

Asst. Prof. Onur Ergen

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Research Areas

Health Sciences, Natural Sciences, Engineering and Technology

Academic Titles / Tasks

Assistant Professor, Istanbul Technical University, Elektrik-Elektronik, Elektronik Ve Haberleşme Mühendisliği, 2020 - Continues

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Robust atrial fibrillation monitoring utilizing graphene aerogel-based nano-tattoo**
Ergen O.
Materials Letters, vol.291, 2021 (Journal Indexed in SCI)
- II. **Artificial intelligence-based identification of butter variations as a model study for detecting food adulteration**
Iymen G., Tanriver G., Hayirlioglu Y. Z. , Ergen O.
INNOVATIVE FOOD SCIENCE & EMERGING TECHNOLOGIES, vol.66, 2020 (Journal Indexed in SCI)
- III. **Real time chemical and mechanical human motion monitoring with aerogel-based wearable sensors**
Ergen O., Celik E., Unal A. H. , Erdolu M. Y. , Sarac F. E. , Unal U.
LAB ON A CHIP, vol.20, no.15, pp.2689-2695, 2020 (Journal Indexed in SCI)
- IV. **Screen Engineered Field Effect Cu & x2082;O Based Solar Cells**
Ergen O., Celik E., Unal A. H. , Erdolu M. Y.
IEEE ELECTRON DEVICE LETTERS, vol.41, no.7, pp.1138-1140, 2020 (Journal Indexed in SCI)
- V. **Hexagonal boron nitride incorporation to achieve high performance Li4Ti5O12 electrodes**
Ergen O.
AIP ADVANCES, vol.10, no.4, 2020 (Journal Indexed in SCI)
- VI. **Effective capacity and outage probability assessment of multiple-relay cognitive communication systems in Nakagami-m and Rayleigh fading channel**
Zahedi A., Ergen M., Ergen O., Shayea I., El-Saleh A. A.
TRANSACTIONS ON EMERGING TELECOMMUNICATIONS TECHNOLOGIES, vol.31, no.4, 2020 (Journal Indexed in SCI)
- VII. **Edge on Wheels With OMNIBUS Networking for 6G Technology**
Ergen M., Inan F., Ergen O., Shayea I., Tuysuz M. F. , Azizan A., Üre N. K. , Nekovee M.
IEEE ACCESS, vol.8, pp.215928-215942, 2020 (Journal Indexed in SCI)
- VIII. **Ai Driven Advanced Internet Of Things (Iotx(2)): The Future Seems Irreversibly Connected in Medicine**
Ergen O., Belcastro K. D.
ANATOLIAN JOURNAL OF CARDIOLOGY, vol.22, pp.15-17, 2019 (Journal Indexed in SCI)

