

## Prof. MURAT AYDIN

### Personal Information

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### Education Information

Doctorate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Makina Mühendisliği Anabilimdalı, Turkey 1995 - 2001

Postgraduate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Makina Mühendisliği Anabilimdalı, Turkey 1992 - 1995

Undergraduate, Karadeniz Technical University, Mühendislik-Mimarlık Fakültesi, Makina Mühendisliği Bölümü, Turkey 1988 - 1992

### Foreign Languages

English, B2 Upper Intermediate

### Certificates, Courses and Trainings

Occupational Health and Safety, İşyeri hekimliği ve iş güvenliği uzmanlığı eğitici belgesi, Çalışma ve Sosyal Güvenlik Bakanlığı İş Sağlığı ve İş Güvenliği Genel Müdürlüğü, 2013

### Dissertations

Doctorate, Çinko-Alüminyum Esaslı Alaşımların Değişik Ortamlardaki Yorulma Davranışlarının İncelenmesi, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Makina Mühendisliği Anabilimdalı, 2001

Postgraduate, Çinko-Alüminyum Esaslı Alaşımların Yorulma Özelliklerinin İncelenmesi, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Makina Mühendisliği Anabilimdalı, 1995

### Research Areas

Mechanical Engineering, Construction and Manufacturing, Non-traditional manufacturing methods, Material, Mechanical, Mechanical Testing, Engineering and Technology

### Academic Titles / Tasks

Professor, Karadeniz Technical University, Mühendislik Fakültesi, Makine Mühendisliği, 2018 - Continues

Associate Professor, Karadeniz Technical University, Mühendislik Fakültesi, Makine Mühendisliği, 2013 - 2018

Assistant Professor, Karadeniz Technical University, Mühendislik Fakültesi, Makine Mühendisliği, 2008 - 2013

Assistant Professor, Karadeniz Technical University, Beşikdüzü Meslek Yüksekokulu, Teknik Programlar, 2005 - 2008  
Lecturer PhD, Karadeniz Technical University, Beşikdüzü Meslek Yüksekokulu, Teknik Programlar, 2001 - 2005  
Research Assistant, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Makine Mühendisliği, 1993 - 2001

## Academic and Administrative Experience

Staj Başkanı, Karadeniz Technical University, Mühendislik Fakültesi, Makine Mühendisliği, 2010 - 2011  
Karadeniz Technical University, Bmyo Teknik Programlar, 2005 - 2008  
Karadeniz Technical University, Bmyo, 2003 - 2004  
Karadeniz Technical University, Bmyo Teknik Programlar, 2001 - 2002

## Courses

MÜHENDİSLİK MALZEMELERİNDE YORULMA, Postgraduate, 2021 - 2022  
MALZEME BİLİMİ, Undergraduate, 2016 - 2017  
MÜHENDİSLİK MALZEMELERİ, Undergraduate, 2016 - 2017  
HAFİF METALLER VE ALAŞIMLAR, Postgraduate, 2016 - 2017  
ÜRETİM YÖNTEMLERİ, Undergraduate, 2016 - 2017  
MALZEME BİLGİSİ-II, Undergraduate, 2013 - 2014  
MANUFACTURING PROCESSES-II, Undergraduate, 2013 - 2014  
ÜRETİM YÖNTEMLERİ, Undergraduate, 2013 - 2014  
KOMPOZİT MALZEMELER, Undergraduate, 2013 - 2014  
MECHANICAL BEHAVIOUR OF MATERIALS, Undergraduate, 2013 - 2014  
MALZEME SEÇİMİ, Undergraduate, 2013 - 2014  
HAFİF METALLER VE ALAŞIMLAR, Postgraduate, 2013 - 2014  
ÜRETİM YÖNTEMLERİ-I, Undergraduate, 2013 - 2014  
MAKİNA MÜHENDİSLİĞİNDE DENEYLER-I, Undergraduate, 2013 - 2014  
TASARIM PROJESİ, Undergraduate, 2013 - 2014  
MALZEMELERİN MEKANİK DAVRANIŞI, Undergraduate, 2013 - 2014  
MALZEME BİLGİSİ-I, Undergraduate, 2013 - 2014

