

Assoc. Prof. Billur Deniz Karahan

Personal Information

Email: bdkarahan@itu.edu.tr

Web: <https://avesis.itu.edu.tr/bpolat>

International Researcher IDs

ORCID: 0000-0002-7839-2222

Yoksis Researcher ID: 114739

Education Information

Doctorate, Istanbul Technical University, Fen Bilimleri Enstitüsü, Malzeme Bilimi Ve Müh Prog, Turkey 2010 - 2017

Postgraduate, Istanbul Technical University, Fen Bilimleri Enstitüsü, Malzeme Bilimi ve Müh Prog., Turkey 2008 - 2010

Undergraduate, Istanbul Technical University, Kimya-Metalurji, Metalurji Ve Malzeme Mühendisliği, Turkey 2005 - 2008

Undergraduate, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Metallurgical And Materials Engineering, Turkey 2004 - 2005

Research Areas

Engineering and Technology

Academic Titles / Tasks

Associate Professor, Istanbul Technical University, Kimya-Metalurji, Metalurji Ve Malzeme Mühendisliği, 2022 - Continues

Assistant Professor, Istanbul Medipol University, Mühendislik Ve Doğa Bilimleri Fakültesi, İnşaat Mühendisliği Bölümü, 2017 - 2022

Research Assistant, Istanbul Technical University, Kimya-Metalurji, Metalurji Ve Malzeme Mühendisliği, 2009 - 2016

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Porous, columnar shaped iron rich oxide synthesis for lithium-ion batteries from metallurgical grade, domestic, high carbon ferro-chromium alloys**

Gülcan M. F., Karahan B. D., Gürmen S.

Journal of Alloys and Compounds, vol.922, 2022 (SCI-Expanded)

- II. **Carbon coated electric arc furnace dust prepared by one-pot pyrolysis: An efficient, low carbon footprint electrode material for lithium-ion batteries**

Karahan B. D.

MATERIALS CHEMISTRY AND PHYSICS, vol.287, 2022 (SCI-Expanded)

- III. **Upcycling of industrial iron scale waste for reutilization as anode material in lithium ion batteries**

Gulcan M. F., Karahan B. D.

MATERIALS CHEMISTRY AND PHYSICS, vol.276, 2022 (SCI-Expanded)

- IV. **Corrosion Behavior of Ni-Fe-Mo Deposits Obtained under Different Electrodeposition Conditions**

Solmaz R., Karahan B. D.

JOURNAL OF MATERIALS ENGINEERING AND PERFORMANCE, vol.30, no.8, pp.5593-5602, 2021 (SCI-Expanded)

- V. **Modification of the Cu current collector by magnetron sputtering to improve the cycle performance of M_xO_y (M:Ni,Mn,Co) anodes for lithium ion batteries**
Solmaz R., Karahan B. D.
JOURNAL OF ALLOYS AND COMPOUNDS, vol.872, 2021 (SCI-Expanded)
- VI. **Effect of vinylene carbonate as electrolyte additive for Mn₂O₃/NiMnO₃ anodes of lithium-ion batteries**
Solmaz R., Karahan B. D.
IONICS, vol.27, no.7, pp.2813-2824, 2021 (SCI-Expanded)
- VII. **Designing carbon-supported Fe₂O₃ anodes for lithium ion batteries**
Gulcan M. F., Karahan B. D.
JOURNAL OF APPLIED ELECTROCHEMISTRY, vol.51, no.6, pp.917-931, 2021 (SCI-Expanded)
- VIII. **ZrO₂ coating via e-beam evaporation on PE separators for lithium-ion batteries**
Sivlin D., Unal F., Karahan B. D., Kazmanli K., Keles Ö.
IONICS, vol.27, no.2, pp.577-586, 2021 (SCI-Expanded)
- IX. **Leaching of iron and chromium from an indigenous ferro chromium alloy via a rotary evaporator: optimum conditions determination and kinetic analysis**
Gulcan M. F., Karahan B. D., Gürmen S.
JOURNAL OF MATERIALS RESEARCH AND TECHNOLOGY-JMR&T, vol.9, no.6, pp.14103-14115, 2020 (SCI-Expanded)
- X. **Fabrication of nickel manganese cobalt oxide (NMCO) anodes for lithium-ion batteries via hydrothermal process**
Solmaz R., Karahan B. D., Keleş Ö.
JOURNAL OF APPLIED ELECTROCHEMISTRY, vol.50, no.10, pp.1079-1089, 2020 (SCI-Expanded)
- XI. **Superlattice-structured films by magnetron sputtering as new era electrodes for advanced lithium-ion batteries**
Keleş Ö., Karahan B. D., Eryilmaz L., Amine R., Abouimrane A., Chen Z., Zuo X., Zhu Z., Al-Hallaj S., Amine K.
NANO ENERGY, vol.76, 2020 (SCI-Expanded)
- XII. **A Study on the Corrosion Behavior of 7072/3004/7072 Clad Aluminum Alloy in Different Media**
Tunc İ., Karahan B. D., Keles Ö.
Journal of Materials Engineering and Performance, vol.29, no.7, pp.4506-4514, 2020 (SCI-Expanded)
- XIII. **Nickel-framed film with alternate layers of nickel and silicon for high performance lithium ion battery anodes**
Karahan B. D.
JOURNAL OF ALLOYS AND COMPOUNDS, vol.823, 2020 (SCI-Expanded)
- XIV. **Characterization and corrosion studies of ternary Zn-Ni-Sn alloys**
Solmaz R., Karahan B. D.
INTERNATIONAL JOURNAL OF MINERALS METALLURGY AND MATERIALS, vol.27, no.1, pp.74-82, 2020 (SCI-Expanded)
- XV. **Engineering self-standing Si-Mo-O based nanostructure arrays as anodes for new era lithium-ion batteries**
Karahan B. D., Amine K.
JOURNAL OF APPLIED ELECTROCHEMISTRY, vol.49, no.7, pp.671-680, 2019 (SCI-Expanded)
- XVI. **Molybdenum Oxide and Hybride Films as Anodes for Lithium Ion Batteries**
Karahan B. D., Yagsı C., Keles Ö.
JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY, vol.19, no.2, pp.941-949, 2019 (SCI-Expanded)
- XVII. **Si-Cu alloy nanowires grown by oblique angle deposition as a stable negative electrode for Li-ion batteries**
Polat B. D., Keles O., CHEN Z. H., AMINE K.
JOURNAL OF MATERIALS SCIENCE, vol.51, no.13, pp.6207-6219, 2016 (SCI-Expanded)
- XVIII. **Compositionally-graded silicon-copper helical arrays as anodes for lithium-ion batteries**
Polat D. B., Keleş Ö., AMINE K.

