engineering, vol.176, 2019 (SCI-Expanded)

- VI. **Improving mechanical properties of AlSi10Mg aluminum alloy using ultrasonic melt treatment combined with T6 heat treatment**  
VATANSEVER F., ERTÜRK A. T., KARABAY S.  
Kovove Materialy, vol.57, no.1, pp.33-43, 2019 (SCI-Expanded)
- VII. **Failure analysis of wire-breaks in aluminum conductor production and investigation of early failure reasons for transmission lines**  
KARABAY S., ERTÜRK A. T., ZEREN M., YAMANOĞLU R., KARAKULAK E.  
ENGINEERING FAILURE ANALYSIS, vol.83, pp.47-56, 2018 (SCI-Expanded)
- VIII. **Vibration noise harshness of a light truck driveshaft, analysis and improvement with six sigma approach**  
ERTÜRK A. T., KARABAY S., BAYNAL K., Korkut T.  
Acta Physica Polonica A, vol.131, no.3, pp.477-480, 2017 (SCI-Expanded)
- IX. **Determination of Zr Inoculation Effect on Improving Thermal Resistivity of EC Grade Aluminum**  
ERTÜRK A. T., GÜVEN E. A., KARABAY S.  
Transactions of the Indian Institute of Metals, vol.68, no.4, pp.535-541, 2015 (SCI-Expanded)
- X. **Influence of Different Heat Treatments on the Solid Particle Erosion Behavior of Aluminum Alloy AA 7075 in Industrial Applications**  
KARABAY S., Bayraklılar M. S., BALCI E.  
ACTA PHYSICA POLONICA A, vol.127, no.4, pp.1052-1054, 2015 (SCI-Expanded)
- XI. **Manufacturing of Al-Zr thermal-resistant alloys for transmission lines**  
ERTÜRK A. T., GÜVEN E. A., KARABAY S.  
Acta Physica Polonica A, vol.127, no.4, pp.1292-1294, 2015 (SCI-Expanded)
- XII. **Processing damages of material components of aerial conductors and their tribological behaviors under dry friction**  
FEYZULLAHOĞLU E., KARABAY S.  
ARCHIVES OF CIVIL AND MECHANICAL ENGINEERING, vol.14, no.4, pp.682-690, 2014 (SCI-Expanded)
- XIII. **Determination of early failure sources and mechanisms for Al 99.7% and Al-Mg-Si alloy bare conductors used in aerial transmission lines**  
KARABAY S., FEYZULLAHOĞLU E.  
ENGINEERING FAILURE ANALYSIS, vol.38, pp.1-15, 2014 (SCI-Expanded)
- XIV. **Increasing Lightning Strength of Optical Ground Conductors**  
Karabay S.  
TRANSACTIONS OF THE INDIAN INSTITUTE OF METALS, vol.67, no.1, pp.105-114, 2014 (SCI-Expanded)
- XV. **THE EFFECT OF HEAT TREATMENTS ON THE SOLID-PARTICLE EROSION BEHAVIOR OF THE ALUMINUM ALLOY AA2014**  
Karabay S.  
MATERIALI IN TEHNOLOGIJE, vol.48, no.1, pp.141-147, 2014 (SCI-Expanded)
- XVI. **Modification of Conductive Material AA6101 of OPGW Conductors against Lightning Strikes**  
KARABAY S.  
STROJNISKI VESTNIK-JOURNAL OF MECHANICAL ENGINEERING, vol.59, pp.451-461, 2013 (SCI-Expanded)
- XVII. **Enhancement on Al-Mg-Si alloys against failure due to lightning arc occurred in energy transmission lines**  
KARABAY S., GÜVEN E. A., ERTÜRK A. T.  
Engineering Failure Analysis, vol.31, pp.153-160, 2013 (SCI-Expanded)
- XVIII. **Detecting Groan Sources in Drum Brakes of Commercial Vehicles by TVA-FMEA: A Case Study**  
KARABAY S., BAYNAL K., Igdeli C.  
STROJNISKI VESTNIK-JOURNAL OF MECHANICAL ENGINEERING, vol.59, no.6, pp.375-386, 2013 (SCI-Expanded)
- XIX. **A Study on the Derivation of Parametric Cutting Force Equations in Drilling of GFRP Composites**  
OKUTAN E., KARABAY S., SINMAZÇELİK T., AVCU E.