## Advising Theses

Aydın M., Yüksek oranda alüminyum içeren çinko-alüminyum esaslı alaşımların yorulma davranışlarının incelenmesi, Postgraduate, H.ÇOLAK(Student), 2020  
Aydın M., Bakır katkısının Zn-27Al alaşımının yorulma davranışına etkisi, Postgraduate, H.ZENGİN(Student), 2019  
AYDIN M., Plazma Nitrüleme İşleminin Düşük Alaşımli AISI 4140 Çeliğinin Yapı ve Mekanik Özelliklerine Etkisi, Postgraduate, M.Anıl(Student), 2017  
AYDIN M., Yaşlandırma Süresinin Zn-27Al-1Cu Alaşımının Yapı ve Mekanik Özelliklerine Etkisi, Postgraduate, F.Şenaslan(Student), 2016  
AYDIN M., Metal Oksit Esaslı Kontak Malzemesi Üretimi ve Özelliklerinin İncelenmesi, Doctorate, S.Bıyık(Student), 2015  
AYDIN M., Eş Kanalda Açısal Ekstrüzyon Yönteminin Zn-60Al ve Zn-80Al Alaşımlarının Yorulma Özelliklerine Etkisi, Postgraduate, Y.Heyal(Student), 2011

## Jury Memberships

Doctorate, Doktora yeterlik sınavı, Karadeniz Teknik Üniversitesi, February, 2014  
Doctorate, Doktora yeterlik sınavı, Karadeniz Teknik Üniversitesi, February, 2014

Academic Staff Examination, Sınav Komisyonu, KTÜ Arsin Meslek Yüksekokulu, June, 2013  
Post Graduate, Yüksek Lisans Tez Savunması, Karadeniz Teknik Üniversitesi, December, 2012  
Doctorate, Tez izleme komitesi, Karadeniz Teknik Üniversitesi, March, 2012  
Doctorate, Doktora yeterlik sınavı, Karadeniz Teknik Üniversitesi, February, 2012  
Doctorate, Doktora yeterlik sınavı, Karadeniz Teknik Üniversitesi, September, 2011  
Post Graduate, Yüksek Lisans Tez Savunması, Karadeniz Teknik Üniversitesi, June, 2011  
Academic Staff Examination, Sınav Komisyonu, KTÜ Beşikdüzü Meslek Yüksekokulu, November, 2009  
Academic Staff Examination, Sınav Komisyonu, KTÜ Beşikdüzü Meslek Yüksekokulu, March, 2008  
Academic Staff Examination, Sınav Komisyonu, KTÜ Beşikdüzü Meslek Yüksekokulu, February, 2007

