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Education Information

Doctorate, Ruhr-Universitaet Bochum, Mechanical Engineering, Mechanical Engineering, Germany 2013 - 2017
Undergraduate, Istanbul Technical University, Kimya-Metalurji, Metalurji Ve Malzeme Mühendisliği, Turkey 2006 - 2011

Research Areas

Chemical and Electrochemical Properties, Corrosion and Corrosion Protection, Material Characterization

Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, 2020 - Continues

Published journal articles indexed by SCI, SSCI, and AHCI

I. **B-Site Doping Boosts the OER and ORR Performance of Double Perovskite Oxide as Air Cathode for Zinc-Air Batteries**
Ozgur Ç., Erdil T., Geyikci U., Yildiz İ., Lokcu E., Toparlı Ç.
CHEMPHYSCHEM, vol.25, no.22, 2024 (SCI-Expanded)

II. **Earth-Abundant Divalent Cation High-Entropy Spinel Ferrites as Bifunctional Electrocatalysts for Oxygen Evolution and Reduction Reactions**
ERDİL T., ÖZGÜR Ç., Geyikci U., LÖKÇÜ E., TOPARLI Ç.
ACS APPLIED ENERGY MATERIALS, vol.7, no.18, pp.7775-7786, 2024 (SCI-Expanded)

III. **Engineering Oxygen Vacancies in (FeCrCoMnZn)3O4-δ High Entropy Spinel Oxides Through Altering Fabrication Atmosphere for High-Performance Rechargeable Zinc-Air Batteries**
Özgür Ç., Erdil T., Geyikci U., Okuyucu C., Lökçü E., Kalay Y. E., Toparlı Ç.
Global Challenges, vol.8, no.1, 2024 (SCI-Expanded)

IV. **Synthesis of N-Doped Graphene Photo-Catalyst for Photo-Assisted Charging of Li-Ion Oxygen Battery**
Kaçar N., LÖKÇÜ E., ÇAYIRLI M., ÖZDEN R. C., COŞKUN Ş., TOPARLI Ç., ÇELİKYÜREK İ., ANIK M.

Global Challenges, vol.8, no.1, 2024 (SCI-Expanded)

V. **B-Site Effect on High-Entropy Perovskite Oxide as a Bifunctional Electrocatalyst for Rechargeable Zinc-Air Batteries**
Erdil T., Toparlı Ç.
ACS APPLIED ENERGY MATERIALS, vol.6, no.21, pp.11255-11267, 2023 (SCI-Expanded)

VI. **Facile Synthesis and Origin of Enhanced Electrochemical Oxygen Evolution Reaction Performance of 2H-Hexagonal Ba2CoMnO6-delta as a New Member in Double Perovskite Oxides**
Erdil T., Lökçü E., Yıldız İ., Okuyucu C., Kalay Y. E., Toparlı Ç.
ACS OMEGA, vol.7, no.48, pp.44147-44155, 2022 (SCI-Expanded)

VII. **Effect of synthesis environment on the electrochemical properties of (FeMnCrCoZn)(3)O-4 high-entropy oxides for Li-ion batteries**
Bayraktar D. O., LÖKÇÜ E., ÖZGÜR Ç., Erdil T., TOPARLI Ç.
INTERNATIONAL JOURNAL OF ENERGY RESEARCH, vol.46, no.15, pp.22124-22133, 2022 (SCI-Expanded)

VIII. **Electronegative metal dopants improve switching variability in Al(2)O(3)resistive switching devices**
Tan Z. J., Somjit V., TOPARLI Ç., Yildiz B., Fang N.
PHYSICAL REVIEW MATERIALS, vol.6, no.10, 2022 (SCI-Expanded)

IX. **Microwave-assisted in situ laser dye incorporation into high sensitivity whispering gallery mode microresonators**
Mondragon-Ochoa J. S., Gonzalez-Rivera J., Toparli C., Khanum R., Moirangthem R. S., Duce C., Ferrari C., Barillaro G., Erbe A.
JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.55, no.5, 2022 (SCI-Expanded)

X. **Acidity of surface-infiltrated binary oxides as a sensitive descriptor of oxygen exchange kinetics in mixed conducting oxides**
Nicollet C., TOPARLI Ç., Harrington G. F., Defferriere T., Yildiz B., Tuller H. L.
NATURE CATALYSIS, vol.3, no.11, pp.913-920, 2020 (SCI-Expanded)

XI. **Multi-Foulant-Resistant Material Design by Matching Coating-Fluid Optical Properties**
TOPARLI Ç., Carlson M., Dinh M. A., Yildiz B., Short M. P.
LANGMUIR, vol.36, no.17, pp.4776-4784, 2020 (SCI-Expanded)