- IX. **Hexagonal boron nitride as a cationic diffusion barrier to form a graded band gap perovskite heterostructure**
Ergen O., Gilbert S. M., Turner S. J., Zettl A.
PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS, vol.253, no.12, pp.2478-2480, 2016 (Journal Indexed in SCI)
- X. **Metal insulator semiconductor solar cell devices based on a Cu₂O substrate utilizing h-BN as an insulating and passivating layer**
Ergen O., Gibb A., Vazquez-Mena O., Regan W. R., Zettl A.
APPLIED PHYSICS LETTERS, vol.106, no.10, 2015 (Journal Indexed in SCI)
- XI. **Performance Enhancement of a Graphene-Zinc Phosphide Solar Cell Using the Electric Field-Effect**
Vazquez-Mena O., Bosco J. P., Ergen O., Rasool H. I., Fathalizadeh A., Tosun M., Crommie M., Javey A., Atwater H. A., Zettl A.
NANO LETTERS, vol.14, no.8, pp.4280-4285, 2014 (Journal Indexed in SCI)
- XII. **Screening-Engineered Field-Effect Solar Cells**
Regan W., Byrnes S., Gannett W., Ergen O., Vazquez-Mena O., Wang F., Zettl A.
NANO LETTERS, vol.12, no.8, pp.4300-4304, 2012 (Journal Indexed in SCI)
- XIII. **Molecular monolayers for conformal, nanoscale doping of InP nanopillar photovoltaics**
Cho K., Ruebusch D. J., Lee M. H., Moon J. H., Ford A. C., Kapadia R., Takei K., Ergen O., Javey A.
APPLIED PHYSICS LETTERS, vol.98, no.20, 2011 (Journal Indexed in SCI)
- XIV. **Shape-Controlled Synthesis of Single-Crystalline Nanopillar Arrays by Template-Assisted Vapor-Liquid-Solid Process**
Ergen O., Ruebusch D. J., Fang H., Rathore A. A., Kapadia R., Fan Z., Takei K., Jamshidi A., Wu M., Javey A.
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol.132, no.40, pp.13972-13974, 2010 (Journal Indexed in SCI)
- XV. **Challenges and Prospects of Nanopillar-Based Solar Cells**
Fan Z., Ruebusch D. J., Rathore A. A., Kapadia R., Ergen O., Leu P. W., Javey A.
NANO RESEARCH, vol.2, no.11, pp.829-843, 2009 (Journal Indexed in SCI)
- XVI. **Three-dimensional nanopillar-array photovoltaics on low-cost and flexible substrates**
Fan Z., Razavi H., Do J., Moriwaki A., Ergen O., Chueh Y., Leu P. W., Ho J. C., Takahashi T., Reichertz L. A., et al.
NATURE MATERIALS, vol.8, no.8, pp.648-653, 2009 (Journal Indexed in SCI)
- XVII. **Nanoscale doping of InAs via sulfur monolayers**
Ho J. C., Ford A. C., Chueh Y., Leu P. W., Ergen O., Takei K., Smith G., Majhi P., Bennett J., Javey A.
APPLIED PHYSICS LETTERS, vol.95, no.7, 2009 (Journal Indexed in SCI)
- XVIII. **Synthesis, Contact Printing, and Device Characterization of Ni-Catalyzed, Crystalline InAs Nanowires**
Ford A. C., Ho J. C., Fan Z., Ergen O., Altoe V., Aloni S., Razavi H., Javey A.
NANO RESEARCH, vol.1, no.1, pp.32-39, 2008 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Graphene Aerogel Based Nanogenerators for Health Monitoring**
ERGEN O.
European Journal of Science and Technology, no.21, pp.665-668, 2021 (Other Refereed National Journals)
- II. **Selected Applications of Generative Adversarial Networks: Mini Review**
İYMEN G., TANRIVER G., ERGEN O.
COJ Robotics Artificial Intelligence, vol.1, no.2, 2020 (Refereed Journals of Other Institutions)

Refereed Congress / Symposium Publications in Proceedings

- I. **ZnO Nanowire Embedded Graphene Aerogel Nanogenerators**
ERGEN O.

USBIK 2021 Online Uluslararası Fen Bilimleri Kongresi, 26 February 2021

- II. **Cost Effective Grid Edge Management Utilizing Wireless Information**
ERGEN O.
1. Uluslararası Mühendislik Bilimleri ve Multidisipliner Yaklaşımlar Kongresi, 23 - 24 February 2021
- III. **A novel direct and cost-effective growth of III—V semiconductors on 2D layered materials**
ERGEN O.
XXXII International Winterschool on Electronic Properties of Novel Materials, 17 - 24 March 2018
- IV. **High Current, High Efficiency Graded Band Gap Perovskite Solar Cells**
ERGEN O., GILBERT S. M. , THOAM PHAM T., TURNER S. J. , TAN M. T. , WORSLEY M. A. , ZETTL A.
2016 MRS FALL MEETING & EXHIBIT, 27 November - 02 December 2016
- V. **Li-air, rechargeable, solid-state batteries using graphene and boron nitride aerogel matrices.1**
ERGEN O., THOAM PHAM T., DEMAIO-TURNER S., ZETTL A.
MAR16 Meeting of The American Physical Society, 14 - 18 March 2016
- VI. **High efficiency graded band gap perovskite solar cells**
ERGEN O., DEMAIO-TURNER S., THOAM PHAM T., TAN M. T. Z. , YUK J., ZETTL A.
XXX International Winterschool on Electronic Properties of Novel Materials, 13 - 20 February 2016
- VII. **MIS Solar Cell Devices Based on a Cu₂ O Substrate Utilizing h-BN as an Insulating and Passivating Layer**
ERGEN O., GIBB A., VAZQUEZ-MENA O., REGAN W., ZETTL A.
APS March Meeting 2015, 2 - 06 March 2015
- VIII. **Enhanced Photovoltaic Performance by Using 2D Layer Materials**
ERGEN O.
Center of Integrated Nano-mechanical Systems, University of California, Berkeley, CA, 01 January 2014
- IX. **A Novel Architecture for Photovoltaic Devices: Field-effect Solar Cells Using Screening-engineered Nanoelectrodes for Silicon and Earth Abundant Cuprous Oxide**
Vazquez-Mena O., Regan W., Byrnes S., Ergen O., Gannett W., Wang F., Zettl A.
39th IEEE Photovoltaic Specialists Conference (PVSC), Tama, Japan, 16 - 21 June 2013, pp.3284-3286
- X. **A Novel Architecture for Photovoltaic Devices: Field-effect Solar Cells Using Screening-engineered Nanoelectrodes for Silicon and Earth Abundant Cuprous Oxide**
Vazquez-Mena O., Regan W., Byrnes S., Ergen O., Gannett W., Wang F., Zettl A.
39th IEEE Photovoltaic Specialists Conference (PVSC), Tama, Japan, 16 - 21 June 2013, pp.83-86
- XI. **PV Technology Overview and Current Innovations**
ERGEN O.
Center of Integrated Nano-mechanical Systems, University of California, Berkeley, CA., 01 January 2012
- XII. **Micro-crystal Based Screen Field Engineering Field-effect Solar Cells**
ERGEN O.
PV idea Lab, University of California, Berkeley, CA., 01 January 2011
- XIII. **Shape-Controlled Synthesis of Single-Crystalline Nanopillar Arrays by Template-Assisted Vapor Liquid Solid Process**
ERGEN O.
PV Idea Lab, University of California, Berkeley, CA., 01 January 2009