STROJNISKI VESTNIK-JOURNAL OF MECHANICAL ENGINEERING, vol.59, no.2, pp.97-105, 2013 (SCI-Expanded)

- XX. **Performance testing of an optical ground wire composite**  
KARABAY S., GÜVEN E. A., ERTÜRK A. T.  
Materiali in Tehnologije, vol.47, no.1, pp.119-124, 2013 (SCI-Expanded)
- XXI. **THE COMPARISON OF SOLID PARTICLE EROSION BEHAVIORS OF AA-1070 AND AA-6101 ALLOYS USED INPOWER TRANSMISSION LINES IN TURKEY**  
AVCU E., FİDAN S., KARABAY S., SINMAZÇELİK T.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.27, no.4, pp.865-874, 2012 (SCI-Expanded)
- XXII. **ACSS/TW aerial high-temperature bare conductors as a remedy for increasing transmission line capacity and determination of processing parameters for manufacturing**  
Karabay S.  
MATERIALS & DESIGN, vol.30, no.3, pp.816-825, 2009 (SCI-Expanded)
- XXIII. **Importance of early detection of maintenance problems in rotating machines in management of plants: Case studies from wire and tyre plants**  
KARABAY S., Uzman I.  
ENGINEERING FAILURE ANALYSIS, vol.16, no.1, pp.212-224, 2009 (SCI-Expanded)
- XXIV. **Influence of AIB2 compound on elimination of incoherent precipitation in artificial aging of wires drawn from redraw rod extruded from billets cast of alloy AA-6101 by vertical direct chill casting**  
Karabay S.  
MATERIALS & DESIGN, vol.29, no.7, pp.1364-1375, 2008 (SCI-Expanded)
- XXV. **Performance testing of a constructed drilling dynamometer by deriving empirical equations for drill torque and thrust on SAE 1020 steel**  
Karabay S.  
MATERIALS & DESIGN, vol.28, no.6, pp.1780-1793, 2007 (SCI-Expanded)

## Articles Published in Other Journals

- I. **PID ve Bulanık Mantık Kontrol Sistemleri ile İki Tekerlekli KendiniDengeleyebilen Robotik Sistem Tasarımı**  
PEÇE F., YARAR E., KARABAY S.  
Kocaeli Üniversitesi Fen Bilimleri Dergisi, 2020 (Peer-Reviewed Journal)
- II. **A STUDY ON THE POSSIBLE USE AA-6101 ALLOYS AS A MATERIAL TO MANUFACTURE AAAC ALUMINUM**  
ZEREN M., KARABAY S.  
Kocaeli Journal of Science and Engineering, 2012 (Peer-Reviewed Journal)
- III. **Transmisyon hatlarını koruyan opgw konstrüksiyonları ve yıldırım düşmelerine karşı tasarım kriteri**  
KARABAY S., ERTÜRK A. T., GÜVEN E. A.  
Metal Dünyası, vol.3, no.226, pp.72-77, 2012 (Peer-Reviewed Journal)
- IV. **Kompozit İletken Konstrüksiyonlarında Elastisite E Ve Termik Uzama Katsayısı Parametrelerinin Hesaplanması**  
KARABAY S., GÜVEN E. A.  
Metal Dünyası, vol.1, no.212, pp.124-127, 2011 (Peer-Reviewed Journal)
- V. **Ekstrüzyon Mamullerinde Eloksoal Sonrası Görülen Bantlı Yapıların Nedenleri**  
KARABAY S., ERTÜRK A. T., GÜVEN E. A.  
Metal Dünyası, vol.10, no.221, pp.106-109, 2011 (Peer-Reviewed Journal)
- VI. **Uluslararası İletken Piyasalarından Talep Gören Al 59 1120 ve AA 6101 İletken Alaşımları ve Fiziksel Özellikleri**  
KARABAY S., GÜVEN E. A.  
Metal Dünyası, vol.2, no.213, pp.106-110, 2011 (Peer-Reviewed Journal)