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

- I. **The effect of quench-aging on the mechanical properties of Zn-27Al-1Cu alloy**  
AYDIN M., Senaslan F.  
INTERNATIONAL JOURNAL OF MATERIALS RESEARCH, vol.109, no.8, pp.699-707, 2018 (SCI-Expanded)
- II. **Optimization of Mechanical Alloying Parameters of Cu25W Electrical Contact Material**  
BIYIK S., AYDIN M.  
ACTA PHYSICA POLONICA A, vol.132, no.3, pp.909-912, 2017 (SCI-Expanded)
- III. **Fabrication and Arc-Erosion Behavior of Ag8SnO(2) Electrical Contact Materials under Inductive Loads**  
BIYIK S., AYDIN M.  
ACTA PHYSICA POLONICA A, vol.131, no.3, pp.339-342, 2017 (SCI-Expanded)
- IV. **Fabrication and Arc-Erosion Behavior of Ag8SnO2 Electrical Contact Materials under Inductive Loads**  
BIYIK S., AYDIN M.  
ACTA PHYSICA POLONICA A, vol.131, pp.339-342, 2017 (SCI-Expanded)
- V. **Investigation of the Effect of Different Current Loads on the Arc-Erosion Performance of Electrical Contacts**  
BIYIK S., AYDIN M.  
ACTA PHYSICA POLONICA A, vol.129, no.4, pp.656-660, 2016 (SCI-Expanded)
- VI. **The Effect of Milling Speed on Particle Size and Morphology of Cu25W Composite Powder**  
AYDIN M., BIYIK S.  
ACTA PHYSICA POLONICA A, no.127, pp.1255-1260, 2015 (SCI-Expanded)
- VII. **The Effect of Milling Speed on Particle Size and Morphology of Cu25W Composite Powder**  
BIYIK S., AYDIN M.  
ACTA PHYSICA POLONICA A, vol.127, no.4, pp.1255-1260, 2015 (SCI-Expanded)
- VIII. **Arc-Erosion Behavior of Boric Oxide-Reinforced Silver-Based Electrical Contact Materials Produced by Mechanical Alloying**  
BIYIK S., Arslan F., AYDIN M.  
JOURNAL OF ELECTRONIC MATERIALS, vol.44, no.1, pp.457-466, 2015 (SCI-Expanded)
- IX. **Effect of equal channel angular pressing on microstructural and mechanical properties of as cast Al-20 wt-%Zn alloy**  
AYDIN M., HEYAL Y.  
MATERIALS SCIENCE AND TECHNOLOGY, vol.29, no.6, pp.679-688, 2013 (SCI-Expanded)
- X. **High-cycle fatigue behavior of severe plastically deformed binary Zn-60Al alloy by equal-channel angular extrusion**  
Aydin M.  
JOURNAL OF MATERIALS PROCESSING TECHNOLOGY, vol.212, no.8, pp.1780-1789, 2012 (SCI-Expanded)
- XI. **Mechanical Properties Of Equal-Channel Angular Extrusion-Processed Al-20Zn Alloy**  
AYDIN M., HEYAL Y.

- MATERIALS AND MANUFACTURING PROCESSES, no.445, pp.195-200, 2012 (SCI-Expanded)
- XII. **Enhancement of Tensile Ductility of Severe Plastically Deformed Two-Phase Zn-12Al Alloy by Equal Channel Angular Extrusion**  
AYDIN M., PÜRÇEK G., KÜÇÜKÖMEROĞLU T., SARAY O.  
Materials Science Forum, vol.633-634, pp.437-447, 2010 (SCI-Expanded)
- XIII. **Enhancement of Tensile Ductility of Severe Plastically Deformed Two-Phase Zn-12Al Alloy by Equal Channel Angular Extrusion**  
PÜRÇEK G., AYDIN M., Saray O., KÜÇÜKÖMEROĞLU T.  
DUCTILITY OF BULK NANOSTRUCTURED MATERIALS, pp.437-447, 2010 (SCI-Expanded)
- XIV. **Fatigue behaviour of monotectoid-based Zn-Al-Cu alloys in 3.5% NaCl and 1% HCl solutions**  
Savaskan T., Aydın M.  
MATERIALS CHARACTERIZATION, vol.52, no.4-5, pp.269-278, 2004 (SCI-Expanded)
- XV. **Fatigue properties of zinc-aluminium alloys in 3.5% NaCl and 1% HCl solutions**  
Aydın M., Savaskan T.  
INTERNATIONAL JOURNAL OF FATIGUE, vol.26, no.1, pp.103-110, 2004 (SCI-Expanded)
- XVI. **Fatigue behaviour of Zn-Al casting alloys**  
Savaskan T., Aydın M., Odabaşioğlu H. A.  
MATERIALS SCIENCE AND TECHNOLOGY, vol.17, no.6, pp.681-685, 2001 (SCI-Expanded)

### Articles Published in Other Journals

- I. **Investigation of microstructural change and damping behaviour of Zn-27Al- 1Cu alloy in different aging periods**  
Aydın M.  
Gümüşhane Üniversitesi Fen Bilimleri Dergisi, vol.12, no.2, pp.636-648, 2022 (Peer-Reviewed Journal)
- II. **Enhancement of tensile ductility of severe plastically deformed two-phase Zn-12Al alloy by equal channel angular extrusion**  
PÜRÇEK G., AYDIN M., SARAY O., KÜÇÜKÖMEROĞLU T.  
Materials Science Forum, vol.633, no.633, pp.437-447, 2010 (Scopus)
- III. **Çinko-Alüminyum Esaslı Alaşımların Yorulma Özelliklerinin İncelenmesi**  
AYDIN M., SAVAŞKAN T., KÜÇÜKÖMEROĞLU T.  
Mühendis ve Makina, vol.38, no.444, pp.40-45, 1997 (Peer-Reviewed Journal)

