

Doç.Dr. BURAK BAL

Kişisel Bilgiler

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Eğitim Bilgileri

Doktora, Koç Üniversitesi, Makine Mühendisliği, Türkiye 2011 - 2015

Yabancı Diller

İngilizce, C1 İleri

Yaptığı Tezler

Doktora, Utilizing Multi-Scale Modeling and Experimentation to Uncover the Role of Micro-Deformation Mechanisms on the Performance of High-Strength Steels, Koç Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği, 2015

Araştırma Alanları

Makina Mühendisliği, Mekanik, Katı Cisimler Mekaniği, Kırılma Mekaniği, Sonlu Elemanlar Yöntemi, Mekanik Testler, Sürekli Ortam Mekaniği, Metalurji ve Malzeme Mühendisliği, Malzeme Bilimi ve Mühendisliği, Malzeme Testi ve Kontrolü, Mekanik Özellikler, Mekanik Metalurji, Metalik Malzemeler, Yapı-Özellik İlişkisi, Mühendislik ve Teknoloji

Akademik Unvanlar / Görevler

Doç.Dr., Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği, 2019 - Devam Ediyor

Dr.Öğr.Üyesi, Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği, 2018 - 2019

Yrd.Doç.Dr., Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği, 2016 - 2018

Öğretim Görevlisi Dr., Kyushu Üniversitesi, Engineering, Mechanical Engineering, 2016 - 2016

Araştırma Görevlisi Dr., Purdue University, Engineering, Aeronautics And Astronautics, 2015 - 2016

Araştırma Görevlisi, Koç Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği, 2011 - 2015

Verdiği Dersler

Machine Elements, Lisans, 2015 - 2016

Materials Science, Lisans, 2015 - 2016

SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

1. Experimental and Molecular Dynamics Simulation-Based Investigations on Hydrogen Embrittlement

Behavior of Chromium Electroplated 4340 Steel

Dogan O., KAPÇI M. F. , Esat V., BAL B.

JOURNAL OF ENGINEERING MATERIALS AND TECHNOLOGY-TRANSACTIONS OF THE ASME, cilt.143, sa.4, 2021
(SCI İndekslerine Giren Dergi)

- II. **The role of hydrogen in the edge dislocation mobility and grain boundary-dislocation interaction in alpha-Fe**
KAPÇI M. F. , Schoen J. C. , BAL B.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, cilt.46, sa.64, ss.32695-32709, 2021 (SCI İndekslerine Giren Dergi)
- III. **Assessment of biocompatibility of novel TiTaHf-based high entropy alloys for utility in orthopedic implants**
Gurel S., Nazarahari A., Canadinc D., Cabuk H., Bal B.
Materials Chemistry and Physics, cilt.266, 2021 (SCI Expanded İndekslerine Giren Dergi)
- IV. **Investigations of strain rate, size, and crack length effects on the mechanical response of polycaprolactone electrospun membranes**
Bayram F. C. , KAPÇI M. F. , Yuruk A., İŞOĞLU İ. A. , BAL B.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART E-JOURNAL OF PROCESS MECHANICAL ENGINEERING, 2021 (SCI İndekslerine Giren Dergi)
- V. **Effect of pre-rolling temperature on the interfacial properties and formability of steel-steel bilayer sheet in Single Point Incremental Forming**
Hassan M., Hussain G., Ali A., Ilyas M., Malik S., Khan W. A. , BAL B.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART B-JOURNAL OF ENGINEERING MANUFACTURE, cilt.235, sa.3, ss.406-416, 2021 (SCI İndekslerine Giren Dergi)
- VI. **Corrosion behavior of novel Titanium-based high entropy alloys designed for medical implants**
Gurel S., Yagci M. B. , Bal B., Canadinc D.
Materials Chemistry and Physics, cilt.254, 2020 (SCI Expanded İndekslerine Giren Dergi)
- VII. **A detailed investigation of the effect of hydrogen on the mechanical response and microstructure of Al 7075 alloy under medium strain rate impact loading**
BAL B., Okdem B., Bayram F. C. , AYDIN M.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, cilt.45, sa.46, ss.25509-25522, 2020 (SCI İndekslerine Giren Dergi)
- VIII. **Lateral Angular Co-Extrusion: Geometrical and Mechanical Properties of Compound Profiles**
Thuerer S. E. , Peddinghaus J., Heimes N., Bayram F. C. , BAL B., Uhe J., Behrens B., Maier H. J. , Klose C.
METALS, cilt.10, sa.9, 2020 (SCI İndekslerine Giren Dergi)
- IX. **Strain rate and hydrogen effects on crack growth from a notch in a Fe-high-Mn steel containing 1.1 wt% solute carbon**
Najam H., Koyama M., BAL B., Akiyama E., Tsuzaki K.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, cilt.45, sa.1, ss.1125-1139, 2020 (SCI İndekslerine Giren Dergi)
- X. **The Precise Determination of the Johnson-Cook Material and Damage Model Parameters and Mechanical Properties of an Aluminum 7068-T651 Alloy**
BAL B., Karaveli K. K. , Cetin B., Gumus B.
JOURNAL OF ENGINEERING MATERIALS AND TECHNOLOGY-TRANSACTIONS OF THE ASME, cilt.141, sa.4, 2019
(SCI İndekslerine Giren Dergi)
- XI. **Experimental investigation on chloroprene and acrylonitrile butadiene rubber types reinforced with nano-materials**
Dogan O., Esat V., BAL B.
MATERIALS RESEARCH EXPRESS, cilt.6, sa.8, 2019 (SCI İndekslerine Giren Dergi)
- XII. **On the detailed mechanical response investigation of PHBV/PCL and PHBV/PLGA electrospun mats**
BAL B., Tugluca I. B. , Koc N., İŞOĞLU İ. A.
MATERIALS RESEARCH EXPRESS, cilt.6, sa.6, 2019 (SCI İndekslerine Giren Dergi)