- VII. **Orta ve Yüksek Gerilim Enerji Kablolarında Çok Telli Alüminyum İletkenlerinin Soğuk Haddeleme İşleminde Ovallık Sorunu ve Önlenmesi**  
KARABAY S., GÜVEN E. A., ERTÜRK A. T.  
Metal Dünyası, vol.9, no.220, pp.96-100, 2011 (Peer-Reviewed Journal)
- VIII. **Isıya dayanıklı Al-Zr alaşımlı iletkenlerin teknik karakteristikleri ve geleneksel iletkenlerle karşılaştırılması**  
KARABAY S., TAYŞI Y., YILMAZ M.  
Mühendis ve Makina, vol.46, no.540, pp.12-19, 2005 (Peer-Reviewed Journal)
- IX. **Enerji nakil hatlarında kullanılan OPT-GW kompozit iletkeninin tasarımı ve imalat teknikleri**  
KARABAY S., TAYŞI Y., YILMAZ M.  
MÜHENDİS VE MAKİNA, vol.45, no.530, pp.37-42, 2004 (Peer-Reviewed Journal)
- X. **Alüminyum iletken imalat sanayiinde AIB2 ve AIB12 ön-alaşımlarının 99.5- 99.7Al ve AlMg0.7Si alaşımları üzerindeki iletkenlik tesirlerinin araştırılması**  
KARABAY S., YILMAZ M.  
METALURJİ, no.132, pp.56-62, 2003 (Peer-Reviewed Journal)
- XI. **AA-6101 Alaşımının yüksek gerilim çıplak havai hatlarında AAAC iletkeni olarak kullanımı**  
KARABAY S., ZEREN M., YILMAZ M.  
METALURJİ, no.132, pp.56-62, 2003 (Peer-Reviewed Journal)

## Books & Book Chapters

- I. **Mekanik Titreşimler Cilt 1**  
KARABAY S.  
Birsen Yayınevi, 2017
- II. **Mekanik Titreşimler Cilt 2**  
KARABAY S.  
Birsen Yayınevi, 2017

## Refereed Congress / Symposium Publications in Proceedings

- I. **DH36 Çelik Bir Yapı Üzerinde İletilebilirlik Yaklaşımı İle Hasar Tespit Metodolojisinin Uygulanması**  
KARA M., YARAR E., KARABAY S.  
ASES International Health, Engineering and Sciences Congress, Turkey, 07 May 2022
- II. **KAĞIT İŞLETMELERİNDE KESTİRİMCİ BAKIM UYGULAMALARI ve TİTREŞİMANALİZİ**  
Dereoğlu F., YARAR E., KARABAY S.  
International Marmara Sciences Congress (Spring) 2020, 19 - 20 June 2020
- III. **Micro Diameter Aluminum Conductor Wire Manufacturing for Advanced Technology Application**  
ERTÜRK A. T., Ocak N., KARABAY S., Akyüz O., GÜVEN E. A.  
9. ULUSLARARASI ALUMİNYUM SEMPOZYUMU, İstanbul, Turkey, 10 - 11 October 2019, vol.1, pp.341-343
- IV. **Optimization of Cutting Parameters with Taguchi Method for Drilling of Composites**  
Yarar E., Vatansver F., Ertürk A. T., Karabay S.  
IV. International Academic Research Congress (INES), Antalya, Turkey, 30 October - 03 November 2018
- V. **SUPERPLASTIC FORMING OF ALUMINUM ALLOYS**  
VATANSEVER F., ERTÜRK A. T., KARABAY S.  
3rd International Energy and Engineering Congress and Exhibition (UEMK 2018), Gaziantep, Turkey, 18 - 19 October 2018, pp.338-343
- VI. **DESIGN and ANALYSIS of a MAGNETORHEOLOGICAL DAMPER**  
Olçay E., ERTÜRK A. T., VATANSEVER F., KARABAY S.  
3rd International Energy and Engineering Congress and Exhibition (UEMK 2018), Gaziantep, Turkey, 18 - 19