### Refereed Congress / Symposium Publications in Proceedings

- I. **Optimization of Mechanical Alloying Parameters in Cu25W Electrical Contact Material**  
AYDIN M., BIYIK S.  
3rd International Conference on Computational and Experimental Science and Engineering, Antalya, Turkey, 19 - 24 October 2018, pp.475
- II. **Effect of TiO<sub>2</sub> on Physical and Mechanical Properties of Electrical Contact Materials**  
AYDIN M., BIYIK S.  
15th European Mechanics of Materials Conference, Brussels, Belgium, 7 - 09 September 2018, pp.459
- III. **Effect Of Quenching Process On The Microstructure And Mechanical Properties Of Cold Formed Aisi 4140 Low Alloy Steel**  
KAYA M. A., AYDIN M.  
1. INTERNATIONAL TECHNOLOGICAL SCIENCES AND DESIGN SYMPOSIUM, Giresun, Turkey, 27 - 29 June 2018
- IV. **Effect of Quench-Ageing on Microstructural Evolution and Damping Behaviour of Zn-27Al-1Cu Alloy**  
ŞENASLAN F., AYDIN M.  
ISLAC'18 "1st International Symposium on Light Alloys and Composite Materials", Karabük, Turkey, 22 - 24 March

2018, pp.277

- V. **Optimization of Mechanical Alloying Parameters in Cu25W Electrical Contact Material**  
BIYIK S., AYDIN M.  
3rd International Conference on Computational and Experimental Science and Engineering, 19 - 24 October 2016
- VI. **Optimization of Mechanical Alloying Parameters in Cu25W Electrical Contact Material**  
BIYIK S., AYDIN M.  
3rd International Conference on Computational and Experimental Science and Engineering, Antalya, Turkey, 19 - 24 October 2016, pp.475
- VII. **Fabrication and Arc-Erosion Behavior of Ag8SnO2 Electrical Contact Materials under Inductive Loads**  
BIYIK S., AYDIN M.  
6th The International Advances in Applied Physics and Materials Science Congress & Exhibition, İstanbul, Turkey, 1 - 03 June 2016, pp.128
- VIII. **Effect of TiO2 Dopant on Particle Size and Morphology of Ag8SnO2 Composite Powder**  
AYDIN M., BIYIK S.  
Proceedings of the International Porous and Powder Materials Symposium and Exhibition, İzmir, Turkey, 15 - 18 September 2015, pp.170-175
- IX. **Influence of Sintering Temperature on Physical and Mechanical Properties of Ag8SnO2 Electrical Contact Material**  
AYDIN M., BIYIK S.  
Proceedings of the International Porous and Powder Materials Symposium and Exhibition, İzmir, Turkey, 15 - 18 September 2015, pp.164-169
- X. **Investigation of the Effect of Different Current Loads on the Arc-Erosion Performance of Electrical Contacts Using New Life-Test Equipment**  
AYDIN M., BIYIK S.  
5th The International Advances in Applied Physics and Materials Science Congress & Exhibition, Muğla, Turkey, 16 - 19 April 2015
- XI. **The Effect of Ball-to-Powder Weight Ratio on Particle Size and Morphology of Cu25W Composite Powder**  
AYDIN M., BIYIK S.  
7th International Powder Metallurgy Conference & Exhibition, Ankara, Turkey, 12 - 15 November 2014, pp.186-187
- XII. **The effect of the amount of process control agent on the properties of Cu25W composite powder**  
AYDIN M., BIYIK S.  
2014 International Conference on High Performance and Optimum Design of Structures and Materials,, Ostend, Belgium, 9 - 11 June 2014, pp.189-200
- XIII. **The Effect of Milling Speed on Particle Size and Morphology of Cu25W Composite Powder**  
Biyik S., Aydın M.  
4th The International Advances in Applied Physics and Materials Science Congress & Exhibition, Muğla, Turkey, 24 - 27 April 2014, pp.981
- XIV. **The Effect of Milling Speed on Particle Size and Morphology of Cu25W Composite Powder**  
AYDIN M., BIYIK S.  
4th International Advances in Applied physics and Materials Science Congress & Exhibition, Muğla, Turkey, 24 - 27 April 2014, pp.981
- XV. **A New Life-Test Equipment Designed for Medium-Duty Electromagnetic Contactors**  
AYDIN M., BIYIK S.  
15th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems, Gent, Belgium, 7 - 09 April 2014, pp.1-7
- XVI. **A new life-test equipment designed for medium-duty electromagnetic contactors**  
BIYIK S., AYDIN M.  
IEEE 15th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in