Supported Projects

Ergen O., H2020 Project, Smart-WiFi, 2020 - 2022

Ergen O., TUBITAK Project, Organik Ve inorganik Tabanlı Boşluk Taşıyıcı Malzemeler Yardımıyla Yüksek Kararlılığa Sahip Perovskit Hücrelerinin Geliştirilmesi, 2018 - 2021

Ergen O., TUBITAK Project, Yazılım odaklı ağ yapılarıyla (SDN) kablosuz internet (Wi-Fi) erişiminde verimlilik artışı sağlayan algoritma (SON) ve ürün tasarımı, 2017 - 2020

Patent

Ergen O., Method and System for Providing Silica Networked Hybrid, Gel Polymer, Hexagonal Boron Nitride (h-BN) Electrolyte for Use with Liquid Organic Electrolyte Structures, Patent, CHAPTER G Physics, The Invention Recourse Number: 63147780 , Standard Registration, 2021

Ergen O., Method and System for Forming an Electrolyte Separator Using a Silica Network Incorporated with Hexagonal Boron Nitride, Patent, CHAPTER G Physics, The Invention Recourse Number: 63147778 , Standard Registration, 2021

Ergen O., Method and System for Application of Protective Boundary on Capacitor Walls to Prevent Loss of Hydrogen at High Temperatures and/or High Voltages in Electrical Storage Devices, Patent, CHAPTER G Physics, The Invention Recourse Number: 63147781 , Standard Registration, 2021

Ergen O., Method and System for Hexagonal Boron Nitride Incorporation to Achieve High-Performance Lithium-Based Electrodes, Patent, CHAPTER G Physics, The Invention Recourse Number: 63147776 , Standard Registration, 2021

Ergen O., Method and System for Forming an Electrolyte Separator with Additive Boron Nitride Structures, Using Acid-Stable Plasticizer, Patent, CHAPTER G Physics, The Invention Recourse Number: 63147779 , Standard Registration, 2021

Ergen O., High temperature Li-ion battery cells utilizing boron nitride aerogels and boron nitride nanotubes, Patent, CHAPTER G Physics, The Invention Registration Number: 10686227 , Standard Registration, 2020

Ergen O., Artificial Intelligence-Based Food Fraud/Adulteration Identification Utilizing Simple Sound Vibrations, Patent, CHAPTER G Physics, The Invention Recourse Number: 63090231 , Standard Registration, 2020

Ergen O., Method and System for Contact Tracing Using a Software Development Kit (SDK) Integrated into Client Devices, Patent, CHAPTER G Physics, The Invention Recourse Number: 16900484 , Standard Registration, 2020

Ergen O., Method and System for Sharing Wi-Fi in a Wi-Fi Network Using a Cloud Platform, Patent, CHAPTER G Physics, The Invention Recourse Number: 16900525 , Standard Registration, 2020

Ergen O., Graded Band Gap Perovskite Solar Cells, Patent, CHAPTER G Physics, The Invention Registration Number: 10403708 , Standard Registration, 2019

Citations

Total Citations (WOS):1312

h-index (WOS):9