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International Researcher IDs

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Publons / Web Of Science ResearcherID: KEH-5769-2024

ScopusID: 57845759600



Education Information

Post Doctorate, University of Portsmouth, Faculty of Science and Health, School of Pharmacy and Biomedical Sciences, England 2022 - 2024

Doctorate, The University of Manchester, Faculty of Science and Engineering, School of Materials, England 2018 - 2023

Postgraduate, The University of Manchester, Faculty of Science and Engineering, School of Materials, England 2017 - 2018

Undergraduate, Kocaeli University, Mühendislik Fakültesi, Makina Mühendisliği, Turkey 2010 - 2014

Biography

Berzah Yavuzyegit is a materials scientist specializing in the mechanical behaviour of a diverse range of materials, encompassing both metals and non-metallic substances. With expertise in various mechanical tests such as tensile and bending, advanced electron microscopy techniques, and the design of testing rigs, he delves into the microstructures and deformation mechanisms of materials under different conditions, including corrosive environments and varying temperatures. Proficient in programming with Python and Matlab, Yavuzyegit excels in advanced techniques such as X-ray Computed Tomography for 3D material characterization and electron microscopy, including SE, BSE, and EBSD, for detailed analysis. Holding a Ph.D. in Mechanics of Materials from the University of Manchester, his research focused on comprehending the deformation mechanisms of magnesium alloys. Beyond research, Yavuzyegit has practical experience in biomaterials, specifically exploring the mechanical and corrosion behaviour of biodegradable magnesium implants.

Research Interest

My current focus is on biomaterials, specifically studying microscale deformation mechanisms. Utilizing my expertise in mechanical tests, advanced electron microscopy, and testing rig design, I'm investigating the fatigue behavior of metals, with a particular emphasis on biomaterials. Drawing from my experience in exploring the mechanical and corrosion behavior of biodegradable magnesium implants, my ongoing work aims to provide insights into the fatigue dynamics of metallic biomaterials, contributing to a deeper understanding of material behavior in practical applications.

For more information, please visit my website: <https://www.berzahyavuzyegit.com/>

Dissertations

Doctorate, Investigation of the Deformation Mechanisms of Magnesium Alloys at Room Temperature and Elevated Temperature, The University of Manchester, Faculty of Science and Engineering, School of Materials, 2023

Postgraduate, Investigation of Kink Bands Formation under Compression in Carbon Fibre Reinforced Composites, The University of Manchester, Faculty of Science and Engineering, School of Materials, 2018

Research Areas

Mechanical, Metallurgical and Materials Engineering, Material science and engineering, Mechanical Properties, Composites, Biomaterials, Physical Metallurgy, Material Characterization, Mechanical Metallurgy, Metallic Materials, Surface Finishing Processes, Engineering and Technology

Academic Titles / Tasks

Assistant Professor, Recep Tayyip Erdogan University, MÜHENDİSLİK VE MİMARLIK FAKÜLTESİ, MAKİNE MÜHENDİSLİĞİ, 2023 - Continues

Researcher, University of Portsmouth, 2022 - 2024

Courses

Deformation of Metals at Elevated Temperatures and Superplasticity, Postgraduate, 2023 - 2024

Advanced Python Programming for Engineering Applications, Postgraduate, 2024 - 2025

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Sporopollenin Capsules as Biomimetic Templates for the Synthesis of Hydroxyapatite and β -TCP**
De Mori A., Quizon D., Dalton H., Yavuzyegit B., Cerri G., Antonijevic M., Roldo M.
BIOMIMETICS, vol.9, no.3, 2024 (SCI-Expanded)
- II. **Mapping plastic deformation mechanisms in AZ31 magnesium alloy at the nanoscale**
Yavuzyegit B., AVCU E., Smith A. D., Donoghue J. M., Lunt D., Robson J. D., Burnett T. L., da Fonseca J. Q., Withers P. J.
Acta Materialia, vol.250, 2023 (SCI-Expanded)

Articles Published in Other Journals

- I. **Evaluation of Corrosion Performance of AZ31 Mg Alloy in Physiological and Highly Corrosive Solutions**
Yavuzyegit B., Karali A., De Mori A., Smith N., Usov S., Shashkov P., Bonithon R., Blunn G.
ACS Applied Bio Materials, vol.7, no.3, pp.1735-1747, 2024 (ESCI)
- II. **Effect of micro blasting process parameters on 3D surface topography and surface properties of**

zirconia (Y-TZP) ceramics

Yetik O., Yavuzyeđit B., YILDIRAN AVCU Y., Koçođlu H., Pekkan G., Sarıdađ S., Guney M., AVCU E.
Engineering Reports, vol.3, no.7, 2021 (ESCI)

