

Personal Information

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Education Information

Doctorate, Koç Üniversitesi, Makine Mühendisliği, Turkey 2011 - 2015

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, 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

Research Areas

Mechanical Engineering, Mechanical, Solid Mechanics, Fracture Mechanics, Finite Element Methods, Mechanical Testing, Continuous Mechanics, Metallurgical and Materials Engineering, Material science and engineering, Testing and Control of Materials, Mechanical Properties, Mechanical Metallurgy, Metallic Materials, Structure-Property Relationship, Engineering and Technology

Academic Titles / Tasks

Associate Professor, Abdullah Gul University, Mühendislik Fakültesi, Makine Mühendisliği, 2019 - Continues

Assistant Professor, Abdullah Gul University, Mühendislik Fakültesi, Makine Mühendisliği, 2018 - 2019

Assistant Professor, Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği, 2016 - 2018

Lecturer PhD, Kyushu Üniversitesi, Engineering , Mechanical Engineering , 2016 - 2016

Research Assistant PhD, Purdue University, Engineering , Aeronautics And Astronautics, 2015 - 2016

Research Assistant, Koç Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği, 2011 - 2015

Courses

Machine Elements , Under Graduate, 2015 - 2016

Materials Science, Under Graduate, 2015 - 2016

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- **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, vol.45, pp.1125-1139, 2020 (Journal Indexed in SCI)
- **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, vol.141, 2019
(Journal Indexed in SCI)

- **Experimental investigation on chloroprene and acrylonitrile butadiene rubber types reinforced with nano-materials**

Dogan O., Esat V., BAL B.

MATERIALS RESEARCH EXPRESS, vol.6, 2019 (Journal Indexed in SCI)

- **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, vol.6, 2019 (Journal Indexed in SCI)

- **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, pp.1137-1141, 2019 (Journal Indexed in SCI)

- **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, vol.105, pp.99-106, 2019 (Journal Indexed in SCI)

- **Microstructure and tribological properties of TiTaHfNbZr high entropy alloy coatings deposited on Ti6Al4V substrates**

Tüten N., CANADINC D., Motallebzadeh A., BAL B.

INTERMETALLICS, vol.105, pp.99-106, 2019 (Journal Indexed in SCI Expanded)

- **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, vol.140, 2018
(Journal Indexed in SCI)

- **A Study of Different Microstructural Effects on the Strain Hardening Behavior of Hadfield Steel**

BAL B.

INTERNATIONAL JOURNAL OF STEEL STRUCTURES, vol.18, pp.13-23, 2018 (Journal Indexed in SCI)

- **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, vol.717, pp.78-84, 2018 (Journal Indexed in SCI)

- **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 (Journal Indexed in SCI)

- **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, pp.5409-5422, 2016 (Journal Indexed in SCI)

- **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, vol.41, pp.15362-15372, 2016 (Journal Indexed in SCI)

- **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, vol.138, pp.1-

8, 2016 (Journal Indexed in SCI)

- **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, vol.32, pp.463-465, 2016 (Journal Indexed in SCI)

- **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, vol.648, pp.104-112, 2015 (Journal Indexed in SCI)

- **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, vol.137, 2015 (Journal Indexed in SCI)

- **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, vol.632, pp.29-34, 2015 (Journal Indexed in SCI)

- **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, vol.29, pp.1123-1134, 2014 (Journal Indexed in SCI)

Supported Projects

BAL B., Project Supported by Higher Education Institutions, Yüksek manganlı östenitik çeliklerin mekanik davranışlarının deneysel yöntemler ile belirlenmesi ve çok ölçekli modelleme yöntemi ile araştırılması, 2017 - 2019

BAL B., Project Supported by Higher Education Institutions, Hafif ve Kompakt Giyilebilir Robotik Diz Dış-İskeletinin Tasarımı ve Geliştirilmesi, 2017 - 2019

Scientific Refereeing

Journal of Process Mechanical Engineering, SCI Journal, May 2016

Metallurgical and Materials Transactions A, SCI Journal, March 2016

Fatigue & Fracture of Engineering Materials & Structures, SCI Journal, November 2015

Journal of Mechanics Engineering and Automation, Other Indexed Journal, October 2015

Invited Congress and Symposium Activities

Uluslararası Enerji ve Mühendislik Konferansı 2016, Invited Speaker, Gaziantep, Turkey, 2016

Centre for research on i-s interaction and mechanical property in steel, Invited Speaker, Fukuoka, Japan, 2016

International Conference on Processing and Manufacturing of Advanced Materials, Invited Speaker, Nevada, United States Of America, 2013

The 15th International Conference on Machine Design and Production, Invited Speaker, Denizli, Turkey, 2012

Citations

Total Citations (WOS):103

h-index (WOS):6