XII. **Electrochemical Performance of (MgCoNiZn)(1-x)LixO High-Entropy Oxides in Lithium-Ion Batteries**
LÖKÇÜ E., TOPARLI Ç., ANIK M.
ACS APPLIED MATERIALS & INTERFACES, vol.12, no.21, pp.23860-23866, 2020 (SCI-Expanded)

XIII. **What is the trigger for the hydrogen evolution reaction? - towards electrocatalysis beyond the Sabatier principle**
Zeradjanin A. R., Polymeros G., TOPARLI Ç., Ledendecker M., Hodnik N., Erbe A., Rohwerder M., La Mantia F.
PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol.22, no.16, pp.8768-8780, 2020 (SCI-Expanded)

XIV. **Alkaline manganese electrochemistry studied by in situ and operando spectroscopic methods - metal dissolution, oxide formation and oxygen evolution**
Rabe M., TOPARLI Ç., Chen Y., Kasian O., Mayrhofer K. J. J., Erbe A.
PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol.21, no.20, pp.10457-10469, 2019 (SCI-Expanded)

XV. **Cyclodextrin inhibits zinc corrosion by destabilizing point defect formation in the oxide layer**
Altin A., Krzywiecki M., Sarfraz A., TOPARLI Ç., Laska C., Kerger P., Zeradjanin A., Mayrhofer K. J. J., Rohwerder M., Erbe A.
BEILSTEIN JOURNAL OF NANOTECHNOLOGY, vol.9, pp.936-944, 2018 (SCI-Expanded)

XVI. **In situ and operando observation of surface oxides during oxygen evolution reaction on copper**
TOPARLI Ç., Sarfraz A., Wieck A. D., Rohwerder M., Erbe A.
ELECTROCHIMICA ACTA, vol.236, pp.104-115, 2017 (SCI-Expanded)

XVII. **Synthesis, structural and magnetic characterization of soft magnetic nanocrystalline ternary FeNiCo particles**
TOPARLI Ç., Ebin B., Gürmen S.
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol.423, pp.133-139, 2017 (SCI-Expanded)

XVIII. **State of the Surface of Antibacterial Copper in Phosphate Buffered Saline**

TOPARLI Ç., Hieke S. W., Altin A., Kasian O., Scheu C., Erbe A.
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.164, no.12, 2017 (SCI-Expanded)

XIX. **A new look at oxide formation at the copper/electrolyte interface by in situ spectroscopies**
TOPARLI Ç., Sarfraz A., Erbe A.
PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol.17, no.47, pp.31670-31679, 2015 (SCI-Expanded)

XX. **Preparation and magnetic characterization of Fe/metal oxide nanocomposite particles by means of hydrogen reduction assisted ultrasonic spray pyrolysis (USP-HR)**
Ebin B., TOPARLI Ç., Gürmen S.
INTERNATIONAL JOURNAL OF MATERIALS RESEARCH, vol.104, no.5, pp.483-488, 2013 (SCI-Expanded)

Articles Published in Other Journals

I. **SYNTHESIS AND CHARACTERIZATION OF HIGH ENTROPY OXY-HYDROXIDES FOR ELECTROCATALYTIC OXYGEN EVOLUTION AND REDUCTION REACTION**
Toparli C.
Eskişehir Osmangazi Üniversitesi mühendislik ve mimarlık fakültesi dergisi (online), vol.31, no.2, pp.698-704, 2023 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

I. **The Effect of B-site Doping on NdBaCoaFe2-aO6 (a= 1.8, 1.6, 1.4, 1.2) for Enhanced OER/ORR Activity and Rechargeable Zinc- Air Battery Performance**
ÖZGÜR Ç., TOPARLI Ç.
7th International Symposium on Materials for Energy Storage and Conversion, Muğla, Turkey, 17 - 21 July 2023

II. **NANO POROUS HIGH ENTROPY OXIDE ELECTROCATALYST FOR HYDROGEN PRODUCTION**
ÖZGÜR Ç., TOPARLI Ç., ERDİL T., LÖKÇÜ E.
3rd INTERNATIONAL MATERIALS TECHNOLOGIES AND METALLURGY CONFERENCE-2023, İstanbul, Turkey, 11 - 13 October 2023

III. **(Digital Presentation) ORR/OER Activity and Rechargeable Zinc-Air Battery Performance of B Site Doped Double Perovskite NdBaCoXO5+δ (X= Fe, Ni, Mn)**
Özgür Ç., Toparli Ç.
ECS Meeting, Vancouver, Canada, 29 May - 02 June 2022, vol.35, pp.1511

Supported Projects

TOPARLI Ç., Project Supported by Higher Education Institutions, Designing B-site doped double perovskite for the metal-air batteries, 2022 - 2023

Metrics

Publication: 28
Citation (WoS): 231
Citation (Scopus): 251
H-Index (WoS): 9
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