- JOURNAL OF POWER SOURCES, vol.304, pp.273-281, 2016 (SCI-Expanded)
- XIX. **Functionally Graded Si Based Thin Films as Negative Electrodes for Next Generation Lithium Ion Batteries**
 Polat B. D., Keleş Ö.
 ELECTROCHIMICA ACTA, vol.187, pp.293-299, 2016 (SCI-Expanded)
- XX. **SiAg film by magnetron sputtering for high reversible lithium ion storage anodes**
 Polat B. D., ERYILMAZ O. L., Keleş Ö.
 JOURNAL OF ALLOYS AND COMPOUNDS, vol.654, pp.363-370, 2016 (SCI-Expanded)
- XXI. **The Effects of Film Thickness and Evaporation Rate on Si-Cu Thin Films for Lithium Ion Batteries**
 Polat B. D., Keleş Ö.
 JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY, vol.15, no.12, pp.9788-9796, 2015 (SCI-Expanded)
- XXII. **Improving Si Anode Performance by Forming Copper Capped Copper-Silicon Thin Film Anodes for Rechargeable Lithium Ion Batteries**
 POLAT B. D., Keleş Ö.
 ELECTROCHIMICA ACTA, vol.170, pp.63-71, 2015 (SCI-Expanded)
- XXIII. **High capacity anode with well-aligned, ordered NiSi nano-columnar arrays**
 Polat B. D., Eryilmaz O. L., Chen Z., Keleş Ö., Amine K.
 NANO ENERGY, vol.13, pp.781-789, 2015 (SCI-Expanded)
- XXIV. **Multi-layered Cu/Si nanorods and its use for lithium ion batteries**
 Polat B. D., Keleş Ö.
 JOURNAL OF ALLOYS AND COMPOUNDS, vol.622, pp.418-425, 2015 (SCI-Expanded)
- XXV. **Well-aligned, ordered, nanocolumnar, Cu-Si thin film as anode material for lithium-ion batteries**
 Polat D. B., Keleş Ö., AMINE K.
 JOURNAL OF POWER SOURCES, vol.270, pp.238-247, 2014 (SCI-Expanded)
- XXVI. **Use of Multilayered Ni-Sn and Ni-Sn-C Thin Film Anodes for Lithium-Ion Batteries**
 Polat B. D., Abouimrane A., Sezgin N., Keles O., Amine K.
 ELECTROCHIMICA ACTA, vol.135, pp.585-593, 2014 (SCI-Expanded)
- XXVII. **Nanocolumnar Structured Porous Cu-Sn Thin Film as Anode Material for Lithium-Ion Batteries**
 Polat D. B., LU J., ABOUIMRANE A., Keleş Ö., AMINE K.
 ACS APPLIED MATERIALS & INTERFACES, vol.6, no.14, pp.10877-10885, 2014 (SCI-Expanded)
- XXVIII. **A nano-architectured porous electrode assembly of copper rich Cu₆Sn₅ thin film for rechargeable lithium batteries**
 Polat B. D., Sezgin N., Keleş Ö., Kazmanli K., Abouimrane A., Amine K.
 JOURNAL OF ALLOYS AND COMPOUNDS, vol.553, pp.204-207, 2013 (SCI-Expanded)
- XXIX. **Generation of a Surface Pattern Having Conical Surface Features by Anodic Polarization of Aluminum**
 Urgen M. K., Keleş Ö., POLAT B. D., BAYATA F.
 JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.159, no.9, 2012 (SCI-Expanded)

Supported Projects

Karahan B. D., Project Supported by Higher Education Institutions, AlSiCu alaşımlarının döküm sonrası proses hurdalarından elektrot sentezi ve lityum iyon pillerde anot olarak kullanımlarının değerlendirilmesi, 2022 - Continues

Karahan B. D. P., Gürmen S., TUBITAK Project, Development of Metal Doped Fe₂O₃-Cr₂O₃ Composite Powders Decorated with Al₂O₃ from Domestic Fe-Cr Alloys as Anode Materials for Lithium-Ion Batteries, 2019 - 2021

Metrics

Citation (WoS): 241

Citation (Scopus): 260

H-Index (WoS): 10

H-Index (Scopus): 10