

Assoc. Prof. EMRE ACAR

Personal Information

Office Phone: [+90 352 207 6666](tel:+903522076666) Extension: 41184

Email: emreacar@erciyes.edu.tr

Web: <https://avesisis.erciyes.edu.tr/emreacar>

International Researcher IDs

ScholarID: pIJRJVwAAAAJ

ORCID: 0000-0003-1114-6251

ScopusID: 56567754600

Yoksis Researcher ID: 215996

Education Information

Doctorate, University of Kentucky, College Of Engineering, Mechanical Engineering, United States Of America 2010 - 2014

Postgraduate, Brown University, Division Of Engineering, Materials Science, United States Of America 2008 - 2010

Undergraduate, Gazi University, Muhendislik Fakultesi, Makine Muhendisligi, Turkey 2002 - 2006

Certificates, Courses and Trainings

Foreign Language, ELS Language Center, Fairleigh Dickinson University, Teaneck, NJ, USA, 2007

Dissertations

Doctorate, "Precipitation, orientation and composition effects on the shape memory properties of high strength NiTiHfPd shape memory alloys", University Of Kentucky, College Of Engineering, Mechanical Engineering, 2014

Research Areas

Mechanical Testing, Metallic Materials, Structure-Property Relationship

Academic Titles / Tasks

Assistant Professor, Erciyes University, Havacılık ve Uzay Bilimleri Fakültesi, Uçak Mühendisliği, 2018 - Continues

Assistant Professor, Erciyes University, Havacılık ve Uzay Bilimleri Fakültesi, Uçak Mühendisliği, 2015 - 2018

Lecturer PhD, Erciyes University, Havacılık ve Uzay Bilimleri Fakültesi, Uçak Mühendisliği, 2014 - 2015

Research Assistant, University of Kentucky, College Of Engineering, Mechanical Engineering, 2010 - 2014

Research Assistant, Brown University, Division Of Engineering, Materials Science, 2008 - 2010

Advising Theses

ACAR E., Balpeteği kompozit yapılarda termografi metoduyla su tespiti, Postgraduate, K.Münir(Student), 2018

ACAR E., NiTiHf bazlı şekil hafızalı alaşımların fonksiyonel özelliklerinin termodinamik açıdan incelenmesi, Postgraduate, M.Çalışkan(Student), 2018

ACAR E., VTOL İHA'nın kanat bağlantı açılarının incelenmesi, Postgraduate, E.Yazar(Student), 2018

