

Assoc. Prof. MEHMET NURULLAH BALCI

Personal Information

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International Researcher IDs

ORCID: 0000-0002-4416-6761

Publons / Web Of Science ResearcherID: G-6152-2013

ScopusID: 56267264000

Yoksis Researcher ID: 157910

Education Information

Post Doctorate, Loughborough University, Wolfson School of Mechanical Electrical and Manufacturing Engineering, Mechanical Engineering, United Kingdom 2020 - 2021

Doctorate, Middle East Technical University, Faculty Of Engineering, Department Of Mechanical Engineering, Turkey 2013 - 2018

Postgraduate, Hacettepe University, Mühendislik Fakültesi, Makina Mühendisliği Bölümü, Turkey 2010 - 2013

Undergraduate, Baskent University, Faculty Of Engineering, Department Of Mechanical Engineering, Turkey 2006 - 2010

Foreign Languages

English, C1 Advanced

Certificates, Courses and Trainings

Project Management, Uygulamalı Proje Yazma Eğitimi, Hacettepe Üniversitesi, 2019

Vocational Training, ANSYS Authodyn Eğitimi, ANOVA Ltd., 2010

Vocational Course, ANSYS Fluent Eğitimi, ANOVA Ltd., 2010

Dissertations

Doctorate, Dynamic frictional contact problems involving functionally graded materials, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Graduate School Of Natural And Applied Sciences, 2018

Postgraduate, Analysis of frictional contacts with heat generation considering temperature dependent properties, Hacettepe University, Mühendislik Fakültesi, Makina Mühendisliği Bölümü, 2013

Research Areas

Mechanical Engineering, Tribology, Machine Elements, Machine Design, Computer Aided Design and Manufacturing, Solid Mechanics, Fracture Mechanics, Finite Element Methods, Continuous Mechanics

Academic Titles / Tasks

Associate Professor, Hacettepe University, Mühendislik Fakültesi, Makina Mühendisliği Bölümü, 2023 - Continues

Assistant Professor, Hacettepe University, Mühendislik Fakültesi, Makina Mühendisliği Bölümü, 2022 - 2023

Research Assistant PhD, Hacettepe University, Mühendislik Fakültesi, Makina Mühendisliği Bölümü, 2018 - 2020

Research Assistant, Hacettepe University, Mühendislik Fakültesi, Makina Mühendisliği Bölümü, 2011 - 2018

Academic and Administrative Experience

Deputy Head of Department, Hacettepe University, Mühendislik Fakültesi, Makina Mühendisliği Bölümü, 2024 - Continues

Courses

Design (Graduation) Project I, Undergraduate, 2024 - 2025

Fracture Mechanics, Postgraduate, 2024 - 2025

Introduction to Finite Element Method, Undergraduate, 2024 - 2025

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Algorithm to determine local basis weight of random fibrous networks with X-ray microtomography and SEM images**
Hewavidana Y., BALCI M. N., Gleadall A., Pourdeyhimi B., Silberschmidt V., Demirci E.
Textile Research Journal, vol.94, no.7-8, pp.859-868, 2024 (SCI-Expanded)
- II. **Cracking of a functionally graded coating due to sliding contact with heat generation**
BALCI M. N., DAĞ S., YILDIRIM B.
Fatigue and Fracture of Engineering Materials and Structures, vol.46, no.12, pp.4628-4648, 2023 (SCI-Expanded)
- III. **Assessing Crimp of Fibres in Random Networks with 3D Imaging**
Hewavidana Y., BALCI M. N., Gleadall A., Pourdeyhimi B., Silberschmidt V. V., Demirci E.
Polymers, vol.15, no.4, 2023 (SCI-Expanded)
- IV. **Dynamic frictional contact mechanics between a functionally graded orthotropic medium and a moving flat punch**
BALCI M. N., ARSLAN O.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART J-JOURNAL OF ENGINEERING TRIBOLOGY, vol.237, no.1, pp.53-75, 2023 (SCI-Expanded)
- V. **Longitudinal vibration of a nanorod embedded in viscoelastic medium considering nonlocal strain gradient theory**
BALCI M. N.
ADVANCES IN NANO RESEARCH, vol.13, no.2, pp.147-164, 2022 (SCI-Expanded)
- VI. **Contact Stress Analysis for a Functionally Graded Half-Plane at Subsonic, Transonic and Supersonic Sliding Speeds**
BALCI M. N.
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.45, no.11, pp.8895-8915, 2020 (SCI-Expanded)
- VII. **The effect of punch speed on frictional contact mechanics of finite-thickness graded layer resting on the rigid foundation**
BALCI M. N.
JOURNAL OF THE BRAZILIAN SOCIETY OF MECHANICAL SCIENCES AND ENGINEERING, vol.42, no.6, 2020 (SCI-Expanded)
- VIII. **The influence of interface stiffness ratio on elastodynamic contact mechanics of graded coatings**

- BALCI M. N.
SURFACE & COATINGS TECHNOLOGY, vol.375, pp.489-507, 2019 (SCI-Expanded)
- IX. **Mechanics of dynamic contact of coated substrate and rigid cylindrical ended punch**
Balci M. N., DAĞ S.
JOURNAL OF MECHANICAL SCIENCE AND TECHNOLOGY, vol.33, no.5, pp.2225-2240, 2019 (SCI-Expanded)
- X. **Solution of the dynamic frictional contact problem between a functionally graded coating and a moving cylindrical punch**
BALCI M. N., DAĞ S.
INTERNATIONAL JOURNAL OF SOLIDS AND STRUCTURES, vol.161, pp.267-281, 2019 (SCI-Expanded)
- XI. **Dynamic frictional contact problems involving elastic coatings**
BALCI M. N., DAĞ S.
TRIBOLOGY INTERNATIONAL, vol.124, pp.70-92, 2018 (SCI-Expanded)
- XII. **Subsurface stresses in graded coatings subjected to frictional contact with heat generation**
BALCI M. N., DAĞ S., YILDIRIM B.
JOURNAL OF THERMAL STRESSES, vol.40, no.4, pp.517-534, 2017 (SCI-Expanded)
- XIII. **Analysis of frictional contacts with heat generation considering temperature dependent properties**
BALCI M. N., YILDIRIM B., DAĞ S.
INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, vol.101, pp.59-69, 2015 (SCI-Expanded)

Articles Published in Other Journals

- I. **Parametric design of cladding system for tall buildings using computational fluid dynamics approach**
Colak L., BALCI M. N.
JOURNAL OF MECHANICAL ENGINEERING AND SCIENCES, no.4, pp.9663-9678, 2023 (ESCI)
- II. **Longitudinal Forced Vibration Analysis of a Single-Walled Carbon Nanotube Embedded in an Elastic Medium**
BALCI M. N.
Journal of Vibration Engineering and Technologies, vol.11, no.8, pp.4281-4302, 2023 (Scopus)
- III. **Implementation of Dahl's dynamic friction model to contact mechanics of elastic solids**
BALCI M. N.
SN APPLIED SCIENCES, vol.3, no.1, 2021 (ESCI)

Non Academic Experience

Mercedes-Benz Türk Otobüs Fabrikası
Turkish Aerospace Industries TAI Inc.