Refereed Congress / Symposium Publications in Proceedings

- I. **EFFECTS OF STANDOFF DISTANCE AND PROCESSING DURATION PARAMETERS ON PRIMARY DEFORMATION ZONE IN WATER JET PEENING OF Ti6Al4V ALLOY**
Armađan M., alım E., Yavuzyeđit B., Yildiran Avcu Y., Abakay E., Avcu E.
8. Asia Pacific International Modern Sciences Congress, New Delhi, India, 11 - 12 September 2023
- II. **Enhanced Corrosion Resistance of the AZ31 Magnesium Alloy with Electrochemical Oxidised (ECO) Ceramic Coatings**
Yavuzyeđit B., Karali K., Denori A., Bonithon R., Smith N., Shashkov P., Blunn G.
33rd Annual Conference of the European Society for Biomaterials , Chur, Switzerland, 4 September - 08 November 2023
- III. **Grain Scale Strain Mapping of Deformation in Mg Alloys at Room and Elevated Temperatures by High Resolution Digital Image Correlation**
Withers P., Yavuzyeđit B., Fonseca J., Smith A., Donoghue J., Lunt D., Robson J., Burnett T.
17th International Conference on Advances in Experimental Mechanics, Glasgow, England, 30 August - 01 September 2023
- IV. **Corrosion Behaviour of a Coated AZ31 Mg Alloy under Static and Cyclic Loading in Four Point Bending Tests**
Yavuzyeđit B., Karali K., Bonithon R., Smith N., Shashkov P., Blunn G.
17th International Conference on Advances in Experimental Mechanics, Glasgow, England, 30 August - 01 November 2023
- V. **An in situ study of deformation mechanisms in AZ31 and WE43 Mg alloy at elevated temperatures**
Yavuzyeđit B., Avcu E., Smith A., Donoghue J., Lunt D., Robson J., Burnett T., Da Fonseca J., Withers P.
International Conference on Strength of Materials, Metz, France, 26 June - 01 July 2022
- VI. **An in-situ study of grain boundary migration and sliding in AZ31 magnesium at elevated temperatures**
Yavuzyeđit B., Avcu E., Smith A., Donoghue J., Lunt D., Robson J., Burnett T., Da Fonseca J., Withers P.
Junior Euromat 2022, Coimbra, Portugal, 19 - 22 July 2022
- VII. **Fully automated small-scale thermomechanical testing in-situ within an SEM for increased temporal resolution**
Smith A., Donoghue J., Candeas A., Martinez F., Lunt D., Yavuzyeđit B., Withers P., Preuss M.
18th European Mechanics of Materials Conference , Oxford, England, 4 - 06 April 2022
- VIII. **Creep Deformation Mechanisms of AZ31 Magnesium Alloys at Room Temperature by High Resolution Digital Image Correlation**
Yavuzyeđit B., Avcu E., Donoghue J., Smith A., Lunt D., Robson J., Burnett T., Withers P.
14th International Conference on Advances in Experimental Mechanics, Belfast, England, 10 - 12 September 2019
- IX. **Creep Deformation Mechanisms of AZ31 Magnesium Alloys at Room Temperature by High Resolution Digital Image Correlation**
Yavuzyeđit B., Withers P., Burnett T.
PG Conference 2019, Manchester, England, 09 May 2019 - 10 May 2020
- X. **Investigation of Kink Bands Formation under Compression Stress in Carbon Fibre Reinforced Composites, PGR Conference**
Yavuzyeđit B., Withers P.
PG Conference 2017, Manchester, England, 17 - 18 May 2018
- XI. **The effects of erodent size and acceleration pressure on the surface topography in the micro sandblasting process of Ti6Al4V alloy**

Yetik O., Yildiran Avcu Y., Yavuzyeğit B., Avcu E.

16th International Materials Symposium , Denizli, Turkey, 12 - 14 October 2016

- XII. **The effects of acceleration pressure and particle impingement angle on the 3D surface topography and the surface properties in the preparation process of monolithic zirconias with micro sand blasting**

Yetik O., Yavuzyeğit B., Yildiran Avcu Y., Pekkan G., Sarıdağ S., Avcu E.

16th International Materials Symposium , Denizli, Turkey, 12 - 14 October 2016

- XIII. **The effects of shot peening parameters on the surface roughness of the Ti6Al4V alloy**

Yildiran Avcu Y., Yetik O., Yavuzyeğit B., Avcu E.

16th International Materials Symposium, Denizli, Turkey, 12 - 14 October 2016

- XIV. **The effects of erodent particle size and acceleration pressure on the 3d surface topography and the surface properties in the preparation process of conventional Zirconias with micro sand blasting**

Yavuzyeğit B., Yetik O., Yildiran Avcu Y., Pekkan G., Sarıdağ S., Avcu E.

16. international materials symposium, Denizli, Turkey, 12 - 14 October 2016

Scientific Refereeing

INTERNATIONAL JOURNAL OF PLASTICITY, SCI Journal, June 2024

Metrics

Publication: 18

Citation (Scopus): 18

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