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Experimental Analysis of Ultra-High Strength NiTiHfPd Shape Memory Alloys**
ACAR E., Saedi S., Karaca H. E.
Journal of Materials Engineering and Performance, vol.33, no.9, pp.4640-4646, 2024 (SCI-Expanded)
- II. **The effect of STFs formed with different dispersing mediums on rheological properties**
CEYLAN A., ERCÜMEN K. M., AYDIN M., ACAR E.
Journal of the Brazilian Society of Mechanical Sciences and Engineering, vol.46, no.3, 2024 (SCI-Expanded)
- III. **A machine learning approach to predict austenite finish temperature in quaternary NiTiHfPd SMAs**
Raji H., Rad M., ACAR E., Karaca H., Saedi S.
Materials Today Communications, vol.38, 2024 (SCI-Expanded)
- IV. **Energy damping in shape memory alloys: A review**
Saedi S., ACAR E., Raji H., Saghaian S. E., Mirsayar M.
Journal of Alloys and Compounds, vol.956, 2023 (SCI-Expanded)
- V. **Influence of dispersion liquid and silica concentration on rheological properties of shear thickening fluids (STFs)**
Aşkan A., Çapkurt M., Acar E., Aydın M.
RHEOLOGICA ACTA, vol.62, no.9, pp.447-460, 2023 (SCI-Expanded)
- VI. **Mechanical and shape-memory behavior of homogenized NiTiHfPd alloys**
ACAR E.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART L-JOURNAL OF MATERIALS-DESIGN AND APPLICATIONS, vol.237, no.5, pp.974-980, 2023 (SCI-Expanded)
- VII. **Effects of heating cooling rate and cooling method after aging on the thermal properties of Ni-rich NiTiNb alloy with low Nb**
Kaya I., Nematli R., Karasoglu M., Ozyurt E., ACAR E.
EUROPEAN PHYSICAL JOURNAL PLUS, vol.137, no.10, 2022 (SCI-Expanded)
- VIII. **Shape Memory Effect in Quaternary NiTiHfPd Shape Memory Alloys beyond 200 degrees C**
Saedi S., Toker G. P., Raji H., ACAR E., Watanabe F., Karaca H.
JOURNAL OF MATERIALS ENGINEERING AND PERFORMANCE, vol.31, no.8, pp.6689-6696, 2022 (SCI-Expanded)
- IX. **Thermo-mechanical Characterization of an Aged Ni45.3Ti39.7Hf10Pd5 Shape Memory Alloy**
Acar E., Toker G., Saedi S., Tobe H., Karaca H.
JOM, vol.73, no.2, pp.640-645, 2021 (SCI-Expanded)
- X. **Post-aging cooling rate effects in Ni45.3Ti34.7Hf15Pd5 shape memory alloys**
Acar E., Saedi S., Toker P. G., Tobe H., Karaca H. E.
MATERIALS RESEARCH BULLETIN, pp.1-5, 2021 (SCI-Expanded)
- XI. **Post-aging cooling rate effects in Ni45.3Ti34.7Hf15Pd5 shape memory alloys**
Acar E., Saedi S., Toker G., Tobe H., Karaca H.
Materials Research Bulletin, vol.133, 2021 (SCI-Expanded)
- XII. **Loading frequency and temperature-dependent damping capacity of NiTiHfPd shape memory alloy**
Toker P. G., Saedi S., Acar E., Ozbulut O., Karaca H. E.
Mechanics Of Materials, pp.1-8, 2020 (SCI-Expanded)
- XIII. **Thermo-mechanical Characterization of an Aged Ni45.3Ti39.7Hf10Pd5 Shape Memory Alloy**
Acar E., Toker P. G., Saedi S., Tobe H., Karaca H.
Jom, pp.1-6, 2020 (SCI-Expanded)
- XIV. **Processing and compressive response of Al/SiC functionally graded composites**
AYDIN M., Toker G. P., ACAR E., Karaca H. E.

- EUROPEAN PHYSICAL JOURNAL PLUS, vol.135, no.6, 2020 (SCI-Expanded)
- XV. **High temperature surface oxidation response of Ni₅₀Ti₄₉Ta₁ and Ni₅₀Ti₄₇Ta₃ shape memory alloys**
Acar E., Kök M., Gündüz M.
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING, pp.161-162, 2020 (SCI-Expanded)
- XVI. **Exploring surface oxidation behavior of NiTi-V alloys**
Acar E., Kök M., Quader İ.
European Physical Journal Plus, pp.1-9, 2020 (SCI-Expanded)
- XVII. **Effects of deformation temperature and amount on the two-way shape memory effect of solutionized Ni_{50.8}Ti_{49.2} alloys**
Kaya I., Acar E., Karaca H. E.
INTERMETALLICS, vol.114, 2019 (SCI-Expanded)
- XVIII. **High temperature shape memory behavior of Ni_{47.3}Ti_{29.7}Hf₂₀Pd₃ alloys**
ACAR E., Toker G. P., Kurkcu H., Karaca H. E.
INTERMETALLICS, vol.111, 2019 (SCI-Expanded)
- XIX. **Phase transformation and mechanical properties of HfPd ultra-high temperature shape memory alloys**
Kaya I., ACAR E., Karaca H. E.
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING, vol.125, no.6, 2019 (SCI-Expanded)
- XX. **Differential scanning calorimetry response of aged NiTiHfPd shape memory alloys**
ACAR E., Caliskan M., Karaca H. E.
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING, vol.125, no.4, 2019 (SCI-Expanded)
- XXI. **Thermal cycling response of Ni_{45.3}Ti_{29.7}Hf₂₀Pd₅ shape memory alloys**
ACAR E., Karaca H., Tobe H.
SMART MATERIALS AND STRUCTURES, vol.27, no.10, 2018 (SCI-Expanded)
- XXII. **On the stress-assisted aging in NiTiHfPd single crystal shape memory alloys**
ACAR E., Tobe H., Karaca H., Chumlyakov Y.
MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING, vol.725, pp.51-56, 2018 (SCI-Expanded)
- XXIII. **Shape memory behavior of Ni 40.3 Ti 39.7 Hf 15 Pd 5 and Ni 40.3 Ti 44.7 Hf 10 Pd 5 alloys**
Toker G., Saedi S., ACAR E., Ozbulut O., Karaca H.
JOURNAL OF ALLOYS AND COMPOUNDS, 2018 (SCI-Expanded)
- XXIV. **Microstructure and shape memory behavior of [111]-oriented NiTiHfPd alloys**
ACAR E., Tobe H., Karaca H. E., Noebe R. D., Chumlyakov Y. I.
SMART MATERIALS AND STRUCTURES, vol.25, no.3, 2016 (SCI-Expanded)
- XXV. **Shape Memory Behavior of [111]-Oriented NiTi Single Crystals After Stress-Assisted Aging**
Kaya I., Tobe H., Karaca H. E., ACAR E., CHUMLYAKOV Y.
ACTA METALLURGICA SINICA-ENGLISH LETTERS, vol.29, no.3, pp.282-286, 2016 (SCI-Expanded)
- XXVI. **Experimental investigation and modeling of the loading rate and temperature dependent superelastic response of a high performance shape-memory alloy**
Acar E., Ozbulut O. E., Karaca H. E.
SMART MATERIALS AND STRUCTURES, vol.24, no.7, 2015 (SCI-Expanded)
- XXVII. **Dynamic mechanical response of a Ni_{45.7}Ti_{29.3}Hf₂₀Pd₅ alloy**
Acar E.
MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING, vol.633, pp.169-175, 2015 (SCI-Expanded)
- XXVIII. **Microstructure and transformation related behaviors of a Ni_{45.3}Ti_{29.7}Hf₂₀Cu₅ high temperature shape memory alloy**
Karaca H. E., Acar E., Ded G. S., Saghalian S. M., Basaran B., Tobe H., Kok M., MAIER H. J., Noebe R. D., CHUMLYAKOV Y.
MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND

- PROCESSING, vol.627, pp.82-94, 2015 (SCI-Expanded)
- XXIX. **Compressive response of Ni_{45.3}Ti_{34.7}Hf₁₅Pd₅ and Ni_{45.3}Ti_{29.7}Hf₂₀Pd₅ shape-memory alloys**
Acar E., Tobe H., Kaya I., Karaca H. E., Chumlyakov Y. I.
JOURNAL OF MATERIALS SCIENCE, vol.50, no.4, pp.1924-1934, 2015 (SCI-Expanded)
- XXX. **Orientation dependence of the shape memory properties in aged Ni_{45.3}Ti_{29.7}Hf₂₀Pd₅ single crystals**
Acar E., Karaca H. E., Tobe H., Noebe R. D., Chumlyakov Y. I.
INTERMETALLICS, vol.54, pp.60-68, 2014 (SCI-Expanded)
- XXXI. **NiTiHf-based shape memory alloys (Invited Review Paper)**
Karaca H., ACAR E., Tobe H., Saghalian S.
MATERIALS SCIENCE AND TECHNOLOGY, vol.30, pp.1530-1544, 2014 (SCI-Expanded)
- XXXII. **Diffusionless phase transformation characteristics of Mn_{75.7}Pt_{24.3}**
Karaca H. E., Saghalian S. M., Tobe H., Acar E., Basaran B., Nagasako M., Kainuma R., Noebe R. D.
JOURNAL OF ALLOYS AND COMPOUNDS, vol.589, pp.412-415, 2014 (SCI-Expanded)
- XXXIII. **Characterization of the shape memory properties of a Ni_{45.3}Ti_{39.7}Hf₁₀Pd₅ alloy**
Acar E., Karaca H. E., Tobe H., Noebe R. D., Chumlyakov Y. I.
JOURNAL OF ALLOYS AND COMPOUNDS, vol.578, pp.297-302, 2013 (SCI-Expanded)
- XXXIV. **Shape memory behavior of high strength NiTiHfPd polycrystalline alloys**
Karaca H., ACAR E., Ded G., Basaran B., Tobe H., Noebe R., Bigelow G., Chumlyakov Y.
ACTA MATERIALIA, vol.61, no.13, pp.5036-5049, 2013 (SCI-Expanded)
- XXXV. **Role of aging time on the microstructure and shape memory properties of NiTiHfPd single crystals**
ACAR E., Karaca H., Basaran B., Yang F., Mills M., Noebe R., Chumlyakov Y.
MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING, vol.573, pp.161-165, 2013 (SCI-Expanded)
- XXXVI. **Effects of aging on [111] oriented NiTiHfPd single crystals under compression**
Karaca H., ACAR E., Basaran B., Noebe R., Bigelow G., Garg A., Yang F., Mills M., Chumlyakov Y.
SCRIPTA MATERIALIA, vol.67, pp.728-731, 2012 (SCI-Expanded)
- XXXVII. **Superelastic response and damping capacity of ultrahigh-strength [111]-oriented NiTiHfPd single crystals**
Karaca H., ACAR E., Basaran B., Noebe R., Chumlyakov Y.
SCRIPTA MATERIALIA, vol.67, no.5, pp.447-450, 2012 (SCI-Expanded)