- XIII. **Lowering Strain Rate Simultaneously Enhances Carbon- and Hydrogen-Induced Mechanical Degradation in an Fe-33Mn-1.1C Steel**
Tugluca I. B. , Koyama M., Shimomura Y., BAL B., Canadinc D., Akiyama E., Tsuzaki K.
METALLURGICAL AND MATERIALS TRANSACTIONS A-PHYSICAL METALLURGY AND MATERIALS SCIENCE, sa.3, ss.1137-1141, 2019 (SCI İndekslerine Giren Dergi)
- XIV. **Microstructure and tribological properties of TiTaHfNbZr high entropy alloy coatings deposited on Ti-6Al-4V substrates**
Tuten N., Canadinc D., Motallebzadeh A., BAL B.
INTERMETALLICS, cilt.105, ss.99-106, 2019 (SCI İndekslerine Giren Dergi)
- XV. **Microstructure and tribological properties of TiTaHfNbZr high entropy alloy coatings deposited on Tie6Ale4V substrates**
Tüten N., CANADINC D., Motallebzadeh A., BAL B.
INTERMETALLICS, cilt.105, ss.99-106, 2019 (SCI Expanded İndekslerine Giren Dergi)
- XVI. **On the Utility of Crystal Plasticity Modeling to Uncover the Individual Roles of Microdeformation Mechanisms on the Work Hardening Response of Fe-23Mn-0.5C TWIP Steel in the Presence of Hydrogen**
Bal B., Koyama M., Canadinc D., Gerstein G., Maier H. J. , Tsuzaki K.
JOURNAL OF ENGINEERING MATERIALS AND TECHNOLOGY-TRANSACTIONS OF THE ASME, cilt.140, sa.3, 2018 (SCI İndekslerine Giren Dergi)
- XVII. **A Study of Different Microstructural Effects on the Strain Hardening Behavior of Hadfield Steel**
BAL B.
INTERNATIONAL JOURNAL OF STEEL STRUCTURES, cilt.18, sa.1, ss.13-23, 2018 (SCI İndekslerine Giren Dergi)
- XVIII. **High-concentration carbon assists plasticity-driven hydrogen embrittlement in a Fe-high Mn steel with a relatively high stacking fault energy**
Tugluca I. B. , Koyama M., BAL B., Canadinc D., Akiyama E., Tsuzaki K.
MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING, cilt.717, ss.78-84, 2018 (SCI İndekslerine Giren Dergi)
- XIX. **Numerical Investigation of the Role of Volumetric Transformation Strain on the Relaxation Stress and the Corresponding Hydrogen Interstitial Concentration in Niobium Matrix**
BAL B.
ADVANCES IN MATERIALS SCIENCE AND ENGINEERING, 2017 (SCI İndekslerine Giren Dergi)
- XX. **A New Venue Toward Predicting the Role of Hydrogen Embrittlement on Metallic Materials**
BAL B., Sahin İ., Uzun A., Canadinc D.
METALLURGICAL AND MATERIALS TRANSACTIONS A-PHYSICAL METALLURGY AND MATERIALS SCIENCE, sa.11, ss.5409-5422, 2016 (SCI İndekslerine Giren Dergi)
- XXI. **Effect of strain rate on hydrogen embrittlement susceptibility of twinning-induced plasticity steel pre-charged with high-pressure hydrogen gas**
Bal B., Koyama M., Gerstein G., Maier H. J. , Tsuzaki K.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, cilt.41, sa.34, ss.15362-15372, 2016 (SCI İndekslerine Giren Dergi)
- XXII. **Incorporation of dynamic strain aging into a Visco-Plastic Self-Consistent model for predicting the negative strain rate sensitivity of Hadfield steel**
BAL B., Gumus B., Canadinc D.
JOURNAL OF ENGINEERING MATERIALS AND TECHNOLOGY-TRANSACTIONS OF THE ASME, cilt.138, ss.1-8, 2016 (SCI İndekslerine Giren Dergi)
- XXIII. **Twinning activity in high-manganese austenitic steels under high velocity loading**
Gumus B., Bal B., GERSTEIN G., Canadinc D., MAIER H. J.
MATERIALS SCIENCE AND TECHNOLOGY, cilt.32, sa.5, ss.463-465, 2016 (SCI İndekslerine Giren Dergi)
- XXIV. **Twinning activities in high-Mn austenitic steels under high-velocity compressive loading**
Gumus B., Bal B., GERSTEIN G., Canadinc D., MAIER H. J. , GUNER F., ELMADAGLI M.
MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND

PROCESSING, cilt.648, ss.104-112, 2015 (SCI İndekslerine Giren Dergi)

- XXV. **Experimental and Numerical Evaluation of Thickness Reduction in Steel Plate Heat Exchangers**
Onal O., Bal B., Canadinc D., Akdari E.
JOURNAL OF ENGINEERING MATERIALS AND TECHNOLOGY-TRANSACTIONS OF THE ASME, cilt.137, sa.4, 2015
(SCI İndekslerine Giren Dergi)
- XXVI. **On the micro-deformation mechanisms active in high-manganese austenitic steels under impact loading**
Bal B., Gumus B., GERSTEIN G., Canadinc D., MAIER H. J.
MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING, cilt.632, ss.29-34, 2015 (SCI İndekslerine Giren Dergi)
- XXVII. **Microstructure-based modeling of the impact response of a biomedical niobium-zirconium alloy**
Onal O., Bal B., Toker S. M. , Mirzajanzadeh M., Canadinc D., MAIER H. J.
JOURNAL OF MATERIALS RESEARCH, cilt.29, sa.10, ss.1123-1134, 2014 (SCI İndekslerine Giren Dergi)

Diğer Dergilerde Yayınlanan Makaleler

- I. **DETERMINATION OF MATERIAL RESPONSE AND OPTIMIZATION OF JOHNSON-COOK DAMAGE PARAMETERS OF ALUMINIUM 7075 ALLOY**
BAL B.
Selçuk Üniversitesi Mühendislik, Bilim ve Teknoloji Dergisi, cilt.6, sa.2, ss.343-354, 2018 (Diğer Kurumların Hakemli Dergileri)

Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

- I. **Detailed Comparison of Hydrogen Concentration Modelling in Different Metal Matrices**
BAL B., Ali S. F. , Malik F.
International Energy and Engineering Conference 2019, 24 - 25 Eylül 2019
- II. **Effect of Hydrogen on Impact Response of Ductile Cast Iron**
Najam H., BAL B., Çetin B.
International Energy and Engineering Conference 2019, 24 - 25 Eylül 2019
- III. **EFFECT OF HEAT TREATMENTS ON THE BOND STRENGTH OF COLD ROLL BONDED SN COATED STEELS**
BAL B., Kapcı M. F.
ZEUGMA II. ULUSLARARASI MULTİDİSİPLİNER ÇALIŞMALAR KONGRESİ, 18 - 20 Ocak 2019
- IV. **Better Understanding of Hydrogen Embrittlement**
BAL B., Tuğluca İ. B. , Koyama M., Tsuzaki K.
2018 STLE Tribology Frontiers Conference, 28 - 31 Ekim 2018
- V. **The Mechanical Responses of Lightweight Aluminum Alloys and Their Applications**
Karaveli K. K. , BAL B.
3th International Conference on Material Science and Technology in Cappadocia (IMSTEC'18), 17 - 19 Eylül 2018
- VI. **A COMPARATIVE STUDY ON HYDROGEN EMBRITTLEMENT MECHANISMS**
BAL B., Yerlitaş M., Çetin B., Meço H.
The 18th International Conference on Machine Design and Production, 3 - 06 Temmuz 2018
- VII. **Effects of chemical composition and hydrogen charging on the mechanical response of slip-dominated high manganese austenitic steel**
Tuğluca İ. B. , BAL B., Koyama M.
The Internatinonal Conference on Materials Science, Mechanical and Automotive Engineerings and Technology, 10 - 12 Nisan 2018
- VIII. **MATERIAL SELECTION FOR KNEE EXOSKELETON FRAME**

Najam H., BAL B., ÜNAL R.

The Internatinonal Conference on Materials Science, Mechanical and Automotive Engineerings and Technology, 10 - 12 Nisan 2018

IX. COMPARING THE MECHANICAL RESPONSE OF Al 7075 AND Al7068

Karaveli K. K. , Gümüş B., BAL B.

The Internatinonal Conference on Materials Science, Mechanical and Automotive Engineerings and Technology, 10 - 12 Nisan 2018

X. The Hydrogen Embrittlement Susceptibility of High Strength Steels

BAL B., İŞOĞLU İ. A. , Koyama M.

Advances in Functional Materials, 14 - 17 Ağustos 2017

XI. HYDROGEN EMBRITTLEMENT SUSCEPTIBILITY OF TWIP STEEL

BAL B.

International Energy and Engineering Conference, 13 - 14 Ekim 2016

XII. OPTIMISATION OF AUTOMOBILE INTERIOR DESIGN PARAMETERS TO MITIGATE THE EFFECTS OF FULL-FRONTAL AND OBLIQUE COLLISIONS

Tarhan M., BAL B., ESAT V.

15. ULUSLARARASI MAKİNA TASARIM VE İMALAT KONGRESİ (UMTİK 2012), 19 - 22 Haziran 2012

Desteklenen Projeler

BAL B., Yükseköğretim Kurumları Destekli Proje, Yüksek manganlı östenitik çeliklerin mekanik davranışlarının deneysel yöntemler ile belirlenmesi ve çok ölçekli modelleme yöntemi ile araştırılması, 2017 - 2019

BAL B., Yükseköğretim Kurumları Destekli Proje, Hafif ve Kompakt Giyilebilir Robotik Diz Dış-İskeletinin Tasarımı ve Geliştirilmesi, 2017 - 2019

Bilimsel Hakemlikler

Journal of Process Mechanical Engineering, SCI Kapsamındaki Dergi, Mayıs 2016

Metallurgical and Materials Transactions A, SCI Kapsamındaki Dergi, Mart 2016

Fatigue & Fracture of Engineering Materials & Structures, SCI Kapsamındaki Dergi, Kasım 2015

Journal of Mechanics Engineering and Automation, Diğer İndekslerce Taranan Dergi, Ekim 2015

Kongre ve Sempozyum Katılımı Faaliyetleri

Uluslararası Enerji ve Mühendislik Konferansı 2016, Davetli Konuşmacı, Gaziantep, Türkiye, 2016

Centre for research on i-s interaction and mechanical property in steel, Davetli Konuşmacı, Fukuoka, Japonya, 2016

International Conference on Processing and Manufacturing of Advanced Materials, Davetli Konuşmacı, Nevada, Amerika Birleşik Devletleri, 2013

The 15th International Conference on Machine Design and Production, Davetli Konuşmacı, Denizli, Türkiye, 2012

Atıflar

Toplam Atıf Sayısı (WOS):110

h-indeksi (WOS):6