- Microelectronics and Microsystems (EurosimeE), Ghent, Belgium, 7 - 09 April 2014, pp.1-7
- XVII. **Investigation of the Compaction Behaviour of Ag8ZnO Composite Produced by Mechanical Alloying**  
AYDIN M., BIYIK S.  
1st International Porous and Powder Materials Symposium and Exhibition PPM 2013, İzmir, Turkey, 3 - 06 September 2013, pp.145-149
- XVIII. **Mechanical properties of equal-channel angular extrusion-processed Al-20Zn alloy**  
AYDIN M., HEYAL Y.  
Advanced Materials Research, İstanbul, Turkey, 23 - 24 July 2012, vol.445, pp.195-200
- XIX. **Mechanical Properties of Equal-Channel Angular Extrusion-Processed Al-20Zn Alloy**  
AYDIN M., HEYAL Y.  
14th International Conference on Advances in Materials and Processing Technologies (AMPT), İstanbul, Turkey, 13 - 16 July 2011, vol.445, pp.195-200
- XX. **Aşırı Plastik Deformasyon Yöntemiyle Üretilmiş Olan Metalik Biyomalzemelerin Yorulma Özelliklerinin İncelenmesi**  
AYDIN M.  
III. Tıbbi Cihazlar ve İmalatı Kongre ve Sergisi, Samsun, Turkey, 6 - 07 November 2009, pp.59-63
- XXI. **Fatigue Behaviour of Zinc-Aluminium Alloys in Air and 1 % HCl Solution**  
AYDIN M., SAVAŞKAN T.  
5th International Fracture Conference, Elazığ, Turkey, 6 - 08 September 2001, pp.143-150

## **Memberships / Tasks in Scientific Organizations**

TMMOB Makina Mühendisleri Odası, Member, 1993 - Continues  
TMMOB Makina Mühendisleri Odası, Board Member, 1996 - 2000

## **Scientific Refereeing**

Metallography, Microstructure, and Analysis , SCI Journal, October 2017  
Journal of Materials Research, Other Indexed Journal, December 2015  
Materials Research Innovation, SCI Journal, November 2014  
Journal of Mechanical Engineering Science, Other Indexed Journal, October 2014  
G.Ü. Mühendislik-Mimarlık Fakültesi Dergisi, SCI Journal, April 2014

## **Metrics**

Publication: 40  
Citation (WoS): 308  
Citation (Scopus): 322  
H-Index (WoS): 8  
H-Index (Scopus): 8

## **Congress and Symposium Activities**

5th International Fracture Conference, Attendee, Elazığ, Turkey, 2011  
AMPT 2011 14th International Conference on Advances in Materials & Processing Technologies, Attendee, İstanbul, Turkey, 2011  
III. Tıbbi Cihazlar ve İmalatı Kongre ve Sergisi, Attendee, Samsun, Turkey, 2009

## **Non Academic Experience**

KTÜ Makina Müh. Bölümü

KTÜ Beşikdüzü Meslek yüksekokulu

KTÜ Beşikdüzü Meslek yüksekokulu

KTÜ Fen Bilimleri Enstitüsü