Articles Published in Other Journals

- I. **Havacılık Ve Uzay Uygulamalarında Şekil Hafızalı Alaşımlar**
Acar E., Oktay T.
Nigde Omer Halisdemir University Journal of Engineering Sciences, vol.7, pp.335-349, 2018 (Peer-Reviewed Journal)
- II. **Fonksiyonel Kademelenendirilmiş Plakalarda Kalınlık Boyunca Kompozisyonel Değişimin Balistik Performans Üzerindeki Etkisinin İncelenmesi**
AYDIN M., ACAR E.
POLİTEKNİK DERGİSİ, vol.0, no.0, 2018 (Peer-Reviewed Journal)
- III. **Şekil hafıza davranışlarının termodinamiği**
ACAR E., AYDIN M.
POLİTEKNİK DERGİSİ, vol.0, no.0, 2018 (Peer-Reviewed Journal)
- IV. **NiTiHf-tabanlı yüksek sıcaklıklı şekil hafızalı alaşımlar**
ACAR E.
Avrupa bilim ve teknoloji dergisi, 2018 (Peer-Reviewed Journal)
- V. **Havacılık ve Uzay Uygulamalarında Şekil Hafızalı Alaşımlar**
ACAR E., OKTAY T.

ÖMER HALİSDEMİR ÜNİVERSİTESİ MÜHENDİSLİK BİLİMLERİ DERGİSİ, vol.7, pp.1-10, 2018 (Peer-Reviewed Journal)

- VI. **Şekil hafızalı alaşımların biyomedikal uygulamaları**
ACAR E.
Avrupa Bilim ve Teknoloji Dergisi, 2018 (Peer-Reviewed Journal)
- VII. **TiNi akıllı alaşımlarında faz dönüşüm özellikleri**
ACAR E.
Gazi Üniversitesi Fen Bilimleri Dergisi: PART:C "Tasarım ve Teknoloji" Dergisi, vol.4, no.3, pp.165-171, 2016 (Peer-Reviewed Journal)
- VIII. **TiNi Akıllı Alaşımlarında Faz Dönüşümleri ve Aktivasyon Enerjilerinin Belirlenmesi**
ACAR E.
Gazi Üniversitesi Fen Bilimleri Dergisi Part: C Tasarım ve Teknoloji, vol.4, no.3, pp.165-171, 2016 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

- I. **INVESTIGATION OF WING CONNECTIONS OF VTOL UAV**
ŞAHİN O., Yazar E., ACAR E., UZUN M.
II. Uluslararası Multidisipliner Çalışmaları Kongresi, Adana, Turkey, 4 - 05 May 2018, pp.526-541
- II. **Stress generation in NiTiHfPd alloys**
ACAR E., ÇELİK H.
3rd International Conference on Engineering and Natural Sciences (ICENS 2017), Budapest, Hungary, 3 - 07 May 2017, pp.424

Other Publications

- I. **High Strength and Damping Capacity Shape Memory Alloys for Seismic Applications, 6WCSCM Proceedings**
Ozbulut O., ACAR E., Silwal B., Karaca H.
Other, pp.2182-2190, 2014

Supported Projects

ACAR E., Project Supported by Higher Education Institutions, NiTi esash akıllı alaşım üretimi ve fonksiyonel özelliklerinin karakterizasyonu, 2017 - 2020

Scientific Refereeing

Journal of the Balkan Tribological Association, SCI Journal, August 2015
Journal of Materials Reserach, SCI Journal, May 2015
Project Supported by Higher Education Institutions, March 2015
Applied Physics-A, SCI Journal, April 2014

Metrics

Publication: 48

Citation (WoS): 377

Citation (Scopus): 402

H-Index (WoS): 11

H-Index (Scopus): 12