October 2018, pp.329-337

- VII. **Effect of Cooling Rate on the Microstructural and Mechanical Properties of Aluminum Alloys**  
ERTÜRK A. T., VATANSEVER F., KARABAY S.  
3rd International Conference on Engineering Technology and Applied Sciences (ICETAS), Üsküp, Macedonia, 17 - 21 July 2018, pp.31
- VIII. **The Effect of Ultrasonic Melt Treatment on the Microstructural and Mechanical Properties of Aluminum Alloys**  
VATANSEVER F., ERTÜRK A. T., KARABAY S.  
3rd International Conference on Engineering Technology and Applied Sciences (ICETAS), 17 - 21 July 2018, pp.32
- IX. **EXPERIMENTAL STUDY ON ULTRASONIC ASSISTED DRILLING OF AA6061-T6**  
YARAR E., KARABAY S.  
II. INTERNATIONAL ACADEMIC RESEARCH CONGRESS, 18 - 21 October 2017
- X. **THE EFFECTS OF ULTRASONIC ASSISTED DRILLING ON TOOL WEAR**  
YARAR E., KARABAY S.  
II. INTERNATIONAL ACADEMIC RESEARCH CONGRESS, 18 - 21 October 2017
- XI. **Forgability of Aluminum 7075 Alloy in Closed Die**  
YARAR E., GÜVEN E. A., BALCI E., KARABAY S., ELTUT S. B.  
II. INTERNATIONAL ACADEMICRESEARCH CONGRESS, 18 - 21 October 2017
- XII. **Yüksek Sıcaklıklarda Dayanımı Artırılmış Alüminyum İlekten İmalatı**  
ERTÜRK A. T., GÜVEN E. A., KARABAY S., Uncu Ü. G., Binbuğa İ.  
8.Alüminyum Sempozyumu, İstanbul, Turkey, 5 - 06 October 2017, vol.1, pp.286-289
- XIII. **The effects on the surface roughness of Tool coating in Drilling of AA6061-T6**  
YARAR E., KARABAY S., GÜVEN E. A.  
III International Conference on Engineering an Natural Science, Budapest, Hungary, 3 - 07 May 2017, vol.2, pp.546
- XIV. **Grain Refinement Of AA2014 Aluminum Alloy Using Ultrasonic Vibration**  
VATANSEVER F., GÜVEN E. A., ERTÜRK A. T., KARABAY S.  
III International Conference on Engineering an Natural Sciences, Budapest, Hungary, 3 - 07 May 2017, vol.2, pp.248
- XV. **Effect of Ultrasonic Melt Treatment on the Hardness of AA7075 Aluminum Alloy**  
VATANSEVER F., ERTÜRK A. T., GÜVEN E. A., KARABAY S.  
III International Conference on Engineering an Natural Sciences, Budapest, Hungary, 3 - 07 May 2017, vol.2, pp.177
- XVI. **Forging Analysis Of AA2014 Alloy Under Different Conditions By Using Finite Elements Method**  
GÜVEN E. A., YARAR E., KARABAY S.  
III International Conference on Engineering an Natural Science, Budapest, Hungary, 3 - 07 May 2017, vol.2, pp.238
- XVII. **Noise Vibration Harshness Analysis of a Light Truck Driveshaft and Improving with Six Sigma Approach**  
ERTÜRK A. T., KARABAY S., BAYNAL K., Korkut T.  
6th International Advances in Applied Physics and Materials Science Congress & Exhibition (APMAS2016), 1 - 03 June 2016
- XVIII. **Ultrasonic Assisted Drilling of Aluminium 7075 T6**  
Yarar E., Karabay S.  
International Conference on Engineering and Natural Sciences, Sarajevo, Bosnia And Herzegovina, 24 - 28 May 2016
- XIX. **Performance testing of an optical ground wire composites designed and manufactured for transmission lines and telecommunication systems**  
KARABAY S., GÜVEN E. A., ERTÜRK A. T.  
20th Jubilee Conference On Materials and Technology, 18 - 20 October 2012
- XX. **Transmisyon Hatlarında Kullanılan Çelik Telli Mamullerin Rotary Ekstrüzyon Yöntemiyle Ömürlerinin Artırılması**  
KARABAY S., GÜVEN E. A., ERTÜRK A. T.  
International Iron Steel Symposium, Karabük, Turkey, 2 - 04 April 2012, vol.2, pp.651-658

## Supported Projects

KARABAY S., Project Supported by Higher Education Institutions, MANYETOROLOJİK SÖNÜM ELEMANI GELİŞTİRİLMESİ, 2018 - 2019

KARABAY S., ERTÜRK A. T., VATANSEVER F., GÜVEN E. A., Project Supported by Higher Education Institutions, ALÜMİNYUM VE ALAŞIMLARININ GAZ GİDERME İŞLEMİNDE ULTRASONİK TİTREŞİMLERİN KULLANILMASI, 2017 - 2018

KARABAY S., Project Supported by Higher Education Institutions, ALÜMİNYUM ALAŞIMLARININ İÇ YAPISININ İNCELTİLMESİ İŞLEMİNİN OPTİMİZE EDİLMESİ, 2016 - 2017

KARABAY S., Project Supported by Higher Education Institutions, ULTRASONİK TİTREŞİM UYGULAMALI DELME PROSESLERİNDE TİTREŞİM, KUVVET VE YÜZEY ANALİZLERİ, 2015 - 2016

KARABAY S., Project Supported by Higher Education Institutions, Ultrasonik titreşimlerin kesme parametrelerine etkisi, 2013 - 2014

## Metrics

Publication: 61

Citation (WoS): 279

Citation (Scopus): 344

H-Index (WoS): 9

H-Index (Scopus): 11

## Non Academic Experience

Türkkablo A.O.

ODTÜ/İSILMAREN